DATAMINE

STUDIO RM

Advanced Modelling & Evaluation: Studio RM, Advanced Estimation & Supervisor

STUDIO RM

Release Notes

Studio RM 2.0.66.0

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Legal Disclaimer

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.
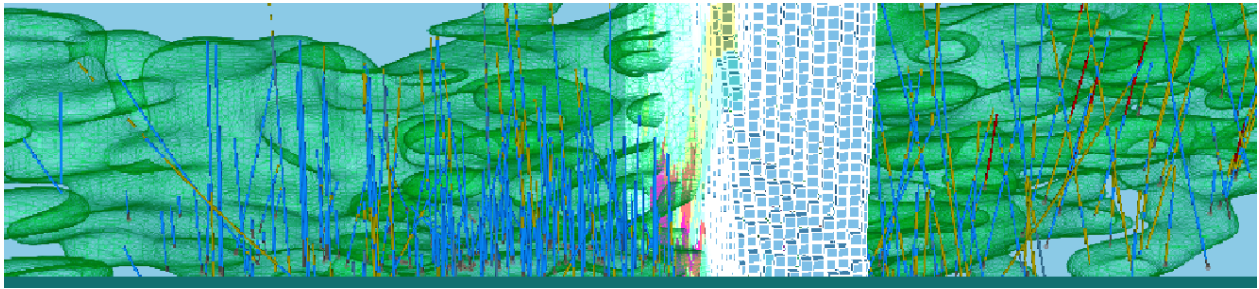
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Overview

Studio RM is the world's leading integrated software package for the natural resource industries. Typical uses are in data capture and analysis, exploration, geology, geochemistry, rock mechanics and orebody modelling. It has been chosen for commodities as diverse as iron ore, gold, nickel, phosphates, diamonds, copper, bauxite, coal, lignite, platinum, petroleum, and industrial minerals.

Studio RM 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

This document includes cumulative releases notes for Studio RM 2.0.66.0.

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

For the complete Studio RM documentation, see **https://docs.dataminesoftware.com/StudioRM.**

Studio RM V2 and Studio RM Pro Licensing Changes

Technical Note: TN00440

> **Note**: Throughout this document, "Isatis.neo" is a shorthand representation of "Isatis.neo Mining". Any reference to "Studio RM V2" relates to the publicly released version of Studio RM 2.0 or any later version.

Background

Datamine Studio products automatically install or upgrade **Datamine License Services**, a support service used to protect your software from unauthorized use.

Prior to November 2023, Datamine's Studio resource modelling functionality was delivered primarily using two product variants; **Studio RM** and **Studio RM Pro**, with the latter including the additional Advanced Estimation module functionality. These applications were independently licensed.

To make things simpler and to provide more value to customers, all maintained Studio RM customers will now automatically receive the Advanced Estimation functionality within **Studio RM V2** as part of their maintenance.

Studio RM Pro will continue to exist as a bundled offering of Studio RM V2 and Supervisor, but going forward it will include Isatis.neo.

Studio RM Pro Changes from November 2023

From **November 2023 onwards**, a single Studio resource modelling product is available; Studio RM. Starting with Studio RM V2, this single product includes the Advanced Estimation functionality previously found in Studio RM Pro, plus new features, improvements and fixes over earlier versions.

Studio RM development will continue throughout 2024 and beyond, to realise an ambitious and exciting resource modelling roadmap. These new developments will only be accessible in Studio RM V2 and later versions via a Studio RM 2+ license.

Studio RM Pro remains as a bundled offering and now includes Studio RM V2, Supervisor and Isatis.neo. Clients who purchased Studio RM Pro prior to November 2023 will have access to Studio RM V2 and Supervisor, with discounted upgrade options for including Isatis.neo within the bundle.

The contents of the Studio RM Pro bundle before and after November 2023 is summarised in the table below.

Before November 2023	After November 2023
Studio RM Pro	**Studio RM Pro**
Studio RM V1 plus the Advanced Estimation module	Studio RM V2 *Includes Advanced Estimation functionality as standard. (The Advanced Estimation licensed module is discontinued.)*
Supervisor	Supervisor
	Isatis.neo (supported by Datamine License Services)

Studio "RM 2+" License

Studio RM V2 requires a new license to run it ("Studio RM 2+").

This license is different to previous Studio RM and Studio RM Pro versions and is provided by your local Datamine office. Once received, the new Studio RM 2+ license(s) must be registered either locally or on a server.

Studio RM V2 will not operate with a Studio RM or Studio RM Pro license issued prior to November 2023. For clients with maintained Studio RM and Studio RM Pro licenses, these legacy licenses will continue to be available for the duration of the maintenance period.

Legacy Studio RM and RM Pro maintenance keys will no longer be issued.

Questions & Answers

Licensing is an important aspect of Datamine software and unexplained changes to our licensing model can cause concerns. These changes shouldn't affect anyone adversely, although new licenses will need to be registered, and for Studio RM Pro users, legacy scripts may require a small adjustment.

The following information is intended to clarify the licensing situation and allay concerns you may have about how it may affect your usage of our flagship resource modelling product.

Deployment & Installation

Can I upgrade a legacy Studio RM or RM Pro product with a Studio RM 2+ key?

As before, you can upgrade a legacy version of Studio RM to version Studio RM V2 or later. Studio RM Pro, however, is a different product and can't be upgraded in this way (which has always been the case).

Will Studio RM Pro be developed in the future? Will I ever get a patch on Studio RM Pro?

Studio RM Pro will continue to refer only to the bundle of products Studio RM V2, Supervisor and Isatis.neo. Studio RM V2 has no optional modules; the Advanced Estimation module is being discontinued and its functionality is included Studio RM V2 as standard.

What happens when Studio RM V2 is released – do I get a new key?

Once Studio RM 2.0 is released, all Studio RM and Studio RM Pro clients with active maintenance contracts will receive Studio RM 2+ licenses to cover their current license quota. These licenses will be issued using the same license ID as their legacy licenses.

What if I want to use a legacy version of Studio RM?

Datamine may issue maintained customers with a bundled Studio RM and a Studio RM 2+ licence (on the same UID). This will replace your existing licence in Licence Manager. This will grant access to legacy version of Studio RM (versions 1.13 and lower) and current versions (Studio RM V2 and higher). Bundled Studio RM 2+ and Studio RM/Pro licences will be available for the current maintenance period.

I previously had a bundled Studio RM Pro licence, which gave me access to Studio RM, Advanced Estimation and Supervisor. Studio RM Pro now includes Isatis.Neo. Does this mean I get a free licence for Isatis.Neo going forward?

Going forward, you will have access to Studio RM V2 and Supervisor. There is an upgrade fee (less than the standard price of Isatis.Neo) to add Isatis.Neo to the licence bundle.

License Registration & Compatibility

I have a Studio RM Pro (or Studio RM legacy) full license key and it is maintained. What happens when I install a new Studio RM 2+ license key?

Once the new Studio RM 2+ license is installed, you can:

- run Studio RM V2 (or later) on the licensed PC.
- continue to run legacy Studio RM or Studio RM Pro products through a bundled licence, but only during the current maintenance period.
- run both Studio RM V2 (or later) and legacy Studio RM/Pro products at the same time, on the same machine, but only during the current maintenance period.

In summary, you will, for a period of time, be able to run legacy and new Studio RM products in parallel on the same PC. Once the current maintenance period has ended, and assuming maintenance is renewed, a new maintenance key is issued to cover (only) the Studio RM V2 (or later) product.

Can I use a legacy Studio RM or RM Pro license key to run Studio RM V2 or later?

No, you can't. To run Studio RM V2 or later versions, you will need a Studio RM 2+ license key as provided by your local Datamine office.

It's not convenient for me to upgrade to Studio RM V2 right now. Can I continue to use my legacy version, potentially beyond my current maintenance period?

Yes, please ask your local Datamine office and they can extend your legacy keys if there is a valid reason not to upgrade and your maintenance is up to date. If a program defect is preventing you from moving forward with Studio RM, please let us know as soon as possible.

Can I split my newly issued license (that allows legacy and new RM versions to run simultaneously) so that I can run Studio RM Pro (legacy) on one machine, and Studio RM 2.0 (or later) on another?

No, you can't. The newly issued Studio RM 2+ license is bound to your legacy key(s), meaning they can only be installed, checked out or locked on one PC.

I've installed my new Studio RM 2+ license key and can now run 2 versions of Studio RM on my machine at once. What happens when the current maintenance period expires?

At the next issue of maintenance key(s) for your organization, keys will be issued to allow Studio RM V2 or later versions to run. Keys for the retired products will expire and those legacy products will no longer be accessible.

My license(s) are contained within one or more solutions. What happens when the new license is installed?

Solution-bound licenses will automatically be replaced with a bundled license that allows legacy and new Studio RM products to operate. Manual solution adjustment is not required.

Project & Data Compatibility

Will projects saved in legacy Studio RM or Studio RM Pro versions be accessible in Studio RM V2 or later?

Project compatibility is unaffected by these changes; projects and data generated by legacy Studio RM or Studio RM Pro versions can be loaded into Studio RM V2 or later. As always, backwards-compatibility is not possible due to the rapidly evolving Studio RM functional framework.

So, if I save a project in Studio RM 1.13, I can load it into Studio RM V2?

Yes, you can.

To be completely clear... if I save a block model in Studio RM 1.13, I can load it into Studio RM V2?

That's correct. You can load RM V2 data into an earlier RM version in most cases, although this isn't strictly supported as the latest functions (e.g. advanced estimation) may save data in a way that can't recognized by older versions of the same tools.

What about scripts? Can I run my legacy scripts in Studio RM V2 and later versions?

This depends on the format of your scripts and the legacy product used to create them.

- **Legacy Studio RM users**: no script changes are required. Scripts will continue to operate in RM V2 or later versions without modification.

- **Legacy Studio RM Pro users**: as you are changing from one product (Studio RM Pro) to a different one (Studio RM), if your script(s) instantiate the DmStudioApplication directly, by referencing its registered class, such as:

```
variable = new ActiveXObject("StudioRMPro.Application");
```

...the ActiveXObject reference should be changed to:

```
variable = new ActiveXObject("StudioRM.Application");
```

If you are accessing the Datamine Application object via the ScriptHelper class, or window.external, no changes are necessary.

If you have further questions about these licensing changes, please contact your local Datamine representative.

License Services - Important Information

Technical Note: TN00399

Datamine Studio products automatically install or upgrade **Datamine License Services**, a support service used to protect your software from unauthorized use.

This update brings two important changes to License Services. Both will affect how you license and activate your software:

- When a Studio application installs License Services, that version of License Services becomes the *minimum required version to activate the software.* Earlier versions cannot be installed locally, but older server versions are still permitted.

- **Studio RM Pro has been discontinued**. Studio RM continues and contains all functionality previously hosted by Studio RM Pro.

Important: **To run Studio RM 2.0 and later versions, you will need a "Studio RM 2+" license.** Studio RM 2.0 and later versions can't be activated using licenses previously registered to activate Studio RM or Studio RM Pro.

A "Studio RM 2+" is required for Studio RM 2.0 or later versions. Studio RM Pro is discontinued. Studio RM 2.0 and later versions can be used to upgrade previous Studio RM versions. Data and projects created by legacy product versions can be loaded into Studio RM 2.0 and later versions.

For more information, refer to the following technical note on the Datamine Support Website (login required):

https://datamine.freshdesk.com/en/support/solutions/articles/19000152442-studio-rm-2-0-licensing-changes

If you need further information, please contact your local Datamine office.

License Services is a technology that governs access to your installed application through a running background service. It has a dedicated application – **Datamine License Manager** – to administer licenses on both client and server machines.

Studio products released after July 2023 are connected to the License Services version that comes with the Studio application. You can't go back to an older version of License Services that was installed before the one by your Studio application.

This modification doesn't impact License Services versions on dedicated license servers. Older server versions of License Services can still be used alongside newer versions of License Services on local machines hosting Studio applications.

To put it simply: Studio products created after July 2023 install a version of License Services that can't be downgraded on your local machine.

Why are we making this change?

To protect your software from unlicensed use and permit more flexible and accessible methods of licensing to be developed in the future.

Will my software work with a newer version of License Services (than Studio originally installed)?

Yes. If the local installation of License Services is newer than the one originally installed, your older Studio product(s) will continue to operate normally. A minimum version of License Services is required to launch your application.

Will future License Services versions be compatible with legacy Studio products?

Yes. This change doesn't break compatibility between License Services and versions of Studio products produced prior to July 2023.

If a locally-installed version of License Services is incompatible, what happens?

When your application is launched, a message is displayed indicating an upgrade to License Services is required. License Services can be downloaded from the Datamine Support Website as a standalone installation package, or it can be installed with another Studio product.

Does this affect servers running License Services (that aren't used to run Studio products)?

No. Server versions, providing they are already supported, continue to serve licenses as before. There's no need to upgrade license servers as a result of this change. This change enforces a minimum *local* License Services version constraint.

For more information on License Services, please refer to your help file, the Datamine Support website, or contact your local Datamine representative for assistance.

acQuire Data Connection - Failure after Upgrade

Technical Note: TN00441

Background

In October 2023, Studio products supported by the acQuire Data Provider (for example, Studio RM) benefited from an upgrade to allow access to the latest capabilities. This driver update included an important 'wireframe constraint' feature and several other improvements. This driver update was deployed through our standard mechanism - Data Source Drivers, starting with Studio RM 2.0.

Unfortunately, this update to the acQuire Data Provider cannot be fully compatible with legacy acQuire-supported products and a compatibility break is unavoidable. This can lead to a failed acQuire data connection in a legacy product following the installation of a newer (but different) product on the same system.

An example of this could be installing Studio RM 2.0 onto a system where Studio RM Pro 1.13 is already installed, and those products exist side-by-side.

What's the Problem?

This issue only affects you if you need to connect to an acQuire data source through both a legacy (pre-October 2023) and new (October 2023 or later) application that is running on the same system.

If a new acQuire Data Provider is installed on a system that already hosts an older (pre-October 2023) application that makes use of the same data connection, the older application attempts to use the newer driver, and encounters a situation where files needed by the newer driver are not available.

As such, when the newer application is installed, the older application is no longer be able to access data through the acQuire Data Provider. The newer product will continue to have access.

What's the Solution?

> **Note**: This procedure will only be needed if you are running a combination of pre-October 2023 products and newer products side-by-side on the same system. As newer versions are installed over time, this procedure will become unnecessary.

It depends on whether you need access to an acQuire data source for your projects or not.

If not, there's nothing to do. This issue won't affect you.

If you need both legacy and new applications to connect to an acQuire database, you'll need to add some files to your system. It will only take a few minutes, using the following procedure:

1. Ensure you are accessing Windows using an account with administrative privileges.
2. If a failing legacy product is running, close it.
3. Download the "AcquireFix.zip" archive from the following URL:

   https://dataminesoftware-my.sharepoint.com/:u:/p/productstore/EWxsrZ0K5c5Prmpv9YXJpUIBFcuC0d3XaevjD1FR-tk9YA?e=8OAxfx

4. Open the archive. The archive contains four files:
   - oc1101as.dll
   - oe1101as.dll
   - og1301as.dll
   - RWUXThemeS10.dll
5. Copy these files to a temporary location, outside of the archive.
6. In a folder browser, open the "Bin" folder of the legacy product that cannot connect to an acQuire data source following the installation of the newer product. For standard installations, this is at a location similar to **C:\Program Files\Datamine\[Product Name]\Bin**, for example, **C:\Program Files\Datamine\StudioRM Pro\Bin**.
7. Copy the files from the temporary location to the folder path above. Depending on your operating system access settings, you may need to confirm this action, possibly several times.
8. Once all new files are in place, restart your legacy application. Both it and the newly installed product will be able to access acQuire data.

Studio RM 2.0 Release Notes

Important information for this version

- **Important licensing changes** have been made to your product. See "Studio RM License Changes" and "License Services - Minimum Version", above, for more information. Please contact your local Datamine office for more information.

- **COKRIG and Advanced Estimation**: Variogram models used in multivariate estimation must now include a **GRADE** and **GRADE2** field. Whilst these fields were optional previously, this could lead to an incorrect variogram being used, as first variogram in the file would be selected, which might not be the correct variogram for the estimation run. As such, these fields are now mandatory.

  > Note: **This may affect existing macros**. If affected, the input VMODEL file must be updated accordingly.

- **Studio RM can produce long field names (up to 24 characters) by default**. 'Long Field' mode is automatically set when launching this version of the application, and is required for this and future versions. Care should be taken when defining new attributes to ensure output data can be read by legacy 'short field' applications in your business.

- **Legacy application access to acQuire data sources**: An unavoidable compatibility break has been introduced with this version's installation of acQuire Data Provider components. This will prevent legacy applications from accessing an acQuire data source after this product is installed. A workaround for mixed environment users is provided below (see "acQuire Data Connection - Failure after Upgrade").

Key Improvements

Drillhole Importer
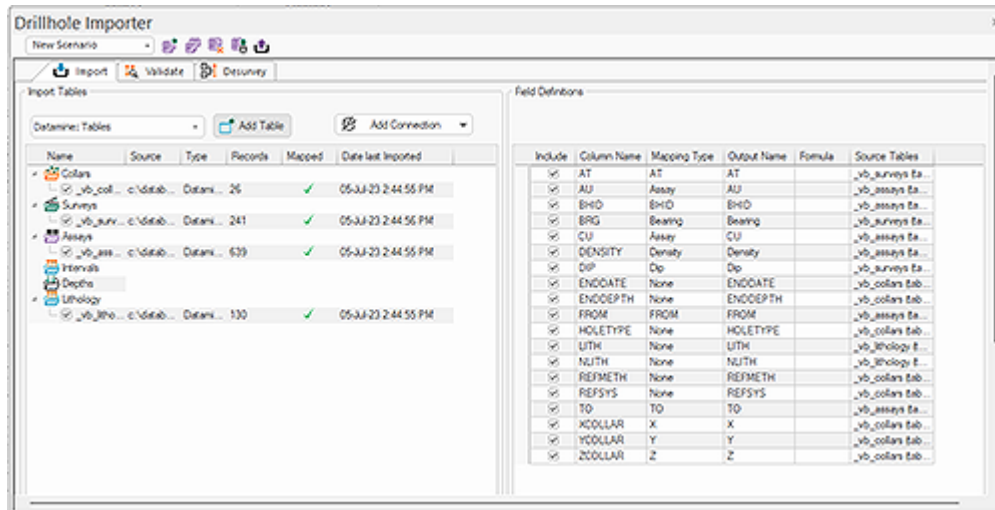
The **Drillhole Importer** simplifies the import of downhole data (collars, assays, surveys, depths, and intervals) from various sources. It validates the imported data for errors and converts it into a static drillhole file. For example, you can easily import drillholes with the latest assay data from the grade control database for short-term planning and blast modelling.

Drillhole Importer also connects to a brand new Datamine Fusion connection facility - **Fusion Importer**. See below for more information.

Another common use case is updating geological wireframes by obtaining current drillholes from a Datashed grade control database after each bi-monthly RC drilling campaign.

Configure your data connections to access and store a wide range of database formats, ensuring quick and easy reconnection for data updates.

Fusion Importer

Replacing the previous Data Source Driver for Fusion database connections, Fusion Importer provides a simple and intuitive way of setting up a connection to your remote or local GDMS that remains live throughout the lifetime of your project. Connect, define a data scope and that's it.

This facility is also seamlessly integrated with the Drillhole Importer, introduced in this update.

Model Faults
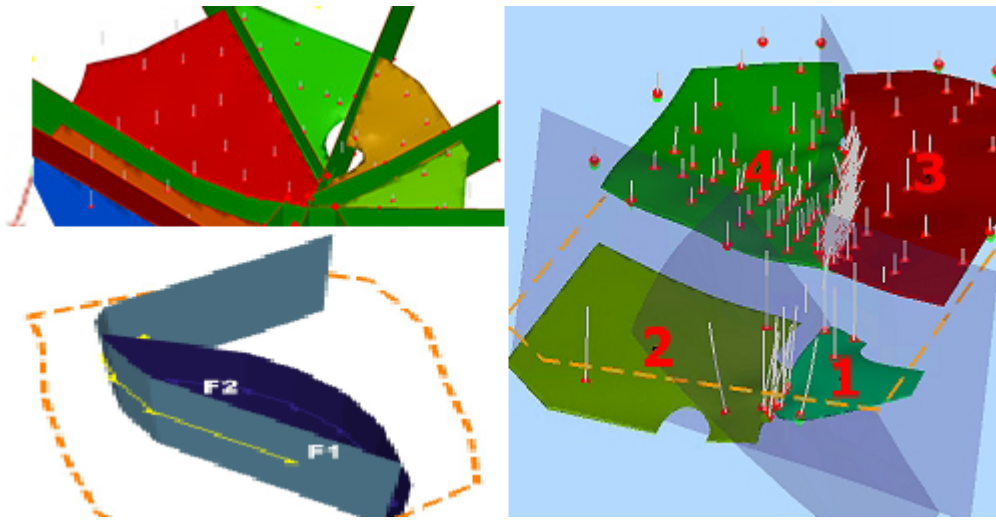
Quickly and easily model fault wireframes from loaded fault traces. Control each fault trace's dip and dip direction (at any point along the line) and make further edits using any of Studio's range of string editing tools. Fault wireframes are updated in real time, giving you dynamic control over fault shapes and extents.

Define fault relationships (for interdependent fault systems) using simple starts on / stops on settings, making even complex or sinusoidal fault relationships really easy to model.

Improved Implicit Modelling

- You can now optionally enforce tighter contact point to surface adherence using a post-processing 'Contact Snapping' option in both categorical and grade shell modelling commands.

- Drillhole interpretation settings are preserved between different implicit modelling sessions.

- In vein modelling, fault wireframe data can be automatically extended to ensure a clean intersection with the modelled vein volume(s).

- The categorical modelling command has been optimized to handle much larger input drillhole data than before.

- You can now pick an existing output surface to update in **Create Contact Surfaces**.

- Export contact points to a points object using the **Create Contact Surface** and **Create Vein Surfaces** tasks.

- Choose how absent grade data is treated in the **Grade Shell** modelling task. It can either be ignored, or it can influence the shell boundary as if a zero grade were present.

Vein Modelling: Model Inter-block Faults
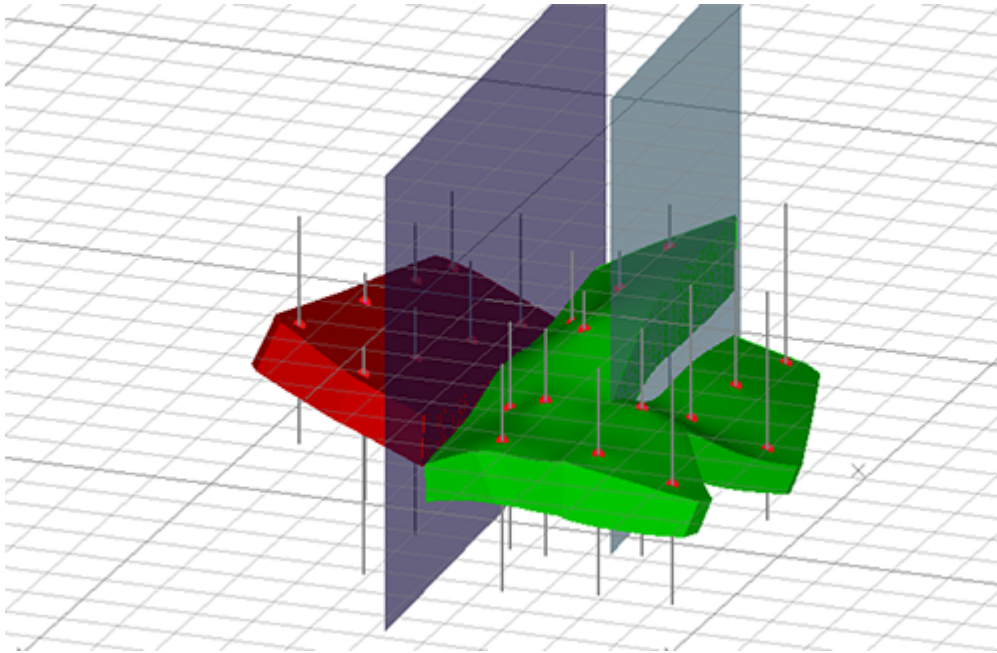
Previously, fault wireframes had to fully divide the positive sample data when vein modelling. Now, a fault can terminate within the body of data, creating a 'scissor fault'. In this situation, Studio automatically adjusts the throw of the fault along the length of the fault as before, but will gradually eliminate the fault throw over distance after the fault zone terminates.

This makes modelling of complex fault zones much quicker and easier as you can model a mixture of scissor and other faults within the same output.

Improved Grade Estimation
& Uniform Conditioning

- **COKRIG** now quicker if multiple zones are estimated.

- **MIKEST** supports Inverse Distance and Nearest Neighbour estimation with Dynamic Anisotropy.

- **ELLIPSE** can use an input variogram model file to generate an ellipse that encloses the shape of model, and can now output both wireframes and ellipsoid point-type data files.

- **Uniform Conditioning** can now recognize and process both **ESTIMA** and **COKRIG** variogram files.

- Specify whether to use anisotropy when calculating Inverse Power of Distance estimations in the **Advanced Estimation** console.

Point Cloud Reconstruction 2.0
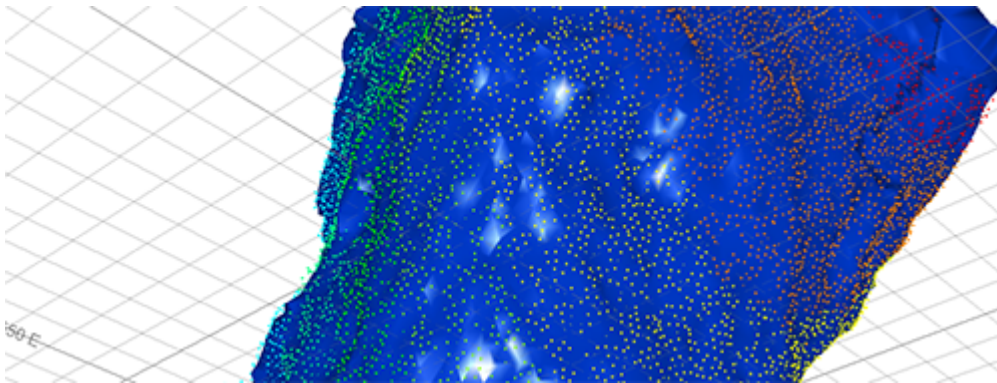
This release provides an update to our point reconstruction facility. You have multiple surfacing options at your fingertips, including interpolative and triangulation methods. We've kept parameters as simple as possible whilst maintaining flexibility, presenting a simple step-through process to accurately model your survey data.

You can find the **Point Reconstruction** console on the **Explicit** ribbon (**Automatic >> From Points**).

Smooth Contour Grid Colouring Options

Generate a 'smooth' contour grid legend to show subtle variations in contour values between contour isobars. Select from a range of custom smooth legend options and your output grid model displays smooth colour transitions between contour landmarks.
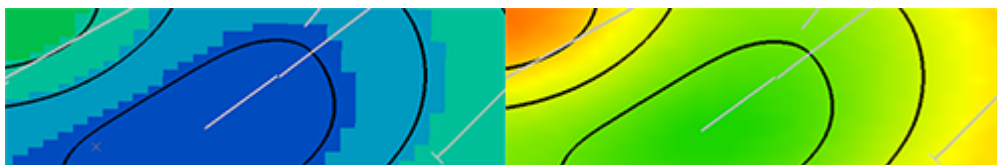
GETSAMP - Get Sample Data from Desurveyed Drillholes
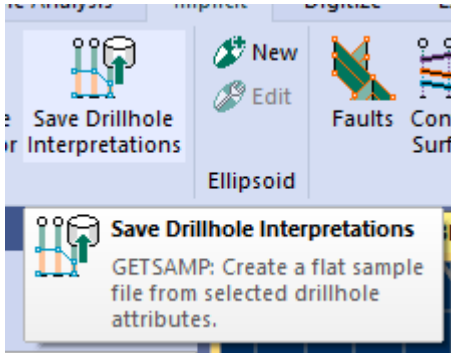
A new process - **GETSAMP** - lets you create a flat sample file from selected drillhole attributes. You can access this process via the **Implicit** ribbon.

SWATHPLT Slices at any Orientation
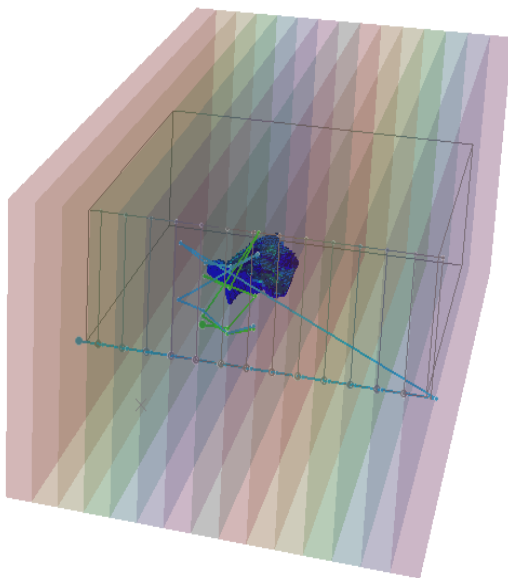
The **SWATHPLT** process now lets you specify a rotation axis and angle to orient swaths in any direction in relation to the model and (optionally) input samples. Swaths are also output as distinct wireframe volumes, making it easier to see how the swaths interact with your data, and how grades and tonnages relate to model or sample slices.

Attributes from Perimeters

A new command - **attributes-from-perimeters** - transfers attributes and values from closed perimeter strings to enclosed target data. Target data can be points, strings, drillholes or wireframes.

Drillhole Data Selection Toggle

You can now use the quick key combination "tds" to swap between full drillhole and independent sample data selection in a **3D** view. A new command - toggle-drillhole-selection - is also available.

Multiple Attribute Range Legends

The Multiple Attribute Legend wizard has been extended to let you define numeric ranges as well as distinct values, allowing for even more flexibility when generating visualization or evaluation legends.

View & Data Type Quick Filters
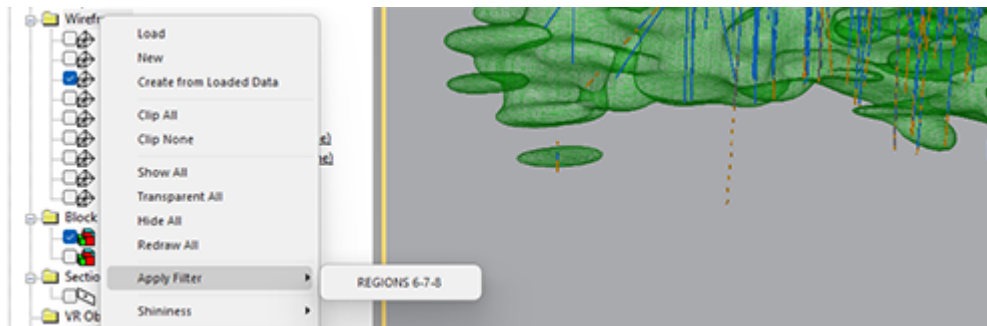
Apply previously saved quick filters to all overlays of a data type, or all overlays of an entire view, using new **Sheets** control bar menu options.

Calculate and Display Structural Orientations
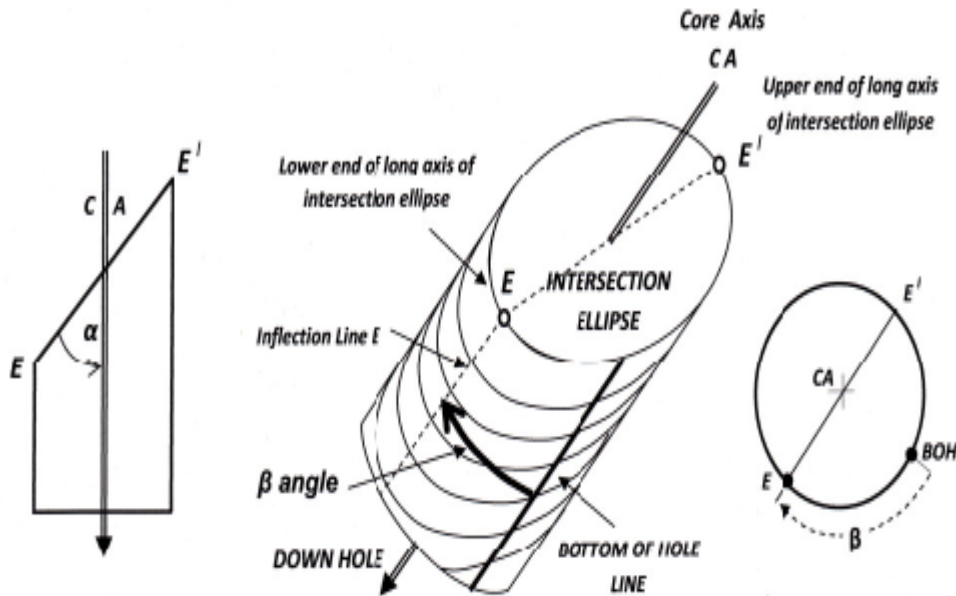
Define and format 2D or 3D drillhole structural symbols using a new 3D properties screen. Choose up to 3 orientation angles and render core sample orientation data using a wide range of visualization options.

Calculate-structural-orientations automatically calculates dip and dip directions from core logged alpha and beta angles. The resulting dip and dip direction attributes can be used to visualize angles using downhole structural symbols.

A New Look & Ribbon Layout
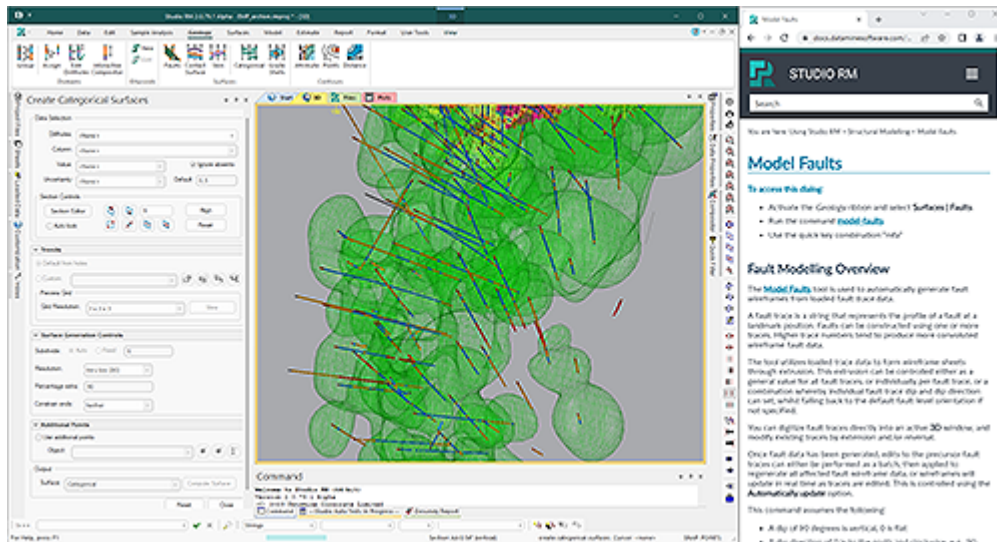
A streamlined experience for geologists. Based on feedback, we have reorganized and refreshed the ribbon system, and it's now more intuitive and easier to navigate. Not only that, but it's supported by more effective look and feel themes.

HTML5-compliant, Online Documentation

Access help via **docs.dataminesoftware.com**. This new online resource will, if an Internet connection is available (and you choose to access it), provide up-to-date system documentation that adapts to multiple target reading devices from laptops to phones. If no Internet connection is available, or you prefer to view compiled offline help, you can view the legacy installed content instead.

Not only that, but the latest help is deployed instantly, meaning you benefit from the latest knowledge available at all times.

docs.dataminesoftware.com will benefit from a lot of innovative development in the future, so it's worth taking a look!

Improved Data Source Drivers

- Export Vulcan .bmf block models to file sizes up to 4GB. Previously, the limit was 2GB.
- Fusion Connex functionality has been deprecated, replaced by the more robust D-BOX Fusion connection service.

STUDIO RM   DATAMINE

All Improvements

Commands & Processes

- **Cases: STUDIO-6549, STUDIO-6666** Specify whether to use anisotropy when calculating Inverse Power of Distance estimations in the **Advanced Estimation** console.

- **Case: STUDIO-6641 GETSAMP** - a new process - has been added to extract flat sample file information from static drillholes, preserving interpretations.

- **Case: STUDIO-6629** A new process - **GETSAMP** - lets you extract sample data from a drillhole file to preserve interpretations.

- **Case: STUDIO-6589** Move wireframe points mode can now be enabled via the top-level ribbon button on the **Surfaces** ribbon.

- **Case: STUDIO-6587** Choose how absent grade data is treated in the **Grade Shell** modelling task. It can either be ignored, or it can influence the shell boundary as if a zero grade were present.

- **Case: STUDIO-6561** Export contact points to a points object using the **Create Contact Surface** task.

- **Case: STUDIO-6539** Pick an existing output surface in **Create Contact Surface**.

- **Case: STUDIO-6530** To support future project management options, the surface modelling commands/contouring commands now generate files with additional metadata.

- **Case: STUDIO-6409** You can now choose whether drillhole formatting is automatically updated during vein or surface modelling.

- **Case: STUDIO-6369 Uniform Conditioning** can now recognize and process both **ESTIMA** and **COKRIG** variogram files.

- **Case: STUDIO-6349** The categorical modelling command has been optimized to handle much bigger input drillhole data than before.

- **Case: STUDIO-6388** Studio RM must now be run in Long Field mode.

- **Case: STUDIO-6340** When fitting a model, for exponential structures, control points on the chart are drawn at x=3*range, harmonizing structures between Studio and Supervisor.

- **Case: STUDIO-6336**When modelling vein structures, a fault sheet can now terminate within the positive data.

- **Case: STUDIO-6333** When editing ellipsoids, shortcut rotation buttons now rotate by 90, not 180 degrees.
- **Case: STUDIO-6280 COKRIG** now runs more quickly with multiple zones specified.
- **Case: STUDIO-6280** Wireframe data output by the structural modelling tasks is now rendered as a flat wireframe.
- **Case: STUDIO-6225** The legacy Design window is no longer accessible in this version.
- **Case: STUDIO-5562** Drillhole interpretation settings are now fully preserved between different implicit modelling sessions.
- **Case: STUDIO-5456 MIKEST** now supports **Inverse Distance** and **Nearest Neighbour** estimation with **Dynamic Anisotropy**.
- **Cases: STUDIO-5368, STUDIO-5319 ELLIPSE** uses an input variogram model file to generate an ellipse that encloses the shape of model, and can now output both wireframes and ellipsoid point-type data files.
- **Case: STUDIO-5185** Fault wireframe data can now be automatically extended to ensure a clean intersection with modelled vein volume(s).
- **Case: STUDIO-4669** Export HW and FW contact points to a points object during vein modelling.
- **Case: STUDIO-1095 COMPDH** can composite both down and up holes, using a @REVERSE parameter.
- **Case: STUDIO-924 calculate-structural-orientations** calculates dip and dip directions from core logged alpha and beta angles. The resulting dip and dip direction attributes can be used to visualize angles using downhole structural symbols.
- **Case: GEO-17** The new **Model Faults** managed task appears in this update. Consult your help file for more details.
- **Case: GEO-16 Drillhole Importer** is available for importing, validating and desurveying component drillhole data tables.
- **Case: CORE-7684**An issue causing system instability when changing the format of a block model overlay in the Plots window has been resolved.
- **Case: CORE-7632** Contouring commands now tag output data with their source command name.
- **Case: CORE-7581** Legacy GRAPHICS and SCREEN windows no longer appear in your product.
- **Case: CORE-7579 SWATHPLT** now lets you specify optional axes and rotation angles to orient swaths in any direction in relation to the model or samples.

- **Case: CORE-7569** Data objects derived from a database connection now display their connection string in the **Data Object Manager**.
- **Case: CORE-7478 Converge-segments** has been refactored, making it faster and more robust.
- **Case: CORE-7447 JOIN** supports up to 30 key fields.
- **Case: CORE-7436** @BOUNDTYP is no longer supported in the **PTCLD2WF** process.
- **Case: CORE-7405** The deprecated command "Undo Last DTM" is no longer available via the ribbon system.
- **Case: CORE-7390 SELWF** now assigns attribute values based on the order of input wireframe data, reinstating legacy behaviour.
- **Case: CORE-7348** The **PTCLD2WF** process has been overhauled to accommodate a wider range of input point clouds.
- **Case: CORE-7254 SLIMOD** has a tolerance to check for the creation of very small cells. A cell will not be created in the output file if it has a volume less than the parent volume of the output prototype multiplied by 0.00000001. This tolerance is smaller than in previous versions to allow for prototypes with a large parent cell dimension in one of the axes.
- **Case: CORE-7180** The legacy command **make-dtm-from-objects** is obsolete.
- **Case: CORE-7163** Choosing to auto-align a section after creation will not automatically zoom to fit all data in the 3D view.
- **Case: CORE-7141 SELWF** supports a @SETABSNT parameter.
- **Case: CORE-7112** Offset-string accommodates a wider range of input string shapes.
- **Case: CORE-7102** You can choose a 'smooth' legend output when generating contour grids.
- **Case: CORE-6885** Section plane pierce points are not enabled by default.
- **Case: CORE-6883** A new command - **toggle-drillhole-selection** (quick key "tds") toggles between full drillhole and independent sample data selection in a **3D** view.
- **Case: CORE-6711** A new process for point reconstruction – **PTCLD2WF** – is available in this version.
- **Case: CORE-6152** Quickly **store and reinstate quick filters** using the **Sheets** control bar's context menu.
- **Case: CORE-6148** Choosing to auto-align a section after creation no longer automatically zooms to fit all data in the 3D view.
- **Case: CORE-7172 MODSPLIT** has a @TOLERNCE parameter.
- **Case: CORE-7141 SELWF** has a @SETABSNT parameter.

- **Case: CORE-7112 offset-string** accommodates a wider range of input string shapes, including strings with near-coincident points that could previously generate erratic offset string shapes.

- **Case: CORE-7102** You can now choose **Smooth Legend** output when generating contour grids, allowing higher resolution colour maps to display.

- **Case: CORE-7079** By default, the **Edit Attributes** screen defaults to selecting value options from selected legend items.

- **Case: CORE-7032** If the input files cannot be found in the **BOOLEAN** process, a warning is issued.

- **Case: CORE-7026** Choose to hide the 'Browse for file' prompt when loading a project with broken file references.

- **Case: CORE-7012 HOLES3D** has a DESURVMD option if run interactively. It is used to locate sample centers or end points on desurveyed arcs.

- **Case: CORE-6991** The **BOOLEAN** process provides more verbose output messages.

- **Case: CORE-6793** You are now only notified of excessively large legends if the total number of bins exceeds 1000. Previously, the limit was 100

- **Case: CORE-6767** Custom cursor length intervals can be <1.

- **Case: CORE-6570 snap-to-mid-string-switch** now affects snapping to both the mid points of strings and drillhole segments.

- **Case: CORE-6449** The **BOOLEAN** process will transfer attributes from input to output wireframes and strings.

- **Case: CORE-6148 DECLUST** now supports retrieval criteria.

- **Case: CORE-6086** By popular request, the **unlink-wireframe** command has been reinstated.

- **Case: CORE-6053 STATS** has @PRINT options to control the scope of control bar report output.

- **Case: CORE-5954** The **Multiple Attribute Legend** wizard can be used define numeric ranges as well as distinct values. This provides greater flexibility when generating visualization or evaluation legends.

- **Case: CORE-5941** Define and format **2D and 3D drillhole structural symbols** using a 3D properties screen. Choose up to 3 orientation angles and render core sample orientation data using various visualization options.

- **Case: CORE-5861** Use **string-at-gradient-on-wf** to generate on-surface strings (such as surface roads) between start and end points, honouring a maximum gradient.

- **Case: CORE-5347** Specify custom contour interval values when contouring from point data.
- **Case: CORE-5223** Enabling **Lock View**in a 3D window no longer adjusts the zoom setting of that view.
- **Case: CORE-5198 Automatically align the view** when defining a 2 point section.
- **Case: CORE-1938 Apply a template** to a 3D overlay by right-clicking it in a 3D view.
- **Case: CORE-1654 Lock any 3D view**, or 3D view segment using a 3D window context menu option.

User Experience

- **Cases: Various** Studio RM has been rebranded, including documentation, splash screen and application icons. A ribbon overhaul has also been performed.
- **Case: STUDIO-6416** You can now access secondary clipping width settings from the **3D View** ribbon.
- **Case: STUDIO-6613** The Navigation toolbar icons have been updated.
- **Case: STUDIO-6508** New look and feel options are available.
- **Case: STUDIO-6577** Surface modelling commands make use of modern look and feel options.
- **Case: STUDIO-6419** Set your section movement distance value using a field on the **View** ribbon.
- **Case: STUDIO-6324** Several minor improvements have been made to the **Create Categorical Surfaces** and **Create Grade Shells** screens.
- **Case: CORE-7267** The **Command** toolbar icons have been updated.
- **Case: CORE-7150** Dynamically resize the components of the **Quick Filter** control bar.
- **Case: CORE-6792** Display up to **1000 drillhole names** for each drillhole object in the **Sheets** control bar.
- **Case: CORE-6767** Define custom cursor length intervals <1.
- **Case: CORE-6735** Hover your cursor over the object name in the **grid-dtms** screen to display the name in full.
- **Case: CORE-5442** The **3D Templates** screen is reorganized and iconized to make template creation and application simpler.
- **Case: CORE-4872** Show or hide all loaded ellipsoid data using a **Format** ribbon toggle.
- **Case: CORE-1928** The **Project Save** screen is resizable.

Scripting & Automation

- **Case: CORE-6402** Feature Edge parameters can now be set when scripting the **Wireframe Verify** command (**VerifyEx(FeatureEdgeAngle=x...**). where x is a numeric value between 0 and 360).

Utilities & Supporting Services

- **Case: STUDIO-6337**Studio RM requires a new license and Studio RM Pro has been discontinued.

- **Case: CORE-7451**Rename multiple license solutions using a standard naming convention.

- **Case: CORE-7312** The License Services screen no longer appears behind the active Studio application if initiated by the third-party EPS application.

- **Case: CORE-7306** Desurveying is no longer automatically performed when importing through the Data Providers as desurveying is now handled by the Drillhole Importer.

- **Case: CORE-7130** If an attempt is made to import a Vulcan .bmf file that is larger than our Maptek-provided driver can accommodate, a message is issued before processing and the operation is aborted.

- **Case: CORE-6510** Studio products will no longer operate if the local version of License Services is downgraded to an earlier version than installed with the product. See "**License Services – Important Information**, above".

- **Cases: CORE-7130**, **CORE-7118** Export Vulcan .bmf block models to file sizes up to 4GB (previously, the limit was 2GB).

- **Case: CORE-6838** Fusion Connex functionality has been deprecated, replaced by the more robust D-BOX Fusion connection service.

- **Case: CORE-6816** A maximum fields check and warning display for Vulcan, Surpac, Text, MineSight and Micromine drivers.

- **Case: CORE-6816** Export an object attribute containing DXF line style names.

- **Case: CORE-6648** When importing data via the **Text driver**, only a single legend is created (based on the first attribute field). In previous versions, a legend was created for each detected field in the incoming file, leading to an excessive number of stored legends.

- **Case: CORE-5809** Import **Amine-format SQL tables** using the ODBC driver.

- **Case: CORE-5020** When importing **Micromine block models**, field names are no longer limited to 9 characters. They can now be up to 24 characters on a long field system.

- **Case: CORE-5019** The **Data Converter** now converts MineSight block models to .dm format.

Documentation & eLearning

- **Case: CORE-7414** The **PICREC** help file includes information on disambiguating reserved keywords.

- **Case: CORE-85** Your application is supported by online, **HTML5-compliant help**. If an Internet connection is available (otherwise, locally-stored help content displays), context and conceptual help is displayed via Datamine's online documentation website at **docs.dataminesoftware.com**.

Additional Defect Fixes

- **Case:** STUDIO-6832 In **ESTIMATE**, you can now use floating point values when defining model update limits.

- **Case:** STUDIO-6682 The **COKRIG** help file now explains that **VSETNUM** is not required for NN estimations.

- **Case:** STUDIO-6649 In the **Create Vein Surfaces** command, the **Digitize New Perimeter** button is not available until a data context has been fully set.

- **Case:** STUDIO-6648 An issue causing folder browser buttons to flicker in **Advanced Estimation** has been resolved.

- **Case:** STUDIO-6645 **COKRIG** will no longer calculate an estimate without a valid GRADE field in the variogram.

- **Case:** STUDIO-6633 An issue causing the Create Vein Surfaces command to fail if a small number of points were selected, has been resolved.

- **Case:** STUDIO-6610 An issue causing **COKRIG** output from a macro and via the Advanced Estimation wizard (with the same parameters) to differ has been resolved.

- **Case:** STUDIO-6565 The documentation for **DAELLIPS** shows the correct menu path.

- **Case:** STUDIO-6527 An issue causing the vein modelling command to omit the generation of expected fault blocks has been resolved.

- **Cases:** STUDIO-6524, STUDIO-6473,CORE-7137: Typographic errors in ribbon buttons and tooltips have been corrected.

- **Case:** STUDIO-6527 The **Estimate Angles** panel now appears above the **Dynamic Anisotropy Fields** panel in the Advanced Estimation console.

- **Case:** STUDIO-6462 **COKRIG** no longer creates an EMPTY field and a BHCOUNT field when no *KEY() is defined in the command line.

- **Case:** STUDIO-6442 The default uncertainty value is now restored correctly to the categorical and grade shell functions.

- **Case:** STUDIO-6393 An issue causing system instability, after unloading all data whilst the model-faults command is active, has been resolved.

- **Case:** STUDIO-6384 The **Create Vein Surfaces** command now creates all fault blocks when using a prototype model as a boundary.

- **Case:** STUDIO-6371 **COKRIG** no longer unexpectedly overwrites zone data when using the multivariate case.

- **Case: STUDIO-6371** In the Advanced Estimation console, the Up and Down arrows now work as expected in the available search volumes list.

- **Case: STUDIO-6132** A link to a redundant URL has been removed from the Studio RM Help file.

- **Case: STUDIO-6004** Additional points are now managed more consistently between implicit modelling commands.

- **Case: STUDIO-5429** The Advanced Estimation's Fit Model page, the **Variogram Type** list no longer reverts to the 'Variogram' item unexpectedly.

- **Case: CORE-7709** Reliance on the Microsoft Visual C++ 2010 x64 Redistributable (10.0.40219) has been removed, following reports of potential insecurities.

- **Case: CORE-7684** An issue causing **SELWF** to produce unexpected output, if both input sample and model attributes have the same name but different lengths, has been resolved.

- **Case: CORE-7304** An issue in **SELWF** (used by **WFCODE**), causing legacy automation scripts to fail, has been resolved.

- **Case: CORE-7300** MineSight Points Files can now be loaded by script.

- **Case: CORE-7291** **SELWF** now selects inside a wireframe correctly when the plane is not set.

- **Case: CORE-7255** If querying multiple strings the correct area is now calculated for non-convex shapes.

- **Case: CORE-7252** Retrieval criteria in **SELWF** are now working as expected.

- **Case: CORE-7250** An issue causing system shutdown, when clicking **OK** in the acQuire drillhole database import wizard, has been resolved.

- **Case: CORE-7245** The Text driver no longer fails when the number of fields exceeds the maximum limit.

- **Case: CORE-7216** The **Apply Filter** option no longer appears in **Sheets >> Plots** menus.

- **Case: CORE-7213** A legacy data driver problem causing system shutdown when reopening projects has been guarded against. In this version, a warning of unexpected driver input is issued, but all loadable project items are loaded afterwards.

- **Case: CORE-7202** 'Point data' controls are correctly enabled/disabled on the **generate-contours-from-holes-intercepts** screen.

- **Case: CORE-7192** An issue causing system instability, when closing a project with the **Extract Objects** screen displayed, has been resolved.

- **Case: CORE-7178** The **Values** drop-down list in the **Edit Attributes** screen now initializes correctly.

- **Case: CORE-7171** Breaking strings with other strings (BKI or BKS) now correctly breaks the target string.
- **Case: CORE-7145** After breaking a string with another string (BKI or BKS), attributes are now edited correctly on resulting string segments.
- **Case: CORE-7139** In **COPYMOD**, default values of the new origin and angles are now being set correctly set when angles and origin are blank.
- **Case: CORE-7127 PTCLD2WF** no longer fails when the active user account name contains a ".".
- **Case: CORE-7126** An issue preventing the successful drag and drop loading of DWG and DXF files has been resolved.
- **Case: CORE-7122** An instance of system instability, if closing a project whilst the **wireframe-volume** screen is displayed, has been resolved.
- **Case: CORE-7119** An issue causing system failure, when unloading objects via the **Data Object Manager**, where table data is selected, has been resolved.
- **Case: CORE-7117 SELWF** output is now consistent between multiple runs with the same settings and data.
- **Case: CORE-7091** Internal block model blocks are now rendered correctly in the 3D view when clipping.
- **Case: CORE-7094 edit-model-cell-values** now responds correctly to data unload operations.
- **Case: CORE-7087** An issue causing system failure when renaming an object data column in the **Data Object Manager**, has been resolved.
- **Case: CORE-7080** An issue causing system instability, when using **Drillhole Planner** with the **Data Properties** bar displayed, has been resolved.
- **Case: CORE-7077** An issue causing "Error 39" in **License Services** has been investigated and resolved by adding support for Dinkey Pro driverless dongles.
- **Case: CORE-7070** An issue causing **WFCODE** to generate only a single record when @ALLPTS=1 and @SETABSNT=0 has been resolved.
- **Case:CORE-7069** The **Edge Cylinder Segments** label is not truncated in Tools >> Options > 3D.
- **Case: CORE-7054** Messages no longer overlap on product splash screens.
- **Case: CORE-7050 wf-intersections** generates string data with the expected inherited attributes.
- **Case: CORE-7038** Picture and plane objects no longer obscure transparent foreground filled strings and sections.
- **Case: CORE-7031** An issue causing system instability, if cancelling the **Image Registration** screen before the specified image has loaded, has been resolved.

- **Case: CORE-7028** The 3D view no longer unexpectedly shifts view position after using the **View Controller**.
- **Case: CORE-7025 DESURV** no longer terminates with confusing message if number of survey points in a hole exceeds 10000.
- **Case: CORE-7024** In **DESURV**, @DESURVMD=0 no longer resets all of the coordinates to 0 if @ENDPTS=0.
- **Case: CORE-7018** The **PTCLD2WF** process will run correctly on machines that have no previous Studio installation.
- **Case: CORE-7009 HOLES3D** does not reset the first Survey record to AT=0 if there is no AT=0 record.
- **Case: CORE-6935** DTM creation creates a surface where coincident points exist.
- **Case: CORE-6987** Object data overlays are rendered in the correct way when object opacity is reduced.
- **Case: CORE-6983 DESURV**: Under some circumstances zero length or horizontal samples when using @ENDPTS=1 could result in corrupted B0 ouput values. This has been resolved.
- **Case: CORE-6979** The **BOOLEAN** process generates identical results to the **wireframe-intersection** command.
- **Case: CORE-6978 DILUTMOD**'s subcell checking routines now provide useful user feedback instead of creating (potentially) arbitrarily large model outputs.
- **Case: CORE-6915** An issue causing system failure, when resetting the customization profile from **the Quick Access** menu, has been resolved.
- **Case: CORE-6877** The system no longer halts unexpectedly if the file source of a histogram chart cannot be found.
- **Case: CORE-6839** An issue causing incomplete export to Surpac .mdl format has been resolved.
- **Case: CORE-6822** Adjusting the scale of a plot no longer causes unexpected repositioning of labels.
- **Case: CORE-6818** An issue preventing accurate data picking in 3D views, when high magnification has been applied, has been resolved.
- **Case: CORE-6814DECLUST** no longer automatically lists X, Y and Z as default coordinate fields.
- **Case: CORE-6807** A data-specific issue causing system shutdown after importing a 3D sheet template has been resolved.
- **Case: CORE-6781** In the **create-new-legends** command, changing the Precision value (of a Numeric Range legend) no longer results in the custom defined Range Filter being reset back to the defaults.

- **Case: CORE-6774** An issue causing the splash screen to flicker on startup has been resolved.
- **Case: CORE-6730** The **Edit Attributes** screen correctly references the ellipsoid data type.
- **Case: CORE-6720** An issue causing mouse wheel zooming to fail, after box selection and panning in 3D, has been resolved.
- **Case: CORE-6617 wf-intersections** adds expected data attributes to generated strings.
- **Case: CORE-6607** An issue causing the system to fail after running **make-dtm-from-object** has been resolved.
- **Case: CORE-6594** An issue causing system shutdown when moving points with the snap mode set to 'Lines' has been resolved.
- **Case: CORE-6548** An intermittent problem causing an unclean shut down of the system after importing files via the Vulcan driver, has been resolved.
- **Case: CORE-6433** Mouse scrolling when editing date ranges in the **Create New Legend** wizard is no longer using inverse controls.
- **Case: CORE-6418** An issue causing scale locking in the **Plots** window to fail has been resolved.
- **Case: CORE-6368** Context sensitive help for the **Fault Modelling** panel now appears correctly.
- **Case: CORE-6167** The dialog labels for the **MODTRI** process have been corrected.
- **Case: CORE-6166** The dialog labels for the **BLKTRI** process have been corrected.
- **Case: CORE-6160** The **Project File** control bar's **Pictures** folder, if displayed, displays a title as expected.
- **Case: CORE-6138** A data-specific issue causing **SELPER** to fail to sort the output by IJK has been resolved.
- **Case: CORE-6137** An issue causing unexpected A0 and B0 results in output from **COMPDH** has been resolved.
- **Case: CORE-6131** An issue that could cause **create-ramp-string** to fail with a particular gradient, radius and distance end limit settings has been resolved.
- **Case: CORE-6128break-strings-at-intersections** now produces string breaks in expected locations.
- **Case: CORE-6124**An issue preventing the import of a large number of 3D display templates in one action has been resolved.
- **Case: CORE-6101** If a plot sheet is created without others existing, the legacy **Design** window is no longer displayed at the same time.

- **Case: CORE-6095** Running the **unlink-triangle** command will now automatically deselect any previously selected triangles.
- **Case: CORE-6080** The **Texture from Object** setting is now correctly applied from a visual display template.
- **Case: CORE-6072**The URL to project startup scripts is now decoded to remove escape sequences.
- **Case: CORE-6060**An issue, that could cause system failure when applying a 2D label of *BHID* to loaded dynamic drillholes, has been resolved.
- **Case: CORE-6043**The grid value for the weighting column is no longer reset if it has been pre-defined (e.g. from **Evaluation** settings).
- **Cases: CORE-6039**, **CORE-5674** Linestyle and Thickness attribute values are now exported to DXF and DGN as expected.
- **Case: CORE-6003** Text boxes are now displayed as expected when switching back to **Plots** from the **Print Preview** window.
- **Case: CORE-5626** During volumetric block modelling, records are no longer saved in the control files if they have empty or non-existent filenames.
- **Case: CORE-5502** The **Plots** window correctly honours "SCALE" when a section definition file is applied from a script.
- **Case: CORE-5238** An issue causing the **Data Converter** to fail when accessing it via script has been resolved.
- **Case: CORE-5209** An issue causing alphanumeric field data to be imported incorrectly via the ODBC v2 driver has been resolved.
- **Case: CORE-4632** **WFCODE** no longer incorrectly sets alphanumeric zone fields to numeric if @SETABSENT=1.
- **Case: CORE-4333** Drillhole data selection in the 3D window is now more accurate with large data and high scaling.
- **Case: CORE-4238** A typographic error in the E-W section ribbon button tooltip has been corrected.
- **Case: CORE-4085** In **COMPBE**, where FROM-TOs are greater than @MINGAP, compositing will now continue at the next interval of the same hole, and won't skip to the next BHID as previously.
- **Case: CORE-3694** An intermittent issue causing 3D window zooming to fail after filtering has been resolved.
- **Case: CORE-3189** Unexpected rounding results in the A0 and B0 columns when using **COMPBE** have been resolved.
- **Case: CORE-3076** The ODBC v2 driver now permits alphanumeric columns to be exported in Microsoft Access format.

- **Case: CORE-2692** Spinner button behaviour in **Tools >> 3D >> Initial States** is now as expected.

- **Case: CORE-2405** **COMPDH** now produces accurate results when the EOH interval is 0.

- **Case: CORE-1449** An issue causing **COMPBR** to become unresponsive with certain interval values has been resolved.

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