TNA Report

Title:	**Strategic Spatial Visualization and Interactive Decision Simulation**
ID:	#141
Access provider:	HLRS, University of Stuttgart
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Start date:	25.11.2013
End date:	06.12.2013

Challenges

3D visualization and 4D simulation for a holisitic city model (case study: Vienna) supporting the development of planning strategies for energy- and mobility awareness planning (decision simulation - decision support systems - planning support systems).

Objectives:

- Finding new ways how to deal with complex, different aggregated data sets in combination with a 3D visualization.
- Exploring new methods (technique of modelling and implementation of data) for fast, interactive multi-scale models (from an urban overview to a detailed house)
- Understanding which and how different data sets need to be visualized and combined in order to generate an added value for energy-consious urban planning strategies.
- Exploring new ways in the context of interactive modelling for collaborative and participative planning processes (team-oriented decision making for lay-persons, experts and none-experts) using different interaction modi (tracking, haptic perception, etc.)

In summary the challenges are the visualization of diverse linked data sets on different scales, to reduce complexity of the model while at the same time generating useful simulation outcomes and to the parametrization and aggregation of data.

Work Description

- COVISE Training
- Programming/Scripting Training (Open Scene Graph / osgEarth)
- 3D Modelling & Simulation
- Export and test of osgEarth in conjunction with COVISE

Results

- osgEarth investigated in detail as an approach for required fuctionality, but osgEarth removes granularity of data read into the module.
- tried an adhoc solutions for visualisation
- performance considerations regarding visualisation of huge GIS data sets
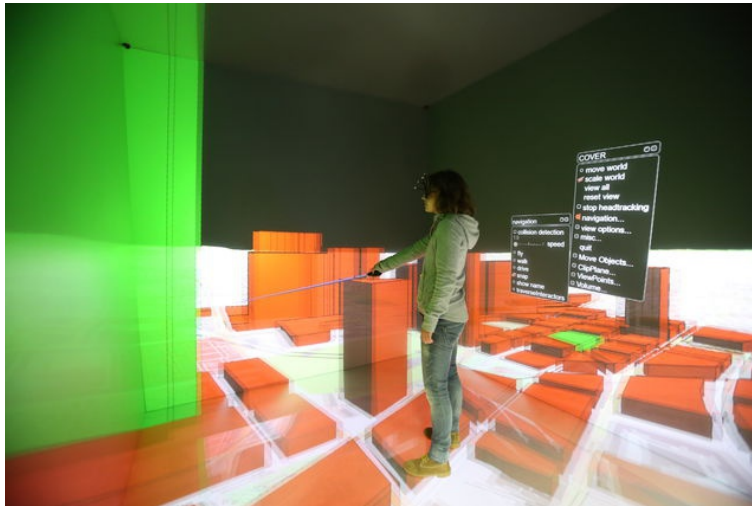
Future Work

- system design of a visualization frontend for GIS data
- user interface design, what the user should be able to modified online / during visualization, what parameters are important
- new PlugIn for COVISE with Interface to PostgreSQL / GIS-DB used by the user; to be implemented by user and host
- testing and validation should be conducted within a second TNA

Date: 01/01/2014
Signature of the User: Julia Forster