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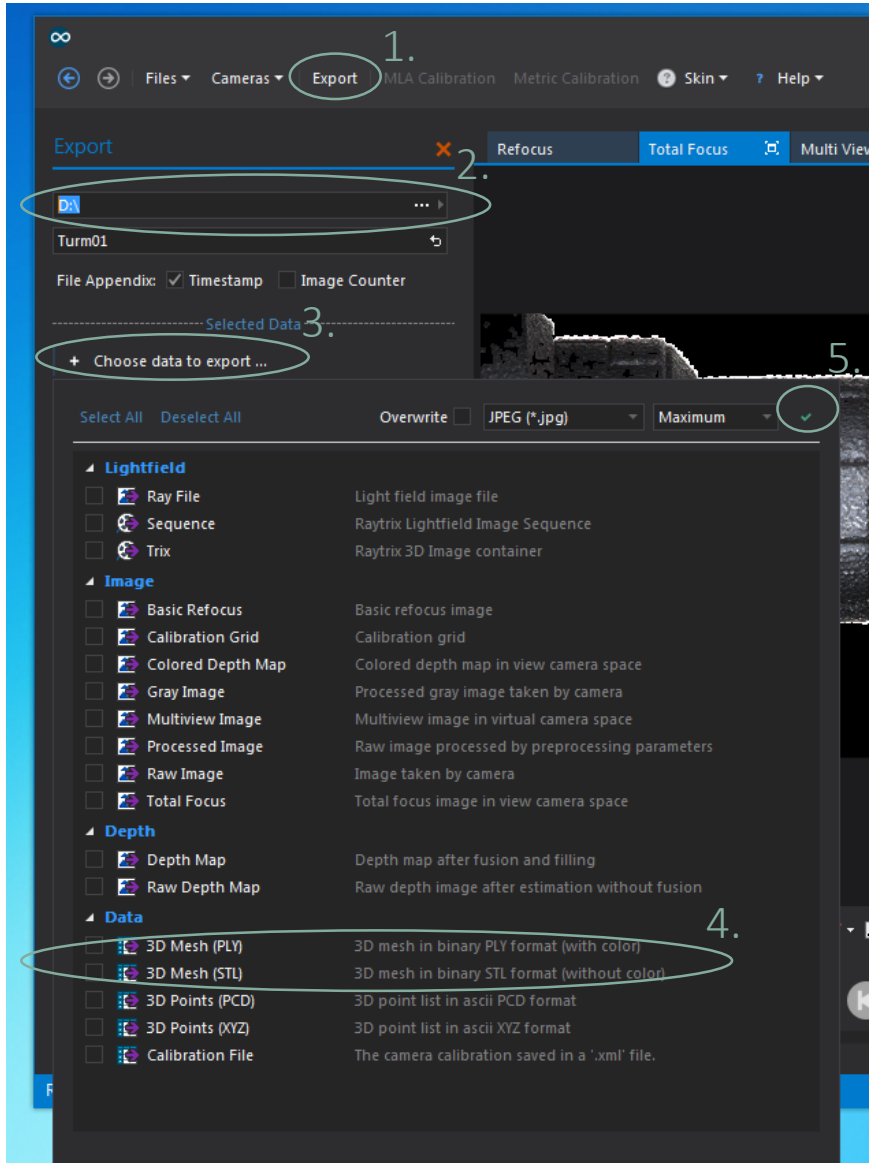
Stitching 3D data in MeshLab

www.raytrix.de



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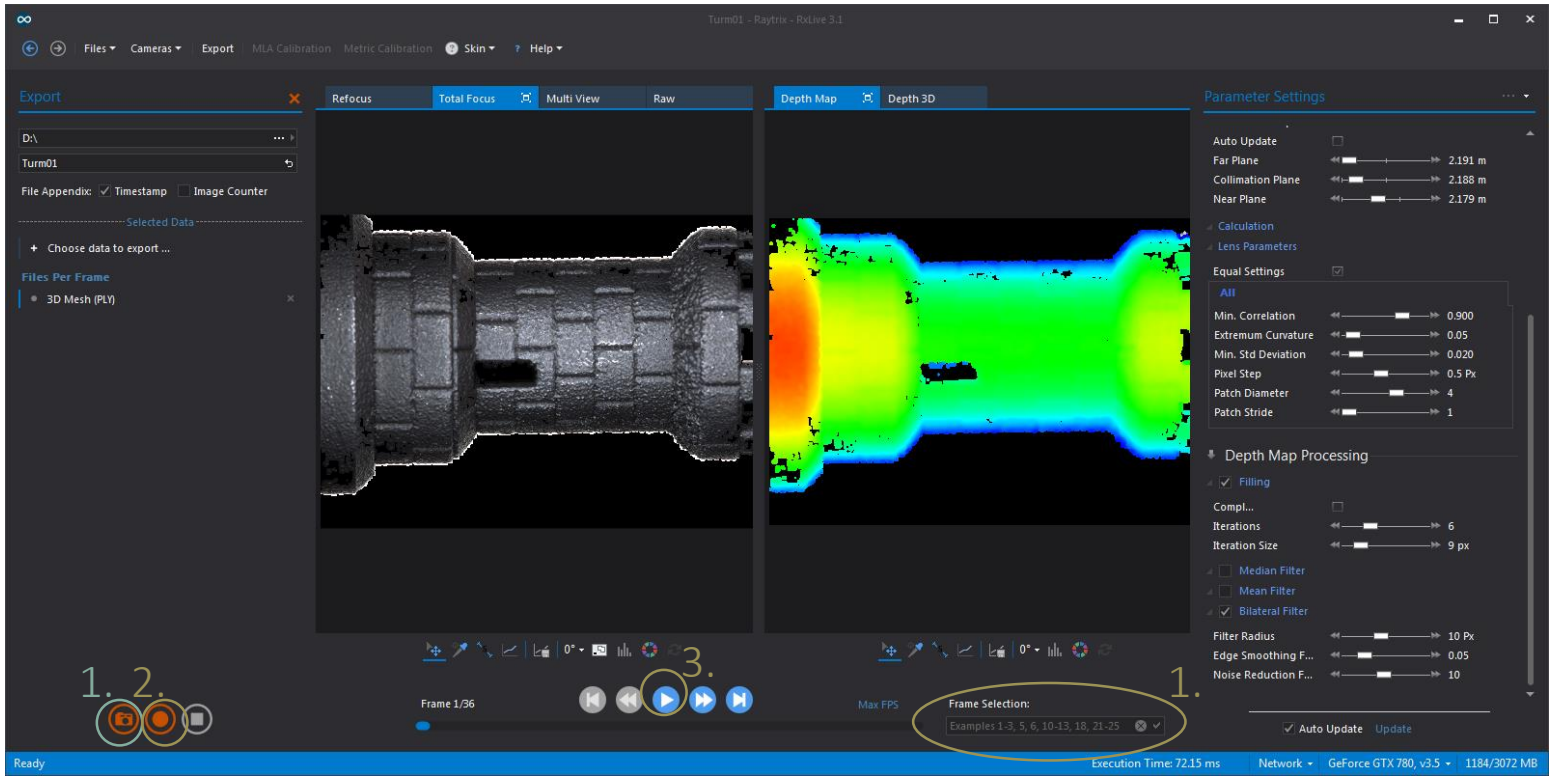
Export .ply files in RxLive

1. Go to the Export tab
2. Select a folder
3. Click Choose data to export
4. Select 3D Mesh (PLY) or 3D Mesh (STL)
5. Click Close & Apply



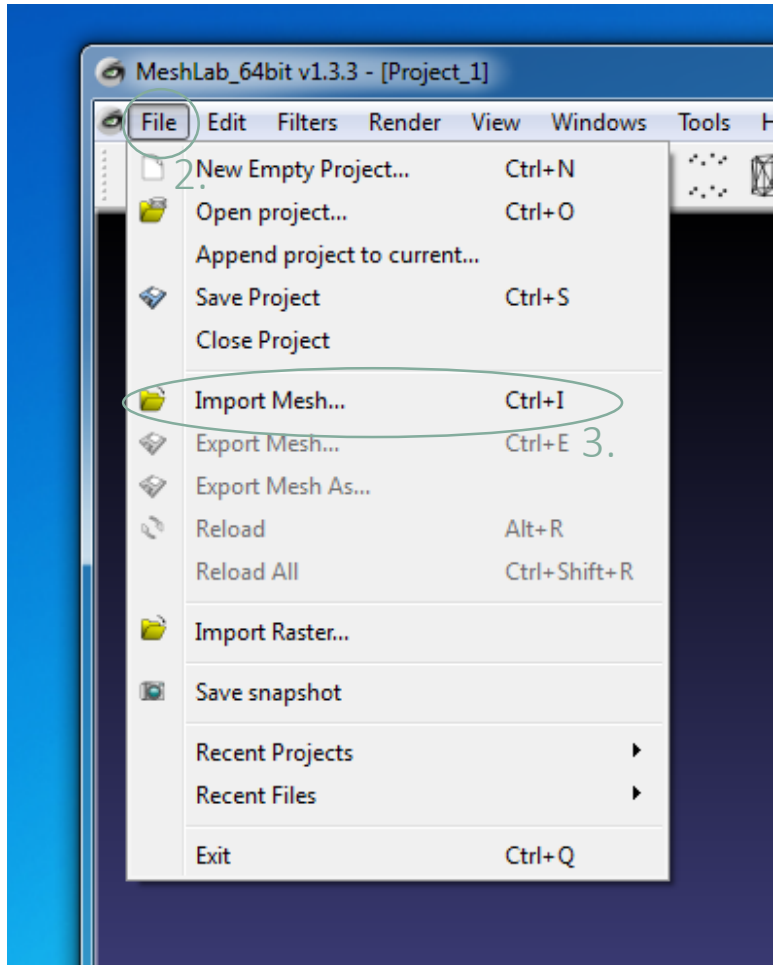
Export .ply files in RxLive

Export a single image

1. Click the Shnapshot symbol

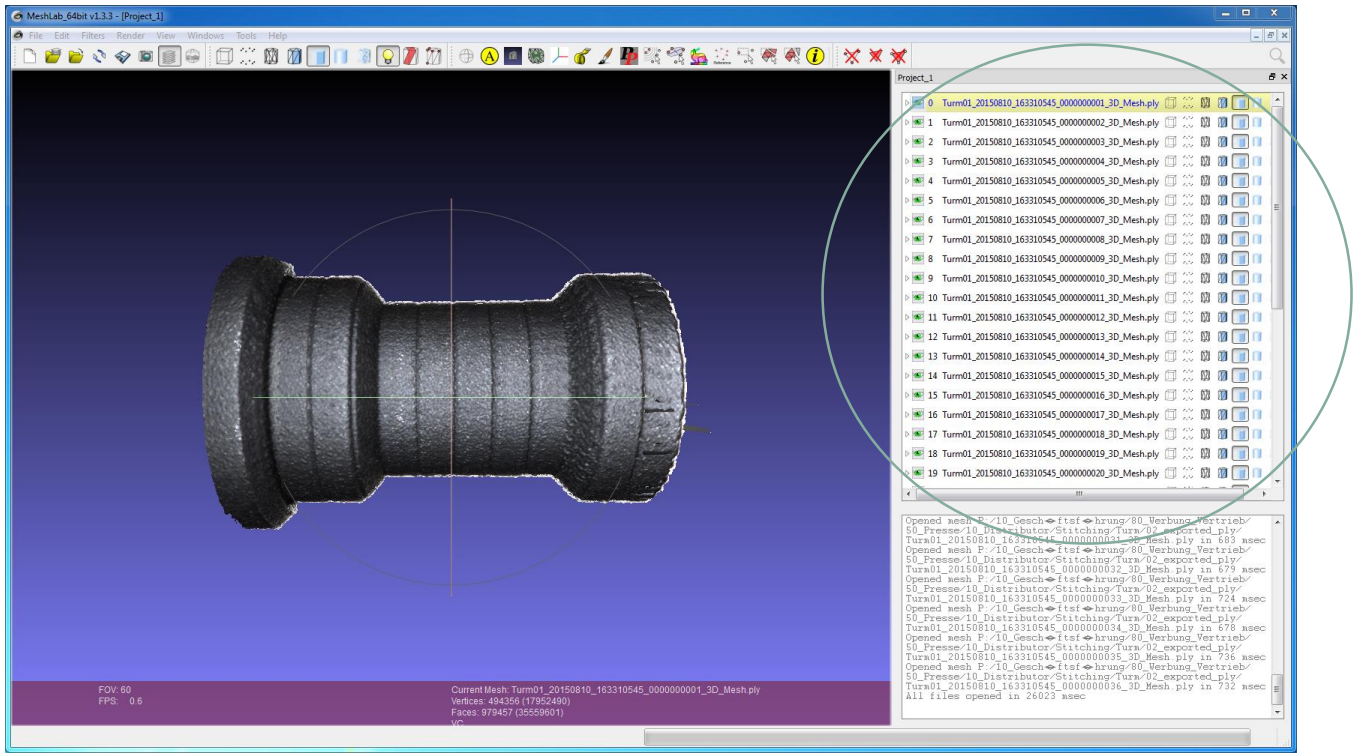
Export images from a .ray file

1. (optional) select specific frames to export
2. Click the Recording symbol
3. Click the Play symbol



Import .ply files in MeshLab

1. Open MeshLab
2. Select File
3. Click Import Mesh…

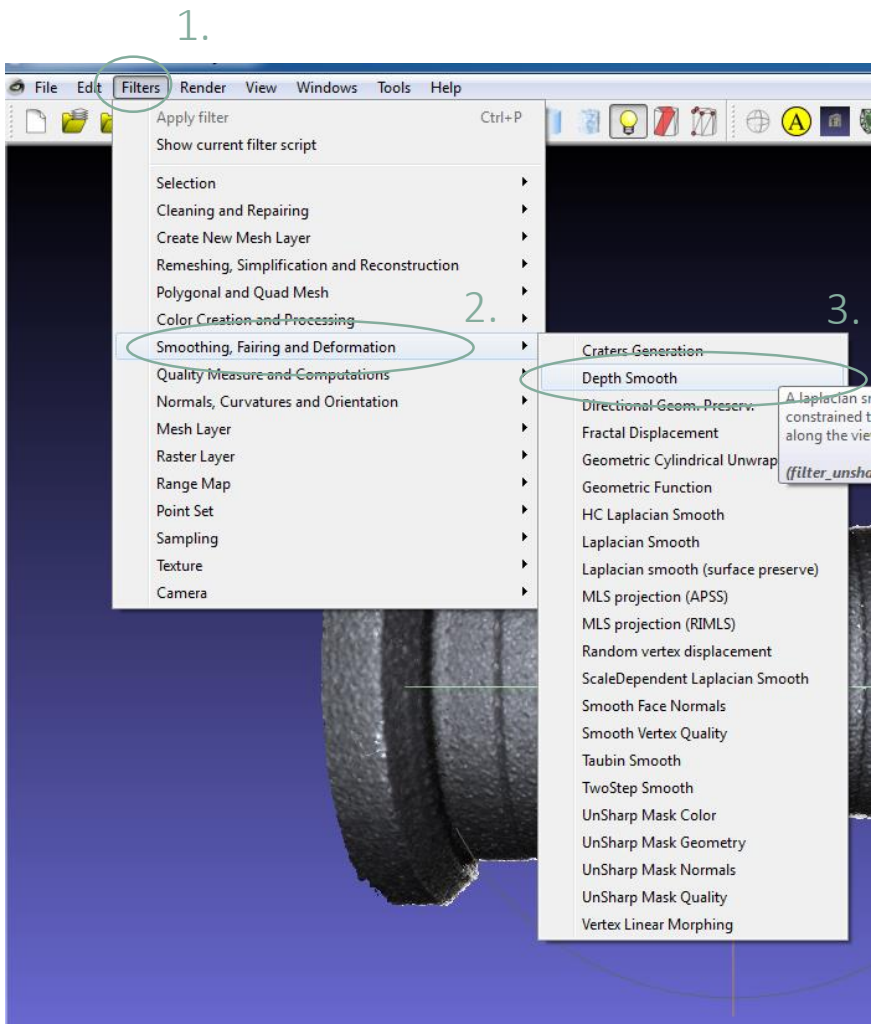


Import .ply files in MeshLab

The imported .ply files will show up on the right hand side.

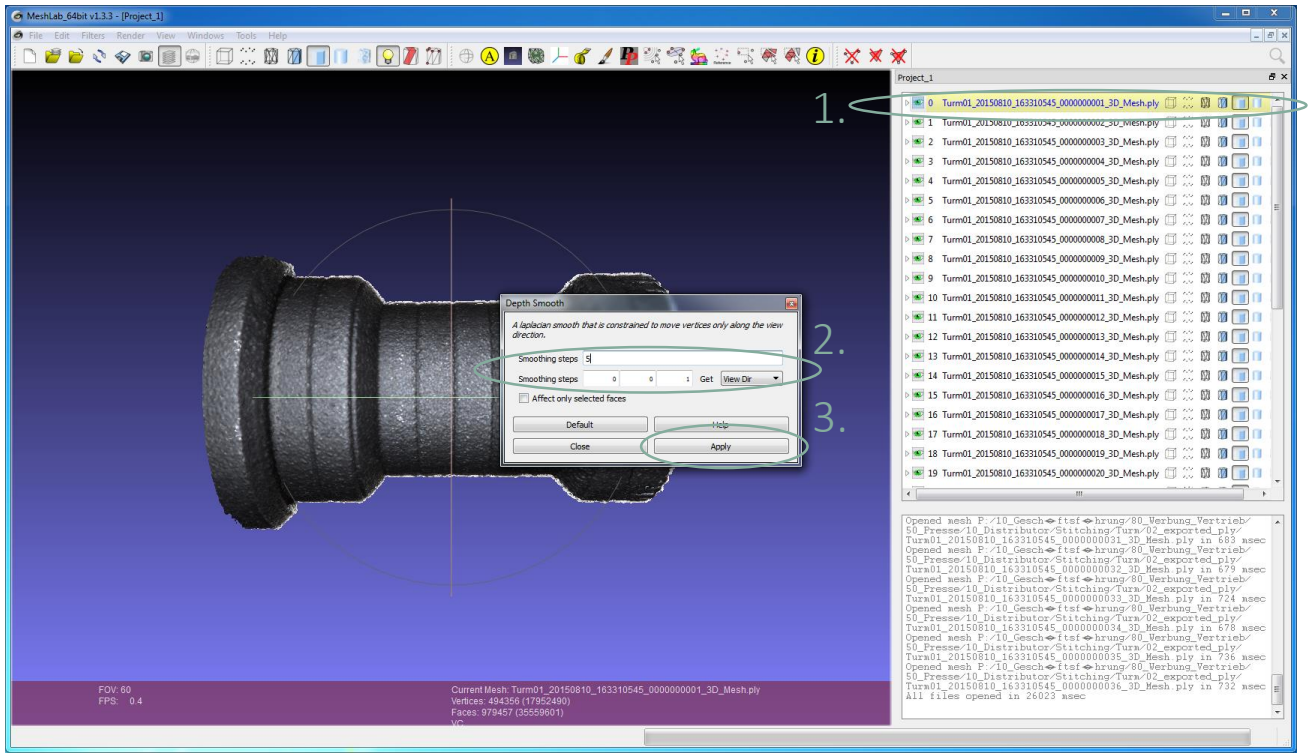
This guide assumes that the .ply files are not aligned and that the camera positions are unknown.

(optional) Apply Depth Smooth filter



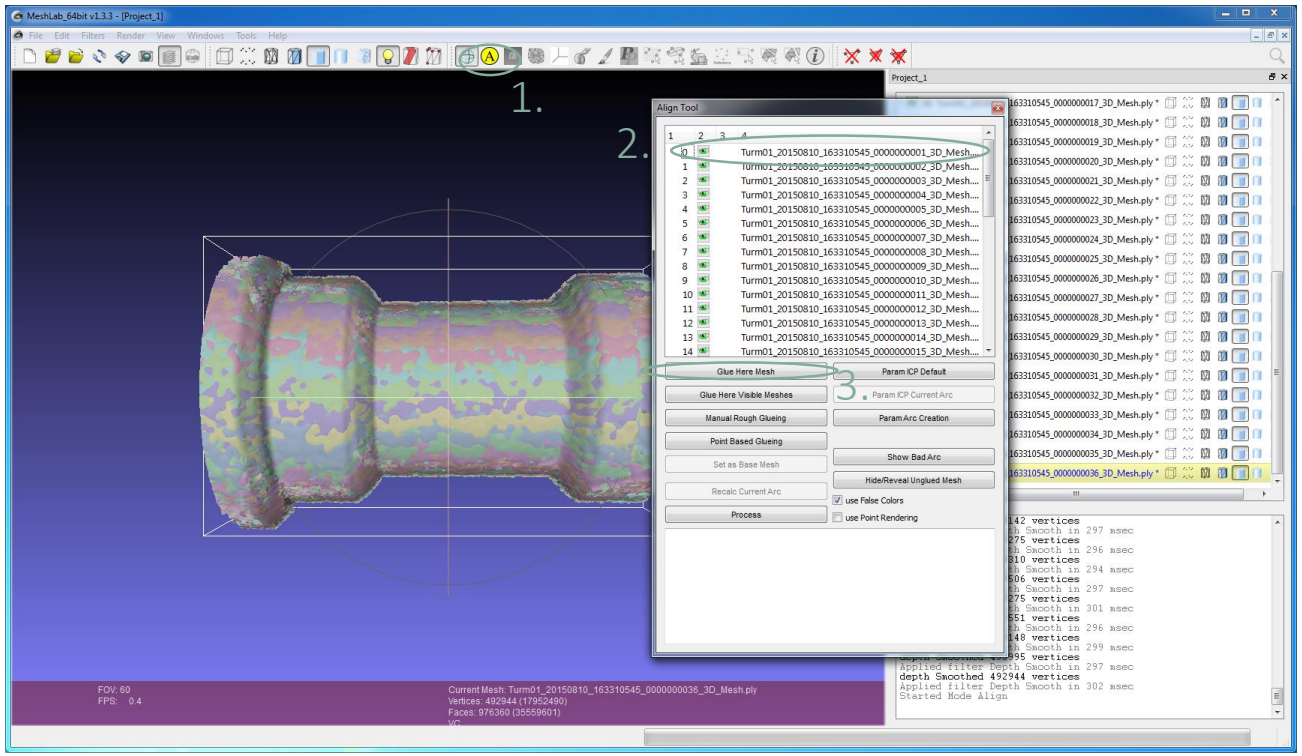
Depending on the depth measurements noise it might be helpful to smooth the data before stitching it.

1. Select Filters
2. Select Smoothing, Fairing and Deformation
3. Select Depth Smooth



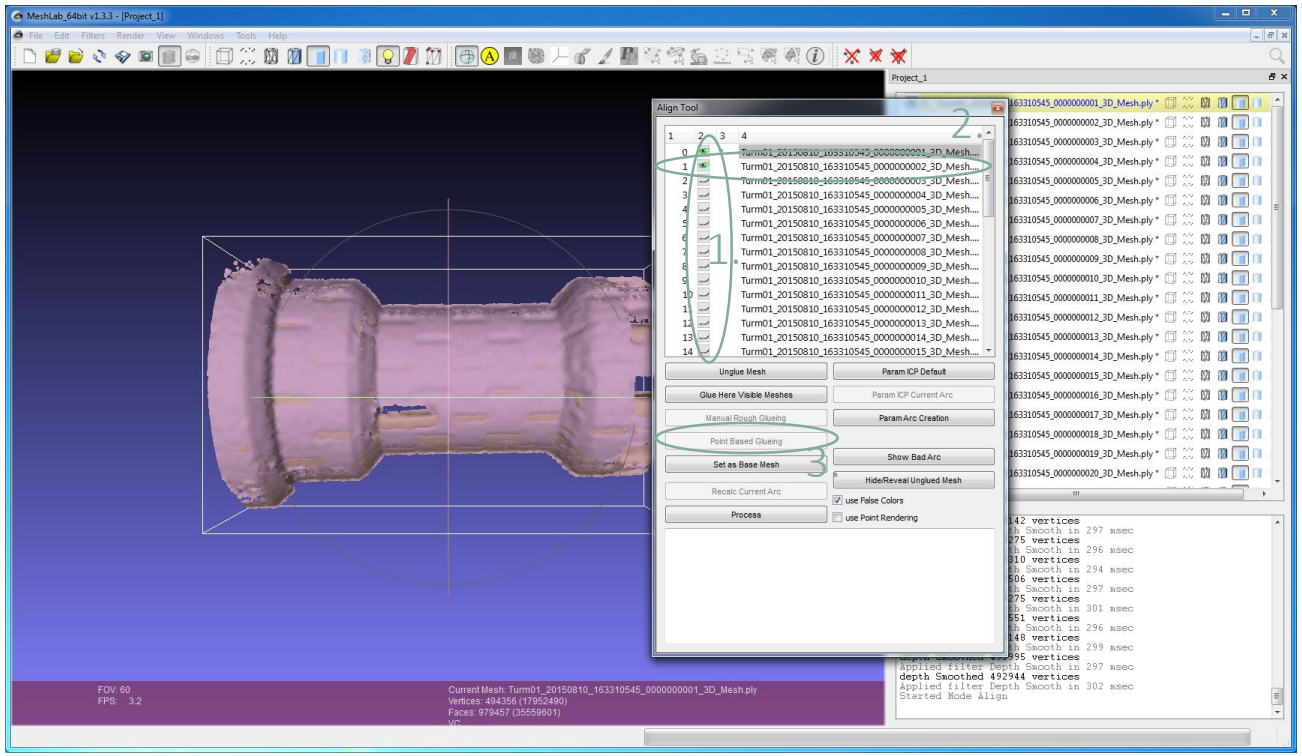
(optional) Apply Depth Smooth filter

1. Select the data to which the filter should be applied
2. Select a Smoothing steps between 3 to 5 and the direction 0 0 1.
3. Click Apply



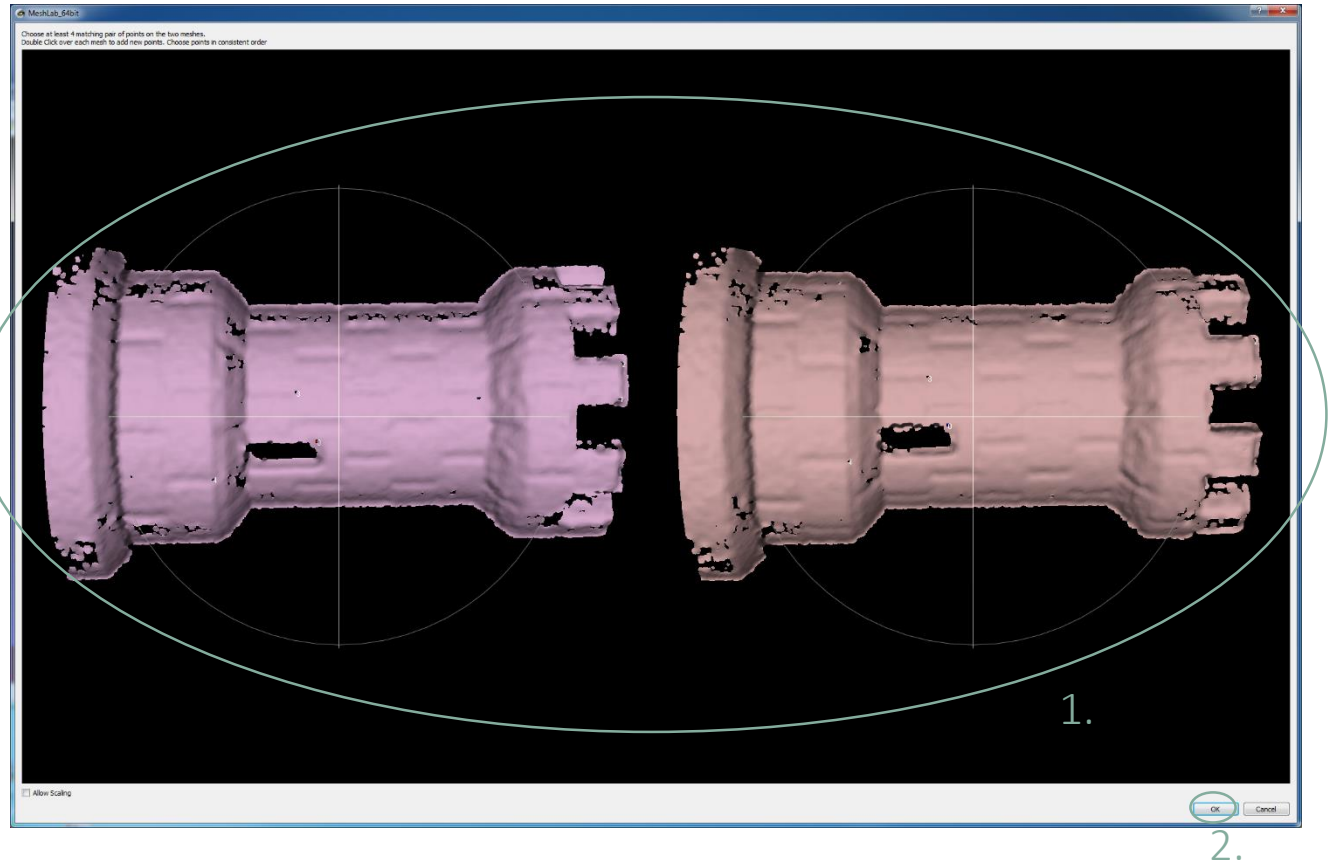
Initial alignment

1. Click Align
2. Select the file you want to use as reference
3. Click Glue Here Mesh



Initial alignment

1. Uncheck the visibility of all data sets except the reference and the first data to stitch
2. Select the data to stitch
3. Click Point Based Glueing



Initial alignment

1. Select a point in the left image then mark the same point on the right. Repeat this until you have marked at least 4 points.
2. Click OK

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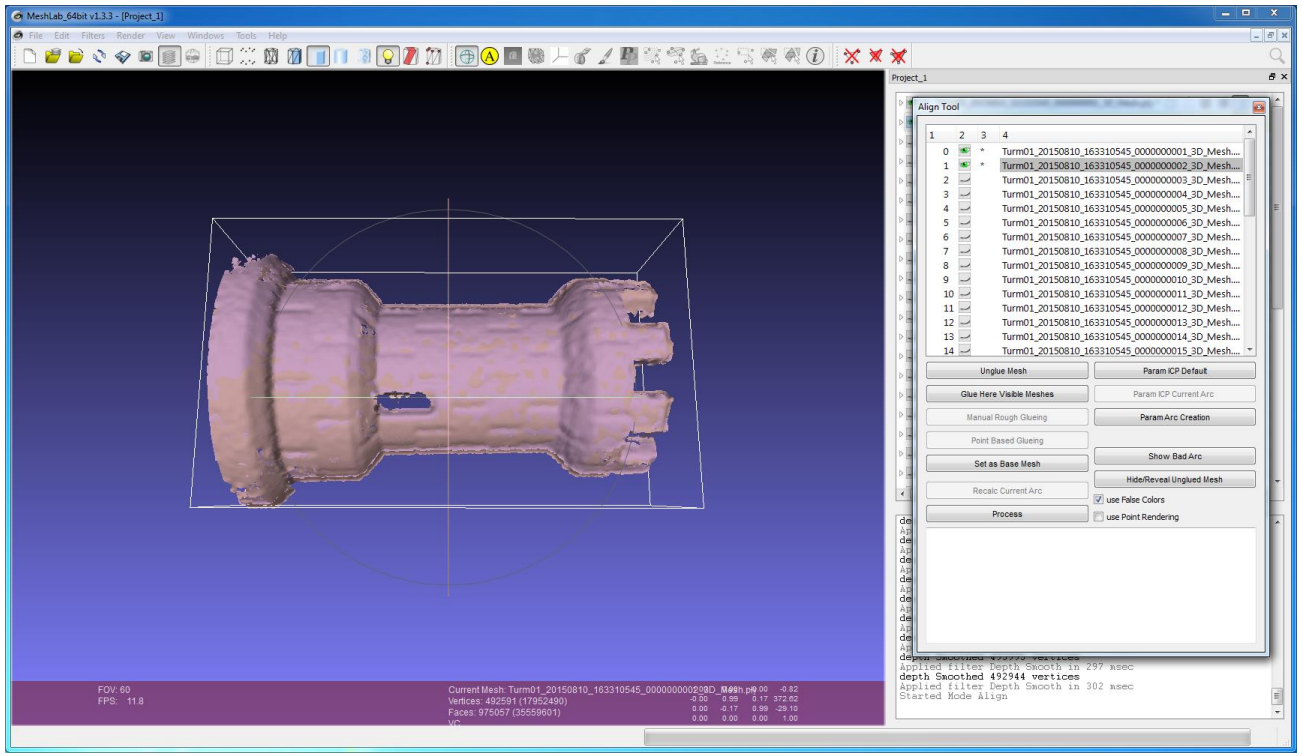
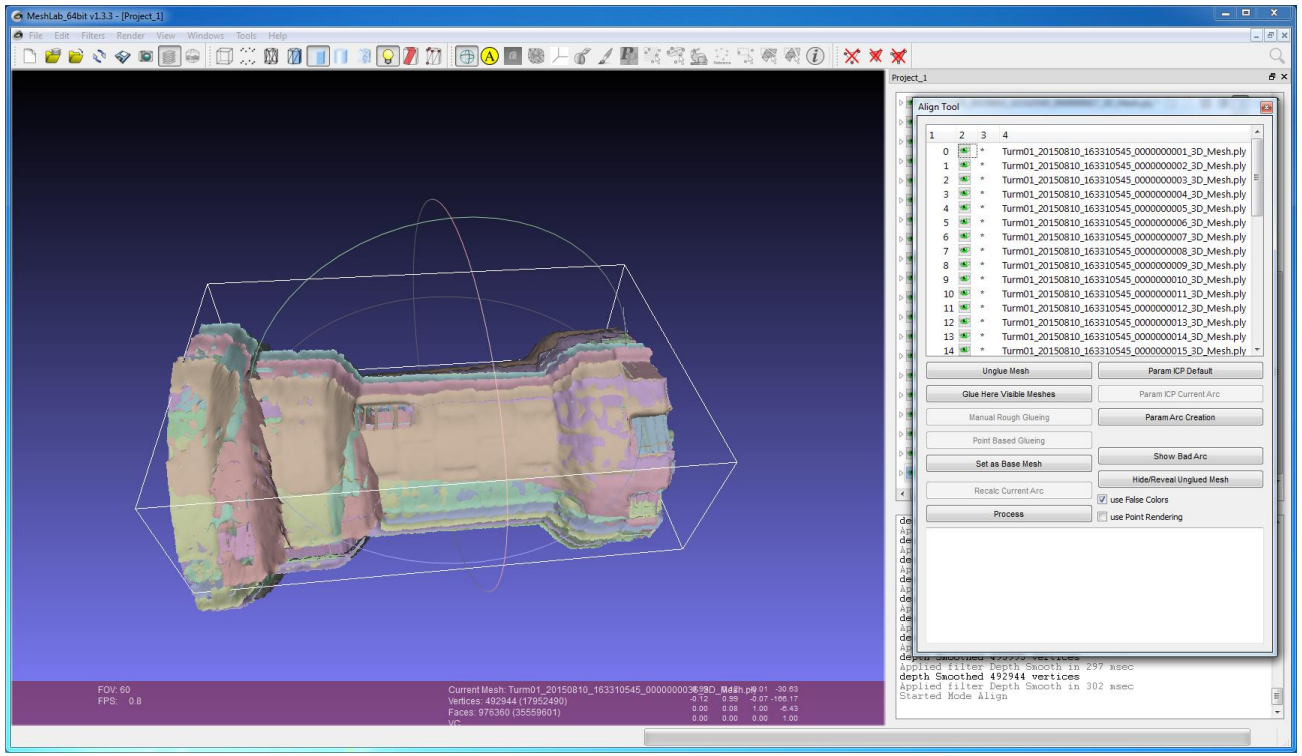


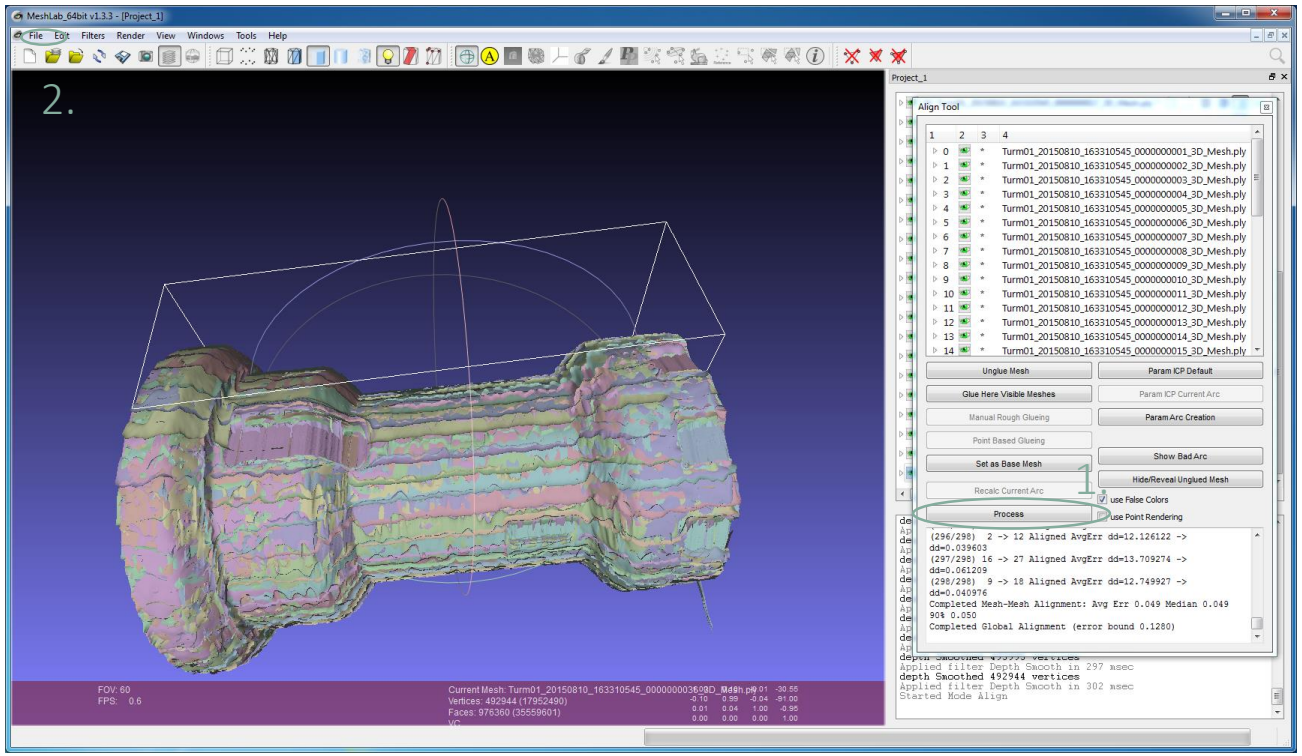
Initial alignment

The two data sets should be roughly aligned now. If not repeat the previous step.



Initial alignment

Repeat the steps from slide 9 until all data sets are roughly aligned.



ICP Alignment

1. Click Process for precise alignment via icp algorithm
2. You can now run additional filters on the stitched data or export it by clicking File then Export Mesh as…