PREFACE

Over the course of the last decade the mapping and modelling of indoor and enclosed spaces has received greater attention. Indoor space differs from outdoor space in many respects: the spaces are smaller; there are many constraints such as walls, doors, stairs, furniture and so forth. To be able to represent indoor spaces in a proper manner many data acquisition concepts, data models, and standards have to be redefined to meet the requirements of indoor spatial applications. The acquisition, modelling and navigation in indoor and enclosed environments continue to be the subject of active research. These research activities aim to 1) advance acquisition systems, modelling, mobile computing and augmented systems, and 2) support indoor application systems such as positioning and navigation or facility management to name a few.

Because of the increased research in this subject ISPRS Working group IV/7 in collaboration with WG I/2, ICWG II/IV, WG III/2 and WG IV/6 and OGC SWG IndoorGML are holding a conference on the subject of 3D indoor mapping, modelling, visualisation and navigation. This conference will be held from 11 – 13 December 2013 in Cape Town South Africa. It is hoped that this conference will provide a platform for further discussion and stimulate greater collaboration on 3D indoor mapping research.

1. GOALS AND OBJECTIVES

Research activities in indoor approaches for modelling and navigation has been matched by industry that has invested in commercial and open source applications. However the research is still very fragmented and application-specific. Therefore this conference has the following goals:

- To promote and advance indoor acquisition, modelling, visualisation and navigation research within the ISPRS community.

- To examine and evaluate the state of the art in all aspects of indoor modeling and navigation.

- To examine and evaluate the application of indoor models for navigation, crisis decision support systems, simulations, information systems, and augmented systems.

- To share best practices, discuss user requirements and explore opportunities for future research directions.

2. CONFERENCE TOPICS

Topics of interest included: Acquisition and Sensors, Data Structures and Modelling, Visualisation and Navigation of Indoor Models, Applications and User requirements and best practices. This conference will address the following aspects:

- Acquisition and Sensors: Fusion of imagery, point clouds and other data from indoor scenes, Data acquisition in dynamic or cluttered scenes, Simultaneous localisation and mapping, Sensor networks, localisation

- Data Structures and Modelling: Automated model creation from imagery, point clouds and other data, Data Structures (topology and geometry), Algorithms and standards for integration of BIM, CAD and GIS indoor models, Automated semantic description of indoor environments

- Visualisation and Navigation of Indoor Models: Visualisation, PoI and Landmarks strategies, Assisted navigation of indoor models, Mobile and web visualisation, Guidance

- Applications: Indoor modelling for crisis response, Evacuation and navigation systems, Simulation tools for crisis situations, Mobile applications and augmented systems, User requirements and best practices

- Standards: Security, privacy and legal considerations, Unification of indoor and outdoor models.

3. PROGRAMME COMMITTEE

Chairs (ISPRS WG IV/7): George Sithole, University of Cape Town, Sisi Zlatanova, Delft University of Technology, Masafumi Nakagawa, Shibaura Institute of Technology, Qing Zhu, Wuhan University

Co-Chairs: Norbert Haala - Chair ISPRS WG I/2 (University of Stuttgart), Mir Abolfazl Mostafavi - Chair ICWG II/IV (Laval University), Sander Oude Elberink - Chair WG III/2 (University of Twente), Steve H.L. Liang - Chair WG IV/6 (University of Calgary), Ki-Joune Li – Chair SWG IndoorGML (Pusan National University)

Scientific Committee: Costas Armenakis, York University, Timo Balz, Wuhan University, Martin Breunig, Karlsruhe Institute of Technology (KIT), Christophe Claramunt, Naval Academy Research Institute Lanvéoc-Poulmic, Eliseo Clementini, University of L'Aquila, Marian de Vries, Delft University of Technology, Eduardo Diaz, VU Amsterdam University, Claire Ellul , University College London, Yao-Ming (Frank) Fang, Feng Chia University, Ben Gorte, Delft University of Technology, Norbert Haala, University of Stuttgart, Ihab Hidjazi, An-Najah National University, Bo Huang, The Chinese University of Hong Kong, Chih-Yuan (Alec) Huang, University of Calgary, Umit Isikdag, University of Central Lancashire, Dorota Iwaszczuk, Technische Universitaet Muenchen, Krzysztof Janowicz, University of California, Santa Barbara, Jie Jiang, National Geomatics Center of China, Martin Kada, University of Osnabrueck, Zhizhong Kang, China University of Geosciences in Beijing, Kourosh Khoshelham, University of Twente, Margarita Kokla, Technische Universitaet Muenchen, Thomas Kolbe, National Technical University of Athens, Kris Kolodziej, aisle411, Inc., Wolfgang Kresse, Neubrandenburg University of Applied Sciences, Petr Kubicek, Masaryk University, Florent Lafarge, INRIA, Jiyeong Lee, University of Seoul, Franz Meyer, University of Alaska Fairbanks, Darka Mioc, Denmark Technical University, Jeremi Morley, Nottingham University, George Percivall, Open Geospatial Consortium, Alexander Velizhev, Hexagon Technology Center GmbH, Edward Verbree, Delft University, The Netherlands, Ruisheng Wang, University of Calgary, Stephan Winter, University of Melbourne, Alexander Zipf, University of Heidelberg

Chair, Local Organizing Committee: George Sithole, University of Cape Town, Sisi Zlatanova, Delft University of Technology, Heidi Tait, Unversity of Cape Town.

4. PAPER SELECTION PROCESS

5 full papers and 14 extended abstracts were submitted to the conference. The papers and abstracts were double blind reviewed by the members of the SC. Accepted papers are published in the ISPRS Annals or the ISPRS Archive.

5. ACKNOWLEDGEMENTS