AUGMENTED REALITY AIDED CRANIOFACIAL SURGERY – FINAL CHECKPOINT

Group number 13
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Deliverables

The following deliverables are all expected before the end of the semester (final presentation).

**Point/surface registration method for orbital socket**
- Min: Target registration error (TRE) <4mm – camera-based tracker accuracy
- Expected: TRE <3mm - camera-based tracker accuracy
- Max: TRE <2mm - camera-based tracker accuracy

Calibration of implant with respect to tracked hemostat
- Min: Pivot Calibration of the distal edge of the implant (only model the distal edge)
- Expected: Use calibrated pointer to model the implant distal edge
- Max: Use calibrated pointer to model the entire implant

**Visualize position of tracked implant respect to CT**
- Min: Visualization on 3D slicer (OpenIGTlink to update model)
- Expected: Visualization in AR system (Hololens)
- Max: A comparison between 3D slicer implementation and Hololens implementation
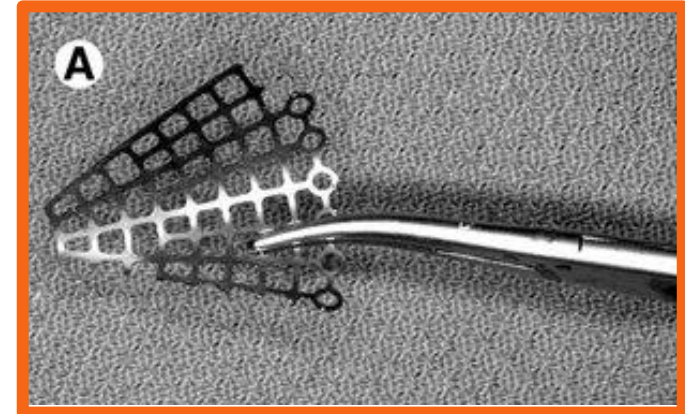
Pictures Courtesy of :
Dr. Peter Kazanzides

[1] Kazanzides, P. (2020). Navigation for Orbital Floor Fracture Repair. [PowerPoint Slides]

Unity Visualization

- Registration chain
- Unity handedness
- Data transmission
  - Server
  - Client
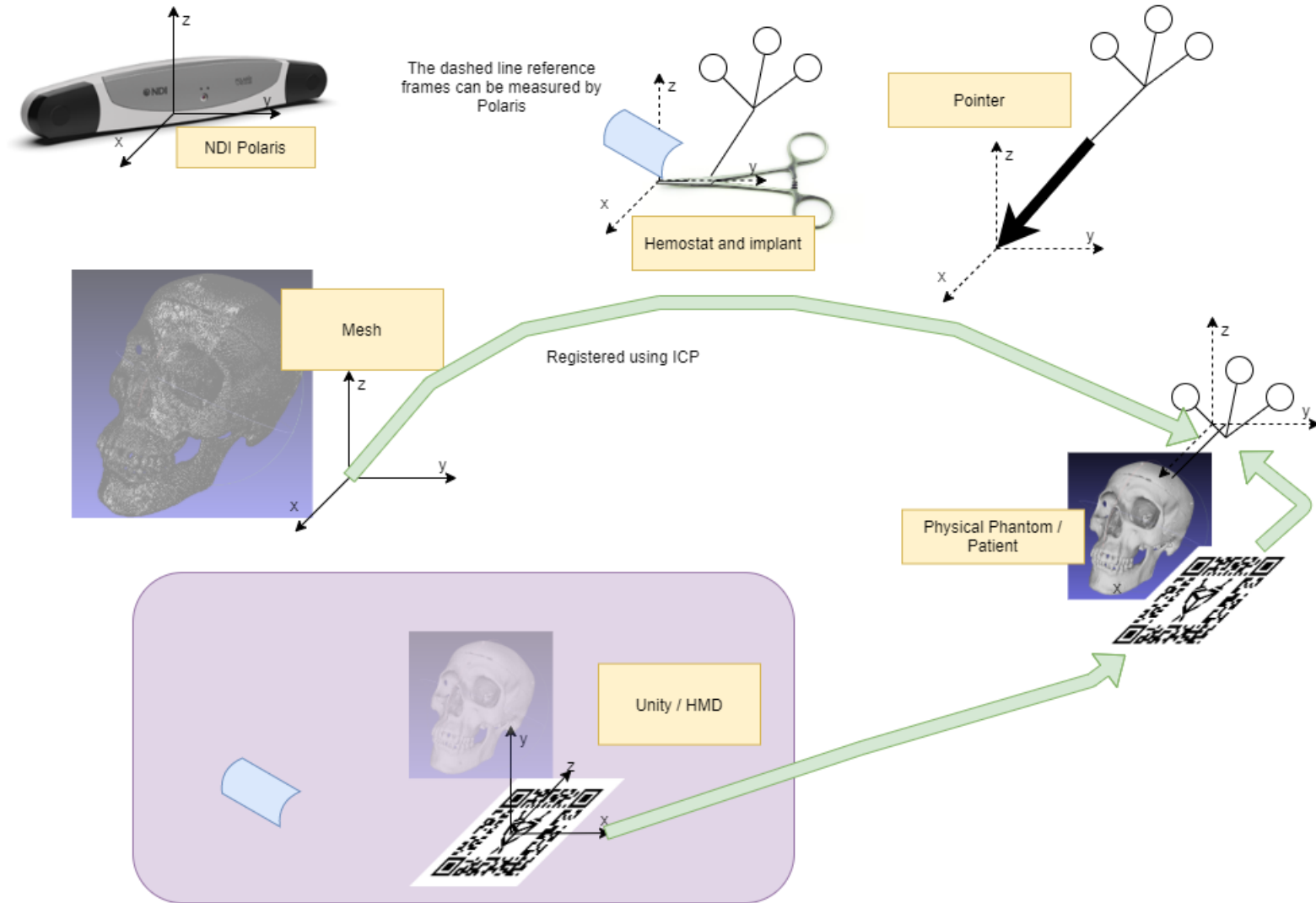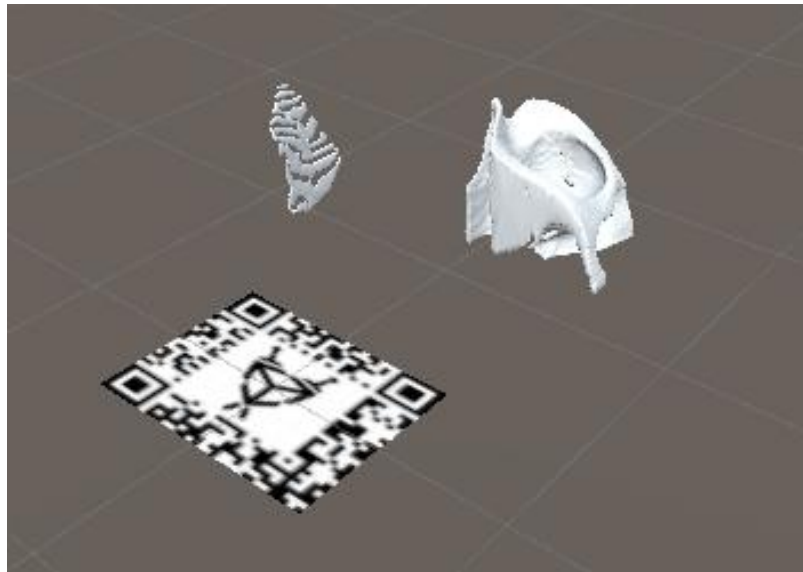
Progress: Visualization in 3D-Slicer

- Need to develop interface.
- Integrate all parts of the process to validate current progress.