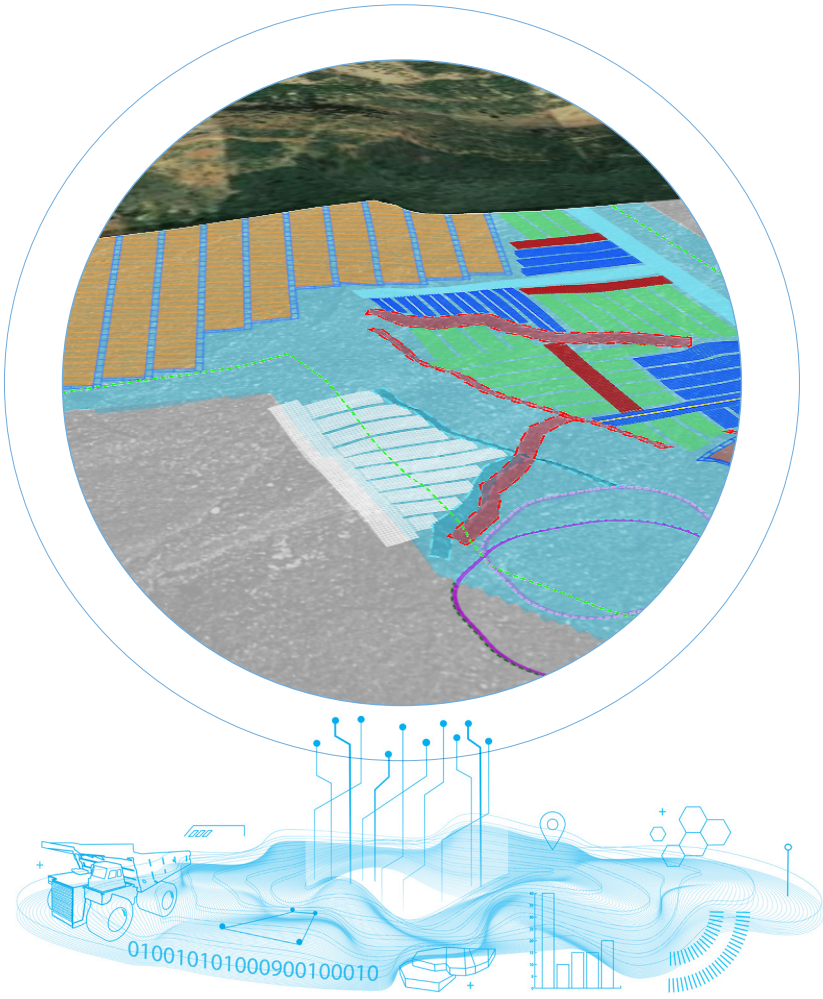
RPMGLOBAL

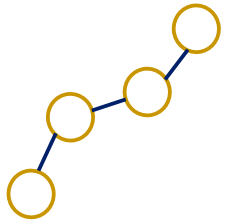
RPMGlobal redefines mine planning and scheduling.

There is no other solution that can match the 50+ years RPMGlobal has focused on the mining industry to deliver the industry benchmark in planning.



RPMGlobal's Underground Coal Solution (UGCS) is a complete mine planning tool that incorporates best of breed design, reserving and scheduling capabilities into a single, easy to use package. The fully integrated planning solution is designed specifically for underground coal mines. The mine layout is modelled in true 3D and allows multiple seams to be designed and scheduled simultaneously. Schedules are created interactively using a combination of automatic and manual methods, while monitoring the deployment of all equipment on a synchronised animation plot.

Features

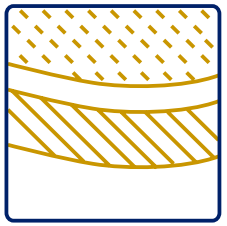


Process-driven UI

Unique, process-driven UI. Learn in a few days, implement in a few weeks.

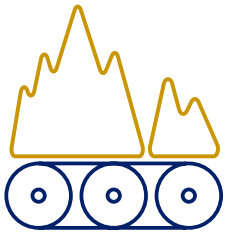
Reserving and working section modelling

Builds a detailed 3D model of the mine's geology and creates working sections.



Dynamic stratigraphic design

Panels dynamically respond as the mine layout is created and adjusted.

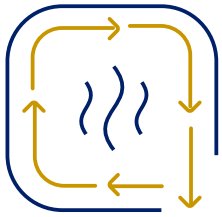


Conveyor modelling

Conveyer characteristics can be defined to act as a constraint on the overall production.

Parametric scheduling

Generate practical schedules in a fraction of the time it would otherwise take.



Gas Drainage

Integrate gas drainage planning into both the design and scheduling processes.

Benefits

Reserving & Working Section Modelling

UGCS builds a detailed 3D model of the mine's geology directly from the mines structure and quality grids. Working section composites are then created that account for the minimum and maximum working height of the mine's equipment. The working sections automatically incorporate the additional stone that must be mined when seam thickness becomes too small and the lost coal when the seam thickness is too high.

Dynamic Stratigraphic Design

The 3D design capabilities within UGCS is unlike any other. Users don't just design the panels, headings and longwalls within the mine; they also define how they behave when they intersect major features, such as lease boundaries, exclusion zones and faults. As the mine layout is created and adjusted, the panels dynamically respond to these features, avoiding a huge amount of repetitive, manual refinement.

Conveyor Modelling

Customers can define the characteristics of all conveyors used in the mine and graphically specify which headings each type of belt will be installed. The conveyor network acts as a constraint on the overall production, ensuring production from multiple faces never exceeds the capacity of the out-bye conveyors. Delays are also inserted into the schedule automatically to account for the installation, extension and removal of belts during the life of each panel.

Advanced Mining Rules

Many of the mining rules needed to ensure a practical schedule are generated automatically. The mining sequence within each panel is fully automated, including all headings and crosscuts, installation roads and longwalls. The availability of each panel is also restricted automatically until access is available from the parent.

Parametric Scheduling

100% script-free, UGCS is built on the principle of Parametric Scheduling, helping users generate practical schedules in a fraction of the time it would otherwise take. Robust automated mining rules ensure panels become available only once they have appropriate access. Once each panel is mined, the headings, crosscuts, installation roads and longwalls are developed in a logical sequence. Flexible controls are provided to manage the number of continuous miners deployed in each panel and each section. Advanced heuristics ensure unnecessary equipment relocations are avoided and when equipment must be relocated, delays are inserted into the schedule that reflect the distance the equipment must move.

When users want greater control over the schedule, they can run it interactively. The schedule can be paused at any point in time or run until a key event occurs. This gives planners the opportunity to see where the major equipment is operating, either in the 3D animation or on the Gantt chart, and adjust deployment accordingly.

Integrated Product Optimiser

Running simultaneously as the schedule progresses, the Product Optimiser removes the need for pre-schedule or post-schedule blending strategies. It uses mixed period linear programming to identify the optimal coal washing and blending strategy for the schedule to meet any number of different products. Users can configure multiple wash plants and decide the density strategy. Wash table data is maintained for each parcel of coal as it moves through different processing streams and plant efficiency can be incorporated into the cut logic.

The Product Optimiser can model situations where multiple sources are feeding a single wash plant to help planners understand the impact of their schedules on final product qualities and the mines ability to satisfy long-term contracts.

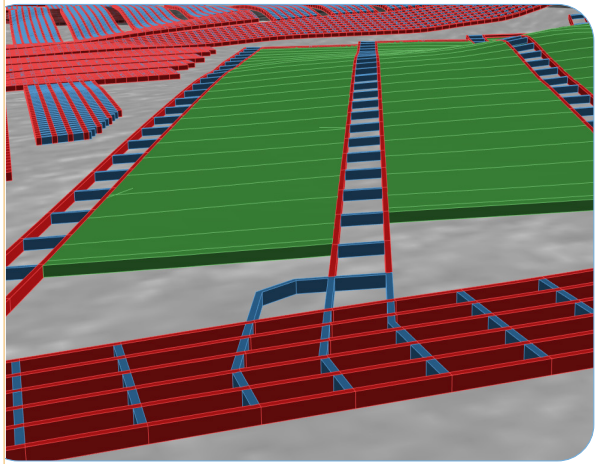
Intuitive, Practical Scheduling Rules with a Process Driven UI

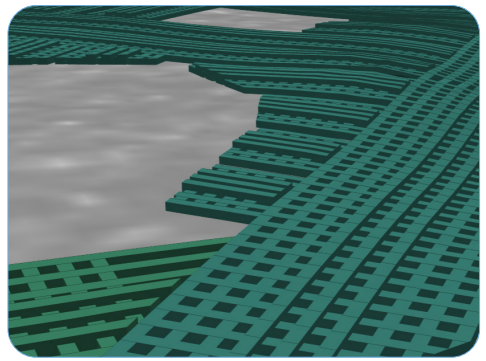
UGCS uses a process driven workflow that's 100% script free, making it fast to implement and easy to learn. Rather than complex menus and options hidden within deeply nested dialogues, the repeatable process provides every option exactly when and where required. Whether they last used the solution yesterday or six months ago, planners will be up and scheduling in no time. And because the process has been designed specifically for the challenges of underground coal mining, we have avoided the heavy reliance on scripting that's common with alternative tools.

Gas drainage

UGCS provides a step change in the way gassy mines are scheduled. By tightly integrating the drainage activities into both the mine design and the scheduling processes it makes gas drainage a key consideration every time the schedule is updated.

UGCS allows the user to directly include factors that influence drainage times – like gas content and permeability – into the in situ model. When users design a series of longwall panels, gas drainage stubs can be inserted automatically, along with the associated patterns that will be drilled from them. These drill pattern envelopes adjust dynamically based on the longwall dimensions and gateroad properties. The users are also free to refine everything in the model. The rigs used to perform the gas drainage drilling are treated as independent resources and are scheduled in the same way as continuous miners and longwalls. Rules govern when the drill sites become available and once they have been drilled, the schedule starts tracking drainage status as soon as each pattern has been drilled.





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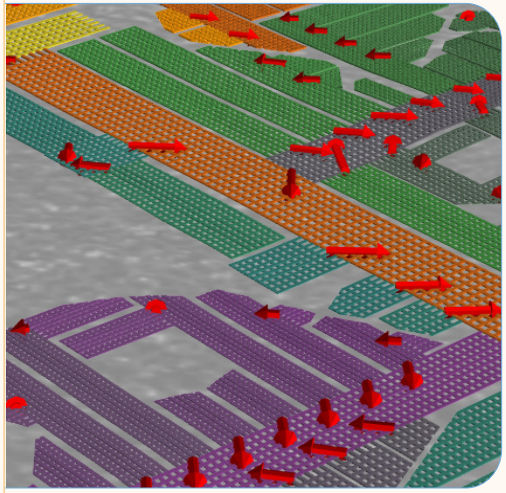
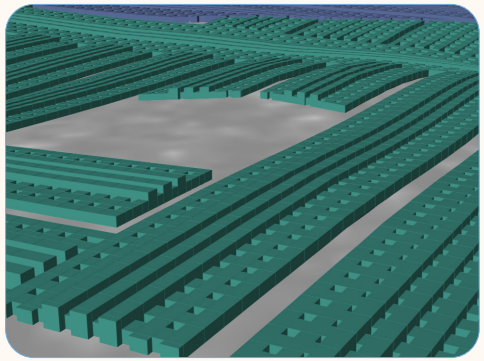
‘What if’ Scenario Analysis Capability

With its intuitive, process-driven user interface, highly automated mining rules and extremely rapid scheduling speed, engineers can focus on delivering value knowing the solution has the mining logic covered. You are no longer forced to accept the best option the planner can manually generate in the limited time available. Our scheduling solutions give engineers the opportunity to explore alternative ‘what if’ scenarios to truly understand how best to drive the mines production in changing market conditions. alternative ‘what if’ scenarios to truly understand how best to drive the mines production in changing market conditions.





True Enterprise Mining Solution

UGCS synchronises models on a central repository, ensuring a full history of all changes is made. Any number of users can share these models using a managed check-in/check-out approach that facilitates an unparalleled level of collaboration. UGCS can acquire raw data from any software application across the mining value chain. It can also obtain data and publish scheduling results directly to corporate enterprise systems via RPMGlobal’s Enterprise Planning Framework (EPF), making it the only Enterprise-enabled mine scheduling application available. It seamlessly integrates with financial systems, ERP’s, Fleet Management Systems and Execution/SIC systems to deliver a single source of truth.

About RPMGlobal

RPMGlobal is the global leader in the digital transformation of mining. We provide data with context, transforming mining operations. Our Enterprise approach, built on open industry standards, connects systems and information to amplify decision-making across the mining value chain. RPMGlobal integrates the planning and scheduling, with maintenance and execution, with simulation and costings, on RPMGlobal’s Enterprise Planning Framework, the mining industry’s only digital platform that delivers insight and control across these core processes.

With origins dating back to 1968, we have proudly delivered premier consulting and advisory services to the global mining industry for more than 50 years. RPMGlobal’s Advisory Team advise the global mining industry on their most critical issues and opportunities, from exploration through to mine closure. Our deep domain expertise, combined with a culture of innovation and global footprint, ensures our mining customers continue to lead. RPMGlobal is the global leader in Enterprise mining software, Advisory services and Professional development, operating offices in 22 locations across 13 countries and have worked in over 125 countries. For more information visit rpmglobal.com or email info@rpmglobal.com.