

# 28<sup>th</sup> Symposium of the Urban Data Management Society UDMS 'Making contributions to the future'

Organized with ISPRS WG IV/8

Delft University of Technology, Delft, The Netherlands, September 28-30, 2011



Delft: TUD Campus



Canals in Delft



Town Hall

Since 1971, the Urban Data Management Society (UDMS) has organized international symposia at various locations in Europe to promote the development of information systems at the local government level. At first, the focus of these symposia was mostly on urban applications, but regional and rural issues have both grown in importance over the years. Nowadays, an important aim of UDMS is to provide a forum for people to discuss new approaches, to consider new technologies, and to share practical experiences in the field of urban data management.

After 27 successful symposia, the 28th edition of UDMS was held in Delft, the Netherlands, in September 2011. This is a city and a country that many of the organizers of UDMS have called 'home' for years. 2011 was also special for UDMS since it celebrated its 40th anniversary, which is special for a geo-conference and a valuable basis on which to form plans for the future. Consequently the theme of UDMS 2011 was 'Making contributions to the future'. The symposium CfP encouraged submission of technical, scientific and practical papers as follows:

- UDMS Technical Issues:
  - 3D for municipalities and citizens: reconstruction, processing, analysis & visualisation
  - Systems and sensors for monitoring urban and regional environments
  - Semantic web for urban applications
- UDMS Practitioner issues:
  - Cooperation among local authorities in urban data management
  - Lessons learned from 40 years of experience and their future application
  - Impacts & implications of social networks/twitter Google Earth and other internet services to government IT/data production/distribution/use
  - Uses and applications of UDM among local and national governments

The call for papers attracted about 60 full papers, of which 43 were selected for two types of publications: (1) a book published by Taylor and Francis; (2) an ISPRS proceedings. The symposium was attended by 80 participants from 18 countries: Italy, Germany, Spain, Netherlands, France, UK, Turkey, Norway, Greece, Poland, Belgium, Czech Republic, Malaysia, Japan, USA, Mexico, Canada and Brazil. UDMS has never been organized outside Europe and it has been always pleasant to have participants from all over the world. The participants came from universities and research institutes, but some were also from applied institutions, municipalities and companies, primarily from the Netherlands. The conference was very well organized by the local committee and included enough time for discussion and exchange between the participants after the talks and during breaks.

The symposium was opened by prof. Massimo Rumor, president of UDMS, who welcomed the participants and elaborated on the importance of data management in current busy and complex cities and infrastructures. Prof. Willem Korthals Altes, Director of the OTB Research Institute for the Built Environment gave a welcome speech expressing his pleasure to accommodate the UDMS symposium for its 40<sup>th</sup> anniversary.

The symposium started with a keynote 'Question of Scale, Data, Models, Design, Theory and Prediction' given by Mike Batty, Bartlett Professor of Planning, UCL, Director, CASA. Mike Batty gave the necessity of reconsidering modelling in GI-Science and explained models with their definition, types and principles. He also exemplified these issues with some projects and predicted the impact of rethinking modelling in Geospatial field. After this very interesting presentation the sessions were opened. As usual the symposium had only two parallel sessions, which give the possibility to make very well focussed sessions allowing enough time for discussion and exchange between the participants after the talks and during breaks. The first day the two parallel topics of the symposium were '3D data modelling and applications' and 'Data management for the local governments'. The second day started with a keynote of Louis Smit, the manager of the Geo Information Department of the City of Rotterdam. He discussed the role of 3D geo-information in his city, the 3D models that the city has and their use in different applications. He announced that the LOD2 of the buildings of the City of Rotterdam are freely available for download for everyone. The major themes of the second day were 'Data and generalisation' and 'Environmental monitoring and assessment'. In the afternoon a dynamic municipal session was organised. The third day was devoted to two short sessions on 'Remote sensing for urban applications' and 'Data and generalisation'. The third keynote speech was given by Ursula Eicker, head of the Centre for Sustainable Energy Technology at Stuttgart University, Germany. The topic was 'Energy Efficient Cities – simulating energy demand and energy production using 3D city models'. She, taking CityGML as an example, illustrated assessment of energy demand and production computation by employing 3D City Models, which yields promising results. The symposium was closed by prof. Peter van Oosterom and prof. Massimo Rumor.

As in previous editions of UDMS, the third dimension was one of the most important topics, and several very interesting papers were presented. They all confirmed that the use of 3D GIS for urban and regional planning is a growing trend that can be observed by the increasing number of tools available (for example CityGML) and by the increasing number of conferences and workshops dedicated to 3D. For example, the attention was drawn to a correct and unambiguous definition of a 3D cadastral object arguing that property rights are gradually replaced by complex 3D spatial definitions, but ambiguity in the definition of a property can lead to expensive legal disputes. Several papers discussed the potential of Building Information Models (BIM) in urban data management. BIMs are increasingly used in construction and design and can be successfully integrated with GIS models, which offers new opportunities for urban management. A number of papers addressed different aspects of indoor navigation: extending the tagging schema of Open Street Map for indoor environments; a 3D data model to support individual traveller routing when using public transport, and to consider specific preferences and constraints for the pedestrian part of the journey (mostly indoor); and a framework for indoor navigation of rescuers. Different approaches for 3D modelling of architectural heritage or for building efficiency were also presented and discussed.

Data management and information sharing with citizens has been always discussed during UDMS events. Although the focus might be different, e.g. public participation systems, spatial information infrastructures, e-governments or standards for exchange of information, the purpose remains the same, i.e. supporting local governments and informing citizens with the ultimate goal to ensure sustainable development. This year several papers addressed such issues. The project Plan4all was presented, which aims at establishing a European network of public and private organizations involved in spatial planning and regional development. Several papers discussed the importance of volunteers to collect geographic information and options to integrate it with spatial data infrastructures or for urban design intervention and transportation safety. Several papers addressed issues related to improving the dialog with the citizens and engage them in the governing process by applying a systematic approach to collection, reuse and sharing of data and information. All papers recognize the increased importance of Internet tools and community sites for exchange of information.

The role of geo-information in environmental monitoring and assessment is progressively increasing. A number of papers illustrated this trend by presenting different applications of use of urban data to monitor and analyze urban processes and phenomena. Few papers focused on Urban Heat Islands, which have impact on the quality of life and energy consumption in urban settlements. They presented either a methodology for data measurement and estimation to define relationships between factors that play a role in this phenomena or management of information. An other paper presented an interesting study on the effects of population growth in Athens. The research reveals that there is lack of open spaces and green areas, although the city can be considered sustainable in terms of transportation. Vulnerability issues were also discussed including forestry fire protection models and 3D models for crime analysis. A very interesting paper illustrated a more general approach of

'systemic' vulnerability evaluation, which estimates the relationship between extreme events and direct/indirect consequences of this event on the territorial system.

Although UDMS concentrates mostly on data management, at each event several high quality data collection papers are usually presented. The papers in 2011 followed that trend, but now in 3D. Several papers were devoted on 3D reconstruction from various sensors or visualization of raw data. One paper discussed a LIDAR VR, which uses high-speed spatial interpolation applying a point cloud to generate VR data.

As mentioned above the papers are published in a book, 'Urban and Regional Data Management, UDMS Annual 2011', (eds) Zlatanova, Ledoux, Fendel and Rumor, Taylor and Francis (<http://www.taylorandfrancis.com/books/details/9780415674911/>) and in the ISPRS Archives 'UDMS at 40 years: making contributions to the future', (eds) Fendel, Ledoux, Rumor and Zlatanova (<http://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XXXVIII-4-C21/>).

Following the tradition of UDMS most of the participants enjoyed good food and a very friendly atmosphere at the Conference dinner held in the old city of Delft, strengthening well-established relationships and making new ones.

Overall it can be said that UDMS 2011 was a very successful and interesting conference with a broad range of high level presentations related to cities, management of urban data and application. It clearly showed that 3D applications are increasing and the need for developing 3D tools, software for analysis is getting more urgent. The presentation of several municipalities have shown that 3D data are increasingly available and the municipalities are looking forward for finding a good use of it. Energy, energy use and solar energy is one of the emerging applications in which 3D models can successfully be organised.

The next UDMS symposium will be held in London on May 15-17, 2013, again in cooperation with ISPRS.

UDMS 2011 Conference Chairs:

Sisi Zlatanova, Massimo Rumor, Hugo Ledoux and Elfriede Fendel