# Initial Usability Testing of Vario-scale maps

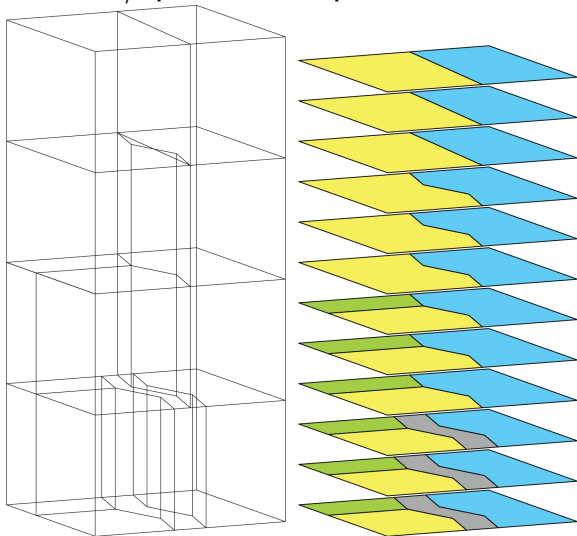Radan Šuba, Martijn Meijers,
Peter van Oosterom



Enabling new technology

STW user committee meeting
Delft, 2016/11/23

Assumption at start of project: Vario-scale maps
will provide faster and more effective interaction:
Better understanding / mental model

# Viewer for SSC – Now makes it possible to get real / practical experience

# SSC viewer

- Orthogonal projection
- Fast slicing (based on GPU) — Smooth content zoom
- No polished GUI (Graphical User Interface)



TASK DEMO

# User task
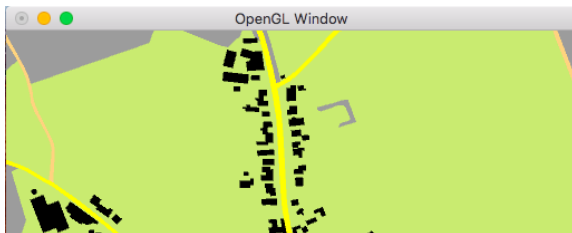
1. **Orientation**: Start at detailed location (zoomed in), zoom out to whole region and get back to initial position.
2. ~~**Searching**: locate a specific object (e.g. find a church).~~
3. ~~**Analysis**: estimate the size of object (e.g. square in $m^2$).~~
4. ~~**Routing**: find largest lake within 500 m route via the road.~~
5. ~~**Routing**: go to a specific location based on printed picture.~~
6. ~~**Analysis**: Estimate distance (e.g. between two churches).~~
7. ~~**Planning**: design a running track.~~

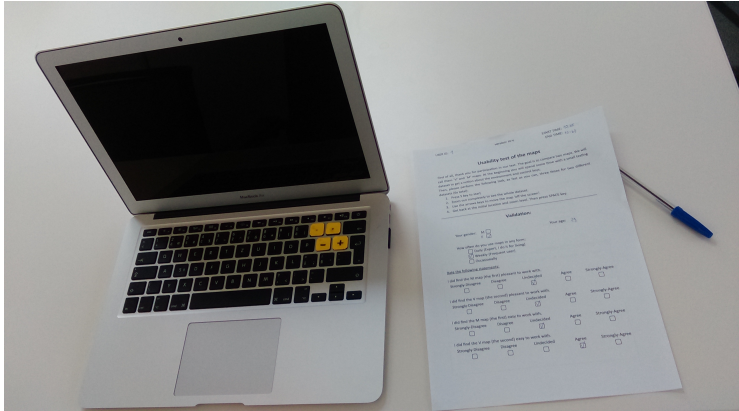Now, we test discrete sets of data versus continuous changing data
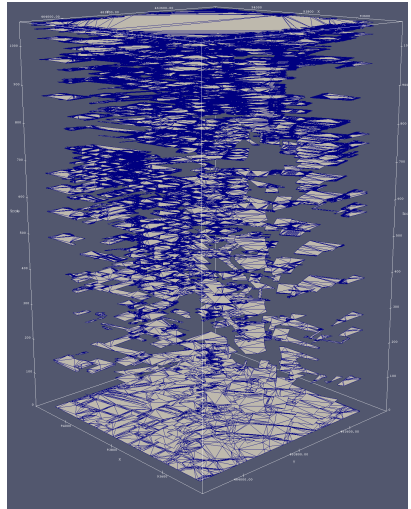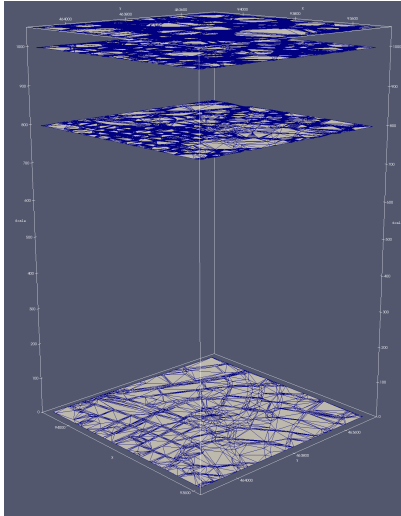
# Testing dataset

- Area of 9x9 km
- 13k faces as input
- 17 mil. triangles in SSC viewer

# Testing

- 26 people tested (24 valid) in 2 rounds
- We measured: times, locations, scale values
- Questionnaire
- Screen captured, voice recording
- 8 control keys (4 arrows, and 4 yellow on picture)

# Questionnaire

- Gender, Age
- How often they use maps in any form.
- Their preference in the test (first of second map).
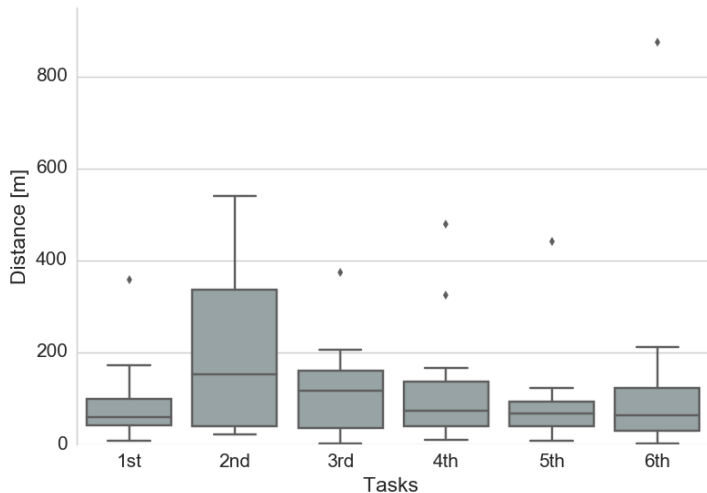- What was the most missing aspect (not implemented yet).
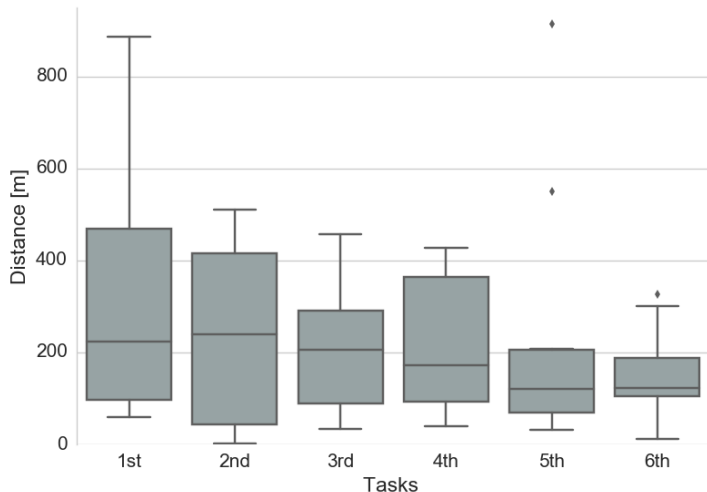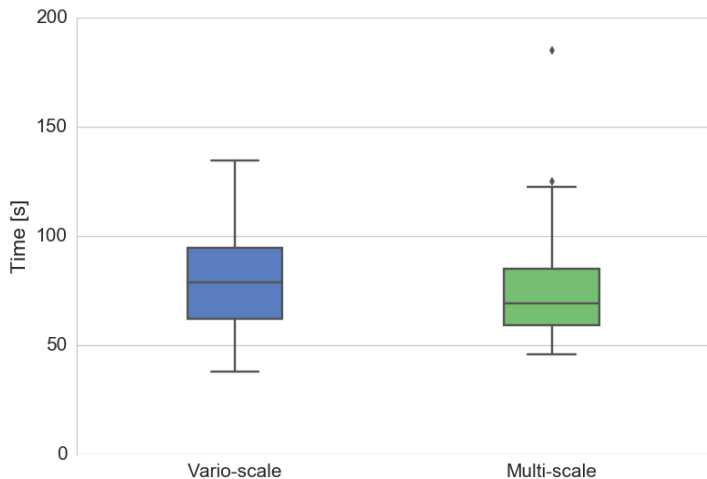
# Order of the tasks

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## Time for task
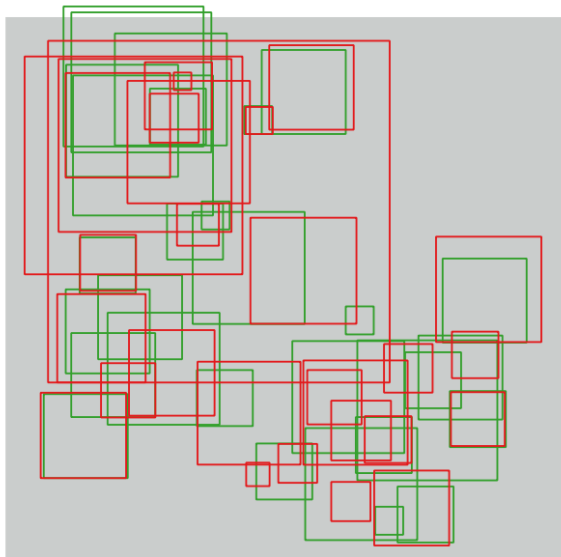
Distance between starting and ending location

# Distance between starting and ending location
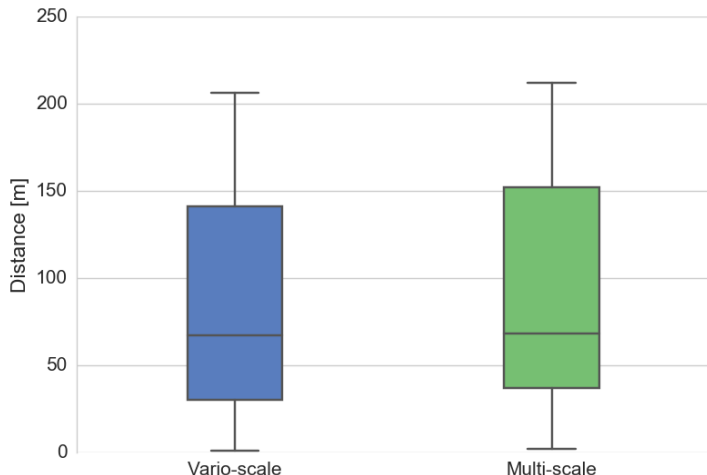
# Time to zoom in, move and zoom out
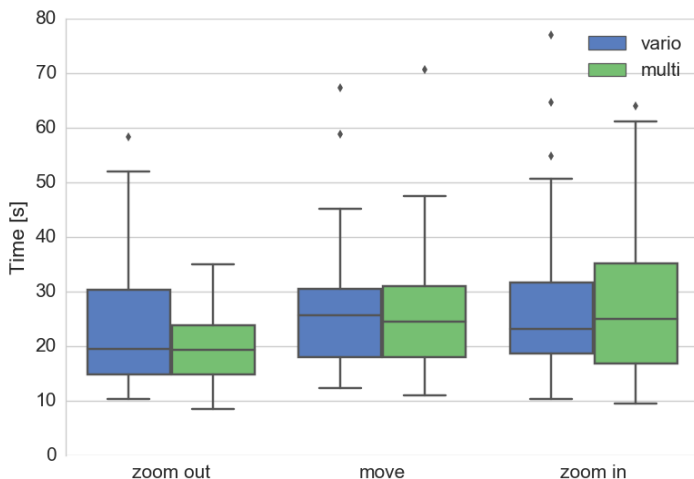
- the differences are too negligible.
- Initial testing with 24 users is inconclusive.
- Vario-scale is slower but more precise (tiny differences).
- Easier to find original scale in multi-scale (less options).
- Users didn't feel any differences between datasets.
- Test set-up with more natural GUI: mouse interaction.
- influence of **too many factors** such as colour schema, controls, size of dataset and type of task

# Future

- Different task (less memory exercise)
- Analyse different content generation strategies
- Use of different tools (colour blending, local magnifier, perspective view)
- Different types of mouse/keyboard interaction
- Animation / morphing techniques

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