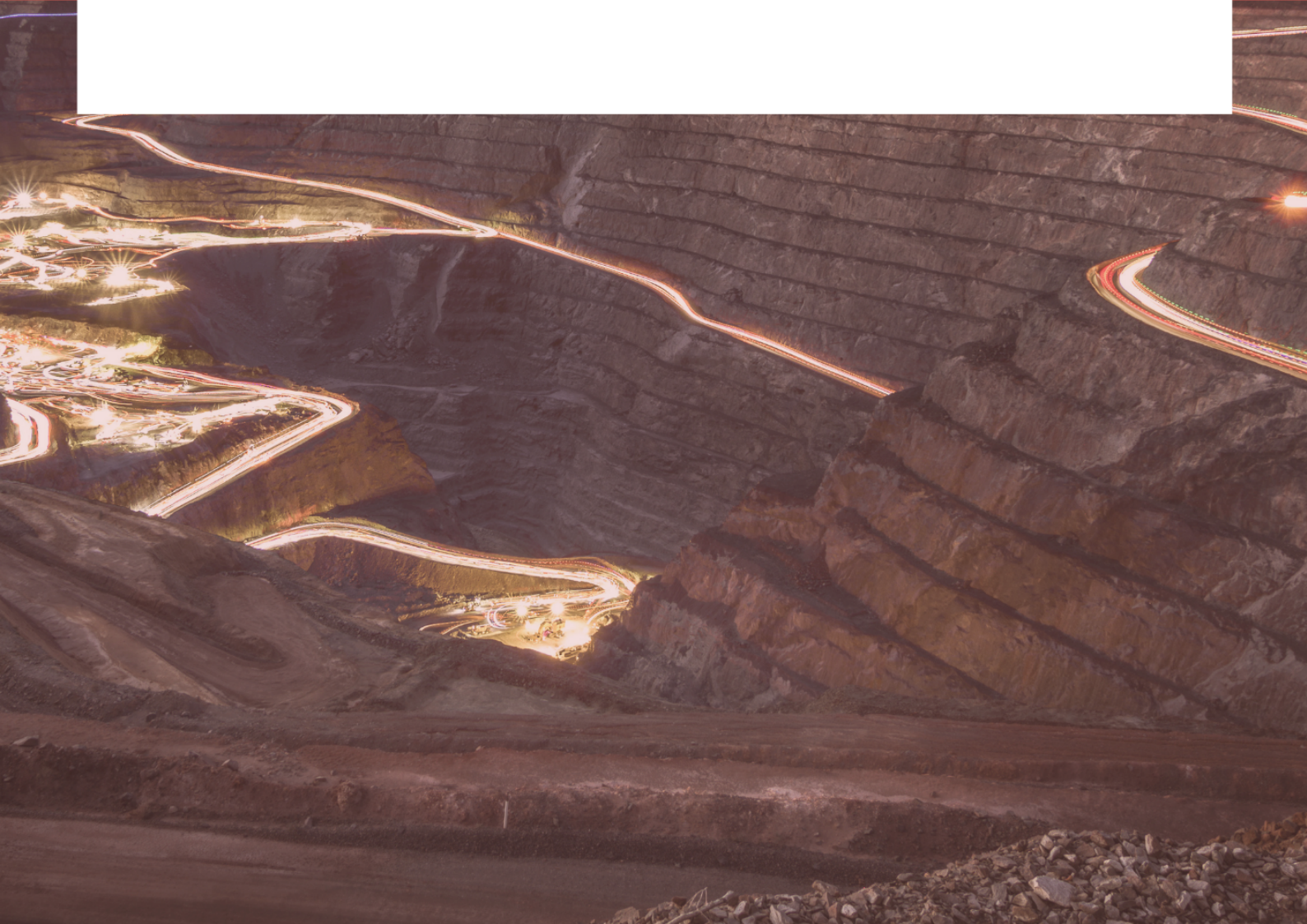


# Release Notes

**Studio NPVS+ 1.0**



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

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# Overview



**Studio NPVS+** is a strategic mine planning system that optimises both mine design and schedule in the search for maximum NPV. Studio NPVS+ features a powerful and flexible schedule generation engine that significantly reduces the time and effort to produce a reliable and practical schedule.

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



**Studio EM** for exploration data analysis and modeling.



**Studio Geo** is for geological and structural modeling.



**Studio Mapper** for geological face mapping and reporting.



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



**Studio OP** for open pit design and operational scheduling.



**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 NPVS+.

Release notes for other versions of Studio NPVS+ are available via the Support Portal

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

For the complete Studio NPVS documentation, see

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

# Studio NPVS+ 1.0 Release Notes

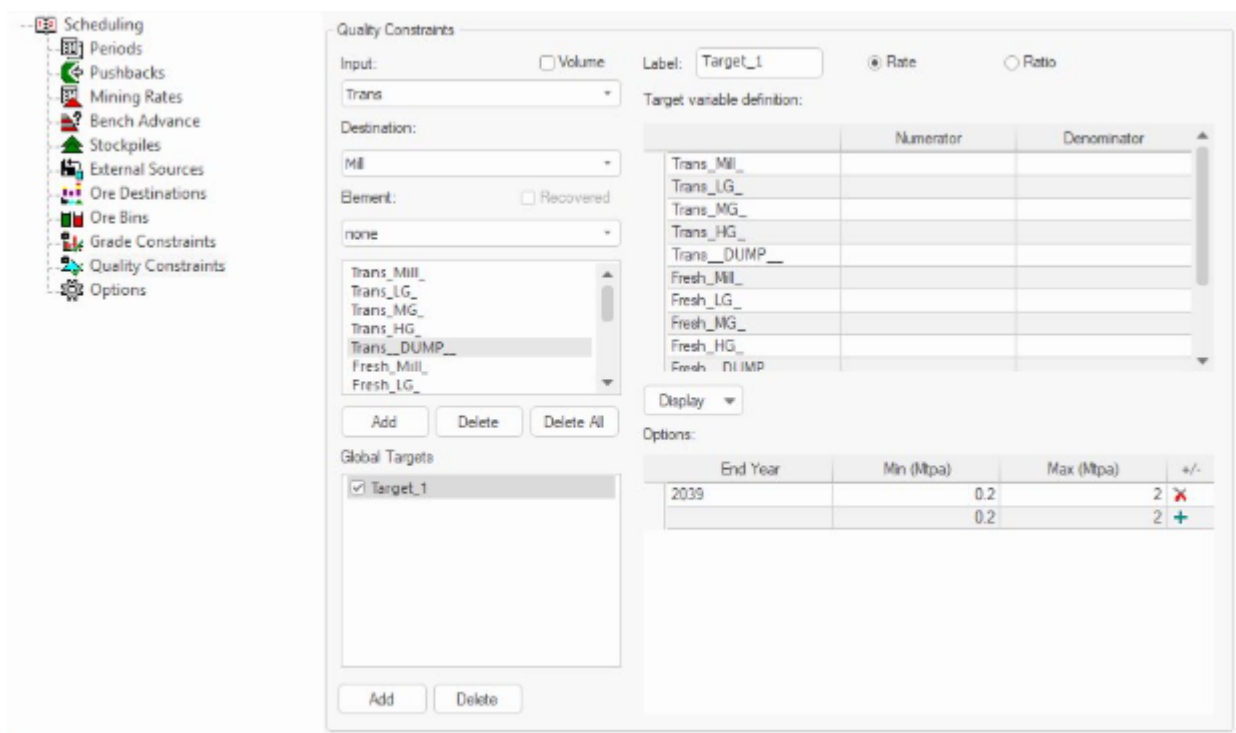
**Note:** Studio NPVS+ does not currently support Multimine projects. This facility will be available in a future version.

**Studio NPVS 1.0** represents a significant step forward in software for strategic mine planning.

## Strategic Scheduling, Evolved

Based on the tried and trusted Studio NPVS technology, Studio NPVS+ can be considered a supercharged evolution, with a more powerful and flexible scheduling engine - called **Maroma** - that means you can go from resource model to a LOM plan in two days instead of two weeks. It really is *that* good.

Maroma is a new mixed integer programming solver tailored for mine planning optimization and similar problems. Maroma incorporates the BZ linear programming algorithm, embedding it into a new integer programming framework. This enables Maroma to solve very large-scale optimization problems that are unsolvable with conventional solvers, and to solve problems of smaller scale much faster than would be otherwise possible.



The Maroma scheduling console in Studio NPVS+

So what does this mean, in practical terms? For strategic mine planners, **Studio NPVS+** significantly extends the reach of software to solve strategic operation challenges. It does this by:

- Providing a truly optimized schedule combining scheduling, MAO, and MFO at the same time, keeping schedule runs to an absolute minimum.
- Supporting multiple parallel constraints simultaneously, taking full advantage of your processing power.
- Being flexible enough to deal with variable length periods.
- Presenting a simplified workflow coupled with easier and more intuitive controls.

Accessible using the familiar **Optimization** task bar, and replacing the legacy scheduling, MAO and MFO functions, Maroma is designed to be far easier to access and use than legacy functions, and anything else on the market.

The key benefit of Maroma is its ability to solve problems previously out of reach of other engines, and that it takes more parameters into account when providing a solution that meets constraints and capabilities of the mine. For example, Studio NPVS (the predecessor) would often require multiple, iterative runs of the schedule and a (at least) a run of MAO to produce a practical schedule, possible MFO as well.

**Studio NPVS+** greatly reduces the number of attempts to reach the final schedule, ready for downstream operation planning and design. It also makes MAO redundant, speeding up the task even further.

So, whilst a single Maroma run may take longer than a single run of the old Scheduler, with **Studio NPVS+** the overall time spent in creating the optimal schedule is greatly reduced, and no longer the domain of experienced users, requiring much less fine-tuning of parameters to solve the most practical schedule to meet input parameters.

Studio NPVS+ is Datamine's platform for future development of strategic planning functionality. It's a great time to start using this game-changing product that really puts you in touch with the long term plan.

**With Studio NPVS+ you get the following game-changing benefits:**

- A truly optimized schedule combining SCH, MAO, and MFO at the same time
- Support for multiple parallel constraints simultaneously.
- The capability to deal with variable length periods.
- A simplified workflow coupled with easier and more intuitive GUI.

**Note:** Studio NPVS+ requires a dedicated license. You cannot activate Studio NPVS+ with a legacy Studio NPVS license. Contact Datamine to discuss a transition to Studio NPVS+.

## Maroma Key Benefits

Other than the significant benefit of a more advanced scheduler, Maroma offers the following key advantages over other strategic planning products:

### Flexible Stockpiling

The speed achieved by Maroma is partly gained by the way in which it treats *stockpiles*. For each parcel, there is a decision variable for each mining period and each of its possible destinations. If a parcel is mined in a particular period and sent to a stockpile, there is a separate decision variable for each of the later periods that it can be reclaimed and sent to the plant. Maroma defines two kinds of stockpiles: **Warehouse and Mixed**.

See [Mixed & Warehouse Modes](#).

### Combined Scheduling Solution

Maroma produces a truly optimized schedule combining all capabilities of the previous scheduler plus integrated support for MAO and MFO. All parameters are considered in the same run, eliminating the need for separate parameters for schedule refinement.

### Parallelization

Maroma can consider multiple parallel constraints simultaneously, meaning a solution is more considerate of the combination of constraints specified.

**Note:** As scheduler runs always make use of available cores, there is no need (nor is it possible) to add a schedule run to a batch, as in the predecessor Studio NPVS application. You can still batch process the economic model, ultimate pits and pushbacks in **Studio NPVS+**.

See [Using Multiple Cores for Scheduling](#).

### Flexible Periods

Maroma can deal with variable length periods easily.

See [Scheduling Setup: Periods](#).

## Accessibility

We've considered not only the power of the scheduling engine, but also how you use it. We've taken a long look at how our users typically engage with strategic planning software and designed a simplified workflow, coupled with an easier to use and more intuitive user interface.

## Moving from Studio NPVS to NPVS+?

The transition from Studio NPVS to Studio NPVS+ is simple.

- Studio NPVS+ can open all Studio NPVS and NPV Scheduler projects.
- A new project file with a **.snpvsp** extension will be created in your project folder.
- All settings except SCH / MAO are preserved.

Consult your help file for more information.

**Note:** Studio NPVS cannot open a Studio NPVS+ project.



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## Read the Docs

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