Low-cost approach for a 3D-visualization of historical structures in Metropolis (Ionia)

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Where is Metropolis?
Data collection (Scans)

Kinect© as a low-cost 3D-Scanner
Data collection (Scans)

Bending of a model because of a low point accuracy
Data collection (Images)

Average Smartphone for collecting color data
Data collection (Images)

Optimal image for texturing
Texturing: Image Registration

Positions of the cameras
Texturing: Color Projection

Texturing the model: detailed view on a bench of the bouleuterion
Time-based splitting

Byzantine wall was erected through the middle of bouleuterion
Time-based splitting

Bouleuterion without the byzantine wall
Visualization: Tool-Requirements

Visualization of the data: Which tool to use?
→ define requirements
Visualization: Georeference

- Problem:
  - too many digits for each value
- Only GIS support georeferenced
  - No online functionality for 3D
- Option: local system, correct dimensions
Visualization: 3D-Hop
Conclusion

- Low-cost visualization is possible
- Quality of collected data has the biggest influence on quality of the result
  - Limited scan distance of the Kinect
  - Images should meet quality criteria
- 3D-Hop best solution for a visualization
- Low variety on software tools
Thank you for your attention. Questions?

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