EinScan-SP Training SOP

Tool Name and Location

The SHINING3D EinScan-SP 3D Scanner is located in Fume Hood #1 in Elings 2448.

Safety

Machine Limitations:

- The turntable has a maximum weight limit of 5kg (~11lbs). Exceeding this weight could damage the machine and its internal components.

Environmental:'

- Keep the scanner in a well ventilated area. Keep flammables, corrosive agents, and liquids away from the scanner. Failing to do so will damage the machine and its internal components.

Physical:

- The projector emits a bright light. Avoid looking directly into the light source to prevent eye injury.

Training

training requirements: Users must attend the in-person training session and should consult the Safe Operating Procedure and EinScan-SP Manual (both found on the Innovation Workshop GauchoSpace page). **Training Outline**

1. Overview of the scanner and the system setup
   1. Structured light projector and dual camera setup
   2. Electronically controlled turntable
   3. Laptop computer
2. Safety
   1. Machine Limit
      1. Do not exceed 5 kg (11 lbs)
   2. Hazards
      1. Keep well ventilated, away from corrosives, liquids, and flammables.
3. Walkthrough of starting up EinScan-S software
   1. File formats, different scan types
   2. EinScan-S menu
4. Scanner Limitations (0.03 mm resolution)
   1. Bigger than 30x30x30 mm, smaller than 250x250x250 mm, less than 5 kg
   2. Do not scan reflective, transparent, or fuzzy objects
   3. Paint or coat dark objects with a light color
5. Step by step walkthrough of a scan
   1. Scanning with the turntable
   2. Scanning without the turntable

      3. Adjusting the brightness and stitching scans
6. Software walkthrough
      1. Turntable toolbar
      2. Scan editing toolbar
      3. Main toolbar (alignment, scans, exporting, brightness)
7. Editing, Meshing, and exporting completed scans

Safe Operation of this Tool

Before Using the Scanner: Make sure that the object:

- Is larger than 30x30x30mm (1.2×1.2×1.2in)
- Is smaller than 250x250x250mm (38x38x38in)
- Weighs less than 5kg (11lbs)
- Isn't shiny, transparent, or furry
- Has all dark features lightened with a powder or coating

Sequence of Operation:

1. Make sure the scanner is powered on and open the EinScan-S software (on desktop)
2. Select <u>EinScan-SP</u>
3. Under "Choose Working Mode", select <u>Fixed Scan</u>
4. Select <u>New Scan</u> or <u>Open Scan</u>. Name the file and save to your group's folder to define the location for saved scan images (saved as .fix_prj file)
5. Select <u>Textured Scan</u> or <u>Non-Textured Scan</u>
   1. Textured scan is used to scan colors and fine features. The user must run a white balance test when using this feature.
6. Adjust <u>Brightness slider</u> until no red areas are visible on the desired part