leapfrog | GEOTHERMAL

Leapfrog Geothermal **2022.1**

new release

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Leapfrog 2022.1 Release Summary

This release of Leapfrog brings a suite of developments across the board to user experience, science and algorithms, performance improvements and increased interoperability.

The latest version includes a reinvigoration of long-standing features such as the well correlation tool, with upgrades based on customer feedback and collaboration.

We're working to support and improve stakeholder communication, with the addition of contextual labels to block models and wells as well as enhanced layouts and views.

Continued developments include upgrades to existing libraries and restructuring project storage with significant improvements to storage and processing speed.

Once again, you can expect faster workflows with new options for easier interoperability between popular industry software solutions.

Leapfrog Geothermal 2022.1 Release Notes

Major New Feature Updates
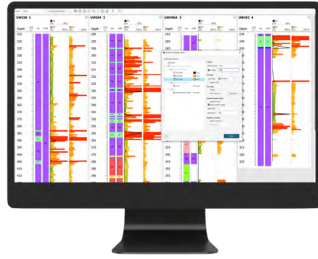
Well Correlation Improvements

Our popular well correlation tool has seen major improvements to its interface to enhance its appearance and usability. Now you can add custom colourmaps and labels to numeric data, along with smart selection of which data values are visible, minimising unnecessary visual clutter.

It is now possible to customise your column width to maximise screen usage inside the correlation tab. Data within each well can now be filtered as well, enabling you to visualise important data quickly and efficiently, for faster correlation and decision-making within the tab. Individual wells can be collapsed allowing you to track progress while working, and to ensure you're looking at the specific data required.

A single formatting dialog now allows you to edit all the columns in a single place and the changes from this dialog are live so you can visually assess the changes made to column formatting.

Further data handling improvements, like interval thickness and log transform for numeric values, make this feature more useful and usable.

The following objects have been improved on the correlation tab:

- The viewing settings are retained when closing and opening the tab
- Numeric data can be formatted to display the colourmap defined within the application
- The data column widths are now adjustable
- Individual wells can be collapsed (as well as an expand and collapse all toolbar item)
- The depth axis intervals can be edited to improve snapping behaviour
- The header information is locked in place
- Formatting of all columns is done within a single dialog
- Text labels can be formatted. Numeric and data handling (in terms of overlapping labels) has been improved
- Numeric data can be log transformed
- A depth filter is now available, and the 'apply to all' setting increases usability
- Category thickness can now be displayed for lithological or other category data
- Drilling data can be plotted as true vertical depth as well as downhole depth
- The Header Title information can now be formatted
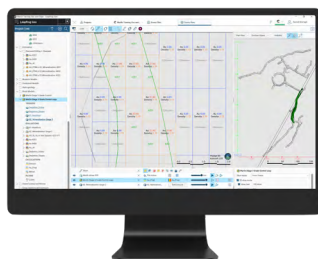
Visualising Block Model Labels in 2D

Expect significant improvements to Leapfrog's scene visualisation technology with two important enhancements to block models - a 2D slice mode and the ability to have multiple display labels of blocks.

Blocks can be filled or have an outline, have one or many labels with independent colourmaps and a fixed-sized (and in some cases scaled) gap set to visually separate adjacent blocks.

These features are available for Block models and Octree block models, but not sub-blocked models.

This feature is only available for Leapfrog Geothermal users with Edge Extension.
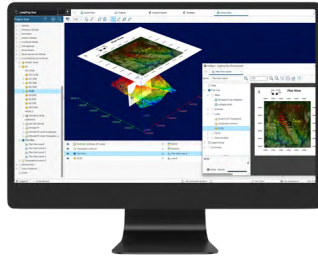
Add Plan View & Master Layout to Sections

We've made improvements based on customer feedback to improve workflows involving several serial sections, as well as stand-alone cross-sections.

Now you can create a higher-level template layout that can be applied to all child layouts from the various section types.

In addition, a new 'Plan View' is now available for sections; enabling you to access and share site maps to illustrate how they relate to other elements of a site and set the context for the section to be interpreted.

These enhancements give you the ability to complete more of your workflows within Leapfrog. Save time previously spent creating site maps in alternative programs, with added capability for data sharing with external stakeholders.
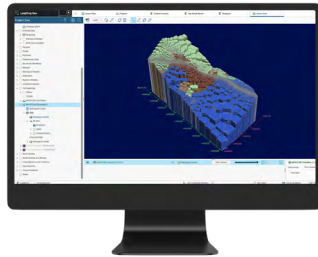
MODFLOW: 2.5D USG Support

Introducing a new, intuitive and interactive way to create quality 2.5D unstructured MODFLOW grids. Now you can define boundary conditions based on features within the model (wells/wells, rivers, faults) and either 2D unstructured, layered grids or fully unstructured grids.

We've built deeper interoperability into this release, with new ways to share and consume data between packages, bringing further workflow enhancements.
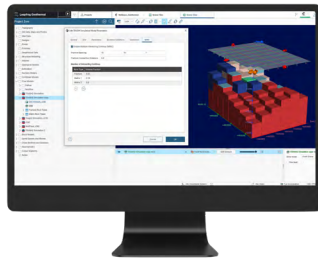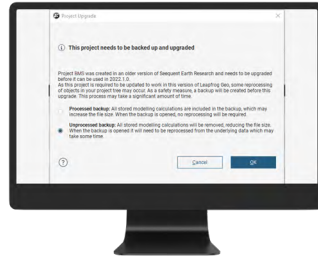

TOUGH - Support for Dual Porosity Using MINC

Geothermal now supports dual porosity for TOUGH models using the MINC method, enabling you to better handle thin fractures.

With the addition of two sets of co-located grid blocks, one for the matrix and another for the fracture, you now have the capability to create more accurate models.

Other Feature Updates

Enforced Project Backup and Improved Compression

In very rare circumstances, an issue is identified in a new release that requires those affected to revert to working in an earlier version of Leapfrog until it is fixed. For this reason, a new workflow for opening and upgrading projects has been introduced that requires a backup of the project to be saved before upgrading.

We have made improvements to the backup process to make it quicker and easier for you to do this. These improvements are:

- Use a more efficient compression tool, and

- The option to back up the project without its modelling calculations, which reduces the time taken to create the backup and the size of the backup.

For projects created in versions of Leapfrog before November 2016, there will not be an unprocessed option.

Project Data Storage Improvements

We have further optimised the way in which Leapfrog stores project data – the final part of this work was to improve how category columns were stored on disk, reducing overall project size even more.
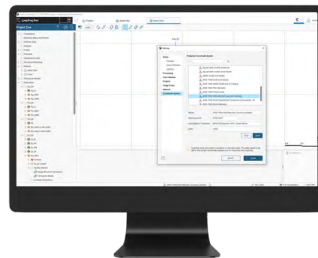
Co-ordinates: Project Metadata

We've introduced a meta-data field allowing you to specify which project coordinate system is being used in a Leapfrog project.

This new button in the main window status bar will display the current coordinate system, or <No Coordinate System> if it has not been set.
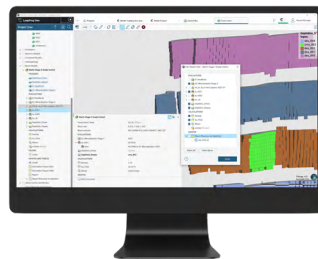

Improve Scene Details Panel

The scene details panel has been redesigned to give an entirely new look and much more control.

The list of items associated with an object, for example evaluations on a block model, now reflects the structure of the project tree and uses the same iconography, making the item you are interested in much quicker to find.

New filtering gives you ultimate control making it possible to hide anything that is not pertinent to the immediate interrogation. And, a 'quick filter' icon makes it fast and easy to go between many items and filtered items.
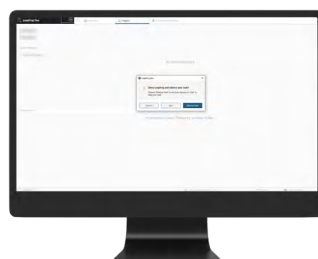
Change of Default Sign-out Dialogue to Release Seat vs Quit

How you sign-out is not consistent when using the keyboard defaults vs a mouse input, causing some to not sign the seat back into the group once finished.

We have changed the default keyboard behaviour to be "sign-out" vs "quit" and moved the primary highlighted button in the dialogue box to the right-hand side.
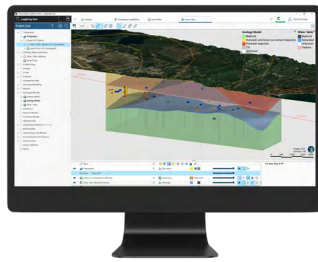
GIS Draping Behaviour

Previously, all GIS data objects in a project would be automatically draped onto the topography - this behaviour has been changed. Now, the user decides which objects are draped, and when.

In addition, it's possible to select multiple objects and drape or remove them all at once.

KORE Spector Geo (by Kore Geosystems) Integration

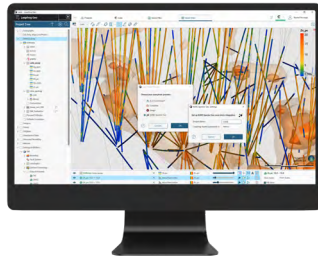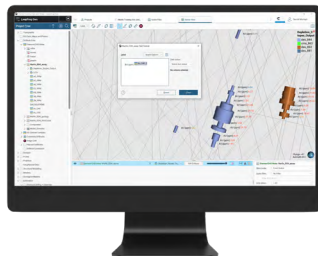Using the core photo link functionality, you now have the option to connect to KORE Spector Geo Link (by Kore GeoSystems).

When connected, you can select an interval in the 3D scene, click on the link in the scene details panel and open the core imagery for that interval in the Spector Geo application.


Improved Labels for Drilling

Groundwork completed for labelling block models has enabled more flexible use of labels on drilling data in the 3D scene. Previously, labels could only carry the colouring of the attribute displayed in the drilling. This limited the interpretation capacity of the information. Now, well labels can display multiple independent colormaps as well as a flat colour of your choice.

Evaluate Grouped Mesh on Interval Tables

Once you have combined volumes into a Grouped Mesh, you can now use the "Evaluated Column" option to evaluate the outputs as a column on an interval table.
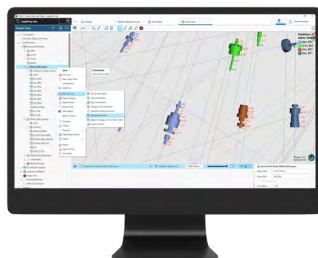
New Columns for Downhole Point Values and Planar Structural Data

"New Column" functionality, e.g., new category selection, category from numeric, evaluated column and evaluated category column, have been extended to downhole Point Values and Planar Structural Data.

This means query filters can now be created directly on the evaluated columns as well as increasing the usability of these data in general.
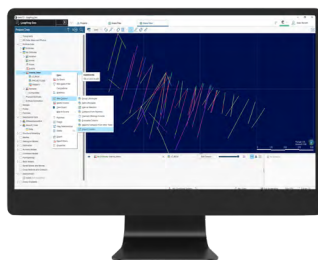
Import New Column via acQuire Database

After the main body of work to improve acQuire workflows was completed for 2021.2, we received strong feedback about the inability to import additional columns into an existing Leapfrog project.

Therefore, we've extended the functionality for acQuire well caches to allow you to update the existing acQuire selection. Now you can add additional columns from their acQuire database, while preserving all existing input/output relationships.

Publish Geophysical Grids to Central and Import from Data Room

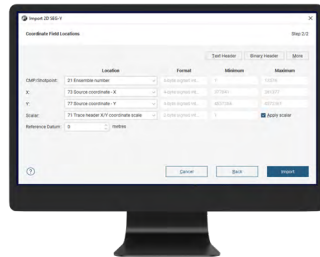Geophysical Grids can now be published to and viewed in Central. Additionally, these can be imported into Leapfrog via Central Data Room.
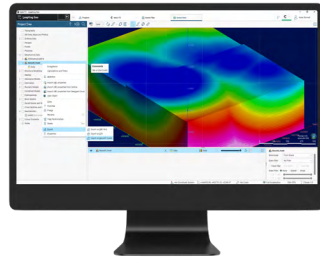
Export Geophysical Grids and Block Models in *.geosoft_voxel Format

To aid interoperability, we have also added the ability to export Geophysical Grids and regular Block Models in the *.geosoft_voxel format.

Add User Datum Dialogue to 2D SEG-Y Import

Currently when you import a SEG-Y file, the default "first sample at" is correct for Time but wrong for Depth. This results in the file coming in at 0, despite having a valid elevation.

This release adds a Reference Datum option for importing 2D files similar to that for importing 3D files. Removing the level of inputs to import the correct data into the correct place with no manipulation.

Geological Model Improvements

Several improvements have been made to the Geological Model. These include:

- Changing the base lithology column of a GM
- Adding legend codes from other tables/columns to the GM lithologies legend
- Copy surfaces. Deposit, erosion, intrusion and veins surfaces can all be copied, allowing easy experimentation with parametric choices and comparison of the effect.
- Copy veins systems
- Copy veins in to and out of vein systems
- Set the boundary filter at the GM level. Previously this needed to be set for each object. Now, a default boundary filter behaviour can be set for the GM and inherited by downstream objects, or over-ridden if desired.

Please note, some of these features will be of more use to new GMs and new projects. For existing GMs and projects, you should test changes (by making a copy of the GM) before committing operations such as changing the base column and adding, removing or changing legend codes. These changes can influence surfaces and output volumes and should be done with extreme care.
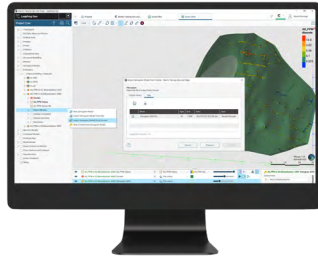
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Import Variogram Model from Central Data Room

We've extended our capability in Leapfrog to import variograms from Central. This enables variograms to be imported and reloaded from the project history or the Central Data Room.

This new capability enables streamlined workflows with the Edge extension ensuring that all your estimators are using the correct variography.

*This feature is only available for Leapfrog Geothermal users with Edge Extension.*
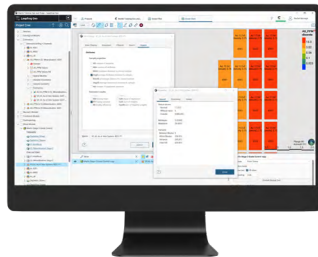
New Estimation Outputs

With several new outputs now added to the Outputs tab for estimators such as NDh, MinAD, and AvgAD, you have greater flexibility when reporting and can determine with more precision whether an estimation is 'well informed' or 'poorly informed'.

Additionally, between block and within block variance have been added to the properties of an estimate when evaluated onto a block model.

This feature is only available for Leapfrog Geothermal users with Edge Extension.
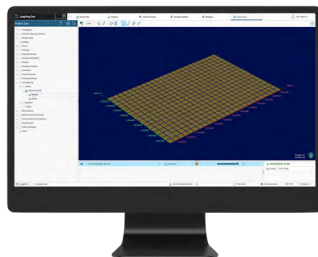
FEFLOW 2D Grid Import

Feedback from some of our FEFLOW users led us to bring back the functionality to Import a 2D FEFLOW Grid and create a 3D grid in Leapfrog using the imported 2D Grid. Through an existing option (Import ASCII Fern Model) now you can import a 2D and a 3D FEFLOW Grid.

A new option (New Model from 2D Model) allows you to create a 3D FEFLOW grid from an imported 2D FEFLOW Grid.

Addition of Date / Time Column Support to Block Models

The addition of date/time columns to block models allows you to associate blocks with a date/time, allowing for basic temporal filtering.

One such use case is using this for reconciliation reporting.

This feature is only available for Leapfrog Geothermal users with Edge Extension.
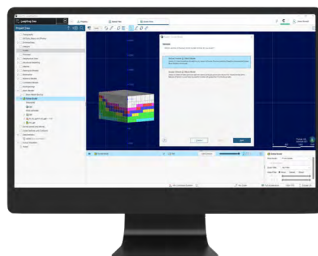
Export/Import Surpac *.mdl Format

Our customers have a strong need to easily and seamlessly transfer block models to other mine planning software.

We already support exporting regularised Block Models to two versions of the Surpac *.mdl format, and we have expanded that to allow for Octree Models to also be exported to these same formats.

Additionally, we added support for importing the same two versions that we currently export from regularised Block Models.

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Block Models on Sections

We can now evaluate Block Models on Serial Sections, Long Sections and Alignments. Improvements were made for Block Models inside the layouts (filtering, labels, gaps). Also, it's now possible to display Block Models with more than 10,000 cells, a limitation for many before.

Leapfrog Geothermal Point Release 2022.1.1

The following issues have been resolved:

Issue Key	Issue Addressed
LF-46268	An issue was resolved concerning editing of 'search range parameters' through the Edit Table function of the Estimation Parameter Report. Edits made to search ranges through the table were not being saved correctly and applied to estimators. The issue persisted through closing and re-opening of the Estimation Parameter Table, meaning that actual search ranges applied to estimators could be different to those the user thought they had applied. The issue applies to NN, ID and OK & SK estimates. Note that edits made to search ranges through the Estimation Object are correctly applied and subsequently updated the next time the Estimation Parameter table is opened. The issue does not affect any other parameters edited through the Estimation Parameter Table.
LF-45854	Fixed an issue where grouped lithology columns on combined drillholes would disappear
LF-45897	Fixed a TB on FEFLOW models after upgrading to 2022.1.0
LF-45927	Fixed an issue of not being able to change flat colours on numeric points in drillhole correlation
LF-45956	Fixed an issue when trying to change a column on the GM base table containing duplicated lithologies
LF-46038	Fixed an issue where unprocessed variable orientation objects would not process
LF-46044	Fixed an issue where published project files have mismatches compression and metadata
LF-46047	Fixed a TB when adding MODFLOW models to sections
LF-46050	Fixed a TB when selecting trench option on collars
LF-46285	Fixed a TB while editing interval selections
LF-46304	Fixed a TB when upgrading a project with blended meshes
LF-46333	Fixed an issue when adding labels to composited intervals resulted in inconsistent classification
LF-46367	Fixed a TB when importing Datamine meshes
LF-46368	Fixed an issue where the sliced GM would not be visible
LF-46371	Fixed an issue where text in the scene details was not wrapping
LF-46372	Fixed an issue where astral search (NN) was slow
LF-46388	Fixed a TB when changing the base lithology column
LF-46402	Fixed a TB when changing the base lithology column to <None>
LF-46429	Fixed an issue where the saved scene test did not retain colours
LF-46433	Fixed an issue where blank columns would appear in the value selection for Economic Compositing

Leapfrog Geothermal Point Release 2022.1.1

The following issues have been resolved (continued):

Issue Key	Issue Addressed
LF-46440	Fixed an issue where interval selections on combined drillhole sets were lost on upgrade from 2021.2.5 only
LF-46447	Fixed a TB on failing upgrade tests
LF-46452	Fixed an issue where ignored drillholes did not automatically adhere to other tables
LF-46459	Fixed a TB when reprocessing older imported octree columns
LF-46466	Fixed an issue where enforced backup occurs on newly downloaded Central Projects
LF-46496	Fixed a TB when using a distance function query filter on new interval tables
LF-46558	Fixed an issue where vein lithology IDs are not updated correctly when lithologies are deleted
LF-46571	Fixed a TB in drillhole correlation when stretching a set
LF-46578	Fixed a TB when clicking on points in the scene with the interrogation tool
LF-46605	Fixed an issue where the user could not scroll out on drillhole correlation
LF-46609	Fixed a TB on project upgrade tests
LF-46625	Fixed an incorrectly reporting TB
LF-46626	Fixed a TB where a point category selection would generate too few results
LF-46630	Fixed an issue when upgrading NN to cope with incorrect samples
LF-46651	Fixed a TB when using new GM lithologies in sections
LF-46702	Fixed a TB when setting structural data category selections to a topography