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# Leica Cyclone 7.1.1: Sub-Dividing Large Point Clouds for Autodesk Applications – Exporting the Data

This workflow will show you how to export your sub-divided point cloud. Hint: You can click on any image to see a larger version.

#### CREATING PIECES AND EXPORTING DXF'S

V. Creating Pieces and Exporting DXF's – Once the first two vertical RP's have been placed, the first sectional piece will be copied into its own MS and exported.

A. In Piecing\_Base, activate the top view (you may lock the rotation of the view to help create consistent fences > Viewpoint > View Lock > Rotation)

B. Create a fence around the first area marked by RP's Vertical\_001 and Vertical\_002 > Copy fenced to new MS

1. Leave a slight overlap beyond the RP to allow later re-assembly of the exports

2. Confirm that nothing is selected before creating the fence; otherwise the entire cloud will copy



Figure 11 – Piece\_001 is fenced

and copied to a new MS, using the RP's as guides; note the fence overlaps slightly beyond the RP, capturing redundant points between adjacent pieces for later re-assembly.

C. In the new MS > Activate a side or front view (you may need to unlock the view lock > Viewpoint > View Lock)

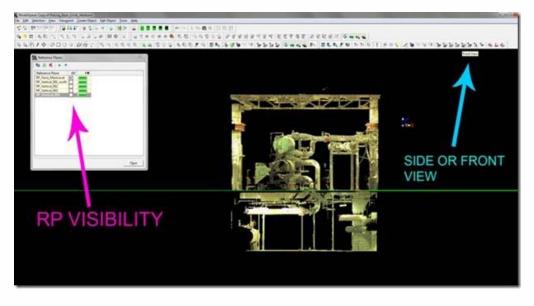


Figure 12 – Front view of Piece\_001 in a new MS; note all vertical RP's are invisible, allowing the horizontal division (the green line/RP in the center) to be clearly seen

# ACTIVATE RP DIALOGUE BOX



D. Activate RP dialogue box > Turn off the visibility of the vertical RP's > Turn on the visibility of the horizontal RP's > You should now see the first piece of your data with RP's to dividing it into more pieces (Suggested MS name Piece\_001).

# CREAT FENCE AND COPY TO NEW MS

E. Create a fence around the top piece > Copy fenced to new MS (Suggested MS name Piece 001\_A) > Again, remember to leave a slight overlap beyond the RP

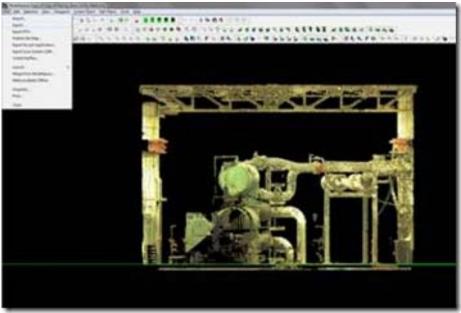


Figure 14 – Piece\_001\_A in its own MS,

selected and being exported; note the overlap below the RP, creating some redundancy between adjacent scans

#### **EXPORT**

F. In new MS, select piece > Export > Confirm file type is DXF R12 (NOT 2D dxf - currently DXF R12 is the supported format for direct export from Cyclone) > Selected items > Export (Suggested export name Piece\_001\_A)

NOTE: If Cyclone immediately states "0 objects exported" either the file type is incorrect or the point cloud was not selected before the export command. Check your settings and selection.

G. **The number of points is displayed as the export begins.** Roughly, when exporting, 1,000,000 points equals a 1 megabyte DXF. Noting this value at the beginning of each export helps you confirm that the resulting imports will be manageable.

1. Even if you have evenly-sized pieces (based on physical measurements) the size of the data in the pieces varies greatly depending on the complexity within each piece. 5 square meters of measured space can have more points than 20 square meters of space depending on what is within that volume (ie: a complicated network of pipes versus an empty room). Taking this into account and watching the exporting figures are essential to figuring out how to divide up your specific project.

2. If the number of points is vastly smaller or larger than the desired file size, delete the MS for the piece > adjust the RP > Copy out the new piece and try again!

# CYCLONE BUGS?

#### 3. Cyclone bugs?

i. When the point cloud piece is copied to its own MS, it may be selected and the object info can be displayed. However, this info shows the number of points in the parent point cloud, not the piece.

When the export begins, appears to be the first time the accurate number of points in the piece is displayed.

Export Progress	
Exporting 1441807 points	
I toxodal	Cancel

ii. When you name the export file, it always prompts that this file exists and asks if you want to overwrite it; answer yes.

# CLOSE EACH MODELSPACE

H. Close each MS > be sure to select CLOSE when prompted, DO NOT merge into the original MS or merge!!



I. Repeat Steps D through G for each vertical division of Piece\_001, naming each export and MS/MS View as you go (Piece\_001\_A, Piece\_001\_B, etc)

# RENAME YOUR MODELSPACES

J. Before continuing, it is recommended that you go to Cyclone Navigator and rename each MS and each MS view as shown in Figure 15 to avoid confusion. After Piece\_001 is completely divided and exported, return to Step IV -Section D and repeat the steps for dividing up the the next piece in the direction you are gridding (Piece\_002) reducing it to its sub-divisions (Piece\_002\_A, Piece\_002\_B, etc)

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••••••••••••••••••••••••••••••••••••	Piecing_Base_(Unify_Medium)   Piece_001   Piecing_001_A   Piecing_001_B   Piecing_002_A   Piecing_002_B   Piece_003   Piecing_003_A   Piecing_003_B   Piecing_003_B

Figure 15 – A closer view of the file structure in Cyclone Navigator; the MS for each vertical sectional slice is named Piece\_###. The MS and MS View for each horizontal piece (and the resulting .dxf exports) are named Piecing\_###\_A, B, etc.



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