

## Whittle 4.7.2

### Enhancements

#### Simultaneous Optimisation

- **SIMO Spreadsheet Report: Summary-Limits sheet now reports CAPEX data**

The **SIMO Spreadsheet Report** now includes CAPEX data in the **Summary-Limits** sheet. The data includes the Additional Capacity, New Limit, Undiscounted Additional Capacity Cost, and Discounted Additional Capacity Cost.
- **SIMO Summary and SIMO Report Summary include CAPEX cost when CAPEX optimisation is enabled**

Under the **Simultaneous Optimisation** node and **Simultaneous Optimisation Report** node, the **Summary** tab now shows the result of CAPEX cost information when CAPEX optimisation is enabled.
- **Select multiple Rock Types when adding new blend bins**

Under the **Simultaneous Optimisation** node, **Bulk Blend** node, or **Extractive Blend** node, when you add new blend bins to the list of bins, you can now select multiple Rock Types in the **Blend Bins** tab.

### Issues Fixed

#### Simultaneous Optimisation

- **Discount rate period variations could not be used in the SIMO node**

You can now run a **Simultaneous Optimisation** node under a **Scenario** node while using the period variation expression *Discount Rate per period(%)*.
- **Simultaneous Optimisation reporting issue for Mining Recovery or Dilution**

The Simultaneous Optimisation process now reports the correct values for metal and grade when the **Mining Recovery** or **Dilution** factor is not equal to 1.
- **In-situ and Recovered/Diluted columns added to SIMO and SIMO Report node Summary tabs**

The **Summary** tabs for the **Simultaneous Optimisation** node and the **Simultaneous Optimisation Report** node now match. If **Mining Dilution** or **Mining Recovery** are enabled in the **Scenario** node above the **Simultaneous Optimisation** node, there are now columns for the **In-situ tonnage** (mined tonnage) and the **Diluted & Recovered tonnage** (tonnage sent to processing).
- **Simultaneous Optimisation incorrectly handled ore parcels that contained more than 1 million tonnes**

The **Simultaneous Optimisation** node now correctly handles individual ore parcels that contain more than 1 million tonnes of material.
- **Simultaneous Optimisation did not handle .res files with all blocks mined**

When Import Surfaces or Pit Shell Generation produces a final pit shell (corresponding to a revenue factor) that contains all blocks in the model, the results (**.res**) file has a slightly different format. The **Simultaneous Optimisation** node now accepts and correctly handles these **.res** files.
- **Simultaneous Optimisation ignored parcels with ore tonnages less than 0.1 tonne**

Simultaneous Optimisation no longer ignores parcels that have a tonnage of less than 0.1 tonne.
- **Minimum grade of element processed not reported for a SIMO Schedule**

The **SIMO Report** node now correctly displays the minimum grade of an element processed in a plant in the **Output** tab and the CSV spreadsheet.

- **SIMO Spreadsheet Report could not process more than 100 periods**

The **Simultaneous Optimisation Spreadsheet Report** now works correctly when its parent **Simultaneous Optimisation** node has more than 100 periods.

- **SIMO Schedule Report reported gross revenue as Open Pit Value**

Previously, in the **Output** tab of the **Simultaneous Optimisation Schedule Report** node, gross revenue was reported as the **Open Pit Value**. This issue has been fixed and Whittle now reports net cash flow as the **Open Pit Value**.

- **SIMO Report node did not support Individual Mine spreadsheet codes under a Multi-Mine scenario**

Previously, if you selected the **Redirect ore to available process(es)** option for a Multi-Mine scenario, the **SIMO Report** node produced an error message when an Individual Mine spreadsheet code was used in the **Definitions** tab. This error no longer occurs and the individual mine information is shown.

Note: The **Redirect ore to available process(es)** option has no impact on a simultaneous optimisation run because, by default, the ore is redirected to available processes to achieve the highest possible NPV.

- **SIMO stopped responding due to inconsistent mine number in the result file**

Previously, SIMO would stop responding when you ran it under an imported pit shells node (typically created by third-party tools) if the results file of pit shells contained mine numbers in the block lines instead of the header line. This issue has been fixed.

- **Simultaneous Optimisation node reset Rehandling Cost and Rehandling Limit when blend bins were updated**

When blend bins are updated, the **Simultaneous Optimisation** node no longer changes the stockpile **Rehandling Cost** and **Rehandling Limit**. As they are no longer valid for the updated blend bins, the existing stockpiles are deleted, but the **Rehandling Cost** and **Rehandling Limit** are not affected.

## Blending

- **Mine Limits tab not available for SIMO node under a Blending Scenario**

Under a Bulk or Extractive Blending Scenario, the **Simultaneous Optimisation** node now has a **Mine Limits** tab. The **Simultaneous Optimisation** node **Mine Limits** tab is identical to the **Scenario** node **Mine Limits** tab, and has the same impact on the Simultaneous Optimisation process.

## Other Area

- **Node total run time added in the Message tab**

The total run time for a node is now reported in the **Message** tab, showing the actual elapsed time for running the node. This value is different from the runtime report, which shows the backend engine time.

## Block Model and Results Files

- **Inconsistent pit tonnages reported in Pit Opt node and Pit-by-Pit Graph node**

In the **Formats** tab of Block model nodes, the **Report block mass as** field has been relabeled as **Store block mass as**, as it controls the format of block masses stored in **.res** file created in pit optimisation or other nodes. In addition, the default value has been changed from **0** to **.000** (three decimal places). This setting affects the calculation precision of subsequent schedules. The new default setting avoids inconsistent reporting of pit tonnages between the **Pit optimisation** node and **Pit-by-Pit Graph** node.

- **Datamine Import Manual Setup did not allow Default Density of Zero for Subcells**

Previously, when you imported a Datamine Block Model using the **Import Block Model** functionality and the Model Type **Manual Setup**, it was impossible to enter a value of zero for the **Default Density for subcells**. If the Datamine Block Model had empty or missing subcells within a block, Whittle converted them into undefined waste. Now, if you choose a default density of zero, instead of converting the missing subcells into undefined, Whittle ignores them.

### Data Import

- **Free Block Models could not be imported**

Previously, Free Block Model (.fmb) files could not be imported. This issue has been fixed.

- **Import of Large Datamine Block Models had incorrect number of parcels**

When you import **Datamine .dm** Block Models, they are now converted to **Whittle .mod** Block Models that have the correct number of parcels converted from sub-blocks.

### Slope Set Generation

- **Block model rotation also rotated slope bearings**

Previously, when Whittle rotated a block model, it would also rotate the slope sets bearings. This behavior has been changed and the bearings are now unaffected by the block model rotation.

### Miscellaneous

- **Sentinel SuperPro dongles were not working**

Sentinel SuperPro dongles were not working with Windows 10 after the 1803 update. This issue has been fixed.

- **Updated Sentinel driver**

The Sentinel driver used with Whittle has been updated to version 7.6.9.