



## Calculation and Reblocking Tools Added to MineSight® DART

Two powerful new tools have been added to the MineSight® ASCII Data Reformat Tool (ms dart.exe): a data Reblocking Tool and Calculation Options. Starting from the v.3.50-03 release, MineSight® DART is included with the standard releases of MineSight® 3-D.

### Reblocking Tool

The **Reblocking Tool** is used to reblock ASCII model block data and create an ASCII data file suitable for import into another model with different dimensions and/or block sizes, as illustrated in Figure 1.

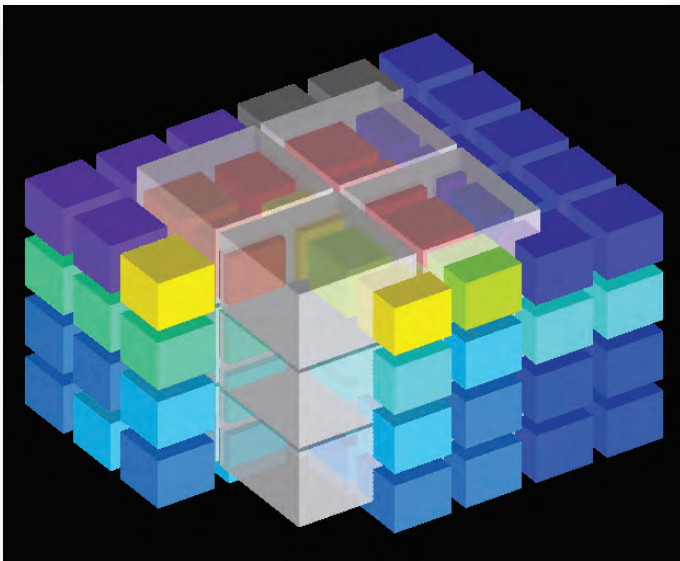
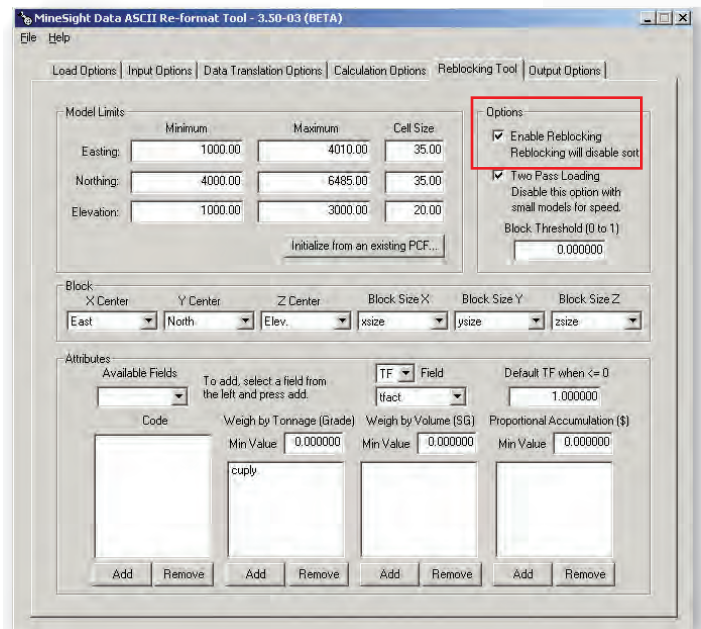


Figure 1 shows small blocks (color-coded) and larger blocks (in gray).

This new tool is on a new tab page in MineSight® DART (Figure 2) and there are four possible reblocking, or **Attributes**, options: Majority Code, Average value (e.g., grade) weighted by Tonnage, Average value weighted by Volume (e.g., SG item), and Proportional Accumulation value (e.g., \$ value).

Figure 2. The **Reblocking Tool** dialog in MineSight® DART shown set up to calculate the grade of item, 'cuply' using the **Weigh by Tonnage** option.



In order to use the **Reblocking Tool**, the option must be activated. All fields on the dialog are grayed-out and are unavailable until the **Enable Reblocking** toggle has been toggled **ON**. Note that when the **Reblocking Tool** is activated, the sort option on the **Output Options** dialog is disabled.

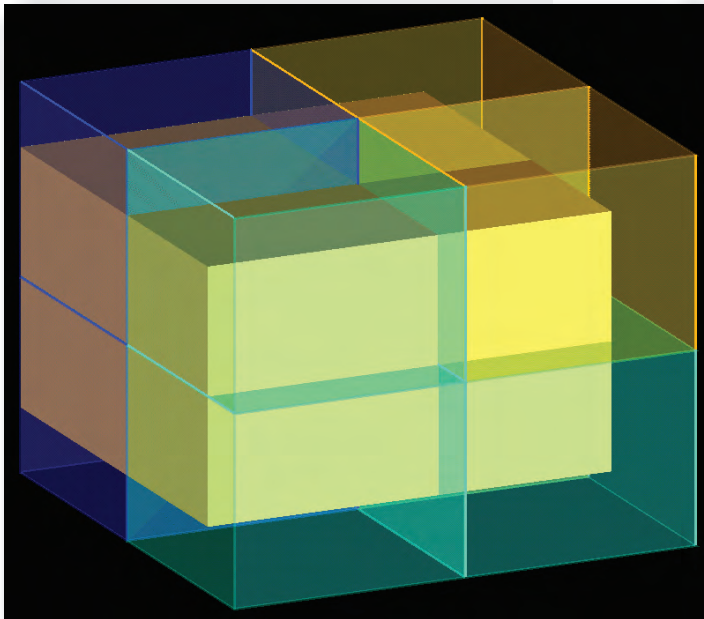
By default, **Two Pass Loading** in MineSight® DART is toggled **ON**. This option loads the location of the block on the first pass and the attributes on the second pass. It makes a difference when there are many items (grade items and/or code items) listed in the **Attributes** section. Disabling this option will speed up the conversion process when there are only a few items or when going from large bench size to a smaller bench size. Very large block models may require the use of **Two Pass Loading** due to memory limitations. The **Block Threshold** is the smallest partial of the source block to be considered for calculations (Default=0.00).

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The **Block** section of the dialog is where the input field names (from the Input file) for the **Easting, North-ing, Elevation**, and the block dimensions are specified. The **Model Limits** section is where the new block limits and size are defined (for the output file). You can use the limits and block size from an existing PCF, click on **Initialize from an existing PCF...** then find and select the PCF you want to use.

Attribute:	Explanation:
Majority Code	Outputs the majority code from the source blocks
Weigh by Tonnage	Values are calculated based on density and volume
Grade weighed by Volume	Values are calculated based only on volume
Proportional Accumulation (\$ value)	Outputs the sum of the values from the source blocks



The following example shows what happens when reblocking smaller (20x20x15) blocks to larger blocks (35x35x20). In this case, we'll use a simple case of eight smaller blocks that are used to code one larger block, as shown in Figure 3. Note the larger block crosses the smaller block's benches. The block data for the smaller blocks is shown in Table 1 and the result for the one large block is shown in Table 2.

Figure 3 shows the relative position of eight small blocks used to code one large block.

Bench	% inside the large block	% of the big block inside a small block	Grade item's Assay value	Code	Tonnage Factor	Dollar Value
1	12.245%	50%	1.12	2	12.75	\$363.30
1	9.184%	37.5%	0.99	4	13.00	\$207.79
1	16.327%	66.7%	1.20	1	12.50	\$465.60
1	12.245%	50%	0.93	4	13.00	\$139.26
2	12.245%	50%	1.49	2	12.75	\$794.26
2	9.184%	37.5%	1.53	2	12.00	\$893.38
2	16.327%	66.7%	1.39	1	12.50	\$691.32
2	12.245%	50%	1.37	4	12.50	\$667.56

Table 1. Grade, Code, Tonnage Factors and block dollar values from the smaller blocks, plus the percent the small blocks occur within the larger block.

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	Resulting Value for the block	Zone Partial
Majority Code:	Code = 4	0.337
Weigh by Volume:	Grade = 1.256	
Weigh by Tonnage:	Grade = 1.252	
Accumulation (\$):	Dollar Value = \$2,166.41	

Table 2. The output results from MineSight® DART for the one larger block.

These two tables illustrate how the data from smaller blocks can be used to calculate the values for a larger block. **Weigh by Volume** is the weighted average of the grade based on the percent inside the large block. Notice the grade values are slightly different when weighted by volume versus weighted by tonnage. This is because the density of the block is a factor in the case of tonnage. The **Code** value is also weighted by the percent of the small block inside the larger block, but in this case the majority code is used and the partial percent is output as well. In this example, there are actually equal volumes of code 4 and code 2, but because MineSight® DART reads the data input file from the top bench downward, code 4 reached the greatest volume first. **Proportional Accumulation (\$)** is a bit different in that the calculation adds up the values based on the percent of the large block inside the small blocks.

You can also use the **Reblocking Tool** to convert from larger blocks to smaller blocks. You can also simply move the limits by specifying a different origin (min/max **Easting, Northing, and Elevation**) in the **Model Limits** section.

The model you are reblocking does not need to have blocks of the same size, and they can cross over benches.

### Calculation Options

The **Calculation Options** tab page dialog is also new to MineSight® DART (Figure 4). On this dialog, you can create and use formulaic expressions with data fields from the input file as well as create new data fields for use in the expressions. You can also change Project and Model coordinates for rotated models (Figure 5).

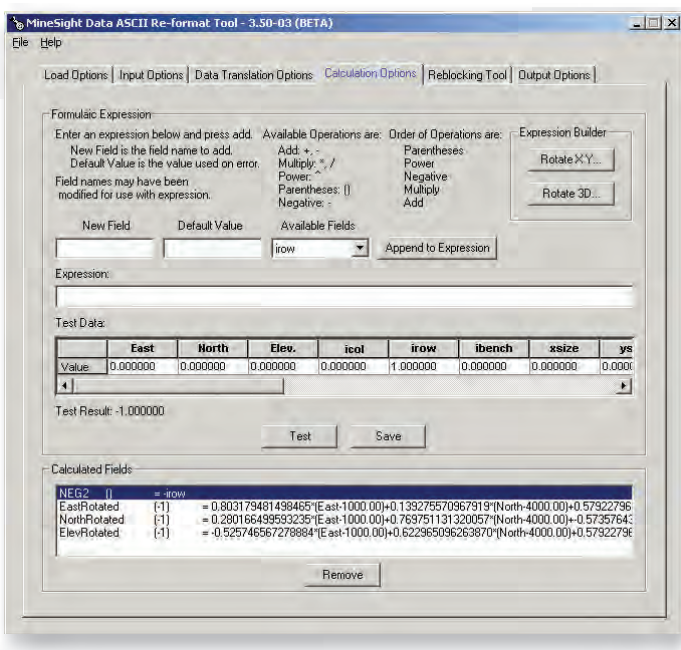


Figure 4, the **Calculation Options** dialog in MineSight® DART.

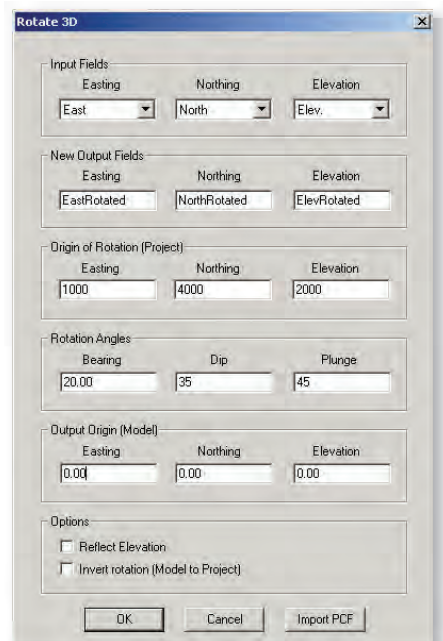


Figure 5 shows the **Rotate 3D** dialog.

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For rotated models, click on the **Rotate X Y...** to set the parameters to rotate the data on the XY plane without a 3-D component, or click on **Rotate 3D...** to set the parameters to rotate the data in all three directions. On either of these dialogs, the rotation parameters from an existing PCF can be imported.

The **Formulaic Expression** is where formulas are created and tested prior to being added to the **Calculated Fields** section. A **New Field** can be given a default value and any of the input data fields can be used in the expression (as illustrated in Figure 6). The formula is defined in the **Expression** field and is equal to the field name in **New Field**. Enter a value in the **Test Data** and then **Test** the expression. If the formula passes the test, then save it to the **Calculated Fields** section for MineSight® DART to use in the conversion process.

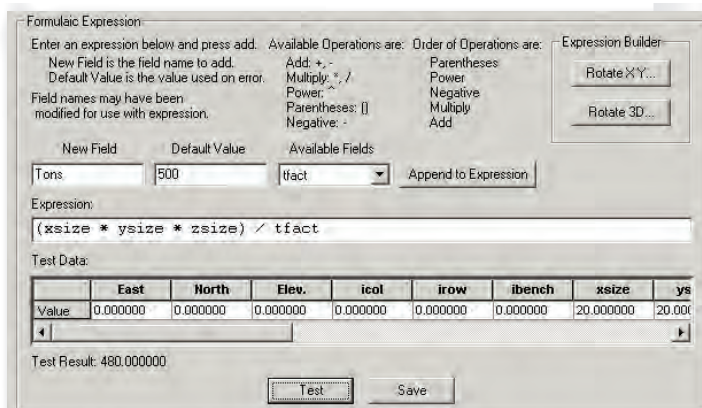


Figure 6 shows the **Formulaic Expression** section of the **Calculation Options** dialog. In this example, the tons in a block are calculated using the block dimensions and the **Tonnage Factor**, all of which are available fields in the input data.

In another example using this new **Calculation Options** function, you can have one field sorted in the reverse direction of the other. For example, data Column1 Column2 Column3 can be sorted so that Column1 is decreasing, Column2 is increasing, and Column3 is decreasing. This can be done by adding an equation to the calculations options so there is a new field "NEG2" with the equation of "- Column2"; sorting by Column1 with the secondary sort having NEG2 and Column3; output of NEG2 unselected (data is not output); and sorting decreasing.

These two new functions in msdart.exe are included in the MineSight® 3-D v.3.50-03 release. If you need help running msdart.exe, the helpdoc CHM file (msdart.chm) is called from the program via **Help | MSDART Help...**, and if you have any questions about MineSight® DART, please contact Mintec Technical Support ([ts@mintec.com](mailto:ts@mintec.com)). In addition, further information regarding MineSight® DART can be found in the September 2005 issue of this newsletter.

## Alert: Standard DLL as a False Positive

Some clients who run Symantec's Norton Antivirus 2006 have reported a false virus positive with the standard Intel JPEG Library file (IJL11.DLL) that Mintec distributes with MineSight® 3-D.

You can use the steps below to exclude IJL11.DLL from the virus list and prevent the file from being deleted:

- 1) Close all programs
- 2) Open Norton Antivirus 2006
- 3) Click on "Option" on top
- 4) On left side click on "Manual Scan"
- 5) Below Manual Scan, click on "Exclusion"
- 6) Type the file name (IJL11.DLL) then press on OK
- 7) Click on "Options" again step 3 above
- 8) On left side click on "AutoProducts"
- 9) Click on "Exclusion"
- 10) Enter the file name (IJL11.dll) and press on OK

Now the dynamic link library (DLL) should not be deleted and can be used by MineSight®.