

# ARTEC STUDIO SCANNING AND PROCESSING GUIDE



**scansource** 

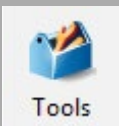
**Follow this sequence of actions capture and process scans in Artec Studio 9 and 10.**



## 1. Scan

This may involve performing several different scans depending on the object you are working with.

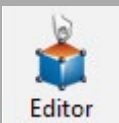
- Make sure to check texture brightness before scanning.
- Keep your eyes on the screen while scanning.
- Watch your distance meter. Keep within the three green middle sections for the best scan results.
- Increase scanning sensitivity to help scan difficult items such as hair, fur, or very dark surfaces without much geometry.
- Scan objects from many different angles.
- Real-time fusion can be helpful to produce a quick model without much manual processing or to make a scanning demo quicker and more interesting.



## 2. Fine Serial Registration

Fine Serial Registration performs an alignment of each frame that was captured within each individual scan.

- This is done automatically when you close the scanning tab. Not needed with Real-Time Fusion.
- You can cancel this automatic function and perform manually later.
- Select between Geometry and Geometry + Texture before scanning or running the process manually. Geometry only is faster and works fine for most scans.



## 3. Erase

If there is a flat surface or pedestal under the object that was captured during the scan, and you have multiple scans, you should erase the unneeded portions before alignment.



## 4. Align Scans

Each scan is captured with a different orientation in 3D space. The align tool allows you to pick common points from each scan to put the scanned pieces together.

- You must do this before performing global registration.
- If you only have a single scan, you may skip this step.
- Pick three common points.
- Select “Enable texture align” if you have difficulty aligning scans that don’t have a lot of geometry.



Tools

## 5. Global Registration

This is similar to fine serial registration but for the entire model across all scans.

- Select Geometry only unless you have trouble performing Global Registration. Geometry + Texture is much slower.
- Look at your quality number after performing Global Registration. Lower numbers are better.
- Spider should be 0.1 - 0.3
- Eva should be 0.3 - 0.7
- For people, a quality of 1.0 - 1.3 can be common.



Tools

## 6. Outliers Removal

All scans have some edge noise that may mess up the geometry when the scans are fused. Outliers Removal cleans up this noise.

- Use threshold of 2 for very noisy scans. Use 3 for less noisy scans. The default is 2.
- Resolution should be the same as what you plan to use for Fusion later on.
- Do not use this for high sensitivity scans that will require outliers to rebuild difficult to scan surfaces such as hair, fur, or dark material.
- Your resolution should always be higher than your worst quality number and should be the same as the resolution you plan use for fusion.



Tools

## 7. Fusion

Fusion takes all the scans and fuses them together into a single mesh object.

- Fast Fusion can be used for a preview.
- Smooth Fusion works well with Eva scans.
- Sharp Fusion is always used for Spider scans, but can be used with the Eva as well.
- Always make sure your resolution is higher than the worst scan quality number.
- The lower the resolution number, the more detail will show in your resulting fusion.



Tools

## 8. Small Objects Filter

After fusion, there may be disconnected objects and noise floating around your main model.

- “Leave biggest object” works best in most cases.



Editor

## 9. Edit Model

You can use the Editor tab to perform touch-up functions such as smoothing and erasing on the fused model if needed.

- Use the de-feature tool to remove portions of the model while automatically patching the resulting hole.



Tools

## 10. Mesh Simplification

Many programs cannot handle millions of polygons like the models produced by Artec Studio have.

- Reduce by Accuracy for mechanical items where accuracy is key.
- Fast Mesh Simplification (AS10 only) is quick and can work organic objects such as people.
- 100k triangles works well for a bust scan.
- 500k triangles works well for a full body scan.



Edges

## 11. Edges

During the editing process, there may be some holes or rough edges created in the model. You can fill and smooth these on the Edges tab.



Texture

## 12. Texture

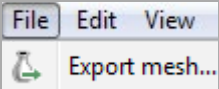
If the scanner captured color texture during the scanning process, you can now apply that to your model.

- Triangles map is good for a quick preview.
- Texture atlas is used for final texturing.
- 4096 resolution works well for most 3D printing applications.
- Texture Normalization evens out the brightness of the captured texture frames.
- Inpaint Missing Texture and Remove Targets are only available in AS10.
- Texture adjustments are made immediately after applying texture. General guides:
  - Brightness: 1.6 - 1.8
  - Hue: May need to adjust to .01 - .03 if printed objects have a green tint
  - Contrast: Adjust up if needed.
  - Gamma: .85 - .9



## 13. Edit Texture

Artec Studio 10 has a manual texture editing tool on the editing tab that can be used to fix minor texture imperfections.



## 14. Export

Your scanned model should now be ready to export for use with other 3D programs.

For questions about the info in this guide, please contact ScanSource 3D.

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