

Contents

Realistic Benchmarks for Point Cloud Data Management Systems.	1
Peter van Oosterom, Oscar Martinez-Rubi, Theo Tijssen and Romulo Gonçalves	
Does a Finer Level of Detail of a 3D City Model Bring an Improvement for Estimating Shadows?	31
Filip Biljecki, Hugo Ledoux and Jantien Stoter	
Interactive and View-Dependent See-Through Lenses for Massive 3D Point Clouds	49
Sören Discher, Rico Richter and Jürgen Döllner	
Representation of CityGML Instance Models in BaseX.	63
Sabine Koch and Marc-O. Löwner	
A Spatio-Semantic Query Language for the Integrated Analysis of City Models and Building Information Models	79
S. Daum, A. Borrmann and T.H. Kolbe	
A Methodology for Modelling of 3D Spatial Constraints	95
Daniel Xu, Peter van Oosterom and Sisi Zlatanova	
Reconstructing 3D Building Models with the 2D Cadastre for Semantic Enhancement.	119
Frédéric Pedrinis and Gilles Gesquière	
A 3D LADM Prototype Implementation in INTERLIS	137
Eftychia Kalogianni, Efi Dimopoulou and Peter van Oosterom	
Web-Based Tool for the Sustainable Refurbishment in Historic Districts Based on 3D City Model	159
Iñaki Prieto, Jose Luis Izkara and Rubén Béjar	

Terrestrial Laser Scanners Self-calibration Study: Datum Constraints Analyses for Network Configurations	171
Mohd Azwan Abbas, Halim Setan, Zulkepli Majid, Albert K. Chong, Lau Chong Luh, Khairulnizam M. Idris and Mohd Farid Mohd Ariff	
Managing Versions and History Within Semantic 3D City Models for the Next Generation of CityGML	191
Kanishk Chaturvedi, Carl Stephen Smyth, Gilles Gesquière, Tatjana Kutzner and Thomas H. Kolbe	
Cartographic Enrichment of 3D City Models—State of the Art and Research Perspectives	207
Stefan Peters, Mathias Jahnke, Christian E. Murphy, Liqiu Meng and Alias Abdul-Rahman	
Comparison of 2D & 3D Parameter-Based Models in Urban Fine Dust Distribution Modelling	231
Yahya Ghassoun and M.-O. Löwner	
Investigating Semantic Functionality of 3D Geometry for Land Administration	247
George Floros, Eva Tsiliakou, Dimitrios Kitsakis, Ioannis Pispidikis and Efi Dimopoulou	
3D Complete Traffic Noise Analysis Based on CityGML	265
Lu Lu, Thomas Becker and Marc-Oliver Löwner	
Highly Efficient Computer Oriented Octree Data Structure and Neighbours Search in 3D GIS	285
Noraidah Keling, Izham Mohamad Yusoff, Habibah Lateh and Uznir Ujang	
Framework for on an Open 3D Urban Analysis	305
Marc-O. Löwner and Thomas Becker	
Usability Assessment of a Virtual Globe-Based 4D Archaeological GIS	323
Berdien De Roo, Jean Bourgeois and Philippe De Maeyer	
Temporal and Spatial Database Support for Geothermal Sub-surface Applications	337
M. Jahn, M. Breunig, E. Butwilowski, P.V. Kuper, A. Thomsen, M. Al-Doori and E. Schill	
Automatic Semantic and Geometric Enrichment of CityGML Building Models Using HOG-Based Template Matching	357
Jon Slade, Christopher B. Jones and Paul L. Rosin	

Stochastic Buildings Generation to Assist in the Design of Right to Build Plans 373
 Mickaël Brasebin, Julien Perret and Romain Reuillon

3D Marine Administration System Based on LADM 385
 Aikaterini Athanasiou, Ioannis Pispidikis and Efi Dimopoulou

Assessing the Suitability of Using Google Glass in Designing 3D Geographic Information for Navigation 409
 Kelvin Wong and Claire Ellul

Review and Assessment of Current Cadastral Data Models for 3D Cadastral Applications 423
 Ali Aien, Abbas Rajabifard, Mohsen Kalantari and Ian Williamson

The Hierarchical Three-Dimensional (3D) Dynamic Water Infiltration on Multi-layers of Soil According to Voronoi Sequence Nodes Based on the Three-Dimensional Triangular Irregular Network (3D TIN) 443
 Siti Nurbaidzuri Reli, Izham Mohamad Yusoff, Habibah Lateh and Uznir Ujang

A Data Model for the Interactive Construction and Correction of 3D Building Geometry Based on Planar Half-Spaces 461
 Martin Kada, Andreas Wichmann, Nina Manzke and Yevgeniya Filippovska

The Potential of the 3D Dual Half-Edge (DHE) Data Structure for Integrated 2D-Space and Scale Modelling: A Review 477
 Hairi Karim, Alias Abdul Rahman, Pawel Boguslawski, Martijn Meijers and Peter van Oosterom

Towards Integrating BIM and GIS—An End-to-End Example from Point Cloud to Analysis 495
 Claire Ellul, Gareth Boyes, Charles Thomson and Dietmar Backes



<http://www.springer.com/978-3-319-25689-4>

Advances in 3D Geoinformation

Abdul-Rahman, A. (Ed.)

2017, VII, 512 p. 266 illus., 204 illus. in color.,

Hardcover

ISBN: 978-3-319-25689-4