JIGC 2015

JOINT INTERNATIONAL GEOINFORMATION

&

NATIONAL UNDERGROUND UTILITY MAPPING CONFERENCE

JIGC 2015 • 28 - 30 OCT. 2015 • KUALA LUMPUR • MALAYSIA

PROGRAM BOOK

www.geoinfo.utm.my/jointgeoinfo2015

GGT Geomatic & Geospatial Technology International Conference

GeoAdvances 2015

3DGeoinfo

isprs information from imagery

Main Organizers

UTM Universiti Teknologi Malaysia

GLS Division

Supported by

JUPEM

PEJUTA

Land Surveyors Board, Peninsular Malaysia

In this information age, the requirements and expectations of consumers are rapidly changing with time and becoming more complex due to improved educational levels and various information avenues available to them. As a result, consumers are more knowledgeable and discerning in their choice of services including matters pertaining to properties. The ongoing trend in the services sector leads to increased competitiveness including those of land surveying services. As a provider of these services, it is imperative that land surveyors, under the auspicious of the Board, place a premium emphasis on the quality of their services to ensure that these complex needs and expectations are fulfilled. As on previous occasions, the Board will continue to assist Land Surveyors in providing facilities and fundings in order to enhance their image and professionalism. Nonetheless, at the same time, Land Surveyors are urged to be more innovative and productive in providing services to their clients without compromising on ethics and the prescribed regulations. Their adherence will ensure that they provide value added services thus be more competitive in a conducive environment for the benefit of all concerned.

In this respect, lifelong learning is viewed as a requisite by which land surveyors are able to keep abreast with ever changing technological advancements in land surveying and cadastral environment. It is therefore vital for land surveyors to participate in various Continuing Educational and Professional Development programmes to ensure the attainment of this objective. The ongoing close cooperation and cordial relations among the Board, Licensed Land Surveyors and the Department of Survey and Mapping Malaysia and other related agencies have helped to create a harmonious environment in the spirit of mutual understanding and respect. The Board, on its part, have always resolved to provide quality services in order to be effective and transparent in maintaining its integrity. By providing quality services, the Board will be able to foster better understanding and cordial relationship with all parties concerned thereby enhancing the land surveying profession.

Welcome to JIGC 2015

The Joint International Geoinformation Conference (JIGC) aims at bringing together international state-of-the-art research and facilitating the dialogue on emerging topics in the field of geo-information science and technology. The conference offers an interdisciplinary forum in the fields of multi-scale and multi-dimensional modelling and data representation including collection, modelling, management, maintenance, analysis and visualization of spatial information including 3D. We sincerely welcome you to take part in this activity by sharing with us your expertise and passion for geospatial data, technologies and applications.

It is our great pleasure to invite all of you to the joint conference where five conferences meet at one place, Kuala Lumpur, Malaysia from 28 - 30 October 2015.

- 10th 3D Geoinfo Conference
- 1st Conference on Geomatic and Geospatial Science & Technology
- 2nd Workshop on Geoinformation Advances
- 2nd ISPRS WG II/2 Workshop, and
- National Underground Utility Mapping Conference (NUUM)

Kuala Lumpur is the city where the 3D Geoinfo was born in 2006. Thus, year 2015 will be the 10th anniversary for the conference series. We also would like to introduce a brand new conference – International Conference on Geomatic and Geospatial Technology, and the first conference organized by the Geomatic and Land Survey (GLS) Division of the Royal Institution of Surveyors Malaysia (RISM). GeoAdvances and ISPRS WG 2/II have been organized by the University of Technology Malaysia (UTM) with colleagues from ISPRS (International Society for Photogrammetry and Remote Sensing) since last few years. JUPEM - the Malaysian national agency for Surveying and Mapping is carrying out the National Underground Utility Mapping Conference (NUUM).

This document includes all the information you will need as an attendee of the JIGC 2015. We are glad to see you at our conference and hope you have a great time!

Contents

WELCOME MESSAGE FROM SECRETARY GENERAL

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT MALAYSIA

I would like to congratulate the JIGC Organising Committee for organising the Joint International Geoinformation Conference and National Underground Utility Conference 2015 (JIGC & NUUM 2015). This event, consist of 2 important conferences touching on the development of geospatial science and technology for both surface and subsurface applications. With the current circumstances in which disasters happen at a regular interval such as the recent earthquake and the current haze situation, it is vital for leaders and technocrats to work together for solutions to mitigate its effect on societies.

Thus this event is timely as the latest geospatial technology provides the foundations for addressing the various disaster issues and ensuring a safe sustainable future for our planet.
Thus, I am confidence that this conference will allow researchers, industry players, academicians and decision makers to share their experiences and knowledge to generate innovative research with the use of geospatial technologies efficiently and provide solutions to various issues of governance.

As for the participants, I encourage everyone to engage in fruitful discussions with leaders of the geoinformation industry on creative and innovative ways that will drive the geoinformation industries to the next level. At the same time, I take this opportunity to congratulate the winners of the International Mapping Year Competition for their creative and innovative use of geospatial data to produce maps. This effort, I hope will spur more interest amongst researcher to carry out more innovative research and development involving geoinformation technologies. Last but not least, I wish JIGC and NUUM 2015 the very best of success. Thank you.

Dato' Sri Azizan bin Ahmad
Secretary General
Ministry of Natural Resources and Environment

WELCOME MESSAGE FROM THE CHAIR OF JIGC 2015

First of all, I would like to thank the Ministry of Natural Resources and Environment Malaysia, and Universiti Teknologi Malaysia for their excellent support and cooperation on this event. This international conference on Geoinformation is the first of its kind held in this region and co-organized by ISPRS (International Society of Photogrammetry and Remote Sensing), LJT (Land Surveyors Board of Peninsular Malaysia), and JUPEM (Department of Survey and Mapping Malaysia). The event is also supported by Antaragrafik (platinum sponsor), a multinational software vendor.

The idea of this conference is to provide a platform for researchers, scientists, and software developers to meet and discuss on the new research and development and trends in GIS. It is a new field and certainly there are a lot of uncertainties, problems, issues, and challenges need to be addressed. Indeed, this event could generate more interesting research ideas and novel approaches.

The conference has attracted many professionals and researchers from universities, research centres, research institutions, and government agencies around the globe. The technical presentations are in the form of oral and poster sessions. More than 100 highly technical were admitted by the international scientific committee and the accepted papers were published by Springer in the series Lecture Notes in Geoinformation and Cartography, ISPRS Annals and Archives.

I hope this conference will serve as a starting point for the GIS community especially scientists and researchers to work together and synergize the efforts in realizing the GIS solution in the very near future. Finally, I would like to acknowledge and highly appreciate international scientific committee members, local organizing committee members, exhibitors, and other individuals for their great contributions.

Prof. Alias Abdul Rahman

CHAIR JIGC 2015

CHAIR GGT & CHAIR 3D GEOINFO 2015

Head of Geospatial Information Infrastructure Research Group, Dept. of Geoinformation, Universiti Teknologi Malaysia

WELCOME MESSAGE from the CHAIR of GEOADVANCES 2015

Welcome to the 2nd of the International Workshop on Geoinformation Advances series. The conference series covers a wide range of topics including 3D Cadastre, 3D Marine Information Systems, Change Detection, Data Capture and Updating, Image-Based, Point Cloud and Crowdsourced Updating of Geospatial Databases, Digital Landscape and Urbanscape Modeling and Visualization, Access To Remote Data Sources, -including Metadata and Open Source Digital Data Standards-, Automated Feature and Attribute Extraction Techniques and Methodologies From Multi-Sensor, Multi-Resolution, Multi-Spectral Hyperspectral and Multi-Temporal Imagery, Spatial, Spectral and Temporal Properties of Natural and Human-Formed Objects, Fundamental Research Into Image Understanding For Object Detection, Recognition, Identification and Reconstruction, Spatial Data and Model Quality, Spatial Reasoning and Spatial Data Mining, Interoperability of Heterogeneous Spatial Information Systems and System Integration, Geostatistics, Computer Graphics and Cloud Computing For Spatial Data and Information, 3D to nD Spatial Information Modelling and Management, 2D and 3D City Modelling, Indoor Modelling.

The participants and research communities have always been the main strength of the conferences. Thus, I would like to thank all contributors of the conference including all authors of the papers, organizing committee, editorial review board members, session chairs, all presenters, our financial sponsors and academic partner universities for making 2nd GeoAdvances an excellent workshop. It is our pleasure and honor to host all of you in Kuala Lumpur, and I cordially wish that this workshop would be fruitful for all of you.

Assoc. Prof. Umit Isikdag

CHAIR, GEOADVANCES 2015
JIGC Conference Co-Chair
Mimar Sinan Fine Arts University, Turkey

WELCOME MESSAGE from the CHAIR of ISPRS WG II/2 WORKSHOP 2015

Welcome to the 2015 Workshop of the Working Group II/2 on Multiscale n-dimensional Spatial Data Representations, Data Structures. The ISPRS Working Group II/2 aims to promote the development of new methodologies, algorithms and applications related to the representation of n-dimensional spatial data at multiple scales. Another focus of the group is on the development of topological and geometric data models, data structures and algorithms for automatic n-dimensional data generalization at different levels of detail and for various purposes.

To this purpose, the WG organises workshops to exchange the latest developments on representation of n-dimensional spatial data at multiple scales.

It is my hope, that this workshop will benefit all its participants and help promote new collaborative works between its participants.

Assoc. Prof. François Anton

CHAIR, ISPRS WG II/2 WORKSHOP 2015

Department of Geodesy, National Space Institute, Technical University of Denmark

CONFERENCE DATE AND VENUE

28-30 October 2015, Kuala Lumpur, Malaysia

This joint conference also organizes one whole day tutorials (on 27 October 2015).

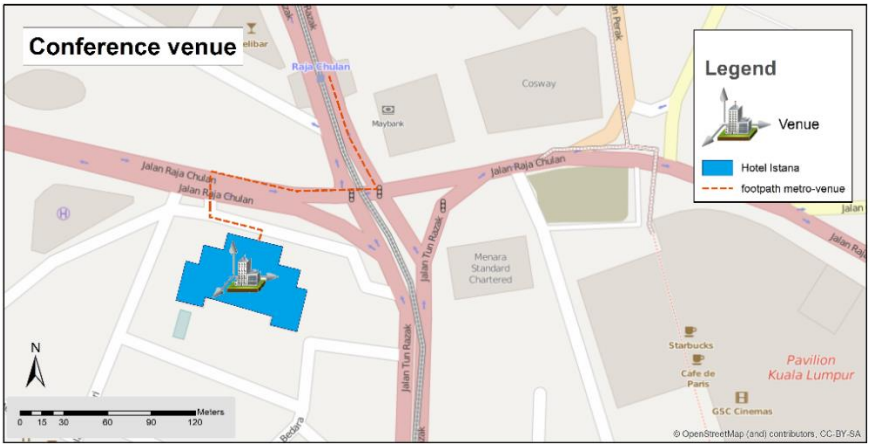
HOTEL ISTANA
KUALA LUMPUR CITY CENTRE

Hotel Istana

Kuala Lumpur City Centre
73 Jalan Raja Chulan
50200 Kuala Lumpur
Malaysia

- 1 block away from Pavillion shopping mall
- 5 min. walk to Fahrenheight, BB Plaza and other shopping malls
- 5 min. walk to Changkat Bukit Bintang - nightlife of the financial district with bars and restaurants
- 10 min. walk to Kuala Lumpur Convention Centre (KLCC) and Petronas Twin Towers, via the new air conditioned Skybridge

The conference venue “Hotel Istana” is a 5 Star hotel in Kuala Lumpur City Centre



GETTING THERE (from the airport to the venue)

Option #1 – public transport to city centre

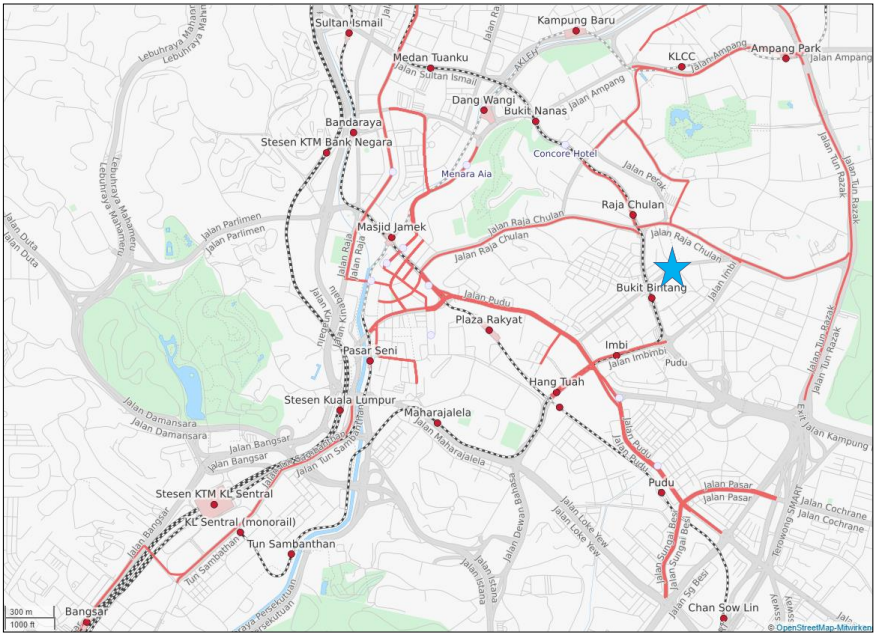
You can take KLIA express train from the International Airport which will take 30 minutes to reach KL-Sentral and will cost about RM 35 one way.

*...**from the city centre** to ★ Hotel Istana:*

From KL Sentral you can take Monorail electric train (red line) from KL-Sentral - direction to Titiwangsa - and you get off at Raja Chulan Station, which is just at the intersection from Hotel Istana. If you have lots of luggage then don't take Monorail and take a taxi from KL Sentral which will cost you around RM.

Option #2 – Taxi

You can take a taxi from the airport (KLIA1 or KLIA2) to our venue and that will take at least one hour to reach hotel depending on the rush hour traffic. Costs will be around RM 75 (budget taxi). We suggest to book a taxi at the Airport Limo counters



JOINT CONFERENCE 'FIVE-IN-ONE'

It is our great pleasure to invite all of you to the joint conference where five conferences meet at one place, Kuala Lumpur, Malaysia from 28 - 30 October 2015. Kuala Lumpur is the city where the first 3D Geoinfo was born in 2006. Thus, year 2015 will be the 10th anniversary for the conference series. We also would like to introduce a brand new conference - International Conference on Geomatic and Geospatial Technology, and the first conference organized by the Geomatic and Land Survey (GLS) Division of the Royal Institution of Surveyors Malaysia (RISM). GeoAdvances and ISPRS WG 2/11 have been organized by the Universiti Teknologi Malaysia (UTM) with colleagues from ISPRS (International Society for Photogrammetry and Remote Sensing) since last few years.

3D GEOINFO CONFERENCE

The 3D Geoinfo conference emphasizes on the third dimension. It is meant to be an interdisciplinary forum for leading researchers to present the latest 3D developments and 3D applications, to discuss cutting-edge 3D technology, to exchange research ideas and to promote international collaboration in this field. The conference will concentrate on these areas:

- Data collection and modelling: Advanced approaches for 3D data collection, re-construction and methods for representation
- Data Management: Topological, Geometrical and Network models for maintenance of 3D Geoinformation.
- Data Analysis and Visualization: Frameworks for representing 3D spatial relationships, 3D spatial analysis and algorithms for navigation, interpolation, etc. Advanced VR, AR and MR visualisation, 3D visualisation on mobile devices
- 3D Applications: City Models, Cadastre, LBS, etc.

The 10th International 3D Geoinfo conference aims at bringing together international state-of-the-art researchers and practitioners facilitating the dialogue on emerging topics in the field of 3D geo-information.

CONFERENCE ON GEOMATIC AND GEOSPATIAL SCIENCE & TECHNOLOGY

This annual conference aims at bringing together local and international state-of-the-art research and facilitating the dialogue on emerging topics in the field of Geo-information Science and Technology.

The conference is also meant to be an interdisciplinary forum for leading research student in related areas to present the latest developments and applications, to discuss cutting-edge technology, to exchange research ideas and to promote international collaboration in this field. It offers an interdisciplinary forum to research students in the closely related fields of:

- Requirements and standardizations: consistency and rules for the development of method and implementation.
- Data acquisition: methods in the handling of high accurate data acquisition, filtering, and storage.
- Data collection and modelling: advanced approaches for data collection, reconstruction and methods for representation.
- Data management: Dynamic topological, geometrical and network models for maintenance of geo-information in n-dimension.
- Data analysis and visualization: frameworks for representing spatial relationships, spatial analysis and algorithms for navigation, interpolation, etc. The results are supported by Advanced Virtual Reality and Augmented Reality visualization.
- Multi-dimensional GIS: Framework for different dimensionalities of geo-information and aspects of implementation and applications.
- Mobile GIS.
- A special focus will be on natural disaster application cases.

WORKSHOP ON GEOINFORMATION ADVANCES

The conference is for exploring ongoing research, development and innovative applications on dynamic and multi-dimensional geographic information science and technology and other related applications.

ISPRS WG II/2 WORKSHOP

ISPRS Working group II/2 aims to promote the development of new methodologies, algorithms and applications related to the representation of n-dimensional spatial data at multiple scales.

Another focus of the group is on the development of topological and geometric data models, data structures and algorithms for automatic n-dimensional data generalization at different levels of detail and for various purposes.

To this purpose, the WG organizes workshops to exchange the latest developments on representation of n-dimensional spatial data at multiple scales.

NATIONAL UNDERGROUND UTILITY MAPPING (NUUM) CONFERENCE

JUPEM - national agency responsible for carrying out surveying and mapping activities in Malaysia - is conducting National Underground Utility Mapping Conference (Invited Papers). The objective of this event is to discuss various issues in relation to handling underground utility mapping and related policies or regulations. The discussion will also include the state-of-the-art approaches being used for underground utility data acquisition, processing and analysis.

FIG – SEMINAR ABOUT GEOMATIC EDUCATION IN MALAYSIA

FIG has been the premier international organisation representing the interests of surveyors worldwide. This seminar will provide a forum for discussion aiming to promote professional and research practices in the field of Geomatic Education.

CONFERENCE PROGRAM

TUTORIALS (OCT. 27)

TUTORIALS		*Room: Safir II*
Tuesday, Oct. 27th (chair: Alias Abdul Rahman)	08:00-08:45	*Registration (open already on Oct 26th 3pm - 6pm)*
	08:45-09:00	Introduction to JIGC Tutorials by Alias Abdul Rahman
	09:00-09:45	**3D Modelling and Simulations using Airborne and Terrestrial LiDAR Datasets** Gurcan Buyuksalih, BIMTAS, Istanbul
	09:45-10:30	**3D Point Cloud Data Management** Mike Horhammer, Oracle, USA
	10:30-11:00	Coffee Break
	11:00-11:45	**Integrating and Analyzing BIM in GIS** Ihab Hijazi, National An Najah University, Palestine and Umit Isikdag, Beykent University, Istanbul
	11:45-12:30	**Real Time GIS in 3D** Morakot Pilouk, ESRI, Redlands, USA
	12:30-13:30	Lunch
	13:30-14:15	**CityGML Energy ADE - 3D City Models for Energy Simulation on Urban Scale** Volker Coors, HFT Stuttgart, Germany
	14:15-15:00	**3D and 4D Geospatial Databases** Martin Bruenig, KIT, Germany
	15:00-15:30	Coffee Break
	15:30-16:15	**3D Mapping and Products for National Mapping Agency** Rollo Home, Ordnance Survey, UK
	16:15-17:00	**3D Cadasters** Peter Van Oosterom, TU Delft, The Netherlands

Tutorials - details

3D Modelling and Simulations using Airborne and Terrestrial LiDAR Datasets

Gurcan Buyuksalih

BIMTAS, Istanbul

Gürcan Büyüksalih has an Associate Professor degree and works for the BIMTAS company of Istanbul Greater Municipality at the position of GIS and 3D Mapping Director. He received his PhD from the University of Glasgow, UK, Department of Geography and Topographic Science. His research direction is the full range of photogrammetry and remote sensing, especially application of Lidar technology.

3D Point Cloud Data Management

This Tutorial introduces Oracle point clouds and its new features, in the context of managing large geographic data sets in Oracle Spatial. Specifically, three alternative storage models are presented and compared.

Mike Horhammer

Oracle, USA

Dr. Mike Horhammer got his CS Diploma from the RWTH Aachen, Germany, in 1996, and his CS Ph.D. from UC Santa Barbara, in 1999. His Ph.D. Thesis was on Multidimensional and Spatial Indexing. Since 1999, Mike has been working in the Oracle Spatial Team, currently as a Principal Member of Technical Staff.

Integrating and Analyzing BIM in GIS

Ihab Hijazi

An-Najah National University, Palestine

This tutorial will commence with a highlight on the motives and contemporary problems for CAD-BIM/GIS integration. Following the introduction, the most two prominently 3D standards in both AEC and GIS industry - IFC and CityGML, will be introduced. Secondly, an overview of these standards and a detailed analysis of the semantics representations of 3D features, in a built environment within these models, will be explained. Thirdly, the course will discuss the different semantics of harmonization approaches in order to achieve interoperability between these two standards, such as formal mapping, unified models, and semantics web technologies. Finally, the course will end with a presentation on BIM4 GeoAnalysis, and two prototypes for indoor/outdoor analysis, based on the harmonization between these two standards - indoor network for pedestrian navigation and utility network.

Real Time GIS in 3D

Morakot Pilouk

ESRI Redlands, USA

This tutorial will introduce ESRI Real-time GIS technology that provides means to connect GIS to real-time data sources such as sensors or web services, design operation logic to process the incoming data at the time they received by the system, and transmitting the data to the target client application in the required format suitable for 3D web applications. Learn how the real-time GIS data can help making the 3D scene become alive using a simple ESRI JavaScript API based on the HTML5 WebGL. Learn about the approach that allows creating real-time 3D GIS applications on one codebase that will run on various platforms.

CityGML Energy ADE - 3D City Models for Energy Simulation on Urban Scale

Volker Coors

HFT Stuttgart, Germany

No widely applicable open information model standard exists until now for large-scale Urban Energy Modelling. Although different data models have been developed for different urban energy tools, they do not offer possibilities of interoperability and exchange between the stakeholders, tools and expert fields. To address this issue, an international group of urban energy simulation developers and users is developing since May 2014 an Application Domain Extension (ADE) Energy for the open urban information model CityGML. This tutorial introduces the Energy ADE developed. Goals, requirements and the modular structure of the CityGML extension are described in detail.

The objective of this Energy ADE is to store and manage data required for the calculation of the building energy flows and its main results in the CityGML-based virtual 3D city model. The physical boundary of this new data model is the building envelope, including the systems installed on it (e.g. solar panel, shading devices). Small-scale centralized energy systems may also be modelled in this Energy ADE. Following the philosophy of CityGML, this Energy ADE aims to be flexible, in terms of compatibility with different data qualities, levels of details and urban energy model complexities (from monthly energy balance, to sub-hourly dynamic simulation of software like CitySim or EnergyPlus). It aims to be integrated as far as possible within the existing CityGML data model, avoiding the creation of a parallel data structure that would be tailor-made for specific calculation methods. Moreover, this Energy ADE considers the existing international building and energy data specifications, like the INSPIRE Directive of the European Parliament, as well as the recent US Building Energy Data Exchange Specification (BEDES), and integrates their relevant energy-related attributes.

3D and 4D Geospatial Databases

Martin Breunig

Karlsruher Institut für Technologie (KIT), Germany

Starting with a motivation for geospatial databases, in the first part of the tutorial the notions of 3D space and objects are introduced. Examples for 3D data types in geospatial database systems and standards are given as well as a classification for 3D database queries. Different kinds of 3D database queries are discussed including their 3D database operations. Also efficient 3D database access is addressed. In the second part of the tutorial the requirements and use of 4D geospatial databases are discussed with the focus on spatio-temporal data types and 4D database access. Finally, DB4GeO, a 4D prototype database architecture is introduced.

3D Mapping and Products for National Mapping Agency - NMA2020: The New Role for a National Mapping Authority enabled by new technologies, driven by a changing market.

Rollo Home

Senior Product Manager Built Environment.Ordnance Survey, UK

Ordnance Survey (OS), as the national mapping authority for Great Britain, finds itself on the cusp of a transformative period. Underlying trends in technology are disrupting every industry and the OS is not immune to those changes. Our customers demand greater insight of our data, at a higher refresh frequency and resolution than ever before. At the same time technology continues to broaden the competitor landscape. The OS is therefore evolving to meet these challenges and remain relevant in the 21st century. However the 227 year history of OS has been one of continuous evolution and the current trends need to be seen in their historical context; while distinctly different, there are lessons to be learnt from the past.

3D Cadasters

Peter van Oosterom

Delft University of Technology,
The Netherlands

In this tutorial an overview is given of the international 3D cadastre developments, in part based on the FIG 3D Cadastres 2010-2014 questionnaires 2010-1014 and 2014-2018. In some countries (Scandinavian countries, Australian states and Canadian provinces) the legislation is allowing/ supporting 3D volumetric parcels and these can be submitted for registration. However, these 3D volumetric parcels are not yet stored in the Cadastral database. Perhaps by surprise, but the first operational 3D Cadastral system, including a database and web-based dissemination was reported from Asia: Shenzhen, China (2013). Every country, has to consider where, when, and how to apply 3D Cadastre (FIG Working group 3D Cadastres). It is to be expected that in many different cases society will need 3D; e.g. registration of legal spaces related to buildings/apartments, (underground) constructions, tunnels, infrastructure/utility networks, air-spaces, etc. It important to align the cadastral (legal) objects with the relevant geographic (physical) objects via SDI.

3D cadastral registration is part of whole 3D spatial development life cycle in 3D consisting of many steps of which the order may differs per country: develop and register zoning plans in 3D, register (public law) restrictions in 3D, design new spatial units/objects in 3D, acquire appropriate land/space in 3D, request and provide (after check) permits in 3D, obtain and register financing (mortgage) for future objects in 3D, survey and measure spatial units/objects (after construction) in 3D, submit associated rights (RRRs)/parties and their spatial units in 3D, validate and check submitted data (and register if accepted) in 3D, store and analyze the spatial units in 3D, and disseminate, visualize and use the spatial units in 3D. While considering the whole life cycle of spatial development, it is good to focus on own aspect: 3D parcels in Cadastre registration.

PROGRAM AT A GLANCE

Note that slight schedule changes might happen during the conference. For the up to date schedule please refer to our online version:

http://www.Geoinfo.utm.my/jointGeoinfo2015/program.html

DAY 1 *room:*		*Mahkota II*			
Wednesday, Oct. 28th	07:30-09:00	Registration			
	09:00-10:30	**Opening ceremony**			
	10:30-11:00	Coffee/Tea break*			
	11:00-11:30	**Keynote #1** Director General of Survey and Mapping Malaysia			
	11:30-13:00	**Industry Talks #1** Antaragrafik, KQ GEO Technologies, RD Palmer, MRT Coop. *Chair: A. Abdul Rahman*			
	13:00-14:30	Lunch break			
	room:	***Mahkota I***	***Mahkota II***	***Baiduri + Berlian***	***Delima + Nilam***
	14:30-16:15	**GGT (S1)** M.Brünig	**NUUM** Dato' Wan Aminuddin	**3D Geoinfo (S1)** T.Kolbe	**ISPRS (S1)** V.Coors
	16:15-16:30	Coffee/Tea break			
	16:30-17:30	**GGT (S2)** R. Celik	**NUUM panel disc.** Dato' Hasan Jamil	**3D Geoinfo (S2)** R.Home	**GeoAdvances (S1)** F. Anton
	17:30-18:30				
	19:00-21:00	**Conference dinner (with ticket)**			

* sponsored by AAM Group www.aamgroup.com/

Detailed schedule for Introduction to the Conference & Opening ceremony

07:30 - 9:00	Registration
09:00-10:30	Doa Recitation Introduction to the Conference by JIGC chair Welcome Speech by Director General of Survey and Mapping Malaysia Opening Speech by Deputy Secretary General (Natural Resources), Ministry of Natural Resources and Environment Video-Montage International Map Year competition award Exhibition Opening
10:30-11:00	Coffee/Tea break

DAY 2 *room:*		*Mahkota I*	*Mahkota II*	*Baiduri + Berlian*	*Delima + Nilam*
Thursday, Oct. 29th	08:30-10:00	**GGT (S3)** B.Gurcan	**3D Geoinfo (S3)** T.Becker	**Ext. Abstracts #1** E.Dimopoulou	**GeoAdvances (S2)** F.Anton
	10:00-10:30	Coffee/Tea break			
	10:30-13:00	**Keynotes #2** *(room: Mahkota II)* P.v.Oosterom, R.Home, T.Kolbe *Chair: A. Abdul Rahman*			
	13:00-14:00	Lunch break			
	14:00-15:00	**Invited talks** *(room: Mahkota II)* S.Bakici (TKGM, Ankara), I.Meilano (ITB Indonesia) *Chair: A. Abdul Rahman*			
	15:00-16:30	**GGT (S4)** M.Nor Said	**3D Geoinfo (S4)** J.Lee	**FIG #1 A.Rahman**	**GeoAdvances (S3)** C.Ellul
	16:30-17:00	Coffee/Tea break			
	17:00-18:30	**GGT (S5)** K.Omar	**3D Geoinfo (S5)** M.Pilouk	**FIG #2 Mohd. Sanusi**	**Ext. Abstracts #2** M.Löwner

DAY 3 *room:*		*Mahkota I*	*Mahkota II*	
Friday, Oct. 30th	08:30-09:30	**GGT (S6)** S.Peters	**3D Geoinfo (S6)** M.Kada	
	09:30-10:00	Coffee/Tea break		
	10:00-10:30	**Industrial talks #2** *(room: Mahkota II)* TM, KBSE, Wuhan Visiontek *Chair: Dato' Wan Aminuddin*		
	10:30-12:00	**Keynotes #3** *(room: Mahkota II)* E.Parsons (Google), M.Pilouk (ESRI), R.Celik (ITU), Antaragrafik *Chair: A. Abdul Rahman*		
		Conference Closing		
	12:00-14:00	Lunch break		
	14:00-18:00	**Excursion** (KL, Putrajaya) booking needed until Oct 21st (free of charge)		

3D GEOINFO

3D Geoinfo TRACK	
S1 - Wed 14:30 - 16:15 Chair: T.Kolbe (Baiduri + Berlian)	**Cartographic Enrichment of 3D City Models - state of the art and research perspectives** Stefan Peters, Mathias Jahnke, Christian Murphy, Liqiu Meng and Alias Rahman (Germany and Malaysia)
	Usability assessment of a virtual globe-based 4D archaeological GIS Berdien De Roo, Jean Bourgeois andPhilippe De Maeyer (Belgium)
	Does a Finer Level of Detail of a 3D City Model bring an Improvement for Estimating Shadows? Filip Biljecki, Hugo Ledoux and Jantien Stoter (The Netherlands)
	Review and Assessment of Current Cadastral Data Models for 3D Cadastral Applications Ali Aien, Abbas Rajabifard, Mohsen Kalantari and Ian P. Williamson (Australia)
	Automatic Semantic and Geometric Enrichment of CityGML Building Models using HoG-based Template Matching Jon Slade, Christopher B. Jones and Paul L. Rosin (United Kingdom)

S2 - Wed 16:30 - 18:30 Chair: R.Home (Baiduri + Berlian)	**3D Complete Traffic Noise Analysis Based on CityGML** Lu Lu, Thomas Becker and Marc-Oliver Löwner (Germany)
	Web-based tool for the sustainable refurbishment in historic districts based on 3D City Model Iñaki Prieto, Jose Luis Izkara and Rubén Béjar (Spain)
	Interactive and View-Dependent See-Through Lenses for Massive 3D Point Clouds Soeren Discher, Rico Richter and Juergen Doellner (Germany)
	Representation of CityGML instance models in BaseX Sabine Koch and Marc-Oliver Löwner (Germany)
	A Data Model for the Interactive Construction and Correction of 3D Building Geometry Based on Planar Half-Spaces Martin Kada, Andreas Wichmann, Nina Manzke and Yevgeniya Filippovska (Germany)
	The Hierarchical Three-Dimensional (3D) Dynamic Water Infiltration on Multilayers of Soil according to Voronoi Sequence Nodes based on the Three-Dimensional Triangular Irregular Network (3D TIN) Siti Nurbaidzuri Reli, Izham Mohammad Yusoff, Habibah Lateh and Uznir Ujang (Malaysia)
S3 - Thu 08:30 - 10:00 Chair: T.Becker (room Mahkota II)	**Managing versions and history within semantic 3D city models for the next generation of CityGML** Kanishk Chaturvedi, Carl Stephen Smyth, Gilles Gesquière, Tatjana Kutzner and Thomas H. Kolbe (Germany)
	Temporal and spatial database support for geothermal sub-surface applications Markus Jahn, Martin Breunig, Edgar Butwilowski, Paul Kuper, Andreas Thomsen, Eva Schill and Mulhim Al- Doori (Germany and UAE)
	Assessing the Suitability of Using Google Glass in Designing 3D Geographic Information for Navigation Kelvin Wong and Claire Ellul (United Kingdom)
	Comparison of 2D and 3D parameter-based models in urban fine dust distribution modelling Yahya Ghassoun and Marc-Oliver Löwner (Germany)

S4 - Thu 15:00 - 16:30 Chair: J.Lee (room Mahkota II)	**Highly Efficient Computer Oriented Octree Data Structure and Neighbours Search in 3D GIS** Noraidah Keling, Izham Mohamad Yusoff, Habibah Lateh and Muhamad Uznir Ujang (Malaysia)
	Reconstructing 3D building models with the 2D cadastre for semantic enhancement Frédéric Pedrinis and Gilles Gesquière (France)
	A Spatio-semantic Query Language for the Integrated Analysis of City Models and Building Information Models Simon Daum, André Borrmann andThomas Kolbe (Germany)
	Framework for on an Open 3D Urban Analysis Platform Based on OGC Web Services Marc-Oliver Löwner and Thomas Becker (Germany)
S5 - Thu 17:00 - 18:30 Chair: M.Pilouk (room Mahkota II)	**Investigating Semantic Functionality Of 3D Geometry For Land Administration** George Floros, Eva Tsiliakou, Dimitrios Kitsakis, Ioannis Pispidikis and Efi Dimopoulou (Greece)
	Photovoltaic Potentiality Analysis using 3D City Models Nazmul Alam, Volker Coors, Sisi Zlatanova and Peter Van Oosterom (Germany and The Netherlands)
	Stochastic buildings generation to assist in the design of Right to Build plans Mickaël Brasebin, Julien Perret and Romain Reuillon (France)
	A methodology for modelling of 3D spatial constraints Daniel Xu, Peter Van Oosterom and Sisi Zlatanova (China and The Netherlands)
	A 3D LADM prototype implementation in INTERLIS Eftychia Kalogianni, Efi Dimopoulou and Peter van Oosterom (Greece and The Netherlands)
S6 - Fri 08:30 - 09:30 Chair: M.Kada (room Mahkota II)	**3D Marine Administration System based on LADM** Aikaterini Athanasiou, Ioannis Pispidikis and Efi Dimopoulou (Greece)
	Towards Integrating BIM and GIS - an End-To-End Example from Point Cloud to Analysis Claire Ellul and Gareth Boyes (United Kingdom)
	The Potential of the 3D Dual Half- Edge (DHE) Data Structure for Integrated 2D-Space And Scale Modelling: A Review Wan Muhd Hairi Wan Ab Karim, Alias Abdul Rahman, Pawel Boguslawski, Martijn Meijers and Peter Van Oosterom (Malaysia and The Netherlands)

GGT

GGT TRACK (Mahkota I)	
S1 - Wed 14:30 - 16:15 Chair: M.Brünig (Mahkota I)	**Geolgical Structure Mapping of the Bentong-Raub Suture Zone, Peninsular Malaysia Using Palsar Remote Sensing Data** Amin Beiranvand Pour and Mazlan Hashim (Iran and Malaysia)
	Analysing the Sustainability of Urban Development: A Review on the Potential Use of Volunteered Geographic Information Nabila Ibrahim, Uznir Ujang, Ghazali Desa and Azman Ariffin (Malaysia)
	A New Framework for Geospatial Site Selection Using Artificial Neural Networks As Decision Rules a Case Study on Landfill Sites Sohaib K. M. Abujayyab, Mohd Sanusi S. Ahamad, Ahmad Shukri Yahya and Abdul-Malik H. Y. Saad (Malaysia)
	Visual Inspection of Water Leakage From Ground Penetrating Radar Radargram Nurniesya Nabila Halimsyah, Amalina Yusup, Zulkarnaini Mat Amin and Mimi Diana Ghazali (Malaysia)
	Solar Energy Supply Models For Smart Cities And Townships Deepak Kumar and Sulochana Shekhar (India)
S2 - Wed 16:30 - 17:30 Chair: R.Celik (Mahkota I)	**Temporal Statistic of Traffic Accidents In Turkey** Saffet Erdogan, Mustafa Yalcin, Mustafa Yilmaz and Aysegul Korkmaz Takim (Turkey)
	Impact assessment of tropical storm Hud Hud on coastal region of Visakhapatnam, Andrah Pradesh Vivek G and Srinivasa Kumar T (India)
	Integrated Analysis and Tools For Land Subsidence Surveying and Monitoring: A Semi-Quantitative Approach Alice Pozzoli, Alessandro Mosconi, Alberto Meroni and Stefano Gagliano (Italy)
S3 - Thu 08:30 - 10:00 Chair: B.Gurcan (Mahkota I)	**A Decision Support System Through Thematic Mapping of Various Government Schemes Implemented Using Open Source** Bhaskar Reddy Pulsani (South Africa)
	Possibilities of Land Administration Domain Model (LADM) Implementation in Nigeria Babalola Sunday, Abdulrahman Alias, Choon Tan Liat and Peter Van Oosterom (Nigeria, Malaysia and The Netherlands)
	Regional Geolgical Mapping in Tropical Environments Using Landsat TM And SRTM Remote Sensing Data Amin Beiranvand Pour and Mazlan Hashim (Iran and Malaysia)
	Advanced Land Imager (Ali) Satellite Data Ffr Alteration Mapping in The Meiduk And SAR Cheshmeh Porphyry Copper Mining Districts, SE Iran Amin Beiranvand Pour and Mazlan Hashim (Iran and Malaysia)

S4 - Thu 15:00 - 16:30 Chair: M.Nor Said (Mahkota I)	**Mobile Application for Field Data Collection on Ganoderma Disease of Oil Palm in Oil Palm Plantation for Smart Phone** Ahmad Fikri Abdullah and Nur 'Atirah Muhadi (Malaysia)
	Identification and Mapping of Tree Species in Urban Areas Using Worldview-2 Imagery Yaseen Mustafa, Hendaf Habeeb, Alfred Stein and Farooq Sulaiman (Iraq and The Netherlands)
	Accuracy Assessment of LiDAR-Derived Digital Terrain Model (DTM) with Different Slope and Canopy Cover in Tropical Forest Region Mohd Radhie Mohd Salleh, Zamri Ismail and Muhammad Zulkarnain Abdul Rahman (Malaysia)
	Integration Of Palsar and ASTER Satellite Data for Geological Mapping in Tropics Amin Beiranvand Pour and Mazlan Hashim (Iran and Malaysia)
	Parametric Analysis for Automated Extraction of Road Edges from Mobile Laser Scanning Data Pankaj Kumar, Paul Lewis and Conor P McElhinney (Malaysia and Ireland)
S5 - Thu 17:00 - 18:30 Chair: K.Omar (Mahkota I)	**Tectonic Motion of Malaysia: Analysis From Years 2001 To 2013** Jespal Gill, Noor Suryati Mohd Shariff,Kamaludin Omar and Zulkarnaini Mat Amin (Malaysia)
	Estimation of Annual Average Soil Loss, Based on Rusle Model in Kallar Watershed, Bhavani Basin, Tamil Nadu, India S. Abdul Rahaman, S. Aruchamy, R. Jegankumar and S. Abdul Ajeez (India)
	Chromitite Prospecting Using Landsat TM and ASTER Remote Sensing Data Amin Beiranvand Pour and Mazlan Hashim (Iran and Malaysia)
	Indoor Navigation Design Integrated with Smart Phones and RFID Devices Ismail Rakip Karas, Yasin Ortakci, Ümit Atila and Emrullah Demiral (Turkey)
S6 - Fri 08:30 - 09:30 Chair: S.Peters (Mahkota I)	**Approach To Constructing 3D Virtual Scene of Irrigation Area using Multi-Source Data** Shuai Cheng, Mingzhu Dou, Jinxin Wang, Shuqing Zhang and Xiangcong Chen (China)
	Public Perception on Disaster Management Using Volunteered Geographic Information (VGI): Case Of UAE M. Yagoub (UAE)
	Voronoi Diagrams without Bounding Boxes Erik Tjong Kim Sang (The Netherlands)

GEOADVANCES

GeoAdvances TRACK (Delima + Nilam)	
S1 - Wed 16:30 - 17:30 Chair: F.Anton (Delima + Nilam)	**Development of Bio-Optical Algorithms for Estimating Total Suspended Solids and Chlorophyl-A Concentration Using Landsat-8 Image at Poteran Island Waters** Nurahida Laili, Feny Arafah, Lalu Muhamad Jaelani, Adjie Pamungkas, Eddy Setyo Koenhardono and Aries Sulisetyono (Indonesia)
	Building zoning regulation compliance based on LiDAR-derived models:Real-life Tests Umit Isikdag and Ismail Buyuksalih (Turkey)
	BIM and IoT : A Synopsis from GIS Perspective Umit Isikdag (Turkey)
S2 - Thu 8:30 - 10:00 Chair: F.Anton (Delima + Nilam)	**Proposal for a Web Encoding Service (Wes) for Spatial Data Transaction** Chengxi Bernad Siew, Stefan Peters and Alias Abdul-Rahman (Malaysia)
	Two Levels Fusion Decision for Multispectral Image Pattern Recognition Hela Elmannai, Mohamed Anis Loghmari and Mohamed Saber Naceur (Tunisia)
	An Automated 3D Indoor Topological Navigation Network Modelling Ali Jamali, Alias Abdul Rahman, Pawel Boguslawski and Christopher M. Gold (Malaysia, UK, and Canada)
	Assessing Spatial Data Quality of Participatory GIS Studies: A Case Study in Cape Town Kevin Musungu (South Africa)
S3 - Thu 15:00 - 16:30 Chair: C.Ellul (Delima + Nilam)	**Study and Analysis Diachronic Natureless Media and Grown in The Basin Bouzina (BATNA)** Hassen Benmessaoud and Moufida Mekaoussi (Algeria)
	Interpreting 3D City Model Building Parts Based on 3D Segmentation for Urban Mining Khairul Hafiz Sharkawi and Alias Abdul-Rahman (Malaysia)
	Dual Half Edge Data Structure In Database for Big Data in GIS Mojtaba Goudarzi, Maryam Asghari, Pawel Boguslawsk and Alias Abdul Rahman (Iran, UK and Malaysia)
	Smart aeronautical chart management system design M. E. Pakdil, R. N. Celik, Ö. Kaya, Y. C. Konak, C. Guney (Turkey)

ISPRS WG2/II

ISPRS WG 2/II TRACK (room: Delima + Nilam)	
Wed 14:30 - 16:15 Chair: V. Coors	**Storing a 3D city model, its levels of detail and the correspondences between objects as a 4D combinatorial map** Ken Arroyo Ohori, Hugo Ledoux and Jantien Stoter (The Netherlands)
	Generalized Cartographic and Simultaneous Representation of Utility Networks for Decision-Support Systems and Crisis Management in Urban Environments Thomas Becker and Gerhard Koenig (Germany)
	Partition-based clustering for supply chain data management Suhaibah Azri, Uznir Ujang, Francois Anton, Darka Mioc, and Alias Abdul Rahman (Malaysia, Denmark)
	3D Indoor Building Environment Reconstruction using calibration of Rangefinder Data Ali Jamali, Francois Anton, and Alias Abdul Rahman (Malaysia, Denmark)

NUUM

NUUM TRACK (room: Baiduri + Berlian)	
NUUM - Technical Session Wed 14:30 - 16:15	***Technical Session: Utility Mapping Requirements and Practices in Malaysia*** ***Chair: Dato' Wan Aminuddin bin Wan Hussin, PEJUTA***
	Underground Utility Data Acquisition and Maintenance in Malaysia *Mohd Yunus Mohd Yusoff (JUPEM)*
	Utility Mapping In Relation To Road Construction Works *Jamilah Binti Mohd Marjan (Ministry of Public Work)*
	Underground Utility Mapping – Professional Approach and Practice in Malaysia *Logisvarran a/l Muniandy (PEJUTA)*
	Implementation of "Call Before U Dig" for Telekom Bhd Clients *Mohd Zaidi bin Mohd Basir (Telekom Malaysia Berhad)*
	Leap Forward in GPR Technology – The HDR *Mohd Yunus Wahab (RD-Palmer Technology (M) Sdn Bhd)*
panel discussion Wed 16:30 -17:30	**Panel Discussion (Utility Mapping)** **Chair: Deputy Director General of Department of Survey and Mapping Malaysia** Panel: JUPEM, KKR, PEJUTA, TELEKOM, RD PALMER (all speakers)

FIG

FIG TRACK (room: Baiduri + Berlian)	
FIG #1 Thu 15:00 - 16:30 Chair: A. Rahman	**Professional Accreditation Standard for Geomatic Education: Formation of Geomatic Accreditation Council (GAC).** *Dato' Wan Muhd Aminuddin Wan Hussin*
	Continuous Quality Improvement on Geomatic Course in USM Engineering Program using Course Outcomes Attainment *Mohd Sanusi S. Ahamad, Dato' Wan Muhd Aminuddin Wan Hussin*
	Geomatics-related education and research programmes at the Department of Civil Engineering, UPM *Helmi Zulhaidi Mohd Shafri*
	Geomatics – its relevance to Oil & Gas Industries *Abd Nasir Matori, and Amir Sharifuddin Ab Latip*
	Geomatic Education and Research Direction in Universiti Teknologi MARA (UiTM), Malaysia *Zulkiflee Abd Latif*
FIG #2 Thu 17:00 - 18:30 Chair: M.Sanusi	**Assessment of course outcomes for civil engineering students - Geomatics courses in UKM** *Khairul Nizam Abdul Maulud*
	Implementation of Utility Mapping Syllabus at Polytechnic System *Mohd Asri Bin Hj. Zahid, Asuralyzah Binti Saleh, Rahizudin Bin Abdul Rahim*
	Demographics Inventory of Geomatics Graduates: Case Study of UTM *Kamaludin Mohd Omar (UTM)*
	Education of Geoinformatics (GIS) at Universiti Teknologi Malaysia *Mohammad Zakri Tarmidi, Uznir Ujang, Nurul Hawani Idris, Azman AriffinN, Kamaludin Mohd Omar, and Zulkepli Majid*
	Human Resource Inventory of Geomatic Graduates: a Case Study of Universiti Teknologi Malaysia *Mohd Faisal Abdul Khanan, Mohd Hafiz Yahya, Tan Liat Choon, Ami Hassan Md Din, Kamaludin Mohd Omar*

EXTENDED ABSTRACTS

EXTENDED ABSTRACT TRACK	
Extended Abstract #1 - Thu 8:30 - 10:00 Chair: A. Rahman (Baiduri+Berlian)	**3-Dimensional Geological Mapping and Modeling Activities at the Geological Survey of Norway** Alexandra Jarna, Ane Bang-Kittilsen,Claudia Haase, Iain Henderson, Fredrik Høgaas, Sverre Iversen and Anna Seither (Norway)
	Developing a Method To Generate IndoorGML Data From the Omni-Directional Image Munsu Kim and Jiyeong Lee (Korea)
	Terrestrial Laser Scanners Self-Calibration Study: Datum Constraints Analyses For Network Configurations Mohd Azwan Abbas, Halim Setan, Zulkepli Majid, Albert Chong, Lau Chong Luh, Khairulnizam M Idris and Mohd Farid Mohd Ariff (Malaysia and New Zealand)
	Geoinformation Postgraduate Education at Universiti Teknologi Malaysia - Towards a Centre of High Quality Postgraduate Education and Research Stefan Peters, Kasturi Devi Kanniah and Alias Abdul Rahman (Malaysia)
	Grouping Method for Neighbour Objects of Moving Object using Hash Index Baesung Lee, Jiyoung Kim and Kiyun Yu (Korea)
	Multi-Platform Satellite Based Estimates of Runoff in Ungauged Areas Jae Young Seo and Sang-Il Lee (Korea)
	A Walking Disturbance Index Suggestions for Optimized Path Search for the Transportation Vulnerable Mikyeong Moon, Yoonsik Bang, Kiyun Yu and Jiyoung Kim (Korea)
	GIS for Predicting the Avalanche Zones in the Mountain Regions of Kazakhstan Zhanat Omirzhanova, Aset Urazaliev and Amirkhan Aimenov (Kazakhstan)
	Non-Terrain Features Filtering by Integrating Geometrical and Spectral Information Luh Lau, Halim Setan, Zulkepli Majid, Mohd Azwan Abbas, Wei Lun Tang and Albert Chong (Malaysia and New Zealand)
	Kingdom of Saudi Arabia Geospatial information infrastructure – an initial study Sultan H. Alsultan and Alias Abdul Rahman

Extended Abstract #2 Thu 17:00 - 18:30 Chair: M.Löwner (Delima+Nilam)	**SmartKADASTER: Observing beyond traditional cadastre capabilities for Malaysia** Mohd Noor Isa, Teng Chee Hua and Nur Zurairah Abdu Halim (Malaysia)
	An Overview of 3D Topology for LADM-based Objects Nur Amalina Zulkifli and Alias Abdul Rahman (Malaysia)
	Areal Feature Matching Based on Similarity using Critic Mehtod Jiyoung Kim and Kiyun Yu (Korea)
	A Review of Multi-Hazard Risk Assessment (MHRA) Using 4D Dynamic Models Tehmina Bibi and Alias Abdul Rahman (Pakistan and Malaysia)
	A Study on The Improvement of Cadastral System in Mongolia - Focused on National Land Information System Munkhbaatar Buuveibaatar and Jiyeong Lee (Mongolia and Korea)
	Ocean Wave Energy Estimation using Active Satellite Imagery as a Solution of Energy Scarce In Indonesia Case Study: Poteran Island's Water, Madura Zulfikar Adlan Nadzir, Loryena Ayu Karondia,Lalu Muhamad Jaelani, Albertus Sulaiman, Adjie Pamungkas, Eddy Setyo Koenhardono and Aries Sulisetyono (Indonesia)
	Retrieval of Sea Surface Temperature Over Poteran Island Waters of Indonesia with Landsat 8 TIRS Image: a Preliminary Algorithm** M. Aldila Syariz, Lalu Muhamad Jaelani, Luki Subehi, Adjie Pamungkas, Eddy Setyo Koenhardono and Aries Sulisetyono (Indonesia)
	Indoor Subspacing to Implement IndoorGML for Indoor Navigation Hyo-Jin Jung and Jiyeong Lee (Korea)
	Analyze The Impact of Habitat Patches on Wildlife Road-Kill Sangmuk Seok and Jiyeong Lee (Korea)
	Utilizing mobile sensing to investigate the effects of urban space on users behavior I. H. Hijazi, R. El Meouche, A. Khan, N. Aboud

KEYNOTES

KEYNOTES - PLENARY SESSIONS Chair: A.Rahman (room: Mahkota II)	
#1 Wed 11:00– 11:30	**The Future of Geospatial Data Creation & Management** *Datuk Ahmad Fauzi Bin Nordin, Director General of Survey and Mapping Malaysia (JUPEM)*
#2 Thu 10:30– 13:00	**Realistic Benchmarks for point cloud data management systems** *Peter van Oosterom (TU Delft, The Netherlands)*
	3D: A SOLUTION WAITING FOR A PROBLEM? *Rollo Home (Ordnance Survey, UK)*
	Smart Models for Smart Cities - Modeling of Dynamics, Sensors, Urban Indicators and Planning Actions *Thomas Kolbe (TUM, Germany)*
#3 Fri 11:00– 12:00	***The emerging GI Environment: A Google perspective*** *Ed Parsons (Google, US)*
	Real-time, Big Data and 3D GIS *Morakot Pilouk (ESRI Redlands, USA)*
	Professional opportunities for Geomatic Engineers *Rahmi Nurham Celik (Istanbul Technical University, Turkey)*

THE FUTURE OF GEOSPATIAL DATA CREATION & MANAGEMENT

Datuk Sr. Ahmad Fauzi Bin Nordin (JUPEM, Malaysia)

The use of geospatial information is growing rapidly and many recognize that an understanding of location and place is very important for effective decision-making. At the same time, there has been immense growth in data capture methods as well as in the amount of data collected and generated. It would consequently be beneficial to identify the major trends expected to impact on those involved in geospatial information management in the coming years. The presentation will therefore deliberate on the future of among others - data creation, managing massive data, cloud computing, open source, standards and positioning in relation to the geospatial world.

Biography

Datuk Ahmad Fauzi Nordin is currently the Director-General of the Department of Survey and Mapping Malaysia (JUPEM). He is a qualified land surveyor who additionally serves as the Chairman of the Licensed Land Surveyors Board of Peninsular Malaysia. He is also a Past President and Fellow of the Royal Institution of Surveyors Malaysia (RISM), as well as a member of the Executive Board of the United Nations Global Geospatial Information Management for Asia and the Pacific (UNGGIM-AP).

REALISTIC BENCHMARKS FOR POINT CLOUD DATA MANAGEMENT SYSTEMS

Prof. Dr. Peter Van Oosterom (Delft University of Technology, The Netherlands)

Lidar, photogrammetry, and various other survey technologies enable the collection of massive point clouds. Faced with hundreds of billions or trillions of points the traditional solutions for handling point clouds usually under-perform even for classical loading and retrieving operations. To obtain insight in the features affecting performance the authors carried out single-user tests with different storage models on various systems, including Oracle Spatial and Graph, PostgreSQL-PostGIS, MonetDB and LAStools (during the second half of 2014). In the summer of 2015, the tests are further extended with the latest developments of the systems, including the new version of Point Data Abstraction Library (PDAL) with efficient compression. Web services based on point cloud data are becoming popular and they have requirements that most of the available point cloud data management systems cannot fulfil. This means that specific custom-made solutions are constructed. We identify the requirements of these web services and propose a realistic benchmark extension, including multi-user and level-of-detail queries. This helps in defining the future lines of work for more generic point cloud data management systems, supporting such increasingly demanded web services.

Biography

Peter van Oosterom obtained his MSc Technical Computer Science in 1985 at the Delft University of Technology and his PhD in 1990 at Leiden University. From 1985-1995, he worked as a computer scientist (database and GIS research projects) at TNO. In the period 1995-1999, he held the position of senior information manager at the Dutch Cadastre. In this capacity he was involved in the design of cadastral and land information systems. On January 1st, 2000 he started as professor and head of the GIS Technology department at the Delft University of Technology. Since the formal take-off in 2005, Peter van Oosterom has participated in the core drafting team 'Data Specifications and Harmonisation' of INSPIRE ('Infrastructure for Spatial Information in Europe'), which aims to harmonise spatial information across Europe. Peter van Oosterom has a leading role in the development of ISO/TC 211 Geographic information/Geomatics, Geographic information, Land Administration Domain Model (LADM), IS 19152:2012. His research interests include spatial databases, GIS architectures, generalisation, spatial analysis, querying and presentation, Internet/interoperable GIS, and land administration. He is the current chair of the FIG Working Group on '3D Cadastres'.

3D: A SOLUTION WAITING FOR A PROBLEM?

Rollo Home (Senior Product Manager Built Environment, Ordnance Survey, UK)

The widespread uptake of 3D information and representation has long been heralded as 'just around the corner', and yet we are still to see this in the market place. The disappointing uptake of 3D television illustrates the dominance of established methods of representing the real world digitally. Even within the trail blazing gaming industry, gamers are interacting via the medium of a flat screen and accepting the limitations that that presents, with VR headsets still being slow in uptake. Within our specific geo-information sector the potential of 3D to more accurately address a wider set of issues is tantalising. However as we explore this, we appear to identify further complexities of modelling the world in such a way. Identifying the exact specifications for a first profitable, maintainable and national product remain an elusive topic for research and development The use of 2D, traditional GI techniques are well developed and for the most part meet user requirements, making the transition to 3D a hard one to overcome. This short talk asks that we as an industry work to explore and promote specific values and benefits of working with the 3rd Dimension more effectively.

Ordnance Survey (OS), as the national mapping authority for Great Britain, finds itself on the cusp of a transformative period. Underlying trends in technology are disrupting every industry and the OS is not immune to those changes. Our customers are demanding greater insight of our data, at a higher refresh frequency and resolution than ever before. At the same time technology continues to broaden the competitor landscape. The OS is therefore evolving to meet these challenges and remain relevant in the 21st century. However the 227 year history of OS has been one of continuous evolution and the current trends need to be seen in their historical context; while distinctly different, there are lessons to be learnt from the past.

Smart Models for Smart Cities - Modeling of Dynamics, Sensors, Urban Indicators and Planning Actions

Prof. Dr. Thomas Kolbe (Technische Universität München, Germany)

In Smart City projects, huge amounts of different datasets have to be linked or even integrated. A multitude of sensors provide information about the current operation status of the many urban systems like energy and water supplies, transportation, and security situations for monitoring, controlling, and planning. Semantic 3D city models can be used in such contexts to spatially and semantically structure the many data items by relating them with the respective objects of the 3D city model. However, such models have been mostly static representations of the environment in the past, and their inclusion of the urban sensor landscape was not addressed in detail. Also the computation of urban (key performance) indicator values like building energy demands has not been supported by a dedicated conceptual model yet. The presentation will present new frameworks based on semantic 3D city models and Model Driven Engineering (MDE). These frameworks complement the ISO 19109 standard on modeling geographic features. They provide concepts for the modeling of indicators for different application domains like mobility, energy, and security as well as for the semantic modeling of planned changes as transactions on 3D city models. It will be shown how these concepts are employed in Smart City use cases and how they relate to the CityGML standard. Furthermore, it will be shown how CityGML can be extended for representing dynamic object properties including sensor observations and time-dependent patterns for values.

Biography

The research field of Professor Kolbe (b. 1968) is the development of methods for the spatial, temporal and semantic modeling, storage, analysis and visualization of the environment. Key areas are virtual 3D city and landscape models, city system modeling, smart cities, 3D geodatabases, 3D Geoinformation systems, GIS & simulations and indoor navigation. Professor Kolbe is the initiator and co-author of the international standard CityGML for semantic 3D city and landscape models. Professor Kolbe studied computer science at the University Dortmund between 1988 and 1993. After completing his studies he worked as a research assistant at the Institute for Computer Science III at the University of Bonn and the Institute for Environmental Sciences at the University of Vechta until 1999. He was awarded his doctoral degree in 1999. From 1999 he was a research assistant, and later a senior research assistant, at the Institute for Cartography and Geoinformation at the University of Bonn. Between 2006 and 2012 he held the Chair of the Department of Geoinformation Technology at TU Berlin. Since 2012 he has been president of the German Society for Photogrammetry, Remote Sensing and Geoinformation (DGPF) and a professor at TUM.

THE EMERGING GI ENVIRONMENT: A GOOGLE PERSPECTIVE

Dr. Ed Parsons (Google, UK)

We take for granted the ability to view a map of our location on mobile devices wherever we may be, but how might our location in relation to the things we care about fundamentally change our daily lives.

Biography

Ed Parsons is the Geospatial Technologist of Google, with responsibility for evangelising Google's mission to organise the world's information using geography. In this role he maintains links with Universities, Research and Standards Organisations which are involved in the development of Geospatial Technology. He is currently co-chair of the W3C/OGC Spatial Data on the Web Working Group. Ed is based in Google's London office, and anywhere else he can plug in his laptop. He was the first Chief Technology Officer in the 200-year-old history of Ordnance Survey, and was instrumental in moving the focus of the organisation from mapping to Geographical Information. He came to the Ordnance Survey from Autodesk, where he was EMEA Applications Manager for the Geographical Information Systems (GIS) Division. He earned a Masters degree in Applied Remote Sensing from Cranfield Institute of Technology and holds a Honorary Doctorate in Science from Kingston University, London and is a fellow of the Royal Geographical Society.

REAL-TIME, BIG DATA AND 3D GIS

Dr. Morakot Pilouk (ESRI Redlands, USA)

In the last 5 years, developments in real-time acquisition of data and intercommunication between devices have made their ways into our daily activities and live styles. These combined developments are known as the Internet of Things (IoTs) where devices, gadgets, appliances, automobiles, and other things are getting smarter and capable of communicating among themselves as well as with the backend infrastructure that can collect, analyse, and archive data in real-time. Various kinds of sensors are being produced rapidly. Not only the sensors are getting smaller in sizes, the host computers are now at the size of a credit card or smaller - some of them are embedded in a chip at the size of an SD card (e.g. Intel Edison).

The increasing speed and volume of real-time data are calling for better and more efficient way to process and represent information not only in 2D, but also in 3D. Time is now a critical component that must be stored and handled along with geometry and other attributes. Archiving of high volume and frequency real-time data demands large capacity of storage volume. Efficient spatial and temporal indexes are important for accessing "big data" at a rapid speed to meet various user requirements. Some experiences and observations after multiple years involvements in the areas of real-time, IoTs, and 3D will be shared during this session. Visions on future researches and developments on real-time and temporal 3D GIS will also be given.

Biography

Dr. Pilouk is completing his 20 years with Esri. He received his Ph.D. from a joint degree program from the International Institute for Aerospace Survey and Earth Sciences (ITC) and Wageningen Agricultural University in the Netherlands in 1996. His Ph.D. thesis was "Integrated Modeling for 3D GIS" which was one of the first few 3D GIS theses back in the early 90's. Dr. Pilouk was part of the team that started 3D Analyst product development at Esri. He is now part of the Real Time GIS research and development team. He led several development teams such as Raster, Spatial Analyst, Geostatistical Analyst, Map Generalization, Vectorization (ArcScan). His research interest is in the field of real time 3D GIS including 3D computer graphics, real-time data communication, spatio-temporal big data, Internet of Things.

PROFESSIONAL OPPORTUNITIES FOR GEOMATIC ENGINEERS

Prof. Dr. Rahmi Nurham Celik (Istanbul Technical University, Turkey)

Geomatics or Geomatic Engineering sector is a kind of sector that linked with many other sectors in other words linked with almost all sectors that make business by using geo-data or geospatial information. Therefore Geomatic Engineering sector has a wide variety of opportunity to improve or develop new business fields to work with other sectors such as information technology, civil engineering, environmental engineering, mechanical engineering, shipbuilding, aviation, navigation, logistic and etc. sectors. However, in order to take new positions and work with or to be in other sectors, Geomatics' people or Geomatic Engineers should brake the bulb.

When we look at the fundamental interest fields of Geomatic Engineering sector, we can see that they mainly focus on geodesy, photogrammetry, land surveying, cadastre, land management, remote sensing, cartography and spatial information systems. Education of the profession also mainly concentrates on these fundamental fields of profession. This is important that this wide variety formation of the profession promising much smarter performance from the geomatics people especially with the contribution of new technological developments.

For instance smart digital technologies define new life style for people and communities. Integration of spatial information technologies, internet technologies and mobile communication technologies open new windows and declaring new life styles. Therefore demands of the people and communities increase every new day from the professionals who make business by using these knowledge, data and technologies. On the other hand people learned the priceless value of instantly receiving and knowing 4D positioning information of any other information. Therefore when they ask for or query any information they also expect to have the answer with its location information. Moreover their satisfaction levels increase every new day especially about the precision of the position information of the information they require. Nowadays maps, remote sensing and photogrammetric images integrated with global positioning systems outputs are the key components to compensate their demands. However it is obvious that these are only their today's expectations. What it could be in a short, medium and long term? Therefore we have to prepare ourselves for their new expectations. In order to do this as a geospatial data producer, provider and manager we have to be much smarter than the demanders who would like to use our products in several different applications to make their life much safer and more comfortable. Remember, not long ago, some events were misfortune for the people, such as a heavy traffic jam because of a traffic accident. Thanks to integrated technologies, today, people who use navigation applications on their mobile phones know what happened much earlier than not involved the problem, and consequently they use alternative way to get rid

of the problem. This is just a simple example, imagine that what other services and applications can be provided to the users with more precise real-time positioning, much detailed digital map and etc.

As a summary this presentation firstly draws the capability of geomatics profession and then indicates the links of professions with some other professions or sectors for enlightening the possible opportunities to make up new business channels beside usual or conventional professional business activities. Focus of the presentation is mainly on geospatial fields, however links with aerospace industry, shipbuilding industry and etc. is also emphasised.

Today, the great act is a transition in between information society and Geoinformation society. Way of thinking changes accordingly. Consequently people's spatial thinking ability improves. Therefore Geomatic Engineers have to be spatial thinker, not a man who improves his/her own thinking ability.

Biography

Rahmi Nurhan Çelik is a professor in the Department of Geomatic Engineering at Istanbul Technical University. He had his PhD degree in The University of Newcastle upon Tyne/England. He has taken several academic management positions in the university; as a Vice Dean of Science and Technology Institute, as an Executive Board Member of Civil Engineering Faculty, as a Head of Postgraduate Program of Geographic Information Technologies in the Informatics Institute, as a founder and Head of Terra Working Group, etc. He has also taken several management positions in the professional organisations as a president, as an executive board member, as a scientific and technical committee chair and committee member of both Istanbul Branch and Headquarter of Chamber of Surveying and Cadastre Engineers, as a Vice President board member of European Group of Surveyors, as a founder president, president and board member of the Spatial Information Initiative Association of Turkey, as a founder member and board member of the Association for Geospatial Information in South East Europe, etc. He has also taken part in many international and national scientific and technical congresses as a director, as a management board member, as a chair, as a scientific board member etc. He has more than hundred fifty international and national scientific publications.

INVITED TALKS

INVITED TALKS Chair: A.Rahman (room: Mahkota II)	
Thu 14:00 – 15:00	**Bussines Model and Benefits of Turkey's RTK Network in Turkish Geospatial Infrastructure** *Serdat Bakici (TKGM, Ankara)*
	Updating Seismic hazard map of Indonesia *Irwan Meilano (ITB, Indonesia)*
	Earthquake in Ranau *Azhari bin Mohamed (JUPEM, Malaysia)*

INDUSTRIAL TALKS

INDUSTRIAL TALKS (room: Mahkota II)	
#1 Wed 11:30 - 13:00	*Chair: A. Rahman*
	AntaraGrafik, Malaysia *En. Nor Azman Baharum*
	KQ GEO Technologies Provide comprehensive GIS solutions ***Hanna Zhou***
	RD Palmer Precision locating *Wong ChinYung*
	MRT Cooperation
#2 Fri 10:00 - 10:30	*Chair: Dato Wan*
	TM TM Mapping Services - Redefining Mapping Needs Shamim Ahmad Ameer Ali Khan
	KBSE Mobile Technology in Geographical Information System (GIS)
	Wuhan Visiontek Move The Real World Into Mobile Internet *Gao Kai*

KQ GEO – PROVIDE COMPREHENSIVE GIS SOLUTIONS

Hanna Zhou

KQ GEO is one of the leading suppliers of GIS software, GNSS/GPS technology & equipment, and spatial data service in China. Our company provides complete solutions over a wide variety of industries. Case study: Pipelines Information Management System with its background, functions, advantages and applications.

Hanna Zhou is the Project Manager in International Business Department of KQ GEO Technologies. With her background in science field and enthusiasm in GIS career, Miss Zhou plays a very important role in promoting KQ GIS Concept in Southeast Asia. Her professional and detailed project proposal and on-site project investigation has been well received by many clients. She works closely with KQ R&D group to develop customized systems to complete clients' demands and fit their workflow.

RD PALMER – PRECISION LOCATING

Chin Yung Wong

Over the years there are many talks on underground utility locating covering topics such as methodology of locating, damage prevention and best practice etc. However there is not much emphasis on the precision of the equipment used to further improve the accuracy and quality of locating and marking. The talks will cover on the critical features of the latest Precision Pipe Cable Locator. How and why it is critical for accuracy, speed and safety for utility locating. The newly launched equipment is now available in the market and is setting the standard of EM locating to a new high.

Mr. Chin Yung Wong is a Certified Energy Manager and a Companion Member of The Institution of Engineers. Currently, he is holding the position of the Senior Sales and Marketing Manager in RD-Palmer Technology (M) Sdn Bhd. Mr. Wong had more than 5 years of experience in system process design, control, integration and monitoring for various industries such as Oil and Gas, Water and Wastewater and General Industries. He is also a qualified trainer for Underground Utilities Detection and Inspection system and had to-date conducted numerous training for users from various industries such as TNB, Universities, Water Companies, IWK, PUB and contractors in Malaysia and Singapore.

TELEKOM MALAYSIA BERHAD – REDEFINING MAPPING NEEDS

Shamim Ahmad Ameer Ali Khan

TM started to develop digital map since 1992 for internal needs such as cable planning and implementation. Later the usage was extended for business planning and operation such as targeted marketing and customer provisioning. TM started to realize the value of the digital map when various parties started to approach TM to acquire TM digital map. Due to this demands, TM decided to commercialize the digital map by bundling the map as product solution and successfully marketed the product to government and private sectors. The products developed by TM include Web Mapping, Desktop Mapping and Automatic Vehicle Location System. Among the government sector using TM digital map is Security, Financial, Emergency and Survey sector. Private sector includes Banking, Utilities and Foods. In order to further improve TM digital map, TM have acquired latest technology in the market by purchasing Mobile Mapping System and UAV. TM have recently developed complete GIS workflow engine which covers from cloud servers, desktop to mobile devices such as Smartphone. This product enables customer to adapt quickly to end to end GIS process from data capturing to map publishing.

Shamim joined Geomatics Department of Telekom Malaysia in 1998, assigned as System Analyst to develop application for TM network planning system. Year 2001 to 2006, assigned to develop TM commercial Geomatics product Automatic Vehicle location and TM Geographical Information System. Year 2006 to 2009, promoted to Manager, responsible to manage and improve Geomatics Department IT Infrastructure. Year 2009 to 2013, assigned to manage Geomatics Map Content development and map updates activities. 2013 to now, he is assigned to manage Geomatics Department projects for both internal and external customers. He is currently managing JUPEM SmartKadaster project.

VISIONTEK – MOVE THE REAL WORLD INTO MOBILE INTERNET

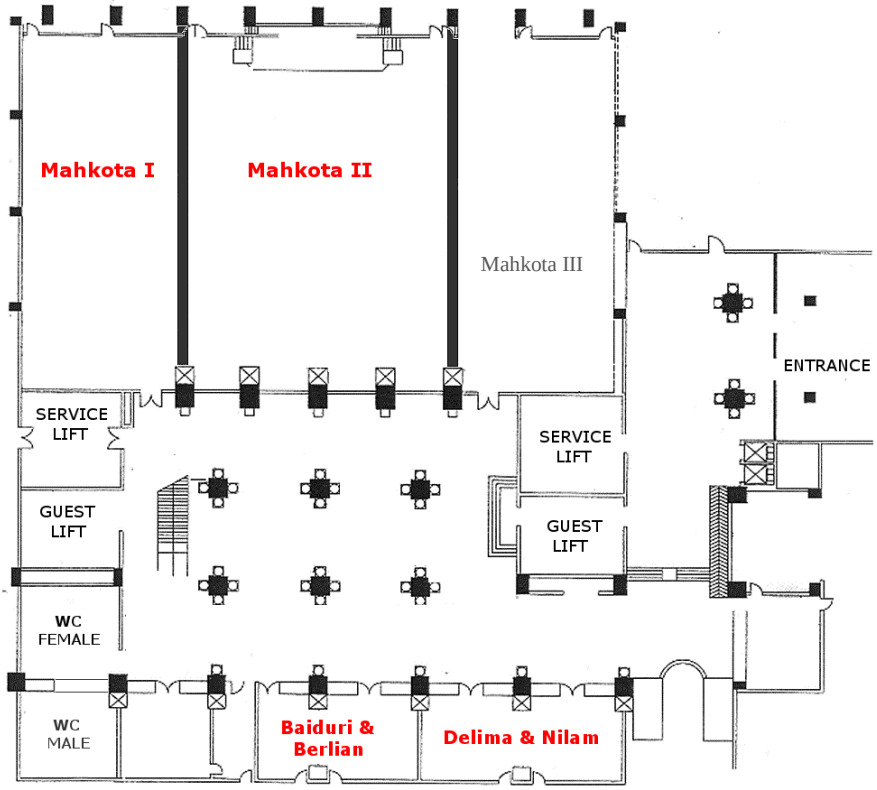
Gao Kai

Mr. Gao Kai will share the information as following, 1. How to capture, process and publish the data quickly. 2. Move the real world into the internet and create real 3D scenes.

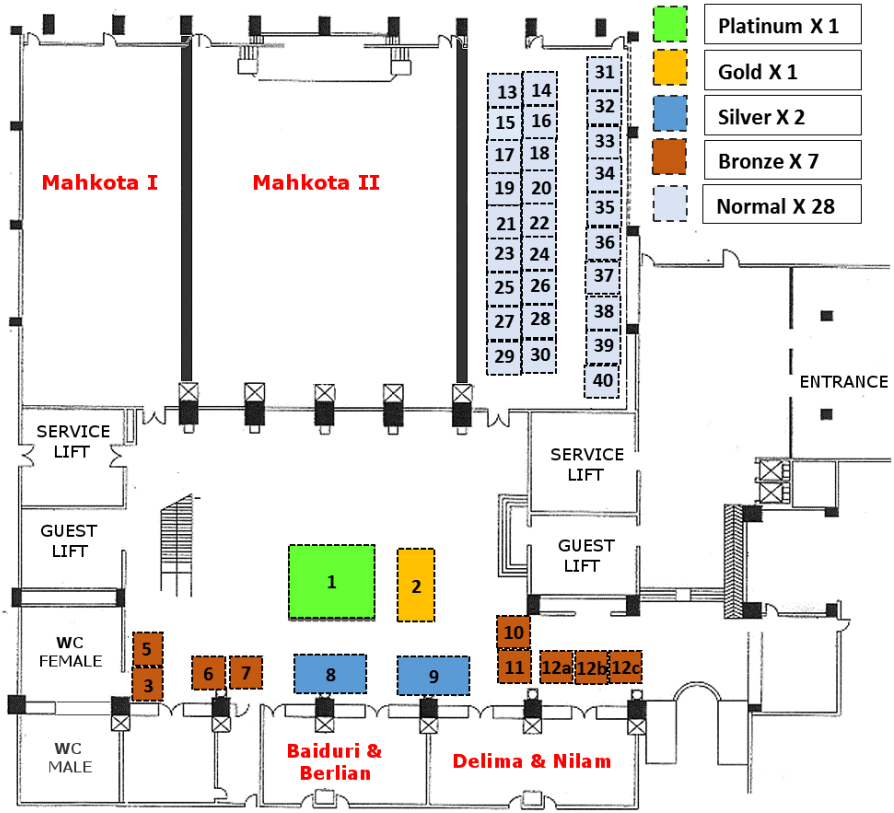
FLOOR / ROOM PLAN

Conference presentations and talks will take place in four different rooms:

- Mahkota I
- Mahkota II
- Baiduri & Berlian
- Delima & Nilam



EXHIBITION PLAN

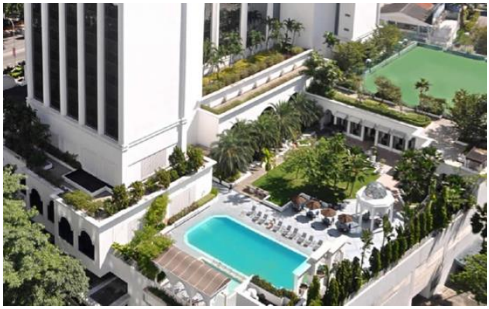


1	Antaragrafik Systems	15	Felda (FGV)	29	BIMTAS (Turkey)
2	Telekom Malaysia (TM)	16	BAE	30	Imagemaps Geospatial Solutions
3	MapInfo Malaysia	17	Jurukur Atlas		
5	Syarikat Air Johor (SAJ)	18	Aerodyne	31	UTM
6	ESRI	19	Global-trak Systems	32	RS & GIS
7	HP	20	IR Technique	33	Maju Geohydro
8	RD-Palmer	21	Juruukur Jalal Johari	34	Ground Data Solutions
9	Info-Geomatik/ JUPEM	22	Geomatika University College		R&D Berhad
10	KBSE Technology			35	Geodelta Systems
11	Mk Survey	23	MegaSoft	36	AV Tech Resources
12a	Wuhan Visiontek Inc.	24	DBKL	37	Surmaps
12b	Enviro Land Services	25	TopSystems	38	THS Geoscience
12c	KQ Geo Technologies	26	Geo Spatial Solution	39	MaCGDI
13	Malik	27	BIMTAS (Turkey)	40	E.J. Motiwalla
14	Bandwork GPS Solutions	28	SkyShine + Topcon		

CONFERENCE SOCIAL EVENTS

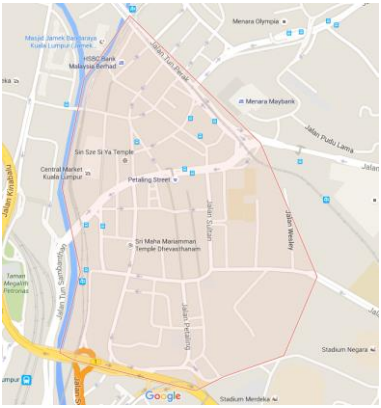
CONFERENCE DINNER

Date: Oct. 28th, 19:00 - 21:00 hours
Venue: Hotel Istana (with ticket)



EXCURSION TO PUTRAJAYA

Date: Oct. 30th (14:30 – 18:00 hours)
Venue: Putrajaya
Free of charge, booking needed until Oct 21st



EMERGENCY AND MEDICAL CONTACT INFORMATION

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PHARMACY	Watsons 63, Jalan Sultan Ismail 50250 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Farmasi Region 64, Jalan Alor 50200 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Constant Pharmacy Lot G48, Ground Floor, Wisma MPL, Jalan Raja Chulan, 50200 Kuala Lumpur

HOSPITAL	**Kuala Lumpur General Hospital** Jalan Pahang 50586 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Phone: 03-2615 5555 Website: www.hkl.gov.my **Tung Shin Hospital** 102, Jalan Pudu 55100 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Phone: 03-2037 2288 Website: www.tungshin.com.my **Sentosa Medical Centre** 36, Jalan Chemur Pekeliling 50400 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Phone: 03-4043 7166 Website: www.kpjsentosa.com **Prince Court Medical Centre** 39, Jalan Kia Peng 50450 Kuala Lumpur Wilayah Persekutuan Kuala Lumpur Phone : 1-800-88-7262 Website: www.princecourt.com
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The Joint International Geoinformation Conference 2015 is co-organized by Universiti Teknologi Malaysia (UTM), Geomatic and Land Survey (GLS) Division of Royal Institution of Surveyors Malaysia (RISM) and supported by the Department of Survey and Mapping (JUPEM) Malaysia and Pejuta (Association of Authorized Land Surveyors Malaysia).

UTM, established in 1972, is an innovation-led and graduate-focused research university which is located both in Kuala Lumpur and Johor Bahru cities of Malaysia. UTM strives with total and unified effort to attain excellence in science and technology for universal peace and prosperity.

RISM-GLS Division is the national professional body comprising professional surveyors in private practice, public sector, government-owned agencies, institutions of higher learning and the corporate world. It strives to play a significant role in national development for the betterment of society, the quality of life and environment through its professional activities in surveying.

JUPEM (Department of Surveying and Mapping Malaysia), as a main supporter of the conference, is government department under Ministry of Natural Resources and Environment (NRE) which is responsible for the surveying and mapping activities in Malaysia. It helps federal & local governments, companies and individuals pertaining to surveying and mapping for evidence based decision-making and policy formulation.

This collaborative organization of JIGC aims to bring together leading researchers at local and international levels to present, discuss and exchange ideas on emerging topics in the field of 3D Geoinformation science, technology and its applications, multidimensional spatial data and underground utility mapping.

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KUALA LUMPUR – TOURIST INFORMATION

Selamat Datang to Kuala Lumpur !

In Kuala Lumpur, short “KL”, you'll get to experience modern sophistication and nostalgic old-world charm in a single destination. Tour the city to see stunning skyscrapers standing alongside charming pre-war heritage buildings. The city abounds with architectural marvels, themed attractions and places of worship. Most spots can be easily accessed via KL's well-developed transport network.

With its colourful potpourri of races and cultures, KL is a kaleidoscope of fascinating sights and sounds. Immerse yourself in the abundance of attractions that include exciting theme parks, world-class sporting events, dazzling cultural performances and entertaining nightlife. Things to do and visit while in KL:

- Kuala Lumpur Orchid Garden
- Kuala Lumpur Hibiscus Garden
- Kuala Lumpur Deer Park
- Kuala Lumpur Bird Park
- Kuala Lumpur Butterfly Park
- Perdana Botanical Gardens
- National Monument
- Amphitheatre
- Parliament House
- Bukit Bintang Street
- Avenue K
- Suria KLCC Shopping Centre
- Ampang Park Shopping Centre
- Mid Valley City
- Tuanku Abdul Rahman Street
- Central Market
- Karyaneka
- Roller Coaster At Berjaya Times Square
- Swim With Sharks At Aquaria KLCC
- Fly A Helicopter At Petrosains
- KLCC's Musical Fountain
- Winged Colours At The KL Bird Park & KL Butterfly Garden
- Awesome Views From Petronas Twin Tower
- Be Creative At Kraftangan Malaysia
- Be Creative At Selangor Pewter
- Royal Selangor Visitor Centre
- Duty-Free MO Outlet
- Enjoy 'ABC'
- Drink Teh Tarik
- Try Satay
- Checkout Night Market Food Stall
- Eat "Roti Canai"

Shopping

KL is famously known as a shopping destination as it offers a plethora of items and brand names with competitive prices. In 2012, CNN Travel voted KL as the fourth best shopping city in the world. The facilities range from deluxe shopping centres and complexes to bazaars and night markets that offer a numbing yet irresistible choice of local collectibles as well as international labels. The KL shopping experience is always an exciting affair that offers a variety and choices that often come at great bargains.

A not-to-be-missed celebration is the Malaysia Mega Sale - held three times a year - where goods and items come at rock-bottom prices. Also, keep a look out on the Reasonably Priced badge on some of the local brands - a mark that is given to businesses that offer valuable goods and services without charging exorbitant prices. Last but not least, credit cards are accepted almost anywhere.

Weather

There are three phases to KL's weather - hot, hotter and hottest! Daily temperatures lay between 23 and 32 degrees Celsius all around the year. KL's weather is perfect for lightweight clothing so dress light and drink lots of water for a fun-filled day exploring this bright and sunny city. Occasionally, there's rain to cool down the weather and relieve the heat. But fret not; we can assure you that the rain won't cause you to take a rain check for your plans as KL still offers ease of mobility via our covered walkways and pavements.

Business Hour

The official operating hours for most retail shops and shopping centres in KL are from 10.00 am to 10.00 pm. Government offices operate from 8.00 am to 4.30 pm on weekdays only. Banking hours are from 9.15 am to 4.30 pm on Mondays to Fridays and post offices open from 8.30 am to 5.30 pm on Mondays to Saturdays.

On the contrary, KL is famous for its round-the-clock eating time, hence you'll see many eateries are open for 24 hours a day, 7 days a week. In some parts of KL, street side shopping happens from 3.00 pm until midnight.

Currency and Money

The Malaysian Ringgit (currency code: MYR) is the main trading currency in Malaysia. Other major currencies such as the US Dollars, Euros, or British Pounds can also be used in selected major stores city-wide, though often these are congregated within the vicinity of the Kuala Lumpur City Centre. Licensed money changers are easy to find throughout the city, and typically accept most of the major currencies. In addition to this, traveller's cheques can also be cashed in at banks, licensed money changers and selected hotels. Most stores and restaurants accept major credit cards, such as Visa, MasterCard, and Amex. However, it is highly recommended that you do keep sufficient cash in hand for emergencies.

Religion and Culture

Malaysia is a cultural fusion with various festivals being celebrated throughout the year. For example Aidilfitri, Aidiladha, Chinese New Year, the mid-autumn festival (also known as Mooncake Festival); Deepavali and Christmas.

Hence, it is not unusual to have a Muslim mosque, a Hindu shrine, a Christian church and a Buddhist temple in the same neighbourhood. When you enter KL, you'll notice the city's colourful vibe - a result of the diversity of its people. To showcase this, KL has its own Chinatown, Little India and Malay village (Kampong Baru), each highly popular and crowded with visitors shopping for trinkets and food. It is the unity and tolerance between the multi-cultural and multi-ethnic people that makes KL beautiful and highly adored by travellers.

Communication

The main languages spoken in KL are English and Bahasa Malaysia (Malay). You will have no problem conversing with the people here in English, be it to ask for directions or the best spot to eat and party.

Postal and communication services are available throughout KL. Mobile networks operate on the GSM network and roaming services are readily available. If needed, you can purchase prepaid telephone cards that are available on most flights to KL, and at the airport. There are special rates offered for tourists. Internet services are available to the public via internet cafes and at hotels, and many outlets offer free WiFi for their patrons. Note: Malaysia's international calling code is +60.

PEJUTA

PERSATUAN JURUUKUR TANAH BERTAULIAH MALAYSIA

ASSOCIATION OF AUTHORISED LAND SURVEYORS MALAYSIA

The Association of Authorized Land Surveyors Malaysia, is a non-governmental organization formed in 1976, and whose membership consisted of practicing professionals with a total number of members reaching more than 500.

PEJUTA is working together with the Department of Surveys and Mapping Malaysia (JUPEM) and the Land Surveyors Board (LJT), to foster, preserve and enhance the status, prestige and integrity of the profession of surveying through the promotion and encouragement of ethical practices and compliance to code of professional conduct amongst the memberships.

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