Research summary

Research contribution within	RGI-011A, RGI-029 (Bsik Ruimte voor Geo-Informatie)
External part	Private enterprise of Ludvig Emgård (Sweden)
Research partners	SWECO AB, Lund Institute of Technology (Sweden)
Research coordinator	Sisi Zlatanova, GISt, OTB, TU Delft
Time period	1 January – 31 December 2007

Mr. Ludvig Emgård joined the GISt group at TU Delft in 2007. The aim of the research visit was to participate in the RGI-011A project as an external company and the objective of RGI-011A was to compare data structures in 3D city models from different external parts. Therefore a methodology for generation of city models was created by Ludvig Emgård and a 3D city model was created using this methodology with a test dataset covering TU Delft Campus. In addition, an initial version of a new 3D data structure named 3DIM was created. The data structure was produced as a part of the RGI-029 project with focus on harmonization of underground features where a framework for harmonization was developed in a DBMS. Several practical tests with data where performed in the Oracle Spatial DBMS as well as the FME environments. The research period resulted in two reviewed publications, a testing report of Oracle Spatial functionality as well as a technical report of the testing. The research was disseminated at three international conferences. In December 2007 in Delft the data structure was presented and compared with the other external parts within the project. Furthermore the work resulted in future ideas which were gathered in a NWO PhD proposal submitted in March 2008.

Results

- Emgård, L. 2007 Geo-DBMS harmonization of subsurface threedimensional geo-information related to infrastructure. Preparation Research Paper
- K.L Emgard, M. Sc drs. T.P.M. Tijssen dr. S. Zlatanova ir. S. Oude Elbrink prof. dr.ir. P.van Oosterom,(2007) Oracle Spatial 11g Beta testing report
- Emgård, L. and S. Zlatanova, 2008, Design of an integrated 3D information model, in Coors, Rumor, Fendel&Zlatanova (eds.) Urban and Regional data Management, UDMS Annual 2007, Taylor&Francis Group, London, pp. 143-156
- Emgård, L. and S. Zlatanova, 2008, Implementation alternatives for an integrated 3D information model, in: Van Oosterom, PJM, S. Zlatanova, F. Penninga and E. Fendel (eds.), Advances in 3D Geoinformation Systems, lecture Notes in Geoinformation and Cartography, Springer-Verlag, Berlin, Heidelberg, pp. 313-329
- Emgård, L (2007) 3DIM database testing documentation
- Emgård, L, Zlatanova, S. - 3DIM a formalized and integrated three-dimensional information model (NWO research proposal)

Dissemination

- 2nd International Workshop on 3D Geo- Information: Requirements, Acquisition, Modelling, Analysis, Visualisation,12-14 December 2007, Delft, the Netherlands
- UDMS, 10-12 October 2007, Stuttgart, Germany
- OGC technical meeting, June, 2007, Paris
- Swedish National GIS conference (Kartdagarna 2007), Jönköping, Sweden