

GeoWeb 2009 Academic Track - Cityscapes

Vancouver, Canada
July 27 - 31, 2009



Editors:
Thomas H. Kolbe
Hao Zhang
Sisi Zlatanova



The Academic Track of the GeoWeb 2009 conference is co-organized by the Working Groups III/4, IV/8 and IV/5 of the International Society for Photogrammetry and Remote Sensing (ISPRS), Galdos Systems Inc. and the Simon Fraser University

This book is published on CD ROM and Internet only within the
International Archives of Photogrammetry, Remote Sensing, and Spatial Information Sciences,
Vol. XXXVIII-3-4/C
ISSN 1682-1777

International Society for Photogrammetry and Remote Sensing (ISPRS), 2009

Cover picture courtesy of Lutz Ross, Birgit Kleinschmit, Technische Universität Berlin.
The illustration shows a project result from the research project "REFINA 3D" funded by
the German Federal Ministry of Education and Research.

Layout and Production of the Proceedings Volume: Hartmut Lehmann, Technische Universität Berlin.

TABLE OF CONTENTS

Session I: Semantics, Wednesday, July 29, 10:30 am – 12:00 pm

- TOWARDS SEMANTICALLY ENRICHED 3D CITY MODELS: AN ONTOLOGY-BASED APPROACH
C. Métral, G. Falqueta, Centre universitaire d'informatique, University of Geneva, Switzerland
A.F. Cutting-Decelle, Ecole Centrale de Lille / LGIL, Cité Scientifique, France **p. 40**
- GENERALIZATION OF SEMANTICALLY ENHANCED 3D CITY MODELS
R. Guercke, C. Brenner, M. Sester, Leibniz Universität Hannover, Institute of Cartography and Geoinformatics, Hannover, Germany **p. 28**
- CONCEPTUAL REQUIREMENTS FOR THE AUTOMATIC RECONSTRUCTION OF BUILDING INFORMATION MODELS FROM UNINTERPRETED 3D MODELS
Claus Nagel, Alexandra Stadler, Thomas H. Kolbe, Institute for Geodesy and Geoinformation Science, Technische Universität Berlin, Germany **p. 46**

Session II: Navigation and 3D Cityscapes, Wednesday, July 29, 13:15 am – 14:15 pm

- EXTENDING A PEDESTRIAN SIMULATION MODEL TO REAL-WORLD APPLICATIONS
H. Kim and C. Jun, Dept. of Geoinformatics, University of Seoul, Seoul, Korea **p. 35**
- USING 3D URBAN MODELS FOR PEDERSTRIAN NAVIGATION SUPPORT
Jürgen Bogdahn, Volker Coors, University of Applied Sciences Stuttgart, Germany **p. 9**

Session III: Cityscape Processing and Analysis, Thursday, July 30, 10:30 am – 12:00 pm

- PERCEPTUALLY GUIDED GEOMETRICAL PRIMITIVE LOCATION METHOD FOR 3D COMPLEX BUILDING SIMPLIFICATION
Qing Zhu, Junqiao Zhao, Zhiqiang Du, Xiaochun Liu and Yeting Zhang
State Key Laboratory of Information Engineering in Surveying Mapping and Remote Sensing, Wuhan University, P.R.China **p. 74**
- SIMILARITY AMONG MULTIPLE GEOGRAPHIC REPRESENTATIONS
Vagner B. N. Coelho, Julia C. M. Strauch, Claudio Esperanca, Rio de Janeiro State University, Brazil **p. 16**
- ROOF PLANE EXTRACTION IN GRIDDED DIGITAL SURFACE MODELS
Ben Gorte, Optical and Laser Remote Sensing, Faculty of Aerospace Engineering, TU Delft, the Netherlands **p. 22**

Session IV: Practice and Experience I, Thursday, July 30, 13:15 am – 14:15 pm

- E-COLLABORATION BETWEEN THE PRIVATE AND THE CIVIL SECTOR: SUPPORT OF LONG-TERM UTILIZATION AND UPDATE OF OFFICIAL 3D CITY MODELS
L. Ross, und B. Kleinschmit, Berlin Institute of Technology, Germany
J. Döllner, Hasso-Plattner-Institute Potsdam, Germany
O. Schroth, University of British Columbia / ETH Zürich, Switzerland **p. 60**
- SEEING THE UNSEEN: DELIVERING INTEGRATED UNDERGROUND UTILITY DATA IN THE UK
Anthony R. Beck Anthony G. Cohn, Nadia Boukhelifa Gaihua Fu, University of Leeds UK
Jo Parker, UK Water Industry Research **p. 1**

Session V: Practice and Experience II, Thursday, July 30, 14:30 am – 15:30 pm

**INFORMATION MANAGEMENT IN CIVIL ENGINEERING INFRASTRUCTURAL DEVELOPMENT:
WITH FOCUS ON GEOLOGICAL AND GEOTECHNICAL INFORMATION**

W. Tegtmeier, S. Zlatanova, P.J.M. van Oosterom, Delft University of Technology, Delft, The Netherlands
W. Tegtmeier, H. R. G. K. Hack International Institute for Geo-Information Science and Earth Observation (ITC), Enschede, The Netherlands

p. 68

**RICH INTERACTIVE MAPPING EXPERIENCE THROUGH OPEN SOURCE FRAMEWORKS AND AJAX
DATA VISUALIZATION TECHNIQUES**

Steven A. Romalewski, Center for Urban Research at the Graduate Center of the City University of New York (CUNY) USA

p. 54

Further Information

CALL FOR PAPERS

p. 80

COMMITTEES

p. 81

TABLE OF CONTENTS

In alphabetical order with respect to the name of the first author

SEEING THE UNSEEN: DELIVERING INTEGRATED UNDERGROUND UTILITY DATA IN THE UK <i>Anthony R. Beck Anthony G. Cohn, Nadia Boukhelifa Gaihua Fu, University of Leeds UK Jo Parker, UK Water Industry Research</i>	p. 1
USING 3D URBAN MODELS FOR PEDERSTRIAN NAVIGATION SUPPORT <i>Jürgen Bogdahn, Volker Coors, University of Applied Sciences Stuttgart, Germany</i>	p. 9
SIMILARITY AMONG MULTIPLE GEOGRAPHIC REPRESENTATIONS <i>Vagner B. N. Coelho, Julia C. M. Strauch, Claudio Esperanca, Rio de Janeiro State University, Brazil</i>	p. 16
ROOF PLANE EXTRACTION IN GRIDDED DIGITAL SURFACE MODELS <i>Ben Gorte, Optical and Laser Remote Sensing, Faculty of Aerospace Engineering, TU Delft, the Netherlands</i>	p. 22
GENERALIZATION OF SEMANTICALLY ENHANCED 3D CITY MODELS <i>R. Guercke, C. Brenner, M. Sester, Leibniz Universität Hannover, Institute of Cartography and Geoinformatics, Hannover, Germany</i>	p. 28
EXTENDING A PEDESTRIAN SIMULATION MODEL TO REAL-WORLD APPLICATIONS <i>H. Kim and C. Jun, Dept. of Geoinformatics, University of Seoul, Seoul, Korea</i>	p. 35
TOWARDS SEMANTICALLY ENRICHED 3D CITY MODELS: AN ONTOLOGY-BASED APPROACH <i>C. Métral, G. Falquet, Centre universitaire d'informatique, University of Geneva, Switzerland A.F.Cutting-Decelle, Ecole Centrale de Lille / LGIL, Cité Scientifique, France</i>	p. 40
CONCEPTUAL REQUIREMENTS FOR THE AUTOMATIC RECONSTRUCTION OF BUILDING INFORMATION MODELS FROM UNINTERPRETED 3D MODELS <i>Claus Nagel, Alexandra Stadler, Thomas H. Kolbe, Institute for Geodesy and Geoinformation Science, Technische Universität Berlin</i>	p. 46
RICH INTERACTIVE MAPPING EXPERIENCE THROUGH OPEN SOURCE FRAMEWORKS AND AJAX DATA VISUALIZATION TECHNIQUES <i>Steven A. Romalewski, Center for Urban Research at the Graduate Center of the City University of New York (CUNY) USA</i>	p. 54
E-COLLABORATION BETWEEN THE PRIVATE AND THE CIVIL SECTOR: SUPPORT OF LONG-TERM UTILIZATION AND UPDATE OF OFFICIAL 3D CITY MODELS <i>L. Ross, und B. Kleinschmit, Berlin Institute of Technology J. Döllner, Hasso-Plattner-Institute Potsdam O. Schroth, University of British Columbia / ETH Zürich</i>	p. 60
INFORMATION MANAGEMENT IN CIVIL ENGINEERING INFRASTRUCTURAL DEVELOPMENT: WITH FOCUS ON GEOLOGICAL AND GEOTECHNICAL INFORMATION <i>W. Tegmeier, S. Zlatanova, P.J.M. van Oosterom, Delft University of Technology, Delft, The Netherlands W. Tegmeier, H. R. G. K. Hack International Institute for Geo-Information Science and Earth Observation (ITC), Enschede, The Netherlands</i>	p. 68
PERCEPTUALLY GUIDED GEOMETRICAL PRIMITIVE LOCATION METHOD FOR 3D COMPLEX BUILDING SIMPLIFICATION <i>Qing Zhu, Junqiao Zhao, Zhiqiang Du, Xiaochun Liu and Yeting Zhang State Key Laboratory of Information Engineering in Surveying Mapping and Remote Sensing, Wuhan University, P.R.China</i>	p. 74