The XXIV FIG International Congress 2010

Technical Program

11 – 16 April 2010
Sydney Convention & Exhibition Centre
Sydney, Australia

Facing the Challenges
– Building the Capacity

www.fig2010.com
# Program at a Glance

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*Figures updated with the correct times and activities.*
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Facing the Challenges – Building the Capacity

Technical Program

Friday, 9 April 2010

FIG Council Meeting
Friday, 9 April 09:00–17:00
Venue: Boardroom, Crown Plaza Hotel
Commission: FIG Council
– by invitation only

Saturday, 10 April 2010

ACCO Meeting
Saturday, 10 April 09:00–17:00
Venue: Blackwattle 3, Crowne Plaza Hotel
Commission: FIG Commission Chairs
– by invitation only

Sunday, 11 April 2010

FIG General Assembly – Session I
Sunday, 11 April 09:00–12:00
Venue: Grand Ballroom B, SCEC
– for FIG Members
– open for observers

FIG General Assembly – Session I (cont.)
Sunday, 11 April 13:00–15:00
Venue: Grand Ballroom B, SCEC
– for FIG Members
– open for observers

Reception for FIG Honorary Members
Sunday, 11 April 15:00–16:00
Venue: Bayside 107, SCEC
Commission: FIG President
– by invitation only

Welcome Reception
Sunday, 11 April 18:30–20:30
Venue: Sydney Town Hall
An invitation is extended to all delegates and registered accompanying persons to attend the official Welcome Reception.

Monday, 12 April 2010

Annual Meetings of FIG Commissions
Monday, 12 April 08:00–09:30
Venue: See list, SCEC
– Commission 1 – Bayside 106
– Commission 2 – Bayside 202
– Commission 3 – Bayside 104
– Commission 4 – Bayside 101
– Commission 5 – Bayside 102
– Commission 6 – Bayside 202
– Commission 7 – Bayside 103
– Commission 8 – Bayside 105
– Commission 9 – Bayside 201
– Commission 10 – Bayside 108

Opening Ceremony
Chair: Mr. Paul Harcombe, FIG Congress Director, Australia
Monday, 12 April 10:00–11:30
Venue: Bayside Auditorium B, SCEC
Michael Giudici, SSSI President (Australia): Welcome Address (4735)
Stig Enemark, FIG President (Denmark): Opening Address (4643)
Tony Kelly, Minister for Lands (Australia): Welcome Address (4737)
Marie Bashir, AC CVO, Governor of New South Wales (Australia): Opening Address (4738)
Tim Flannery (Australia): Opening Keynote Address (4642)

Plenary Session 1 – FIG Achievements for 2007–2010
Monday, 12 April 13:00–14:30
Venue: Bayside Auditorium B, SCEC
Commission: All Chair: Mr. Robert W. Foster, FIG Honorary President, USA
Stig Enemark (Denmark): Building the Capacity – the FIG Agenda and Achievements 2007–2010 (4643)
Matt Higgins (Australia): Achievements of FIG Commissions 2007–2010 (4696)

Opening of the Exhibition
Monday, 12 April 12:00–13:00
Venue: Exhibition Hall, SCEC
– Official Opening of the FIG 2010 Exhibition
MONDAY, 12 APRIL 2010 15:00–16:30

INV 1 – Land Governance in Support of the Millennium Development Goals
Monday, 12 April 15:00–16:30
Auditorium B, SCEC
Commission: FIG and WB
Chair: Mr. András Osskó, Chair of FIG Commission 7, Hungary

Stig Enemark (Denmark): Land Governance and the Response to Climate Change, Natural Disasters and the Millennium Development Goals (4661)


Stig Enemark (Denmark), Paul van der Molen (the Netherlands) and Robin McLaren (United Kingdom): Land Governance in Support of the Millennium Development Goals – A New Agenda for Land Professionals (4662)

TS 1B – SIM in Support of Mega City Management
Monday, 12 April 15:00–16:30
Venue: Bayside 103, SCEC
Commission: 3
Chair: Dr. Szabolcs Mihály, Hungary
Rapporteur: Mr. Gerasimos Apostolatos, Greece

Anthony Adeoye (Nigeria): Lagos State Geoinformation Infrastructure Policy LAGIS as a Tool for Mega City Development: Opportunities and Challenges (3743)

Chryssy Potsiou (Greece), Yerach Doytsher (Israel), Paul Kelly (Australia), Rafic Khouri (France), Robin McLaren (United Kingdom) and Hartmut Müller (Germany): Rapid Urbanization and Mega Cities: The Need for Spatial Information Management (4709)

Yerach Doytsher (Israel): Technical Innovation in Management of Spatial Data (4710)

Paul Kelly (Australia): Case Studies on Mega Cities (4711)

Robin McLaren (United Kingdom): Mega Cities – Conclusions and Recommendations (4713)

TS 1C – Geodetic Infrastructure and Datum
Monday, 12 April 15:00–16:30
Venue: Bayside 104, SCEC
Commission: 5
Chair: Mr. Gary Johnston, Australia
Rapporteur: Mr. Dave Doyle, USA

Lars E. Engberg, Mikael Lilje and Jonas Ågren (Sweden): Is There a Need of Marked Points in Modern Geodetic Infrastructure? (3878)

Daniel Roman, Yan Wang, Jarir Saleh and Xiaopeng Li (USA): Geodesy, Geoids, and Vertical Datums: A Perspective from the U.S. National Geodetic Survey (3768)

Nicholas Brown, Will Featherstone and Guorong Hu (Australia): AUSGeoid09: Improving the Access to Australia’s Vertical Datum (4316)

Roger Fraser (Australia) and Nic Donnelly (New Zealand): Progress Towards a Consistent Exchange Mechanism for Geodetic Data in Australia and New Zealand (3961)

Graeme Blick and Don Grant (New Zealand): The Implementation of a Semi-Dynamic Datum in New Zealand – Ten Years On (3975)

Munkhtsetseg Dalkhaa (Mongolia): Geodetic Network and Geoid Height Model of Mongolia (3912)

TS 1D – Deformation Measurement of Structures Using GNSS
Monday, 12 April 15:00–16:30
Venue: Bayside 102, SCEC
Commission: 6 and 5
Chair: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom
Rapporteur: Mr. Neil Ashcroft, Singapore

Chris Rizos (Australia), Joel Van Cranenbroeck (Belgium) and Vincent Liu (Hong Kong SAR, China): Advances in GNSS-RTK for Structural Deformation Monitoring in Regions of High Ionospheric Activity (4125)

Gethin Roberts and Chris Brown (United Kingdom): Monitoring Bridges by GNSS (4452)

Joël Van Cranenbroeck (Belgium) and Antonio Lopez (Spain): Real Time Bridge Deck Guidance Using GNSS Systems (4077)

Cemal Ozer Yigit, Cevat Inal and Linlin Ge (Australia) and Mervlut Yetkin (Turkey): Analysis of Wind-induced Response of Tall Reinforced Concrete Building Based on Data Collected by GPS and Precise Inclination Sensor (3930)

Rachelle Winefield, Jeremy Palmer, Chris Crook and Nic Donnelly (New Zealand): The Application of a Localised Deformation Model after an Earthquake (4144)

TS 1E – Environment and Energy: Policy and Practice
Monday, 12 April 15:00–16:30
Venue: Bayside 105, SCEC
Commission: 8
Chair: Dr. Diane Dumashie, Chair of FIG Commission 8, United Kingdom
Rapporteur: Mr. John Brock, Australia

Diane Dumashie (United Kingdom): FIG Commission Activities 2007–2010 (4695)

Michael Doran (United Kingdom): Environment and Energy (4674)

Kate Fairlie and Spike Boydell (Australia): Representing Carbon Property Rights (4224)

This is a peer reviewed paper.


Tony Proust (Australia): How Newcastle, Australia Might Respond to the Threat of Climate Change (3927)

Jennifer Oduor (Kenya): Environmental and Social Considerations in Geothermal Development (3857)

TS 1F – Property Taxation
Monday, 12 April 15:00–16:30
Venue: Bayside 201, SCEC
Commission: 9
Chair: Prof. Kaouko Vitanen, Chair of FIG Commission 9, Finland
Rapporteur: Mr. Vince Mangioni, Australia

Frances Plimmer and William McCluskey (United Kingdom): The Basis and Administration of the Property Tax: What Can Be Learnt from International Practice? (4174)

Linda Johansson (Sweden): Urban Management Land Information System (UMLIS) for Revenue Collection (4201)

Vince Mangioni (Australia): The Evolution and Operation of Recurrent Property Taxation (4385)

This is a peer reviewed paper.

Ruud Kathmann and Marco Kuijper (the Netherlands): Taxpayer Checks Data in the Scheme of Base Registers (3894)

Bambang-Edhi Leksono, Yuliana Susilowati and Arief Setyabudi (Indonesia): Prediction Model for Transparency of Land Values Data Base on the Transaction Report (4318)

Note that throughout this Program, “TS” refers to a Technical Session with full presentations while “FS” refers to a Flash Session, which are shortened presentations that take the place of Poster Sessions at past FIG events.
Monday, 12 April 2010 15:00–16:30 (continued)

**TS 1G – Professional Management and Education**
Monday, 12 April 15:00–16:30
Venue: Bayside 202, SCEC
Commission: 1, 2 and 7
Chair: Ms. Leonie Newnham, Chair Elect of FIG Commission 1, Australia
Rapporteur: Prof. Steven Frank, Chair Elect of FIG Commission 2, USA
Leone Newnham (Australia): Building Land Management Organisations and Professions for the Information Age (4454)

**TS 1H – National Infrastructures for Survey, Mapping and Land Administration**
Monday, 12 April 15:00–16:30
Venue: Bayside 203, SCEC
Commission: 5 and 7
Chair: Dr. Neil D. Weston, USA
Rapporteur: Mr. Darren Burns, Australia
Dan Paull (Australia): The Provision of Access to a Nationally Coordinated CORS Network (4088)
Russell Priebenben (Australia): Delivering Benefits through Collaboration – Australia and New Zealand’s Intergovernmental Committee on Surveying and Mapping (ICSM) (4107)

**TS 1I – Administration of Marine Spaces**
Monday, 12 April 15:00–16:30
Venue: Bayside 106, SCEC
Commission: 4 and 7
Chair: Mr. Andrew Leyzack, Chair of FIG Commission 4, Canada
Rapporteur: Mr. David Neale, Trinidad and Tobago
Michael Sutherland (Canada): Further Steps Towards Improving the Administration of Marine and Coastal Spaces: The Marine Cadastre Component (4635)
Haim Srebro and Orit Marom (Israel): Towards a Marine Cadastre in Israel (3839)

**TS 1J – Building Institutional and Organisational Capacity**
Monday, 12 April 15:00–16:30
Venue: Bayside 101, SCEC
Commission: 1
Chair: Prof. Mohamed Ettarid, Morocco
Rapporteur: Mr. Yaacoub Saade, Chair of FIG Commission 1, Lebanon
Iain Greenway (United Kingdom), Stig Enemark (Denmark), John Parker (Australia), Chee Hai Teo (Malaysia), Richard Wonnacott (South Africa), Spike Boydell (Australia) and Santiago Borrero (Mexico): Institutional and Organisational Development (3950)

**TS 1K – Project and Organisation Management I**
Monday, 12 April 15:00–16:30
Venue: Bayside 108, SCEC
Commission: 10
Chair: Mr. Andrew Morley, Chair of FIG Commission 10, United Kingdom
Rapporteur: Mr. Douichi Choukri, Morocco
Peter Smith (Australia): Quantity Surveying Practice in Australia and the Asia-Pacific Region (4312)
This is a peer reviewed paper.

James M.W. Wong and S. Thomas Ng (Hong Kong SAR, China): Company Failure in the Construction Industry: A Critical Review and a Future Research Agenda (4360)
This is a peer reviewed paper.

Krishna Mochtar (Indonesia): Pricing Strategy of Indonesian Contractors (3832)
**Monday, 12 April 2010 16:30–17:30**

**FS 1B – Spatial Information Management**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 103, SCEC
  - **Commission:** 3
  - **Chair:** Ms. Tarja Myllymäki, Finland
  - **Rapporteur:** Mr. Peter Laarakker, the Netherlands
  - **Jaemyong Kim, Changwan Seo and Yun-Soo Choi** (Republic of Korea):
    - 3D Geospatial Database Implementation and Quality Management in Korea (4176)
  - **Andrus Nnaemeka Ukaejejofo** (Nigeria):
    - Application of GIS in Land Administration in Nigeria – The Example of Federal Land Information System (FELIS) (4533)
  - **George Vozikis** (Greece):
    - Investigation and Comparison of Different Methods for Automated Building Extraction from High Resolution Image Data (4603)

**FS 1C – Geoid and Gravity – Modelling, Measurements and Applications**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 104, SCEC
  - **Commission:** 5
  - **Chair:** Prof. Bill Kearnsley, Australia
  - **Rapporteur:** Mr. Nic Donnelly, New Zealand
  - **Yam Khoon Tor** (Singapore):
    - Accuracy of Geometric Geoid Model of Singapore using RTK Heighting (3974)
  - **Pavel Novak** (Czech Republic):
    - On Determination of a Regional Vertical Datum by Combination of EGM, Local Gravity and GPS/leveling Data (4048)
  - **Simon Holmes and Dan Roman** (USA):
    - The Application of High-Degree Gravitational Models to Processing Airborne Gravity Collected under the NGS GRAV-D Project (4057)
  - **Janis Kaminskis** (Latvia):
    - Geoid Model for Surveying in Latvia (4066)
  - **Olalekan Isiroye** (Nigeria):
    - Normal Gravity and the Nigerian Height System (4515)
  - **Saad Mogren** (Saudi Arabia):
    - A Preliminary Attempt of a Quasi-geoid for Saudi Arabia (4623)
  - **Ernesto Rodriguez Roche and Pedro Luis García Pérez** (Cuba):
    - Improving the Cuban National Geodetic Network by Means of the Global Positioning System (GPS) (4602)

**FS 1D – Deformation Measurement of Engineering Structures**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 102, SCEC
  - **Commission:** 6
  - **Chair:** Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom
  - **Rapporteur:** Mr. Russell Tiesler, Australia
  - **Vincent Lui** (Hong Kong SAR, China):
    - State of Art in Structural Geodetic Monitoring Solutions (4076)
  - **Russell Tiesler** (Australia):
    - Roseires Dam Heightening Construction Surveys (4223)
  - **Lukasz Bonenberg, Roberts Gethin, Hancock Craig and Lee Jae Kang** (United Kingdom):
    - Engineering Applications of Integrated Wireless Band Pseudolite and GNSS System (4250)
  - **Esra Tekdal Emniyeti, Rahmi Nurkan Celik and Tefvik Ayan** (Turkey):
    - Determination of Structural Deformations Caused by Earthquakes Using Geodetic Techniques (4184)
  - **Yunus Kalkan, Reha M. Alkan and Serdar Bilgi** (Turkey):
    - Forest Boundary Mapping Using Unregistered Islands Using Airborne Laser Scanning (3951)

**FS 1F – Cadastre: Developments and Case Studies**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 201, SCEC
  - **Commission:** 7
  - **Chair:** Mr. Daniel Roberge, Canada
  - **Rapporteur:** Mr. John Brock, Australia
  - **David Cowen, Nancy von Meyer, Robert Ader and David Stage** (USA):
    - The Current Status of Land Parcel Data in the United States (3882)
  - **Dek Kie Tcha, Young Jin Lee and Hyung Moo Kim** (Republic of Korea):
    - New Cadastral Surveying Process Based on Wibro Communication (3983)
  - **Les Gardner and Marc Strong** (Australia):
    - Metrics Manager for Digital Cadastral Data Base Management (3979)
  - **Jong-Hyun Yoon and Young-Ho Lee** (Republic of Korea):
    - Cadastral Surveying for Effective Caves Management in Korea (4019)
  - **Robert Veitch, Clare Fitzpatrick and Catherine Cooksey** (Australia):
    - Forest Boundary Mapping Using Multitemporal Satellite Images in Forested Areas of North Iran (4339)
  - **Ali Darvishsefat and Farokh Poursakhouri** (Iran):
    - Forest Boundary Mapping Using Some Properties of Ambiguity Function Method (3913)

**FS 1G – Cadastre and Land Administration – Technical Development**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 202, SCEC
  - **Commission:** 7
  - **Chair:** Dr. Markus Seifert, Germany
  - **Rapporteur:** Prof. Steven Frank, Chair Elect of FIG Commission 2, USA

**FS 1H – GNSS CORS Networks – Positioning Infrastructure, Analysis and Applications**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 203, SCEC
  - **Commission:** 5
  - **Chair:** Mr. Robert Sarib, Australia
  - **Rapporteur:** Mr. Mikael Lilje, Chair Elect of FIG Commission 5, Sweden

**Swawim Cellner** (Poland):
- GNSS Carrier Phase Processing Using Some Properties of Ambiguity Function Method

**Kostov Gintcho** (Bulgaria):
- Some Studies on the Quality of GNSS Determinations under Specific Conditions

**Joel Haasdyk, Craig Roberts and Volker Janssen** (Australia):
- Automated Monitoring of CORSnet-NSW using the Bernese Software

**Young-Jin Lee, Kwang-Ho Jung, Jun-Ho Song, Ki-Duk Ahn and Hung-Kyu Lee** (Republic of Korea):
- CORS Management Reform in Korea

**Open Meeting for Young Surveyors**
- **Monday, 12 April 16:30–17:30**
  - **Venue:** Bayside 106, SCEC
  - **Commission:** Young Surveyors Network
  - **Chair:** Ms. Cecilia Lindén, Chair of FIG Young Surveyors Network

  - This meeting is open for young surveyors and students who are interested in FIG.

**FIG Foundation Dinner**
- **Monday, 12 April 19:00–22:00**
- Captain Cook Cruises (boarding time 18:45)
  - The FIG Foundation Dinner is a cruise on Sydney Harbour, Join us for an enchanting scenic cruise whilst enjoying a three course meal complemented by Australian wines, beers and assorted soft drinks.
  - Cost: A$180.00 (includes donation to FIG Foundation).
Tuesday, 13 April 2010 08:30–10:00

IN V 2 – Social Tenure Domain Model
Tuesday, 13 April 08:30–10:00
Venue: Bayside Gallery A, SCEC
Chair: Dr. Mohamed El-Sioufi, UN-HABITAT
Rapporteur: Mr. Danilo R. Antonio, UN-HABITAT

Stig Enemark (Denmark):
The Social Tenure Domain Model in Support of the GLTN Agenda (4680)

Clarissa Augustinus (South Africa):
Social Tenure Domain Model: What It Can Mean for the Land Industry and the Poor (3724)

What It Can Mean for the Land Industry and the Poor (3724)

Christiaan Lemmen (the Netherlands):
Social Tenure Domain Model as Tool for Secure Tenure and Poverty Alleviation (4681)

T S 2 A – International Boundary Issues
Tuesday, 13 April 08:30–10:00
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Mr. Bill Robertson, New Zealand
Rapporteur: Mr. Mohamed Bakessou, Morocco

Bill Robertson (New Zealand): Challenges for Surveying in the Establishment of International Borders (3895)

Maurice Kamto (Cameroon): Law and Demarcation in the Light of the Experience of Demarcation of the Boundary between Cameroon and Nigeria (4759)

Kyung-Soo Eom (Republic of Korea), Vladimir Bessarabov (Russia), Guillaume Le Sourd (France) and Jeffrey Bliss (USA): The United Nations Technical Assistance in the Boundary Demarcation Activities (3858)

Sobar Sutisna (Indonesia): International Boundary Fixing and the Roles of Indonesian Surveyors (3888)

Murat Meha (Kosovo): Demarcation’s Challenges of Kosovo—Macedonia Border (4481)

This paper has not been presented at the congress.

T S 2 B – Low-Cost SDI and Best Practice Applications
Tuesday, 13 April 08:30–10:00
Venue: Bayside 103, SCEC
Commission: 3
Chair: Dr. Chrysyss Potsovia, Chair of FIG Commission 3, Greece
Rapporteur: Mr. Anthony Adeoye, Nigeria

Heri Sutanta, Abbas Rajabifard and Ian Bishop (Australia): Impediments in e-Planning in Local Government – Indonesian Case Study (4142)

Rui Pedro Juliao (Portugal): Low-Cost SDI – The Portuguese Example of Building a SDI for Small Countries (4165)

Lesley Arnold (Australia): Delivering Sustainable Data and Product Management Business Processes (4178)

Stéphane Roche (Canada): Geoweb, Geonotechnology, and VGI: New Challenges for Geomatics Sciences and Engineering (4208)

George Havakis and Ken Toleman (Australia): Streamlining Processes for Recording and Managing Local Government Assets (4321)

TS 2C – Low Cost GNSS and New Positioning Techniques
Tuesday, 13 April 08:30–10:00
Venue: Bayside 104, SCEC
Commission: 5
Chair: Dr. Volker Schwieger, Germany
Rapporteur: Mr. David Martin, France

Neil Weston (USA) and Volker Schwieger (Germany): Cost-effective GNSS (4685)

Binghao Li, Andrew G. Dempster and Chris Rizos (Australia): Positioning in Environments Where GPS Fails (4357)

This is a peer reviewed paper.

Joel van Cranenbroek (Belgium): Advanced Development in RFID Technology to Provide Solutions for Structural Health Monitoring Operations (4508)

Reha Metin Alkan (Turkey): Development of a Low-cost Positioning System Using OEM GPS Receivers and Usability in Surveying Applications (4206)

Claudia Depenthal (Germany): iGPS Used as Kinematic Measurement System (4587)

Oscar Colombo (USA), Shane Bruker, Glenn Jones, Volker Janssen and Chris Rizos (Australia): Wide-area, Sub-decimetre Positioning for Airborne LIDAR Surveys Using CORSNet-NSW (3965)

TS 2D – Deformation Measurement Using GNSS
Tuesday, 13 April 08:30–10:00
Venue: Bayside 102, SCEC
Commission: 6 and 3
Chair: Mr. Neil Acrost, Singapore
Rapporteur: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom

Paul Drummond (New Zealand): Combining CORS Stations, Automated Observations and Processing for Network RTK Integrity Analysis and Deformation Monitoring (4437)

Victor H.S. Khoo, Yam Khoon Tor and Gerry Ong (Singapore): Monitoring of High Rise Building Using Real-Time Differential GPS (3976)

Jayanta Kumar Ghosh, Devanjana Bhattacharya, Ankur Mundra, Yuvraj Singh, Vinayak Shrestha and Ram Bhuwan Chauhan (India): Geo-Deformation Analysis Using GPS (4463)

Jacob Odeh Ehiobobo, Bofuyat U. Anyata and Godwin Ovuorie (Nigeria): Monitoring of Deformation in an Earth Dam Using Differential GPS (4287)

Heri Andreas, Hasanuddin Z. Abidin, Mipi A. Kusuma, Prihadi Sumintadireja, Irwan Gumilar and Teguh P. Sidiq (Indonesia): Ground Displacements around LUSI Mud Volcano Indonesia as Inferred from GPS Surveys (3875)


Hakan S. Kucoglu (Turkey): Datum Issue in Deformation Monitoring Using GPS (4326)

TS 2E – Climate Change and Environmental Threats
Tuesday, 13 April 08:30–10:00
Venue: Bayside 105, SCEC
Commission: 8
Chair: Dr. Isaac Boateng, United Kingdom
Rapporteur: Dr. Reinfried Mansberger, Austria

Owen McShane (New Zealand): Why Urban Planners Love Global Warming: Why We Must Challenge the Theories of the Urban Central Planners (4624)

Ian Cox, Heping Zuo, Jai Vaze and Andrew Davidson (Australia): Enabling Community Access to NSW Climate Change Rainfall and Runoff Projections; a Spatial Perspective (3969)

Mwembe Muleya Mudenda (Zambia): Climate Change and Urban Slums in Lusaka, Zambia: Ignoring, Mitigate or Adapt (4196)

Wafala Nabutola (Kenya): The Mau Forest in the Rift Valley: Kenya’s Largest Water Tower: A Perfect Model for the Challenges and Opportunities of a Sustainable Development Project? (4755)

Hari Sutanta, Abbas Rajabifard and Ian Bishop (Australia): Studying Spatial Plan in Coastal Urban Environment – Facing Global Threat and Adapting to Local Condition (4156)

This is a peer reviewed paper.

Chima Ogba and Pius Utang (Nigeria): Geospatial Evaluation of Niger Delta Coastal Susceptibility to Climate Change (4039)

This is a peer reviewed paper.
Tuesday, 13 April 2010 08:30–10:00 (continued)

**TS 2F – Environmental and Financial Aspects in Valuation**
Tuesday, 13 April 08:30–10:00
Venue: Bayside 201, SCEC
Commission: 9
Chair: Dr. Frances Plimmer, Chair Elect of FIG Commission 9, United Kingdom
Rapporteur: Mr. Steven Nystrom, USA

Bengt Kjellson and Lars Magnusson (Sweden): Property Rights, Access to Finance and Poverty Reduction – the FIG Challenge (3891)
This is a flash presentation.

Joycelyn Makena Kaaria (Kenya): Incorporating Environmental Perspectives in Real Estate Valuation – The Income Approach and Compensations (4363)

Markku Airaksinen and Simo Hannelius (Finland): The Income Approach and Compensations (4363)

**TS 2G – Future Education Models and Curricula**
Tuesday, 13 April 08:30–10:00
Venue: Bayside 202, SCEC
Commission: 2
Chair: Prof. Bela Markus, Chair of FIG Commission 2, Hungary
Rapporteur: Ms. Marina Vaskovich, Sweden

Grenville Barnes and Brian Child (USA): Building a New Generation of Sustainable Development Practitioners: The Masters in Development Practice at the University of Florida and the Global MDP Network. (4243)

M. Tevfik Özlüdeşir, Rahmi N. Çelik and Erol Köktürk (Turkey): Education and Training in Surveying Sector of Turkey: Current Challenges and Future Perspectives (4294)


Taylan Ocalan and Nursu Tunalioglu (Turkey): Exchanges and Orientations at Surveying and Geomatic Engineering Education in Turkey (4262)

Richard Abbott (Australia): Paperless e-Surveying with Mr Laptop Surveyor (3758)

**TS 2H – e-Land Administration Projects**
Tuesday, 13 April 08:30–10:00
Venue: Bayside 203, SCEC
Commission: 7
Chair: Mr. Gyula Iván, Hungary

Rik Wouters (the Netherlands): Extracting Information from Deeds by OCR (3841)

Dimitris Rokos, Konstantinos Kyriazis and Panos Lolomis (Greece): Setting up the Infrastructure for Improving the Development of Cadastre in Greece (3916)

Zsuzsanna Ferencz (Hungary): Test and Implementation of DATR System in Hungary (4143)

Gyula Iván, Gábor Szabó and Zoltán Weninger (Hungary): DATR — Towards e-Land Administration in Hungary (4186)

Rui Pedro Juliao, Catarina Roque and Jose Neto (Portugal): SINeGIC – A New Approach to Cadastre (4215)

**TS 2I – Hydrographic Surveying in Practice with High Resolution Data**
Tuesday, 13 April 08:30–10:00
Venue: Bayside 106, SCEC
Commission: 4
Chair: Mr. Andrew Leyzack, Chair of FIG Commission 4, Canada
Rapporteur: Mr. Jerry Mills, USA

Mark Sinclair (Australia): Airborne Lidar Bathymetric Survey for Climate Change (4083)

Dean Battilana and Lawes Geoffrey (Australia): Fansweep 20 Total Propagated Uncertainty, Does It Reflect Reality? (3739)

Volker Böder (Germany): Applications for a Hydrographic Multi Sensor System on Lakes and Rivers (3962)

This is a peer reviewed paper.

Branko Kordić, Almin Đapo and Boško Pribičević (Croatia): Multibeam and Sidescan Sonar Application for Determining the Position and Shape of the Remains of Hadrian Bridge on Drava River (4296)

Christian Fellinger (Australia): New Way Forward for Handling Large Volumes of Data (4152)

John McCarthy and Matthew Simpson (Australia): In the Steps of Our Forefathers – From Sextant and Leadline to Satellites and Multibeam Echo-Sounders (4159)

**TS 2J – Modern Mapping Solutions**
Tuesday, 13 April 08:30–10:00
Venue: Bayside 101, SCEC
Commission: 3
Chair: Mr. Paul Kelly, Australia
Rapporteur: Mr. Michael Klebanov, Israel

Greg Scott (Australia): Topographic Mapping in Australia: The Future State (4003)

Igor Vilus (Croatia): The Official Topographic and Mapping System of the Republic of Croatia (4395)

Walter Henninger (Germany): Public Private Partnership between the State of Bavaria and the German Alpine Association to Publish Topographic Maps of the Bavarian Alps in the Scale of 1:25,000 (3808)

Agus Hermawan Atmadilaga and Nurwdjadji Sarbini (Indonesia): Updating Land Resource Map as Response to the Sustainable National Development Issues in Indonesia (4745)

Plenary Session 2 – Spatially Enabled Society
Tuesday, 13 April 10:30–12:00
Venue: Bayside Auditorium A, SCEC
Commission: All
Chair: Prof. Ian Williamson, Australia
Rapporteur: Dr. Chryssy Potsiou, Chair of FIG Commission 3, Greece

Abbas Rajabifard (Australia): Spatially Enabled Society (4644)

Santiago Borroto (Colombia): Spatially Enabled Society (4645)

Warwick Watkins (Australia): Spatially Enabled Society (4646)
After Lunch Talk 1 – Visions for the Future

Tuesday, 13 April 13:00–14:00
Venue: Bayside Auditorium A, SCEC
Commission: All
Chair: Mr. Robin McLaren, United Kingdom

Damian Spangrud (USA): Properly Managing the Data Asset (4657)

FS 2B – SIM Best Practice Applications
Tuesday, 13 April 13:00–14:00
Venue: Bayside 103, SCEC Commission: 3
Chair: Mr. Lefteris Lykouroupolos, Greece
Rapporteur: Ms. Piroiska Zalaba, Hungary

Sanja Zekusic (Croatia): Official Spatial Data as a Base for Management in Agriculture (4448)
Huseyin Can Unen, Himmet Karaman, Muhammed Sahin (Turkey) and Amr Elnashai (USA): Seismic Performance Analysis of Utility Lifeline Networks in Istanbul, Turkey (4234)

Dursun Zafer Seker, Mehmet Alkan, Hakan Kotoğlu, Hakan Akin and Yegan Kahya (Turkey): Development of a GIS Based Information and Management System for Cultural Heritage Site: Case Study of Sarphanbolu (4328)

Himmet Karaman and Muhammed Sahin (Turkey): Effects of the Datum and Projection of the Data for the Earthquake Loss Assessment (4329)

Robert Young (USA): Using GI and Survey Grade Data for Urban Natural Gas Operations (3744)

FS 2C – Positioning Measurement Techniques and Applications I
Tuesday, 13 April 13:00–14:00
Venue: Bayside 104, SCEC Commission: 5 and 6
Chair: Dr. Neil D. Weston, USA
Rapporteur: Dr. Volker Schwieger, Germany

Lucinda Coombe (USA): Delivering Survey Results Faster in the Digital World (3778)
Ricardo Freire and José Vasoncellos (Brazil): Geodetic or Rhumb Line Polygon Area Calculation over the WGS-84 Datum Ellipsoid (3868)

Olupo Ogundiye, Julie Greensmith and Gethin Roberts (United Kingdom): Multipath Detection Using the Dendritic Cell Algorithm (4673)
Kazimierz Beczek and Khairunissa Ibrahim (Brunei Darussalam): Introducing the Global Elevation Data Testing Facility (4687)

FS 2D – Usage of Image Techniques in Surveying
Tuesday, 13 April 13:00–14:00
Venue: Bayside 102, SCEC Commission: 6
Chair: Prof. Xiaoli Ding, Hong Kong SAR, China
Rapporteur: Mr. Mahmoud Gomah, Australia

Violeta Błaszczak-Bąk, Waldemar Kamiński, Artur Janowski and Jacek Rapiński (Poland): Review of Mathematical Algorithms of LiDAR Data Processing and Their Application in Geodesy and Surveying (3992)

Davood Akbari (Iran): Hyperspectral Target Detection Improvement Based on Noise Reduction and Spectral-spatial Methods Composition (3819)
Robert Páquez (Australia): Estimation of Interpolation Error in DEMs Using Statistical Methods (3983)

Bryan Williams (USA): Raising Expectations on Surveying Deliverables via Imaging Technology in Optical Instruments (4334)

Mir Moosa Hodjati, Mohamad Reza Saradjian and Siamak Jamshidi (Iran): Chlorophyll-a Estimation in Seفدrud Estuarine Using MODIS Images (4449)

Seyyed Emad Musavi, Amir Abuhamze and Musa Saie (Iran): A Study for Choosing the Best Pixel Surveying Method by Using Pixel Decisioning Structures in Satellite Images (4617)

FS 2F – Future Trends in Land Administration and Management
Tuesday, 13 April 13:00–14:00
Venue: Bayside 201, SCEC Commission: 7
Chair: Mr. Richard Grover, United Kingdom
Rapporteur: Mr. John Brock, Australia

Ingrid Öhlund (Sweden): Sustainable Co-operation between Real Properties Can Give Conditions to a Better Atmosphere and Environment (4071)

Stojanka Brankovic and Marija Raskovic (Serbia): Developmental and Sustainable Land Administration as a Support to Growth of Society as a Whole (4082)

Michael Christopher Whelan (Australia): Alternate Dispute Resolution (ADR) as a Means of Addressing Disputes (4636)

FS 2G – Round Table on Ambiguity Resolution
Tuesday, 13 April 13:00–14:00
Venue: Bayside 106, SCEC Commission: 4 and 8
Chair: Mr. David Neale, Trinidad and Tobago
Rapporteur: Dr. Diane Dumashie, Chair of FIG Commission 8, United Kingdom

FS 2H – GNSS CORS Networks – Positioning Infrastructure, Analysis and Applications II
Tuesday, 13 April 13:00–14:00
Venue: Bayside 202, SCEC Commission: 4 and 8
Chair: Ms. Christina Kempe, Sweden
Rapporteur: Mr. Darren Burns, Australia

Barde Jatau (Nigeria), R.M.S. Fernandes (Portugal), Adyemey Adebomeh (Nigeria) and Nuno Gonçalves (Portugal): NIGNET – The New Permanent GNSS Network of Nigeria (4549)

Yahia M. Al-Haifi (Yemen): The Significance of GPS Network Solution Over GPS Baseline Solution in Establishing Geodetic Control Points for Highway Construction in Yemen: a Practical Case Study (4075)

This paper has not been presented at the congress.

Dennis Ojijk and Peter J.G. Teunissen (Australia): Speeding up CORS Network RTK Ambiguity Resolution (4313)

FS 2I – Coastal Zone Issues
Tuesday, 13 April 13:00–14:00
Venue: Bayside 106, SCEC Commission: 4 and 8
Chair: Mr. David Neale, Trinidad and Tobago
Rapporteur: Dr. Diane Dumashie, Chair of FIG Commission 8, United Kingdom

Giskard Chimaghiko (Kenya), P. Avishan (Israel), F. Covas (Brazil), M. Eysel (Germany) and B. Williams (United States): The Significance of GPS Network Solution for the维持 of Geodetic Control Points for Highway Construction in Yemen: a Practical Case Study (4075)

This paper has not been presented at the congress.

Dennis Ojijk and Peter J.G. Teunissen (Australia): Speeding up CORS Network RTK Ambiguity Resolution (4313)
TS 3A – Land Governance for Sustainable Development
Tuesday, 13 April 14:00–15:30
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Ms. Dorine Burmanje, the Netherlands
Rapporteur: Prof. Paul van der Molen, the Netherlands

Tony Burns (Australia), Klaus Deininger (Germany), Harris Selod (France) and Kate Dalrymple (Australia):
Implementing the Land Governance Assessment Framework (4640)

Ian Williamson (Australia), Stig Enemark (Denmark), Jude Wallace and Abbas Rajabifard (Australia):
Land Administration for Sustainable Development (4103).
Launch of the book “Land Administration for Sustainable Development”.

TS 3B – Spatial Information Management and Spatial Data Tuesday, 13 April 14:00–15:30
Venue: Bayside 103, SCEC
Infrastructures Commission: 3 and 7
Chair: Mr. Damir Pahić, Croatia
Rapporteur: Mr. Pekka Halme, Finland

Robin McLaren (United Kingdom):
Can the Innovative Use of Mobile Phones Support More Effective Land Administration Services? (4447)

Christos Zenonos (Cyprus):
Trends & Developments to the Cyprus Cadastral System / Cyprus Integrated Land Information System (4708)

Jean Dotse (Ghana):
A Bordeless Africa – National and Regional Reference Frames and SDI’s (4373)

Conrad Tang and Lesly Lam (Hong Kong SAR, China):
Evolutionary Process of the Development of Spatial Data Infrastructure (SDI) in Hong Kong Part I: Top Directive and Policy Support (4175)

TS 3C – GNSS CORS Networks – Positioning Infrastructure, Analysis and Applications I Tuesday, 13 April 14:00–15:30
Venue: Bayside 104, SCEC
Commission: 5
Chair: Mr. Nic Donnelly, New Zealand
Rapporteur: Mr. Graeme Blick, New Zealand

Neil D. Weston, Richard Snay, Charles Schwartz and Gerald L. Mader (USA):
A Near Real-time GPS Interference Detection System in the United States Using the National CORS Network (4085)

Cecep Subarya, Hasanuddin Abidin, Wedyanto Kuncoro and Joni Efendi (Indonesia):
GPS Analysis Strategies to Minimize the Error Contribution to Geodetic GPS Determination (4319)
This is a peer reviewed paper.

James Millner, Martin Hale, Jacqueline LeLievre, Hayden Asmussen and John Gallagher (Australia):
Positioning Infrastructure Used for a Sustainable Future: Case Study from Victoria Australia (4554)

Andreas Knoepfler (Germany), Frederic Masson (France), Michael Mayer (Germany), Patrice Ulrich (France) and Bernhard Heck (Germany):
GURN (GNSS Upper Rhine Graben Network) – Status and First Results (4380)

TS 3D – Model Building and Data Analysis Tuesday, 13 April 14:00–15:30
Venue: Bayside 102, SCEC
Commission: 6
Chair: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom
Rapporteur: Prof. Hansjoerg Kutterer, Germany

Hansjoerg Kutterer, Hamza Alkhathib, Harald Vennegeerts and Jens-Andre Paffenholz (Germany):
Monte-Carlo Simulation of Profile Scans from Kinematic TLS (3795)

Dionysia-Georgia Perperidou, Konstantinos Sigizas and Eleni Tziortzioti (Greece):
A New Methodology for Surveying and Exploring Complex Environments Using 3D Scanning (4049)

Jens-André Paffenholz, Hamza Alkhathib and Hansjörg Kutterer (Germany):
Adaptive Extended Kalman Filter for Geo-Referencing of a TLS-based Multi-Sensor-System (4052)
This is a peer reviewed paper.

Karl Zippelt and Rebekka Czerny (Germany):
Collection and Interpretation of Point Clouds of Terrestrial Laser-scanning as a Basis for Hydraulic Flow Modelling (4374)

Alexander Reiterer, Peter Rautek and Eduard Groeller (Austria):
A Novel Method for the Visualisation of Deformation Data (3829)
This is a peer reviewed paper.

Hetti Arachchige Nalani (Sri Lanka), Alias Abdul Rahman (Malaysia) and Michael Hahn (Germany):
A Review – Realistic Multi Level 3D Building Models Based on Airborne and Mobile Laser Scanning Data (4686)

TS 3E – Neighbourhood and Society Tuesday, 13 April 14:00–15:30
Venue: Bayside 105, SCEC
Commission: 8
Chair: Mr. Wafula Nabutola, Chair Elect of FIG Commission 8, Kenya
Rapporteur: Mr. John Brock, Australia

Lani Roux and Michael Barry (Canada):
A Historical Post-formalisation Comparison of Two Settlements in South Africa (4288)

Dirk Loehr (Germany):
Land Conversion Out of Control – How to Achieve Better Governance (4666)

Frank Friescke (Germany):
Urban Development Grants in Germany – A Critical Success Factor to Strengthen Cities under Changing General Conditions (3823)

Grant Gleeson (Australia):
Whose Neighbourhood Is It Anyway? The Blight of Zoning – What Happens When “Topical” Development Meets Fast Approval Processes or Is This Just Wrong-headed Thinking? (4368)

Enrico Rispoli (Italy):
Railway Connections and High Speed Transport; the Social and Environmental Impact (4344)

TS 3F – Compulsory Purchase and Compensation I Tuesday, 13 April 14:00–15:30
Venue: Bayside 201, SCEC
Commission: 9
Chair: Mr. Bengt Kjellson, Sweden
Rapporteur: Mr. Trevor Knowles, New Zealand

Kauko Viitanen and Heidi Falkenbach (Finland):
FIG Recommendations for Good Practices in Compulsory Purchase and Compensation (4193)

Winrich Voss (Germany):
Compulsory Purchase in Poland, Norway and Germany – Part Germany (4220)

Håvard Steinsholt (Norway):
Some Aspects of Norwegian Expropriation Input to Comparative Study of Chosen Expropriation Issues: Germany, Norway and Poland (4307)
This is a peer reviewed paper.

Sabina Žróbek and Marek Walacík (Poland):
Compulsory Purchase Compensation in Polish Legislation on a Background Solutions Adopted in Other Countries (4028)
This is a peer reviewed paper.

Varnavas Pashoulis (Cyprus):
Law and Valuation of the Compulsory Purchase in the Republic of Cyprus and Recommendations for Improvement (4601)
Tuesday, 13 April 2010 14:00–15:30 (continued)

**TS 3G – Surveying Education Curricula I**
Tuesday, 13 April 14:00–15:30
Venue: Bayside 202, SCEC Commission: 2
Chair: Prof. Steven Frank, Chair Elect of FIG Commission 2, USA
Rapporteur: Prof. Miljenko Lapaine, Croatia

**Gary Hunter (Australia) and Chris Hoogsteden (New Zealand):**
A New Initiative for Land Administration and Management Education in the Philippines (4016)

**Ernest Chan (Hong Kong SAR, China):**
Changes of the Academic Structure of Hong Kong Universities in 2012 – Opportunities and Challenges for Undergraduate Surveying Teaching (4199)

**Joshua Greenfeld (Israel):**
Developing a Surveying Body of Knowledge (4372)
This is a peer reviewed paper.

**Nadezda Kamynina and Vassily Malinnikov (Russia):**
Land Information Systems and Administration – TEMPS Project in Russia (4222)

**Robert Webb (Australia):**
A New Undergraduate Model for Broadly Based Spatial Science Curriculum at Queensland University of Technology: Diversity in Surveying Curriculum (4161)

**Michael Mayer, Bernhard Heck (Germany) and Claudia Pereira Krueger (Brazil):**
Higher Education in Satellite Geodesy – A Research-related Intercultural Approach (4381)
This is a flash presentation.

**TS 3H – Remote Sensing and Imagery I**
Tuesday, 13 April 14:00–15:30
Venue: Bayside 203, SCEC Commission: 3 and 6
Chair: Dr. Renee Bartolo, Australia
Rapporteur: Dr. Ralf Schroth, Germany

**Cankut Ormeci, Ugur Alganci and Elif Sertel (Turkey):**
Identification of Crop Areas Using SPOT-5 Data (4581)

**Ganiy I. Agbaje (Nigeria):**
Nigeria in Space – an Impetus for Rapid Mapping of the Country for Sustainable Development Planning (4621)

**Hang Jin and Yanming Feng (Australia):**
Towards an Automatic Road Marking Extraction Based on ISO-DATA Classification and Shadow Detection from Large-scale Aerial Images (4403)

**Gabriele Giorgi (the Netherlands), Tim Gourlay, Peter Teu- nissen, Kim Klaka and Lennard Huisman (Australia):**
Carrier Phase Ambiguity Resolution for Ship Attitude Determination and Dynamic Draught (4059)

**Maurice Perwick (New Zealand):**
Profiling Lake Roxburgh Using the NZ Quasigeoid 2005 (4596)

**TS 3I – Positioning Techniques for Hydrography**
Tuesday, 13 April 14:00–15:30
Venue: Bayside 106, SCEC Commission: 4 and 5
Chair: Prof. Volker Böder, Germany
Rapporteur: Mr. John McCarthy, Australia

**Mahmut Olcay Korkmaz, Caner Güney, Özgür Avci, Mete Ercan Pakdil and Rahmi Nurhan Çelik (Turkey):**
Web-Based Integrated Precise Positioning System Design and Testing for Moving Platforms in Offshore Surveying (4323)

**Gabriele Giorgi (the Netherlands), Tim Gourlay, Peter Teunissen, Kim Klaka and Lennard Huisman (Australia):**
Carrier Phase Ambiguity Resolution for Ship Attitude Determination and Dynamic Draught (4059)

**Maurice Perwick (New Zealand):**
Profiling Lake Roxburgh Using the NZ Quasigeoid 2005 (4596)

**TS 3J – Francophone Session 1 – Cadastre and Land Administration**
Tuesday, 13 April 14:00–15:30
Venue: Bayside 101, SCEC Commission: FIG and FGF Chair: Mr. Aziz Hilali, Vice President of FIG, Morocco
Rapporteur: Mr. Yaacoub Saade, Chair of FIG Commission 1, Lebanon

**Francis Gâbele and Marc Vanderschueren (Belgium):**
Continuité dans l’Approche Méthodologique d’Evaluation de Valeurs par les Experts du Cadastre Belge Continuity in the Methodological Approach of the Evaluation of Values by the Appraisers of the Belgian Cadastre (4628)

**Pierre Bibollet (France):**
Le portail e-foncier, levier de modernisation de la délégation de service public du géomètre-expert (3880)

**Jean-Paul Miserez (Switzerland):**
Réaliser la Déclaration 1 de Cadastre 2014: un exemple suisse (4652)
This paper has been presented at the congress by Dr. Daniel Steudler.

**François Mazuyer (France):**
A Perspective on Project and Programme Management (Best Practises) (4260)

**Abdelrazik Kandeil and Chigozie Dimgba Ubong Ikpe (Nigeria):**
Making Sense of Wicked Projects (4014)
This is a peer reviewed paper.

**Chigozie Dimgba and Ubong Ikpe (Nigeria):**
A Perspective on Project and Programme Management (Best Practises) (4260)

**Director General Forum**
Tuesday, 13 April 14:00–17:00
Venue: Bayside 107, SCEC Commission: Board of JB-GIS Chair: Mr. Mark Cygan, Chair of JB-GIS
– for JB-GIS Members
– by invitation only

**Joint Board of Spatial Information Societies**
Tuesday, 13 April 14:00–17:00
Venue: Bayside Gallery B, SCEC Commission: Director General Forum Chair: Mr. Warwick Watkins, Surveyor General, NSW, Australia
Rapporteur: Mr. Iain Greenway, FIG Vice President, United Kingdom

The Director General Forum brings together senior managers of national mapping, cadastral and land organisations from around the world to discuss topics of mutual interest and importance. This event is the 3rd in a series which FIG has hosted. About 40–50 countries are expected to be represented. The Forum in Sydney will consider in particular: organisational mergers and government restructuring; delivering in challenging financial times; and building strong relationships with the private and academic sectors. The Forum will agree key issues in a communiqué from national organisations to FIG to be presented at the closing ceremony of the congress.

By invitation only.
Tuesday, 13 April 2010 16:00–17:30

TS 4A – Open-Source Software Solutions in Cadastre
Tuesday, 13 April 16:00–17:30
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Dr. Daniel Steudler, Switzerland
Rapporteur: Ms. Piroska Zalaba, Hungary

Daniel Steudler (Switzerland) and Mika Törhönen (Italy): The Potential of Open-Source Software in Cadastre and Land Registration – A General View (4167)

Geoffrey C Hay and G. Brent Hall (New Zealand): A Semantic Web Approach to Application Configuration in the Land Administration Domain (4519)

Gertrude Pieper (the Netherlands): Existing Open Source Tools and Possibilities for Cadastre Systems (4577)

Markus Seifert (Germany): Open Source Software in Daily Bavarian Cadastral Work – Practical Experience (4604)

TS 4B – Organisational, Strategic and Fiscal Aspects in SIM
Tuesday, 13 April 16:00–17:30
Venue: Bayside 103, SCEC
Commission: 3
Chair: Dr. Chrissy Potsiou, Chair of FIG Commission 3, Greece
Rapporteur: Dr. Rahmi Nurhan Çelik, Turkey

Oscar Custers and Gijsbert Noordam (the Netherlands): Leveraging Geospatial Information Across the Enterprise: Bentley’s Flexible Geospatial Approach (4702)

Jens Riecken (Germany): Spatial Information Management in the Context of Organizational Development – the Approach in North-Rhine Westphalia, Germany (3805)

Anders Lundquist, Ewa Rannestig and Ulf Sandgren (Sweden): The Swedish National Geodata Strategy and Its Implementation (3796)

Asmat Ali (Pakistan): Is Public Private Partnership an Effective Instrument to Implement SDIs? (4523)

Sarah James and John Richardson (United Kingdom): Managing Data Licensing Need Not Be a Problem! (4746)

TS 4C – GNSS CORS Networks – Positioning Infrastructure, Analysis and Applications II
Tuesday, 13 April 16:00–17:30
Venue: Bayside 104, SCEC
Commission: 5
Chair: Dr. Craig Roberts, Australia
Rapporteur: Mr. Neil Ashcroft, Singapore

Volker Janssen, Thomas Grinner, Craig Roberts and Michael Troth (Australia): Improving Cadastral Infrastructure with RTK GPS in Australia (3825)

This is a peer reviewed paper.

Jeremy Palmer (New Zealand) and Michael Moore (Australia): PositionNZ-PP – A GPS Post-Processing Service New Zealand (4102)

Lars Jämtnäs, Ragne Emardsson and Bo Jonsson (Sweden): Quality Assessment of Network-RTK in the SWEPoS® Network of Permanent GNSS Stations (4247)

This paper has been presented by Mr. Johan Sunna.

Simon C W Kwo (Hong Kong SAR, China): What Makes the Positioning Infrastructure Work – The Experience of the Hong Kong Satellite Positioning Reference Station Network (4526)

TS 4D – TLS Application I
Tuesday, 13 April 16:00–17:30
Venue: Bayside 102, SCEC
Commission: 6
Chair: Dr. Faheem Khan, Singapore
Rapporteur: Prof. Alessandro Capra, Italy

Ivo Miliev (Germany): Leads the Automation Degree in the Processing of Laser Scan Data to Better Final Products? (4409)

Thomas Werner and David Morris (Australia): 3D Laser Scanning for Masonry Arch Bridges (4436)

Timothy Nuttens, Alain De Wulf, Lander Brai, Bart De Wit and Leen Carlier (Belgium): High Resolution Terrestrial Laser Scanning for Tunnel Deformation Measurements (4497)

This is a peer reviewed paper.

Ela Vela, Luka Babić, Almin Dapó, Branko Kordić and Boško Pribićević (Croatia): The Best Practice for Coastal Adaptation Planning: A Surveyor’s Perspect (4756)

Rizgi Abdulahir V. and S. Hendriatiningsih (Indonesia): Spatial Unit Administration: An Integrated Administration of Land, Marine and Air Space Unit towards Sustainable Development of Archipelago State? (4487)

Flavio Boscatto and Francisco Henrique Oliveira (Brazil): The Cadastre System of Mollusk Culture at Santa Catarina Island – Brazil (4277)

Maisam Toosi, Fereidoon Owfi, Arash Eslami, Mahnaz Rabaniha and Abdol Reza Meshgini (Iran): Sustainable Development of Iranian Coastal Habitats of the Caspian Sea with GIS Method (Case Study: Chaloos City, Mazandaran Province) (4272)

Narsimha Garlapati, Mustak Shaikh and Mick Dwyer (Australia): Building the Capacity to Access Spatial Information about the Extent of Riparian Vegetation in New South Wales, Australia (4070)

This is a peer reviewed paper.

Jesper Rye Rasmussen (Denmark): Climate Change and Mapping of the Future Nature (4033)

Taufik Hidayatullah, Yudi Siswantoro, Anggoro Cahyo Pritianto and Irmadi Nahib (Indonesia): Mapping Small Island Natural Resource Balance and Economic Valuation (4362)

This is a flash presentation.

TS 4E – Coasts and Natural Resources
Tuesday, 13 April 16:00–17:30
Venue: Bayside 105, SCEC
Commission: 8 and 4
Chair: Dr. Isaac Boaung, United Kingdom
Rapporteur: Dr. Michael Suther-land, Chair Elect of FIG Commission 4, Canada

Isaac Boaung (United Kingdom): The Best Practice for Coastal Adap- tion Planning: A Surveyor’s Perspec- tive (4756)

Recep Nisanci and Volkan Yıldırım (Turkey): Issues in Determination of Easement Value through Power Trans- mission Lines: A Case Study of Trabzon, Turkey (4273)

Craig Harris and Trevor Knowles (New Zealand): Public Works Act Land Acquisition in New Zealand… Clarifying for Owners the Crowns Differing Roles and Managing Owners/consultants Expectations on Reimbursement of Fees (4429)

Tuesday, 13 April 2010 16:00–17:30

TS 4F – Compulsory Purchase and Compensation II
Tuesday, 13 April 16:00–17:30
Venue: Bayside 201, SCEC
Commission: 9
Chair: Ms. Heidi Falkenbach, Finland
Rapporteur: Mr. Vince Mangioni, Australia

Nira Orn and Rachelle Alterman (Israel): Change of Public Purpose After Expropriation (4598)

Muhammad Bashar Nuhu (Nigeria): Evolving a New Methodologies for Public Land Acquisition and Land Administration in Nigeria (4299)

Recep Nisanci and Volkan Yildirim (Turkey): Issues in Determination of Easement Value through Power Transmission Lines: A Case Study of Trabzon, Turkey (4273)
Tuesday, 13 April 2010 16:00–17:30

**TS 4G – Surveying Education Curricula II**
Tuesday, 13 April 16:00–17:30
Venue: Bayside 202, SCEC
Commission: 2
Chair: Mr. Gert Steinkellner, Austria
Rapporteur: Mr. Ernest Chan, Hong Kong SAR, China
Hans Mattsson and Marina Vaskovich (Sweden): Capacity Building in Land Management (3925)
Miljenko Lapaine and Stanislaw Franges (Croatia): Education in Geodesy and Geoinformatics at the University of Zagreb and the Bologna Process (4267)
Dami Medak, Bosko Privicievic, Stanislav Franges (Croatia), Adriana Car (Austria) and Jacek Kozak (Poland): Impact of TEMPS CARDS Project GIST-CroHE on the New MSc in Geoinformatics Curriculum and on the Implementation of Bologna Process at the Faculty of Geodesy, University of Zagreb, Croatia (4246)
Branko Bozic (Serbia), Olga Petakrovksa (Ukraine) and Violetas Silica (Serbia): Similarities and Differences between Surveyor's Education in Kiev and Belgrade at University (4002)
Bruce Harvey (Australia): Teaching Surveying: What Is Important? (3968)
This is a flash presentation.
Gheorghe M.T. Radulescu, Adrian T.G. Radulescu, Gabriel Badescu, Carmen Nitu and Virgil M.G. Radulescu (Romania): The Role of Surveying Within the University Curricula for Training Terrestrial Measurement and Cadastre Engineers (3944)
This paper has not been presented at the congress.

**TS 4H – Remote Sensing and Imagery II**
Tuesday, 13 April 16:00–17:30
Venue: Bayside 203, SCEC
Commission: 5 and 6
Chair: Dr. Ralf Schroth, Germany
Rapporteur: Mrs. Gypsy Bhaali, Australia, Australia
Senol Kuscuc, M.Sait Ayik, Eray Can and Ayhan Mesci (Turkey): Project for the Producing of 1/1000 Scale Based Plans from Colourful Images with Taken Digital Camera in Bursa Metropole Area in Turkey (4512)
Mostafa Ebrahim (Egypt): Influence of Video Frame Miss-Selection on the Accuracy of Moving Objects 3D Measurements Using Close-Range Photogrammetry (4412)
Gabriel Scarmana (Australia): Mapping City Environments Using a Single Hand-Held Camera (4430)
Jung Hum Yu (Republic of Korea) and Linlin Ge (Australia): Digital Elevation Model Generation Using Ascending and Descending Multi-baseline ALOS/PALSAR Radar Images (4086)
Scott Preskett (New Zealand): The Continuing Development of the IHO Category A Hydrographic Surveying Program at the University of Otago (4100)

**TS 4I – Hydrographic Capacity Building**
Tuesday, 13 April 16:00–17:30
Venue: Bayside 106, SCEC
Commission: 4
Chair: Mr. Gordon Johnston, United Kingdom
Rapporteur: Mr. David Neale, Trinidad and Tobago
Adam Greenland (New Zealand): IHO Capacity Building in the South West Pacific Region – NZ Perspective (3981)
Volker Böder (Germany): The DHyG-Accredited Hydrographer – First Steps and Evaluations (3960)
Roderick Nairn and Jasbir Randhawa (Australia): Competency Certification for Hydrographic Surveyors – The Australasian Experience (3861)

**TS 4J – Francophone Session 2**
Tuesday, 13 April 16:00–17:30
Venue: Bayside 101, SCEC
Commission: 7
Chair: Dr. Markus Seifert, Germany
Rapporteur: Mr. Gyula Ivany, Hungary
Christiaan Lemmen, Peter van Oosterom (the Netherlands), Claude Eisenhut (Switzerland) and Harry Utterman (the Netherlands): Rights, Restrictions and Responsibilities in the Land Administration Domain Model (LADM) (4221)
Jaap Zevenbergen (the Netherlands) and Solomon Haile (Kenya): Institutional Aspects of Implementing Inclusive Land Information System like STM (4254)

**TS 4K – Land Administration Domain Model**
Tuesday, 13 April 16:00–17:30
Venue: Bayside Gallery A, SCEC
Commission: 10
Chair: Prof. Moha Elayachi, Morocco
Rapporteur: Mr. Robert Sinkner, Chair Elect of FIG Commission 10, Czech Republic
Paula Judson, Usha Iyer-Raniga, Ralph Horne and James Wong (Australia): Integrating Built Heritage and Sustainable Development (3977)
Sara Wilkinson, Kimberley James and Richard Reed (Australia): Building Adaptation in the Melbourne CBD: The Relationship between Adaptation and Building Characteristics (3779)
Kenny Chan (Hong Kong SAR, China): Building the Capacity and Improvement Factors in Real Estate Management and Maintenance (4564)
Clive Warren (Australia) and Graham Mathews (New Zealand): Building Resilience – Built Environment Professions in Pre and Post Disaster Management (4190)

**Director General Forum – Reception**
Tuesday, 13 April 17:00–18:00
Venue: Bayside Gallery B, SCEC
Commission: Director General Forum
– by invitation only

**Reception at the Government House**
Tuesday 18:00–19:30
Venue: Government House, Macquarie Street, Sydney
– reception hosted by the Governor of NSW, Prof. Marie Bashir AC CVO
– for Presidents of FIG members associations
– buses from SCEC 17:40
– by invitation only
Wednesday, 14 April 2010 08:30–10:00

TS 5A – Development of 3D Cadastre
Wednesday, 14 April 08:30–10:00 Venue: Bayside Auditorium A, SCEC Commission: 7 Chair: Prof. Peter van Oosterom, the Netherlands Rapporteur: Dr. Jaap Zevenbergen, the Netherlands

Tor Valstad (Norway): At Last! After 10 Years in Waiting Norway Has a New Cadastral Law that also Includes 3D Objects (3473)

Göran Eriksson and Lars Jansson (Sweden): Strata Titles Are Introduced in Sweden (3909)

Ingegerd Hedmark and Karolina Rönningen (Sweden): The City Line in Stockholm, the Longest Three Dimensional Property Unit in Sweden (4255)

Muhammad Imzan Hassan and Alias Abdul Rahman (Malaysia): Malaysian Integrated 3D Cadastre Registration System (4212) This is a peer reviewed paper.

Tan Liat Choon, Khadijah Binti Hussin and Ernest Khoo Hock Oon (Malaysia): 3D Property Situation in Malaysia-Initiatives towards 3D Cadastre (3929)

Sudarshan Karki, Kevin McDougall and Rod Thompson (Australia): An Overview of 3D Cadastre from a Physical Land Parcel and a Legal Property Object Perspective (4432)

TS 5B – Information Management Software
Wednesday, 14 April 08:30–10:00 Venue: Bayside 103, SCEC Commission: 3 Chair: Prof. Yerach Dooytscher, Chair Elect of FIG Commission 3, Israel Rapporteur: Dr. Charalabos Ioannidis, Greece

Michael Dixon (Australia): The Evolution of Data Automation and Its Importance to the Australian Spatial Data Infrastructure (4093)

Geoffrey Y.K. Shea and Jiannong Cao (Hong Kong SAR, China): Use of Open Source Programs to Create a Foundation for Developing Serious GIS Application on Mobile Device (3984)

Cameron Shorter (Australia): Overview of Geospatial Open Source Software Which is Robust, Feature Rich and Standards Compliant (4207)

Mario Miler, Drazen Odobasic and Damir Medak (Croatia): Efficient Web-GIS Solution based on Open Source Technologies: Case-Study of Urban Planning and Management of the City of Zagreb, Croatia (4291) This is a peer reviewed paper.

Alexander P. Karpik, Vladimir A. Seredovich and Dmitry V. Lithiskiy (Russia): Conceptual Fundamentals of Digital Geospatial Environment (4378)

Hamed Olfat, Abbas Rajabifard and Mohsen Kalantari (Australia): Automatic Spatial Metadata Update: A New Approach (4079) This is a peer reviewed paper.

TS 5C – The Quality of Measurements
Wednesday, 14 April 08:30–10:00 Venue: Bayside 104, SCEC Commission: 5 Chair: Mr. Graeme Blick, New Zealand Rapporteur: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom

Jorma Jokela, Pasi Häkli (Finland), Rupert Kugler, Helmut Skorpill and Michael Matus (Australia): Calibration of the BEV Geodetic Baseline (3873) This is a peer reviewed paper.

David Martin (France): Instrument Calibration at the ESRF (3910)

Stepan Savchuk and Ihor Tsjupak (Ukraine): Scientific Geodetic Basis and Test Field for Metrological Certification of Devices (3992)

Simon Fuller, Eldar Rubinov, Phil Collier and Seager James (Australia): Integrated Quality Indicators and Stochastic Modelling for Real-Time Positioning: Overview and Implementation (4145) This is a peer reviewed paper.

Eldar Rubinov, Simon Fuller, Phil Collier and James Seager (Australia): Implementation of Real-Time Quality Control Procedures for Network RTK GNSS Positioning (4151) This is a peer reviewed paper.

Philipp Zeimetz and Heiner Kuhlmann (Germany): Validation of the Laboratory Calibration of Geodetic Antennas based on GPS Measurements (4308) This is a peer reviewed paper.

TS 5D – Landslide and Subsidence Monitoring I
Wednesday, 14 April 08:30–10:00 Venue: Bayside 102, SCEC Commission: 6 Chair: Mr. Joel van Cranenbroeck, Belgium Rapporteur: Prof. Andreas Eichhorn, Germany

Andreas Eichhorn (Germany) and Thilo Schmaul (Australia): Calibration of a Numerical Slope Model by Means of Adaptive Kalman-filtering (4024)

Susan Shield, Peter Sergeant and Mark Harrower (Australia): Subsidence Analysis for Underground Coal Mining Operations: The Use of Airborne Laser Scanning Data (4225)

Hakan Akcin and Senol Hakan Kogutolu (Turkey): Real Time Subsidence Monitoring Techniques in Underground Mining and a Case Study: Zonguldak Metropolitan Area Applications-Turkey (4458)

Turgut Uzel, Kamil Eren and Ahmet Anil Dindar (Turkey): Monitoring Plate Tectonics and Subsidence in Turkey by CORS-TR and InSAR (4570)

TS 5E – Planning Heritage: Back to the Future
Wednesday, 14 April 08:30–10:00 Venue: Bayside 105, SCEC Commission: 8 Chair: Mr. Tim Goodhead, United Kingdom

Malvern Tipping (United Kingdom): Identifying Clay-construction Buildings in a Norfolk Market Town (4522)

S. Hendriatningsih, Yan Shoefan Syarief, Alifita Puspai Handayani, Andri Hernandi and Rizqi Abdulharis (Indonesia): Cultural Landscape Mapping: The Basis for Managing a Sustainable Future? (4488)

Ioan Stangu (Romania): Geo-Cybernets – A 21st Century Cybernetic Approach to Sustainable Development and Environmental Protection (3816)

TS 5F – History of Surveying
Wednesday, 14 April 08:30–10:00 Venue: Bayside 201, SCEC Commission: History Chair: Mr. John Brock, Australia Rapporteur: Ms. Kerima-Gae Topp, Australia

Craig Roberts and Matthew Cooper (Australia): The Scale of the Solar System: Re-enacting the Transit of Venus Observations 5–6 June 2012 (3851)

Geoffrey Sandford (Australia): Larry Wells and the Lost Tribe (4524)

Case Boslaper (Australia): William Dawes’ Gravity Measurement in Sydney Cove, 1788 (4534)

Adrian Cummings (Australia): John McDouall Stuarts Explorations 1858–1862 (4160)

Graham Tweedie (Australia): A Tribute to the Surveyors/Explorers of the 19th Century Australia (4084) This is a flash presentation.
Wednesday, 14 April 2010 08:30–10:00

**TS 5G – Education Pedagogy in Surveying**

Wednesday, 14 April 08:30–10:00
Venue: Bayside 202, SCEC
Commission: 2
Chair: Prof. Damir Medak, Croatia
Rapporteur: Mr. Robert Webb, Australia

Michael Mayer (Germany): An Engineering Science Experience Report on Using Competence-based Techniques to Support Students Individually and Sustainably (4362)

Simon Mclean (United Kingdom): Pedagogy of Using Industrial Simulation in Surveying Education: A Study of Two Models Run at Sheffield Hallam University, 2008/9 (3769)

This is a peer reviewed paper.

Martin Smith, Andrew Burton and Nikolaos Kokkas (United Kingdom): Teaching and Learning Strategies for 3D Urban and Landscape Modelling (4061)

Steve Yau Wah Lam (Hong Kong SAR, China): Work-Integrated Geomatics Higher Education in Hong Kong (4359)

This is a peer reviewed paper.

Arve Leiknes (Norway): Cadastre Practice – a Success for the Education in Land Surveying and Land Management at Bergen University College (4478)

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**TS 5H – Gender Issues in Surveying**

Wednesday, 14 April 08:30–10:00
Venue: Bayside 203, SCEC
Commission: 1 and 7
Chair: Ms. Gertrude Pieper, the Netherlands
Rapporteur: Ms. Leonie Newnham, Chair Elect of FIG Commission 1, Australia

John Parker (Australia): Why Aren’t Women Getting the Jobs They Deserve to? (4367)

Benedicta Ugwuulo (Nigeria): How Women in Surveying can Change the Society (4257)

Fabian Thiel (Cambodia): Gender Equality and Land Law in Cambodia (4668)

Bayram Uzun and Ebru H. Colak (Turkey): The Issues of Women’s Property Acquisition in Turkey (4237)

Sibel Seyhan (Turkey): Female Geodetic Engineers and Their Problems in Turkey (4753)

This is a flash presentation.

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**TS 5I – Building Land Administration**

Wednesday, 14 April 08:30–10:00
Venue: Bayside 106, SCEC
Commission: 7
Chair: Mr. Richard Grover, United Kingdom
Rapporteur: Mr. Leiv Barte Mjos, Norway

Wilhelm Zeddes (Germany): Official Surveying and Mapping in Germany – Cooperation between the Public and the Private Sector (3802)

Jouni Johannes Anttonen (Finland): Successful Capacity Building of the Cambodian Land Administration: Finnish Technical Assistance Combined with the Local Khmer Expertise, Traditions and Culture (4602)

Andrus Nnaemeka Ukaejiofo (Nigeria): Identifying Appropriate Tools for Effective Land Governance in Nigeria (4612)

Ewa Swensson (Sweden): Quality Improvement of the Cadastral Information in Sweden (4031)

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**TS 5J – Spatial Information for Climate Change Monitoring and Other Natural Disasters Management**

Wednesday, 14 April 08:30–10:00
Venue: Bayside 101, SCEC
Commission: 3, 7 and 8
Chair: Dr. Orhan Erkan, Turkey
Rapporteur: Mr. Kwame Tenadu, Ghana

David Mitchell (Australia): Reducing Vulnerability to Natural Disasters in the Asia Pacific through Enhanced Tenure Security (4127)

This is a peer reviewed paper.

Fahmi Amhar (Indonesia): On Rapid Response Mapping after Padang Earthquake (4428)

Ioan Stoian, Ioan Stangu, Vasile Nacu and Nicusor Baroiu (Romania): Geo-Cybernetics and the Risk Reduction of Natural Hazards in the Lower Danube, Romania (4060)

Jaek Liou (Republic of Korea): Building the Capacity for Climate Change from Low Carbon Development and Energy GIS (4106)

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**TS 5K – Cadastral Projects**

Wednesday, 14 April 08:30–10:00
Venue: Bayside Gallery A, SCEC
Commission: 7
Chair: Mr. Christiaan Lemmen, the Netherlands
Rapporteur: Ms. Monica Lengoibon, the Netherlands

Haim Srebro (Israel): On the Way to a Coordinate Based Cadastre (CBC) in Israel (3837)

Lars Palm (Sweden): Quick and Cheap Mass Land Registration and Computerisation in Ethiopia (4278)

Hyunjin Kim (Republic of Korea): The Study and Example of Application for the Establishment of Cadastral Methodology in Morocco (4150)

Moha El-ayachi, Elhassan Semlali, Mohamed Ettar and Driss Tahiri (Morocco): An Object Model of a Multi-purpose Cadastral Information System with the Object Oriented Approach – A Case Study (3953)

This is a peer reviewed paper.

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**SIDS 1 – Small Islands Development States Seminar – Building Professional Capacity**

Wednesday, 14 April 08:30–10:00
Venue: Bayside Gallery B, SCEC
Chair: Dr. Mele Rakai, Fiji
Rapporteur: Dr. Spike Boydell, Australia

The FIG Congress includes a special seminar looking at the issues confronting so-called “Small Island Developing States”. These island nations face special challenges as they struggle with Land Governance issues associated with achieving the Millennium Development Goals. The opening session aims at setting the scene for professional capacity building in the region by identifying the specific gaps in capacity in the region, and discussing ways in which land practitioners could contribute towards closing the gaps and thus assist with the achievement of the MDGs in the region.

Detailed program of the Small Island Developing States Seminar is on page 30.
After Lunch Talk 2 – The Fourth Wave of Property Reform
Wednesday, 14 April 13:00–14:00
Venue: Bayside Auditorium A, SICEC
Chair: Mr. Varnavas Pashouli, Cyprus
Rapporteur: Mr. Ionuţ Cristian Săvoiu, Romania

Antonio Juliano Fazan and Aluir Porfírio Dal Poz (Brazil): Building Roof Contours Extraction from Aerial Imagery based on Snakes and Dynamic Programming (4265)
Imane Sebari, Bassioni Gabir, Fatima Ibbannia (Morocco) and Abdoulaye Belem (Burkina Faso): Setting Up a Geocatalogue for the Geographic Institute of Burkina (4331)
Masoume Kheiri (Iran): Finding K-optimum Paths in Multimodal Transportation Network (4320)

Mariana Alves Dal Santo and Carlíne Führ (Brazil): Polygonal Line Simplifying Methods Applied to GIS (4399)
Neil Corby, Naman Habil, Robert P Cechet and Krishna Nadimpalli (Australia): Rapid Inventory Collection System (RICS) (3899)
Ali Aien, Saeid Mohsen, Kalantari Soltanieh, Abdol Reza Mashgini and Reza Akbari (Australia): Development of Geospatial Data Standards and Exchange Software for Geomatics Application (3893)

FS 3C – Positioning and Measurement Techniques and Applications II
Wednesday, 14 April 13:00–14:00
Venue: Bayside 104, SICEC
Chair: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom
Rapporteur: Ms. Christina Kempe, Sweden

Ling Zhu and Ruoming Shi (China, PR): Rectification for Linear Push-broom Image of UAV (4205)
Joel Van Cranenbroek (Belgium): The Sundial Cities (4078)
Dek Kie Tcha, Chul Soo Yang and Rae Jeong Jeong (Republic of Korea): A Study on the Field Surveying System Development by Many-to-Many Local Communication Topology (3978)
Wolfgang Koppe and Ralf Düering (Germany): Assessment of TerraSAR-X Orthorectified Imagery Based on Commonly Used DEMs as well as on TerraSAR-X Stereo DEM (4675)
Heru Setyo Aje (Indonesia): Repositioning Old Wells (4525)
Daniel Robert Helmricks (USA): Motor Vehicle Accident Forensic Survey (4669)

FS 3D – TLS Application II
Wednesday, 14 April 13:00–14:00
Venue: Bayside 102, SICEC
Chair: Mr. Faheem Khan, Singapore
Rapporteur: Dr. Ivo Milev, Germany

Paul Natsikas and Kevin Ide (Australia): Laser Scanning Pavement Auditng Survey, Northern Diversion Sewer Project, Melbourne (4440)
Dongwei Qiu and Yanhui Ding (China, PR): Definition Monitoring of Bridge Approach Using Terrestrial Laser Scanning (4036)
Mike Pinkerton (New Zealand): Terrestrial Laser Scanning for Mainstream Land Surveying (3814)
Tosa Ninkov, Vladimir Bulatovic, Zoran Susac and Dejan Vasic (Serbia): Application of Laser Scanning Technology for Civil Engineering Projects in Serbia (3864)
Tomáš Křemen and Renata Ferrari (Brazil): The Erosion Model Based on Remote Sensing – Baia Mare, Using Topographical and NDVI Data for Analysis of Seasonal Soil Moisture and Vegetation Indices (3747)
Andrzej Dumalski, Andrzej Hejbudzka (Poland): Terrestrial Laser Scanning for the Fire Test on Experimental Building in Mokrsko (4690)
Andrzej Dumalski and Karolina Hejbudzka (Poland): Terrestrial Laser Scanning for the Fire Test on Experimental Building in Mokrsko (4690)

Artur Adamek, Piotr Glowacki, Jacek Jania, Jacek Krawiec and Zdzislaw Kurczynski (Poland): Usefulness of Terrestrial Laser Scanning for Survey of Dynamics of Frontal Zone of Hansbreen – Svalbard Tidewater Glacier (4295)

FS 3E – Land Use Classification and Soils
Wednesday, 14 April 13:00–14:00
Venue: Bayside 105, SICEC
Chair: Dr. Reinfried Manberger, Austria

Rudiney Soares Pereira, Renata Ferrari and Mariane Alves Dal Santo (Brazil): Dynamic Modeling of Land Use and Coverage at Quarte Colônia, RS (4315)
Emi Sukiyah, R. Febrin Hirnawan and Dicky Muslim (Indonesia): The Erosion Model Based on Grain size Distribution Ratios of Weathering Product of Quaternary Volcanic Deposits (4218)
Rod Eckels (Australia) and Nicholas Bugosh (USA): A Natural Approach to Flooded Land Rehabilitation (3958)

Andrés Parra and Francisco Hernandez (Colombia): Identification and Delimitation of Natural Lentic Wetlands in the Department Valle del Cauca with Satellite Imagery (4305)

Stefan Ovidiu, Badescu Gabriel, Bancila Afrim Nicolae, Bud Ioan and Hotea Vasile (Romania): Possibilities for Determining the Stability of Underground Mine Working in the Area of Sasar Mine – Baia Mare, Using Topographical Methods, in the Circumstances of Entering the Economical Circuit (4537)

Thanh Son Nguyen (Viet Nam) and Chi-Farn Chen (Chinese Taipei): Analysis of Seasonal Soil Moisture Using MODIS Land Surface Temperature and NDVI Data for Agro-drought Monitoring in the Mekong Delta, Vietnam (4750)
FS 3F – Land Management Projects
Wednesday, 14 April 13:00–14:00
Venue: Bayside 201, SCEC
Commission: 7
Chair: Mr. Babu Ram Acharaya, Nepal

Joseph Salukvadze (Georgia): Improvements in Land Governance and Land Administration in Transitional Countries of the Post-Soviet Region: Comparative Analysis (4289)

Zahir Ali and Abdul Nasir (Pakistan): Land Administration System in Pakistan – Current Situation and Stakeholders’ Perception (3901)

Vanco Gjorgjiev, Gjorgji Gjorgjiev and Naumce Lazarevski (Macedonia, FYROM): The Transaction Procedures of Real Estate in the Cadastre System in Republic of Macedonia (3955)

Greg Foster, Paul Robinson, Dwayne Schulz and Andrew Bell (Australia): Surety by Sharing – Parrallel Leasing in New South Wales (3885)

FS 3G – Land Administration and Development
Wednesday, 14 April 13:00–14:00
Venue: Bayside 202, SCEC
Commission: 7
Chair: Mr. William Kalande, Kenya

Peter Swan (Australia): Unique and Innovative Solutions to Land Development in Queensland (3963)

Sudarsono Osman and Hui Urg Kueh (Malaysia): Land Administration, Management and Spatial Information (4572)

FS 3H – Remote Sensing and Optical Techniques I
Wednesday, 14 April 13:00–14:00
Venue: Bayside 203, SCEC
Commission: 5 and 6
Chair: Prof. Heiner Kuhlmann, Germany

Christian Hirt (Australia), Beat Bürki, Sébastien Guillaume (Switzerland) and Will Featherstone (Australia): Digital Zenith Cameras – State-of-the-art Astroteodetic Technology for Australian Geodesy (3831)

Jacky Chow, Axel Ebeling and William Teskey (Canada): Low Cost Artificial Planar Target Measurement Techniques For Terrestrial Laser Scanning (4394)

Timothy Nuttens, Alain De Wulf, Rudi Goossens (Belgium), Christiane Tytgat (Greece) and Daniël Van Damme (Belgium): Digital Photogrammetry Used for the 3D Reconstruction of the Walls around the Acropolis of Titan (Greece) (4483)

Seyed Kazem Alavipanah and Mohammad Hamzeh (Iran): Extracting Information from Surface and Subsurface Soil Using Thermal Inframed Remote Sensing Data (4688)

FS 3J – Institutional and Cultural Contributions
Wednesday, 14 April 13:00–14:00
Venue: Bayside 101, SCEC
Commission: 1
Chair: Mr. Yaacoub Saade, Chair of FIG Commission 1, Lebanon
Rapporteur: Mr. Khalid Yousfi, Morocco

Jouni Johannes Anttonen (Finland): Parental Advisory: Kids, Don’t Try This at Home! Surveying in Donald Duck Comics Published in Finland (4603)

Seyed Kazem Alavipanah, Kolsoum Ghazanfari and Bahere Khakbaz (Iran): Literature Contexts of Remote Sensing as Reflected by the Iranian Poems (4589)
The New Technology of a Survey in NSW, Australia (3798)

The Integration of CORS Networks and the Cadastre and Its Application in NSW, Australia (3798)

This is a peer reviewed paper.

Wednesday, 14 April 2010 14:00–15:30

TS 6G – e-Learning I
Wednesday, 14 April 14:00–15:30
Venue: Bayside 202, SCEC
Commission: 2
Chair: Prof. Esben Munk
Sorensen, Denmark
Rapporteur: Ms. Kate Fairlie, Australia

Liza Groenendijk, Christiaan Lemmen and Paul van der Molen (the Netherlands):
E-learning: the Future for Land Administration Studies? (3935)

Arnaud Deshouges, Pierre-Yves Gillieron and Bertrand Merminod (Switzerland):
Enhancement of Geomatics Education by Using Internet Based Techniques (4157)

This is a peer reviewed paper.

Wednesday, 14 April 2010 14:00–15:30

TS 6H – Engineering Surveys I
Wednesday, 14 April 14:00–15:30
Venue: Bayside 203, SCEC
Commission: 6
Chair: Prof. Aljoz Kopacik, Chair of FIG Commission 6, Slovakia
Rapporteur: Mr. David Martin, France

Günter Schmitt (Germany):
Geodetic Contributions to IWRM-Projects in Middle Java, Indonesia (3751)

Théo Engel (Switzerland), Bodo Lahr (Germany) and Jürg Kaufmann (Switzerland):
Building Up on Railway Coordinatates (4477)

David Martin (France):
Review of Accelerator Alignment (3911)

Edi Meier, Philippe Limpach, Hilmar Ingensand, Alain Geiger and Andreas Steiger (Switzerland):
Hydrostatic Leveling Systems: Measuring at the System Limits (4474)

Steve Yau Wah Lam (Hong Kong SAR, China):
Recent Advances of Engineering Survey Operations for Tunnel Construction in Hong Kong (3995)

Jesús Velasco, Juan Prieto, Tomas Herrero and Jose Fabrega (Spain):
Drilling a 25 km Tunnel for High Speed Railway in Spain (4542)

This is a peer reviewed paper.

Wednesday, 14 April 2010 14:00–15:30

TS 6I – Technology in Land Administration
Wednesday, 14 April 14:00–15:30
Venue: Bayside 106, SCEC
Commission: 7 and 5
Chair: Dr. Conrad Tang, Hong Kong SAR, China
Rapporteur: Mr. Gyula Iván, Hungary

Ian Harper (Australia):
The New Technology of a Survey Data Model and Cadastral Fabric as the Foundation for a Future Land Administration System (4036)

Thaer Shunnar and Michael Barry (Canada):
Knowledge Discovery from Land Record Systems (4282)

Michael Dixon (Australia) and Duncan Guthrie (United Kingdom):
Administrative Boundaries: Automating the Data Processing Cycle for a Critical National Dataset (4091)

Marlane Alves Dal Santo, Carlos Loch and Francisco Henrique Oliveira (Brazil):
Digital Cartographic Generalization for Database of Cadastral Maps (4276)

Ji Yeon Jeong (Republic of Korea):
Use of Network RTK Using VRS for a Cadastral Survey in Islands (4013)

Reddy Jai Ram (Australia):
The Integration of CORS Networks and the Cadastre and Its Application in NSW, Australia (3798)

This is a peer reviewed paper.

Wednesday, 14 April 2010 14:00–15:30

TS 6J – Professional Qualifications and Mutual Recognition
Wednesday, 14 April 14:00–15:30
Venue: Bayside 101, SCEC
Commission: 1
Chair: Mr. Teo Chee Hai, FIG Vice President, Malaysia
Rapporteur: Mr. Yaocoub Saade, Chair of FIG Commission 1, Lebanon

Brian Coutts (New Zealand):
Disciplinary Principles for Cadastral Surveyors in Australia and New Zealand (3980)

John Fryer (Australia):
Surveys Crossing International Boundaries – The Australian and New Zealand Bureau for Assessment of Overseas Qualifications (3806)

Patrick McNamara (Australia):
Surveyors Intellectual Property in The High Court of Australia (4743)

Glenn Campbell and Jim Liddle (Australia):
The Implementation of a Competency Based Assessment System for Applicants for a Restrictive Licence for Cadastral Surveying (4469)

This is a peer reviewed paper.

John Worlton (Australia):
Private Sector Industry Association Involvement in the Registration Process (3964)

This is a peer reviewed paper.
**Wednesday, 14 April 2010 16:00–17:30**

**TS 7A – Land Administration – Responses to Crises and Innovations**

Wednesday, 14 April 16:00–17:30
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Mr. András Osskó, Chair of FIG Commission 7, Hungary
Rapporteur: Mr. Wilhelm Zeddies, Germany

Godfried Barnasconi and Paul van der Molen (the Netherlands): Cadstral Innovations and Financial Crisis (4011)

David Cowen and Donald Buhrer (USA): The United States Mortage Crisis and Cadstral Data (4022)

Jaap Zevenbergen (the Netherlands) and Tony Burns (Australia): Land Administration in Post-Conflict Areas; A Key Land and Conflict Issue (4011)

Daniel Roberge and Michel Paradis (Canada): Reconstruction in Haiti: A Land Rights Infrastructure to Support its Sustainable Development (4751)

**TS 7B – Regional and National Spatial Data Infrastructures**

Wednesday, 14 April 16:00–17:30
Venue: Bayside 103, SUC Commission: 3
Chair: Mr. Robin McLaren, United Kingdom
Rapporteur: Mr. Ali Fahri Özen, Turkey

Zeljko Basic (Croatia) and Zeljko Obrovacic (Bosnia and Herzegovina): South-East Europe Regional SDI Cooperation – SEE Inspiration (4044)

Dan Paull (Australia) and Dave Lovell (France): Closer Than You Think: The Pioneering Relationship between PSMA Australia and EuroGeographics (4090)

Nick Littlewood, Sarah MacDonald and Gerry Stanley (Australia): The Benefits of the PSMA Australia Data Network (4087)

Szabolcs Mihály and Pál Lévai (Hungary): Provision of Interoperable Datasets to Open GI to EU Communities An European example of SIM (4203)

**TS 7C – Global Geodetic Observing System and APREF II**

Wednesday, 14 April 16:00–17:30
Venue: Bayside 104, SUC Commission: 5
Chair: Mr. Mikael Lilje, Chair Elect of FIG Commission 5, Sweden
Rapporteur: Mr. Gary Johnston, Australia

Dru Smith, Kendall Fancher, Steve Breidenbach, Jeff Olsen and Nagendra Paudel (USA): Recent IERS Site Survey of Multiple Co-located Geodetic Techniques by NGS (4187)

Guorong Hu and John Dawson (Australia): The Asia Pacific Regional Geodetic Project (APRGP) GPS Solution (1997–2008) (4113)

Graeme Blick (New Zealand) and Robert Sarib (Australia): The Geodetic Infrastructure in Australia and New Zealand: Differeneces and Similarities (4065)

Doug Kinlyside, Tony Watson, Glenn Jones and John Kelaher (Australia): From AGD66 to GDA94 and towards GDA200x in NSW (4433)

Richard Stanaway and Craig Roberts (Australia): CORS Network and Datum Harmonisation in the Asia-Pacific Region (3773)

**TS 7D – LIDAR and InSAR Usage in Surveying**

Wednesday, 14 April 16:00–17:30
Venue: Bayside 105, SUC Commission: 6
Chair: Prof. Hansjoerg Kutterer, Germany
Rapporteur: Dr. Renee Bartolo, Australia

Lei Zhang, Xiaoli Ding (Hong Kong SAR, China) and Zhong Lu (USA): Monitoring of Bridge Deformation with InSAR: An Experimental Study (3737)

Mahmoud Gomah and John Trinder (Australia): Support Vector Machines Based Filtering of Lidar Data (4063) This is a peer reviewed paper.

Hyunil Yoo (Republic of Korea): LIDAR Application for Cultural Heritage 3D Modeling and Reconstruction (4015)

Gili Goncalves and Luisa Gomes Pereira (Portugal): Case Study: Accuracy of a DTM Derived from Full-waveform LiDAR Data under an Unstructured Eucalyptus Forest (4219)

Cristodoulos Psaltis and Charalabos Ioannidis (Greece): Supervised Change Detection on Simulated Data Employing Support Vector Machines (4236) This is a peer reviewed paper.

**TS 7E – SDI and Planning**

Wednesday, 14 April 16:00–17:30
Venue: Bayside 101, SUC Commission: 8
Chair: Dr. Dalal S. Alnaggar, FIG Rapporteur: Mr. Michael Doran, Northern Ireland

Asmat Ali (Pakistan): Is Public Private Partnership an Effective Instrument to Implement SDI? (4484)

Joerg Blankenbach and Markus Schaffert (Germany): A GIS-based Approach to Supporting e-Participation in Municipal Administration and Planning Strategies in the Context of Web 2.0 (3997)

Jason Clark and Ben Somerville (Australia): Making Infrastructure Development Location Intelligent (4551)

**TS 7F – Real Estate Market and Valuation Methods**

Wednesday, 14 April 16:00–17:30
Venue: Bayside 201, SUC Commission: 9
Chair: Mr. Steven Nystrom, USA Rapporteur: Ms. Faanimo Reti-Warren, Samoa

Dieter Kertscher (Germany): The Successful Way from the Purchase Price Collection to a Complete Transparency for the Real Estate Market (3865)

Mehrdad Koohi Kamali and Mohammad Rajabi (Iran): Integrated MRA and Geostatistics Method of Residential Property Valuation (4155)

Anna Baranska (Romania): Influence of Models Form in Two-stage Valuation Procedure on Prediction of Real Estates Market Value (4240)

Rene Gudat (Germany): Collections of the Property Market Data for the Valuation Process – An German Approach in an International Context (4029) This is a peer reviewed paper.

Marija Raskovic and Stojanka Brankovic (Serbia): Real Estate Market non-transparency – valuation and assessment problems in Serbia; towards mass valuation (4081) This is a peer reviewed paper.

Virgo Eresta Jaya (Indonesia): Land Value Indexation in Indonesia (4364)
Wednesday, 14 April 2010 16:00–17:30

TS 7G – e-Learning II
Wednesday, 14 April 16:00–17:30
Venue: Bayside 202, SCEC
Commission: 2
Chair: Ms. Liza Groenendijk, the Netherlands
Rapporteur: Prof. Steven Frank, Chair Elect of FIG Commission 2, USA

Gethin Roberts and Joshua Grey (United Kingdom):
NEST – A New Web Based Teaching Tool for Engineering Surveying (4451)

This is a peer reviewed paper.

Kefei Zhang, Erjiang Fu, Gang-Jun Liu, Stuart Whitman, Erjiang Fu, Kefei Zhang (Australia): CGNA Education Package (4558)

Bill Watt (Australia): CGNA Education Package (4558)

Rudolph Matindas (Indonesia) and Bill Watt (Australia): United Nations Group of Experts on Geographical Names – Structure, Directions and Achievements (4560)

Bill Watt and Greg Windsor (Australia): Place Names in the Spatial Environment (4559)

Lorraine Bayliss and Bill Watt (Australia): CGNA Education Package (4558)

Donald Grant and Wendy Shaw (New Zealand): Place Naming Legislation in New Zealand (4557)

Anselm Haansen (New Zealand) and Brian Goodchild (Australia): A Street Addressing Standard for Australia and New Zealand (4007)

Home Visits
Wednesday, 14 April 19:00–22:30
Hosted by Australian surveyors within 1 hour from Sydney
– Visit the home of an Australian surveyor living in the Sydney region. Aussies are renowned for their friendly outdoor barbecues, all in a relaxed atmosphere where you will meet with your hosts and other international colleagues.
– Cost: 50.00 AUD.

Standards Network Meeting
Wednesday, 14 April 16:00–17:30
C1, SCEC, Exhibition Hall
Commission: Standards Network
Chair: Mr. David Martin, Chair of Standards Network, France
– by invitation only

SID 5 – Small Islands Development Seminar – Good Governance in Land Tenure and Administration
Wednesday, 14 April 16:00–17:30
Venue: Bayside Gallery A, SCEC
Commission: 7
Chair: Prof. Ian Williamson, Australia
Rapporteur: Dr. Gary Hunter, Australia

Jürg Kaufmann (Switzerland): The New Swiss Law on Geoinformation and the Ordinance on the Cadastre on Public Law Restrictions (4064)

Dimo Todorovski and Vasil Miskovski (Macedonia, FYROM): Building the Capacities in the Cadastral and Land Registration Organizations at Individual Level in Developing and Transition Countries (4439)

Orhan Ercan (Turkey), Jamal Ali Gledan and Mahmoud Ejweli (Libya): Capacity Building at Surveying Department of Libya (4424)

Babu Ram Acharaya (Nepal): Development of Integrated Land Information Institutions as Key Success Factor for Sustainable Land Management: A Case of Nepal (4442)

The land sector is particularly susceptible to corruption and rent-seeking. The small island states in the Pacific, typically grouped into three regions: Melanesia, Micronesia and Polynesia, cover a very wide expanse of the world’s surface. The prevalence and importance of customary tenure in the Pacific adds a level of complexity to any consideration of land governance but nonetheless, land governance is an important topic for the Pacific region. This session will explore the topic of land governance as it applies to small island states.

Detailed program of the Small Island Developing States Seminar is on page 30.
Thursday, 15 April 2010 08:30–10:00

**TS 8A – Land Management**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside Auditorium A, SCEC
- Commission: 7
- Chair: Mr. Soren F. Christensen, Denmark
- Rapporteur: Prof. Ryszard Zróbek, Poland

**Bruce Manners, Don Grant and James Dempsey (New Zealand): Towards Tomorrow’s Cadastral Survey Industry (4099)**

**Arvo Kalevi Kokkonen (Finland):** Finnish Cooperation with Neighbouring Areas for Developing Land Management in Russia (4370)

**Alina Zrobek-Rozanska and Ryszard Zrobek (Poland):** Issues of Efficiency in Public Real Estate Resources Management (3654)

*This is a peer reviewed paper.*

**Alessandro Dalmasso (Italy):** Land Maintenance Management in the Chisone and Germanasca Valleys (4348)

**Chuka Oboli and Anne Akpoyoware (Nigeria):** Reform in Cadastre and Land Administration in Nigeria-Coping with Challenges in Development (3914)

**Shewakana Aytenfsu Abab and Melkamu Belachew Moges (Ethiopia):** Facing the Challenges in Building Sustainable Land Management Capacity in Ethiopia (4051)

*This is a peer reviewed paper.*

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**TS 8B – Spatial Information Modelling I**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside 103, SCEC
- Commission: 3
- Chair: Prof. Yerach Doyshter, Chair Elect of FIG Commission 3, Israel
- Rapporteur: Mr. Angel Yanakiev, Bulgaria

**Iain Greenway (United Kingdom):** Transforming Land and Property Services – Northern Ireland Learns from and Builds on the Australian Experience (3949)

**Benoit Fredericque and Alain Lapierre (Canada):** 3D City GIS – A Major Step towards Sustainable Infrastructure (4703)

**Kevin McDougall (Australia):** From Silos to Networks – Will Users Drive Spatial Data Infrastructures in the Future? (4137)

*This is a peer reviewed paper.*

**Chan Tai, Stephen Farrell and Glenn Frankish (Australia):** The National Data Grid: a Development Model for Grid Cell Data Infrastructure (4464)

*This is a peer reviewed paper.*

**Michiel Jellem (the Netherlands):** Strategic Position Model Geo-ICT Function: Facing the Challenge of Organizational Alignment (3907)

*This is a peer reviewed paper.*

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**TS 8C – New GNSS Applications and Developments**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside 104, SCEC
- Commission: 5
- Chair: Dr. Volker Schwieger, Germany
- Rapporteur: Mr. Mikael Lilje, Chair Elect of FIG Commission 5, Sweden

**Simon D.Henning, Wolfgang Koppe, Nadine Kiefl, Jurgen Janoth and Ralf Duering (Germany):** Digital Elevation Modeling using TerraSAR-X Radargrammetry (4672)

**Detlev Kosmann, Birgit Wessel and Volker Schwieger (Germany):** Global Digital Elevation Model from the TanDEM-X and the Calibration/Validation with Worldwide Kinematic GPS-Tracks (4030)

**Juergen Schweiter, Bimin Zheng, Volker Schwieger and Detlev Kosmann (Germany):** Evaluation of the TanDEM-X Digital Elevation Model by PPP GPS – Analysis and Intermediate Results (4045)

*This is a peer reviewed paper.*

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**TS 8D – Photogrammetry, RMS and Image Data Processing**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside 102, SCEC
- Commission: 6
- Chair: Dr. Renee Bartolo, Australia

**Werner Mayr (Germany) and Ralf Schroth (Romania):** Autonomous Aerial Sensing – Fast Response and Personalized (3993)

**Khalidoun Qtaishat (Jordan):** Evaluate the Geometry Strengths and Weaknesses for the Large Format Digital Cameras (3871)

*This is a peer reviewed paper.*

**Robert Paquet and Harvey Mitchell (Australia):** Seeking Historical Ground Deformations from Archival Aerial Photography (3986)

**Rokhmana Catur Aries (Indonesia):** Some Notes on Using Balloon Photography for the Precise Plantation (4166)

**Ida Jazayeri, Simon Cronk and Clive Fraser (Australia):** Automated Object Reconstruction and Modelling via Multi-Image Close-Range Photogrammetry (4393)

*This is a peer reviewed paper.*

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**TS 8E – Law and Planning**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside 105, SCEC
- Commission: 8
- Chair: Mr. Wafula Nabutula, Chair Elect of FIG Commission 8, Kenya
- Rapporteur: Mr. El Meikki Abou Elala, Morocco

**Alexander Kohli (Switzerland):** Land Management and Cadastre – A Symbiotic Interaction? (4580)

**Rattanak Nguon and Jean-Christophe Diepart (Cambodia):** Scaling the Landscapes: a Methodology to Support Integrated Spatial Planning in Cambodia (4639)

**Sandy Rendel (Australia):** Recent Developments in the Law of Easements in NSW, Following the High Court of Australia Decision in Westfield v Perpetual Trustee and also Including Conflicts with Planning Consents (4371)

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**TS 8F – GNSS CORS Networks – Positioning Infrastructure, Analysis and Applications III**

- Thursday, 15 April 08:30–10:00
- Venue: Bayside 201, SCEC
- Commission: 5
- Chair: Prof. Rudolf Staiger, Chair of FIG Commission 5, Germany
- Rapporteur: Mr. Robert Sarib, Australia

**Volker Janssen, Adrian White and Thomas Yan (Australia):** CORSnet-NSW: Towards State-wide CORS Infrastructure for New South Wales, Australia (3959)

**Bashir Al Arabi and Jamal Ali Gledan (Libya):** Establishment of CORS Libya (4539)

**Gavin Docherty and Craig Roberts (Australia):** GNSS CORS Networks – The Impact of Solar Cycle 24 on Network RTK in Australia (4108)

**Dave Collett (New Zealand):** Developing a National Real-time CORS Network in New Zealand (3860)

**Jamil Hasan, Mohamed Azhari and Leng Hua Chang (Malaysia):** The Malaysia Real-Time Kinematic GNSS Network (MyRTKNet) in 2010 and Beyond (4742)
Thursday, 15 April 2010 08:30–10:00 (continued)

TS 8G – Educational Needs
Thursday, 15 April 08:30–10:00
Venue: Bayside 202, SCEC
Commission: 2
Chair: Mr. Christian Paresi, the Netherlands
Rapporteur: Dr. Martin Smith, United Kingdom
Garfield Young, Roger Murphy and Martin Smith (United Kingdom):
Investigating How Education Is Shaping the Modern Surveyor/Geomatics Engineer (4062)

Kate Fairlie (Australia), Robert Mahoney (United Kingdom), Reinfried Mansberger and Gert Steinkellner (Austria):
Navigating the Future of Surveying Education – Outcomes and Conclusions of the FIG Commission 2 Workshop 2009 in Vienna (3920)

David Wolrige (Australia):
The New Era for Surveying Firms (4139)

Raisa Yakovleva (Russia):
Elements of Legal Education in the Sphere of Geodesy and Cartography: Intellectual Property (4496)

Wing Yiu, Anthony Lai (Hong Kong SAR, China):
Assessing Training Needs for Building Surveying Practitioners (4521)
This is a peer reviewed paper.

Cengizhan Ipbuker (Turkey):
The Reason of Changing the Name to “Geomatics” (4229)
This is a flash presentation.

TS 8H – Cadastre and Land Administration Worldwide
Thursday, 15 April 08:30–10:00
Venue: Bayside 203, SCEC
Commission: 7
Chair: Dr. Szabolcs Mihaly, Hungary
Rapporteur: Mr. Gyula Iván, Hungary

Michael Klebanov and Joseph Forrai (Israel):
Implementation of Coordinate Based Cadastre in Israel: Experience and Perspectives (3794)

Leiv Bjarte Mjos (Norway):
Cadastral Practice in Norway (4465)

Mehmet Çete (Turkey):
The Reforms in Turkish Cadastre (4365)

Kholoud Saad (Egypt), Salem A. Solia and Ali Said El-Baden (Libya):
Transformation of the Land Registration Services for Libyan Registry Authority (4406)

Hyung Moo Kim, Dek-Kie Tcha, Chul Soo Yang, Guon Mo Nam and In Su Lee (Republic of Korea):
A Design and Implementation of Full 3D Cadastral Data Architecture in South Korea (3972)

TS 8I – Economic Benefits of Hydrography
Thursday, 15 April 08:30–10:00
Venue: Bayside 106, SCEC
Commission: 4
Chair: Dr. Michael Sutherland, Canada
Rapporteur: Mr. John McCarthy, Australia

Gordon Johnston (United Kingdom):
The Economic Benefits of Hydrography (4615)

Brian Connon (USA) and Rod Nairn (Australia):
Economic Impact of Hydrographic Surveys (4588)

Olumide Omotoso (Nigeria):
Capacity Building and the Economic Benefits of Hydrography (4486)

TS 8J – SIM Services and Applications
Thursday, 15 April 08:30–10:00
Venue: Bayside 101, SCEC
Commission: 3 and 7
Chair: Mr. Bo Lauti, Sweden

Isaac Adeduvin (Nigeria):
Land Procurement, Management, Information and Surveying in Nigeria (3809)

Arif Cagdas Aydinoglu (Turkey):
Geo-data Management Issues for Urban Land Administration in Turkey (4314)

Charisse Griffith-Charles (Trinidad And Tobago):
Challenges to Effective Land Governance in Trinidad and Tobago (4504)

George Mourafetis and Lefteris Lykouropoulos (Greece):
Massive Collection of Cadastral Data in Greece Using Web-enabled GIS Technologies (4410)

Tras Aditya (Indonesia):
Urban Sensing & Land Management for Urban Poverty & Risk Reduction in Web 2.0 Era: A Call for Developing a Collaborative Land Information Infrastructure (4376)

TS 8K – Developing Cadastre from Cadastre 2014
Thursday, 15 April 08:30–10:00
Venue: Bayside Gallery A, SCEC
Commission: 7
Chair: Mr. Jürg Kaufmann, Switzerland
Rapporteur: Dr. Daniel Steudler, Switzerland

Rohan Bennett, Abbas Rajabifard, Mohsen Kalantari, Jude Wallace and Ian Williamson (Australia):
Cadastral Futures: Building a New Vision for the Nature and Role of Cadastres (4096)
This is a peer reviewed paper.

Anna Krelle and Rajabifard Abbas (Australia):
Cadastre 2014: New Challenges and Direction (4027)
This is a peer reviewed paper.

Bill Hirst (Australia):
Cadastre 2014 – Australia and New Zealand: Now and the Future (3824)

Vutthin Utesnan (Thailand):
Reporting Thailand Cadastral System in Cadastre 2014 Trend (3966)

Mohsen Kalantari, Abbas Rajabifard and Rohan Bennett (Australia):
Modern Land Administration: Technical Characteristics (3988)
Thursday 10:30–12:00

Plenary Session 4 – Technological Futures
Thursday, 15 April
10:30–12:00
Venue: Bayside Auditorium A, SCEC
Commission: All
Chair: Dr. Dalal S. Alnaggar, FIG Vice President, Egypt
Mary O’Kane (Australia): Technological Futures (4649)
Ed Parsons (United Kingdom): Technological Futures (4650)
Matt Higgins (Australia): Technological Futures (4653)

Thursday, 15 April 2010 13:00–14:00

After Lunch Talk 3 – Leica Geomatics: Surveying in the Year 2020
Thursday, 15 April 13:00–14:00
Venue: Bayside Auditorium A, SCEC
Chair: Mr. Matt Higgins, FIG Vice President, Australia

Johannes Schwarz (Switzerland): Surveying in the Year 2020 – Potential impacts of emerging technologies on surveying applications and instrumentation – A manufacturer’s perspective (4655)

Chris McAlister, Tammy Carter and Justin White (Australia): A Time of Need – Coordinating Spatial Disaster Management in SEQ (4441)

Turan Erden and Mehmet Zeki Coskun (Turkey): The Role of Geospatial Tools in Disaster Management Life Cycle (3917)

Maysam Toosi (Iran), Ahmad Savari (Canada), Fereidoon Owfi, Armin Moniri and Mojgan Rezaei (Iran): Design and Implementing of Integrated Management and Assessment of HSEQ Risk in Petroleum Complex of Iran (Case Study: Mobin Petroleum Site, Bushehr Province) (4274)

FS 4B – Spatial Data Infrastructures in Support of Disaster Management Need
Thursday, 15 April 13:00–14:00
Venue: Bayside 103, SCEC
Commission: 3
Chair: Prof. Mohamed Essadiki, Morocco
Rapporteur: Mr. Christos Zenonos, Cyprus

Chris McAlister, Tammy Carter and Justin White (Australia): A Time of Need – Coordinating Spatial Disaster Management in SEQ (4441)

Turan Erden and Mehmet Zeki Coskun (Turkey): The Role of Geospatial Tools in Disaster Management Life Cycle (3917)

Maysam Toosi (Iran), Ahmad Savari (Canada), Fereidoon Owfi, Armin Moniri and Mojgan Rezaei (Iran): Design and Implementing of Integrated Management and Assessment of HSEQ Risk in Petroleum Complex of Iran (Case Study: Mobin Petroleum Site, Bushehr Province) (4274)

FS 4C – Adjustment Techniques and Reference Frames
Thursday, 15 April 13:00–14:00
Venue: Bayside 104, SCEC
Commission: 5
Chair: Mr. Dave Doyle, USA
Rapporteur: Dr. Neil D. Weston, USA

John Dawson and Alex Woods (Australia): Coordinate Transformations between GDA94 and the ITRF (4105)

Nasr A. Al-Sahhaf (Saudi Arabia), R.M.S. Fernandes (Portugal) and Sami Alhamidi (Saudi Arabia): The ArabRef Project – A New Geodetic Network for Arabia (4337)

Vivian de Oliveira Fernandes and Ruth Emilia Nogueira (Brazil): Implications for the Adoption of Global Reference Geodetic System SIRGAS2000 on the Large Scale Cadastral Cartography in Brazil (4419)

Guorong Hu, John Dawson, Gary Johnston and Nicholas Brown (Australia): Precision Analysis of GPS for Datum Modernisation in Australia (4110)

FS 4D – Landslide and Subsidence Monitoring II
Thursday, 15 April 13:00–14:00
Venue: Bayside 102, SCEC
Commission: 6
Chair: Prof. Andreas Eichhorn, Germany
Rapporteur: Dr. Milan Talich, Czech Republic

Hasanuddin Z. Abidin, Heri Andreas, Irwan Gumilar (Indonesia), Yoichi Fukuda (Japan) and Dodid Murdohardono (Indonesia): Studying Land Subsidence in Semarang (Indonesia) Using Geodetic Methods (3748)

Febri Hirnawan (Indonesia): Slope Instability Zoning Mapping of Landslide Hazardous Area for the Stabilization System (3991)

Hakan Yavasoglu, Ergin Tari (Turkey) and Frederic Masson (France): Slip Partition on the North Anatolian Fault and Its Splays in Central Anatolia Using GPS Data (4413)

Piotr Grzempowski and Stefan Caçan (Poland): Modelling of Ground Surface Deformations with Finite Element Method in Fault Zones for the Purpose of Designing Geodetic Observations (4283)

Steve Garlinge (Australia): Continuous Monitoring of Long-wall Undermining (4135)

Milan Talich (Czech Republic): How to Create Strain Maps by Online Tools (4264)

Febri Hirnanwan, Dicky Muslim and Emi Sukiyeh (Indonesia): A Measure of Intense Active Tectonism through Manifestation of River Basin Morphometry Development on Quaternary Volcanic Deposits (4235)

Haluk Ozener (Turkey): The Importance of Tuzla Fault and a Study on Deformation Monitoring in the Aegean Region, Turkey (4422)

FS 4E – Critical Infrastructure Development
Thursday, 15 April 13:00–14:00
Venue: Bayside 105, SCEC
Commission: 8 and 3
Chair: Mr. Kwame Tenadu, Ghana

Sian Elliott and Samsung Lim (Australia): Visualisation of the Public Transport System of Sydney (4042)

Bernard Kumi-Boateng and Yakubu Issaka (Ghana): Site Selection for Waste Disposal Using GIS – A Case Study of Akosombo (3931)

Guilherme Clasen Wosny, Francisco Henrique Oliveira and Julita Cucco (Brazil): Overview of Transmission Line Integrated with Land Cadastre in Brazil (4303)

Ibrahim Mahamid and Amund Bruland (Norway): Preliminary Cost Estimating in Road Construction Projects (4592)

Nikolay Naydenov (Bulgaria): Parking Survey – Case Study (3932)

Mehmet Zeki Coskun (Turkey): Production and Geo-Statistical Analysis of Acute Myocardial Infarction Maps by Geographic Information System in Istanbul (4383)
Thursday, 15 April 2010 13:00–14:00 (continued)

**FS 4F – Land Tenure and Land Management Projects in Developing Countries**
Thursday, 15 April 13:00–14:00
Venue: Bayside 201, SCEC
Commission: 6
Chair: Mr. Muhammad Bashar Nuhu, Nigeria
Rapporteur: Mr. William Kalande, Kenya

Nigel Edmead (USA): Open Title: A Low Cost Tool for Inventorying Property Rights – Experiences from Ghana (4037)

Teshome Taffa Dadi (Ethiopia): Nature of Property Units in Ethiopia: Case Study of Two Pilot Projects (4043)

Jacob Odeh Ehiorobo and Henry Audu (Nigeria): Technical and Legal Issues in Land Acquisition for Development of Crude Oil and Natural Gas Facilities within The Niger Delta Region of Nigeria (4261)

**FS 4G – Engineering Surveys II**
Thursday, 15 April 13:00–14:00
Venue: Bayside 202, SCEC
Commission: 6
Chair: Mr. David Martin, France
Rapporteur: Mr. Paul Stivano, Australia

Nursu Tunaloğlu and Taylan Ocalan (Turkey): The Gridding Size Effects on Exposing Highway Profile (4275)

Ding Ke-liang and Tie Li-Shan (China, PR): Level Surveying Method and Accuracy Analysis on Passenger Dedicated Line CP III Network Points (4053)

Jacob Odeh Ehiorobo (Nigeria): Developing Sustainable Electrical Power for Nigeria from Natural Gas: Measurements and Documentation for Construction of Natural Gas Distribution Pipelines from Gathering Facilities to Power Plants (4258)

Bernhard Heck, Michael Mayer, Malte Westerhaus and Karl Zippelt (Germany): Karlsruhe Integrated Displacement Analysis Approach – towards a Rigorous Combination of Different Geodetic Methods (4459)

Nicholas Zembillas (USA): Subsurface Utility Engineering Offers an Accurate View of What’s Down Under (4659)

Paul Stivano (Australia): Volumetric Surveys of Ash Storage Dams (4004)

Hediye Erdögan (Turkey): Experimental and Analytical Studies on Dynamic Characteristics of the Bosporus Suspension Bridges (4541)

FS 4H – Remote Sensing and Optical Techniques II
Thursday, 15 April 13:00–14:00
Venue: Bayside 203, SCEC
Commission: 5 and 6
Chair: Dr. Gethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom

Mika Saloalahti (Finland): Advanced Use of LiDAR Data – Automatic Building Vectorization and Contour Production (4689)

Roy Hill and Jake Jenkins (USA): GeoSAR and PurVIEW: a New Solution for Efficient and Accurate Large-area Topographic Mapping (4571)

Federica Zampa (Italy), Dario Conforti and Daina Morgan (Canada): Lynx Mobile Mapper: The New Survey Technology (4706)

Paola Ronzino (Italy): Innovative Techniques for 3D Digital Survey of the Paphos Theatre (4350)

Ajay K. Singh and S. S. Singh (India): Sub Watersheds Status of Hasdeo River Basin Area in Chhattisgarh, India (4552)

FS 4I – Measuring and Monitoring the Coastal Zone
Thursday, 15 April 13:00–14:00
Venue: Bayside 106, SCEC
Commission: 4
Chair: Mr. David Neale, Trinidad and Tobago
Rapporteur: Ms. Angela Etonovnbe, Nigeria

Michael Sutherland (Canada), Dexter Davis and Sandesh Jaggan (Trinidad And Tobago): Augmenting Tide Gauge Data with Satellite Altimetry in the Caribbean (4614)

Moslem Alghasi (Iran): New Method in Mangrove Forest Hydrography via Remote Sensing (Aerial Photography) and Classic Hydrography (4182)

Nathan Quadros (Australia): Construction of a High Accuracy, Seamless, State-Wide Coastal DEM (4092)

FS 4J – GIS Applications on Internet
Thursday, 15 April 13:00–14:00
Venue: Bayside 101, SCEC
Commission: 3 and 7
Chair: Mr. Lefteris Lykouroupolous, Greece

Francisco Ortiz de Urbina (Australia): Location Intelligence 2.0: Changing the Way Spatial Information Is Used (4131)

Usman Iqbal, David Bruce and Ed Garvin (Australia): A Balancing Act: Fusing Spatial Privacy and Spatial Metadata for Responsible Participatory Geo-Governance (4597)

Dean Luo and Liqiong Liao (China, PR): Extend Municipal GIS Functions Based on Web-Services (4012)

Leonie Dunbar (Australia): Geographic Internet Addresses – Providing Online Homes for Australian Communities (3755)

JaeJun Yoo (Republic of Korea): The First Step at Convergence of Geospatial Web and Sensor Web (4741)

FS 4K – Case Studies from Small Islands States
Thursday, 15 April 13:00–14:00
Venue: Bayside Gallery A, SCEC
Commission: 8, 3 and 7
Chair: Diane Dumashie, Chair of FIG Commission 8, United Kingdom

Jean Francisco Francois (Mauritius): Facing the Challenges of Setting up a Cadastral System in the Rodrigues Island (Mauritius) through a Vision of Good Land Governance towards a Proper Land Administration, Information Land Management System to Support Sustainable Development (3905)

Mone iye Cornelina Marschiaveli and Niendyawati Salam (Indonesia): Vulnerability Assessment Concept for Small Islands Case Study: Makalehi Island, North Sulawesi, Indonesia (4585)

Malcolm Archbold (New Zealand) and Sione Nailasikau (Cook Islands): Development of the Kingdom of Tonga Cyclone Emergency Recovery and Management System using Geospatial Tools (4073)

Malcolm Archbold (New Zealand) and Sione Nailasikau (Cook Islands): Development of the Kingdom of Tonga Cyclone Emergency Recovery and Management System using Geospatial Tools (4073)

Malcolm Archbold (New Zealand) and Sione Nailasikau (Cook Islands): Development of the Kingdom of Tonga Cyclone Emergency Recovery and Management System using Geospatial Tools (4073)
This is a peer reviewed paper.

**TS 9A – Development of Land Tenure Systems – Developing Countries**

Thursday, 15 April 14:00–15:30
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Mr. Teo CheeHai, FIG Vice President, Malaysia
Rapporteur: Mr. William Kalande, Kenya

Monica Lengoiboni, Paul van der Molen, Jaap Zevenbergen, Christiaan Lemmen and Arnold Bregt (the Netherlands): Pastoralism within Land Administration: Accommodating Pastoralists’ Spatiotemporal Land Rights in Land Administration Domain Model (LADM) (3946)

Michael McDermott, Spike Boydell and Jason Prior (Australia): Complexity Epistemology and Real Property Rights (4194)

Noel Taylor (Australia) and Fatma Abdel Kader (Egypt): Parcel Based Deeds Registration – A Viable Alternative to Title Registration in Egypt? (4180)

Belachew Yirsaw Alemu (Ethiopia): Urban Land Lease Policy of Ethiopia – Case Study on Addis Ababa and Lease Towns of the Amhara National Regional State (4006)

Habtemicael Weldegiorgis (Eritrea): The Challenges of Developing Cadastreal System in Eritrea (3774)

This is a peer reviewed paper.

**TS 9B – SIM Best Practice Applications**

Thursday, 15 April 14:00–15:30
Venue: Bayside 103, SCEC
Commission: 3
Chair: Dr. Jens Riecken, Germany
Rapporteur: Mr. Steven Nystrom, USA

Olaf Hedberg and Elizabeth Thomas (Australia): The Role of an Institutional Environment in Building Creative and Innovative Spatial Capacity (3807)

Ebru H. Colak, Bayram Uzun and Halil Ibrahim Inan (Turkey): A Parcel-Based Health Information System in Turkey (4233)

Kambiz Borna, Shahrbanu Firuzi, Mohmadreza Rrajabi, Majid Hamrah and Mehdi Mirzaie (Iran): Optimization Linear Black Box Models of Rainfall – Runoff by Using GIS and Neural Networks (3821)

Alexandra Lyle and Samsung Lim (Australia): Tracing Tramways – the Application of Geographic Information Systems in Transport Archaeology (3967)

Brian Marwick and Peter Richards (Australia): A New G-NAF Processing Environment (4089)

Joseph Abhayaratna (Australia): LYNX and the Commonwealth Spatial Data Initiative (4094)

This is a peer reviewed paper.

**TS 9C – Standards**

Thursday, 15 April 14:00–15:30
Venue: Bayside 104, SCEC
Commission: 5
Chair: Mr. David Martin, France
Rapporteur: Mr. Volker Janssen, Australia


William Henning (USA): Real Time Network Guidelines from NOAA’s National Geodetic Survey (3772)

This is a peer reviewed paper.

Robert Odolinski (Sweden): Swedish User Guidelines for Network-RTK (4226)


This is a peer reviewed paper.

**TS 9D – Machine Guidance and Integrated Measurement Systems**

Thursday, 15 April 14:00–15:30
Venue: Bayside 105, SCEC
Commission: 8
Chair: Dr. Geethin W. Roberts, Chair Elect of FIG Commission 6, United Kingdom
Rapporteur: Mr. Jim Ollis, Australia

Ryan Keenan (Sweden): RTK Networks for Competitive Advantage in Machine Control and Site Positioning (4292)

Peter Kyrinovic and Alojz Kopacic (Slovenia): System for Automatic Crane Measurement (4266)

Alexander Reiterer (Austria), Taher Hassan and Naser Elsheimy (Canada): Automated Traffic Sign Detection for Modern Driver Assistance Systems (3828)

This is a peer reviewed paper.

Rob Huber and Claude Lafliamme (Canada): Leveraging Mobile Mapping Systems (4253)

Jiri Ardielli (Czech Republic): System for Localization and Identification of Divers’ Activity in Aquatic Environment (4667)

This is a peer reviewed paper.

**TS 9E – Sustainable Planning and Urban Renewal**

Thursday, 15 April 14:00–15:30
Venue: Bayside 106, SCEC
Commission: 8
Chair: Mr. Michael Doran, Northern Ireland
Rapporteur: Mr. Yacoub Saade, Lebanon

Hervé Grélard (France): Land Surveyors and Sustainable Development – The Agenda 21 of the French Order of Licensed Surveyors (3827)

Chijioke Eze (Nigeria): Integration of Geographic Information System in Planning and Management of Industrial Developments in Nigeria (3749)

This is a peer reviewed paper.

Austin Amin Usman (Nigeria): Urban Renewal: A Developmental Tool Not Recognized in Developing Countries – A Case of Abuja, Nigeria (4414)

Ibrahim Usman Jibril (Nigeria): The Return of the Greens in Abuja, Nigeria’s New Capital City (4638)

Narelle Underwood (Australia): The Surveyor’s Role in Developing a Sustainable Society (4324)

This is a peer reviewed paper.

Tina Koehler (Germany): A Contribution to a Sustainable Society (4324)

Majid Hamrah and Firuzi Mohammadreza Rrajabi, Kambiz Borna, Shahrbanu Firuzi, Mohammadreza Rrajabi, Majid Hamrah and Mehdi Mirzaie (Iran): Optimization Linear Black Box Models of Rainfall – Runoff by Using GIS and Neural Networks (3821)

This is a peer reviewed paper.

**TS 9F – Real Estate Management**

Thursday, 15 April 14:00–15:30
Venue: Bayside 201, SCEC
Commission: 9, 7 and 8
Chair: Mr. David Smjekal, Czech Republic
Rapporteur: Mr. Tuomo Heinonen, Finland

Silja Lockemann (Germany): Influences of the Demographic Change on the Property Market (3948)

Tuuli Luoma, Jessica Niemi, Peggy Rothe and Anna-Liisa Lindholm (Finland): Office Occupiers’ Real Estate Attributes – Identifying Occupiers’ Preferences (4018)

This is a peer reviewed paper.

Man Wah Conny Wang (Hong Kong SAR, China): The Future of Real Estate Management: Privatization of Public Housing Management (3757)

Peter Clark and Manya Mooya (South Africa): Exploring the Significance of Valuations in South Africa’s Listed Property Sector (3938)

This is a peer reviewed paper.

Andrea Massaro (Italy): Planning Permission by Curative Statute (4349)

Catherine Kariuki and Nicky Nzioki (Kenya): The Management of Corporate Real Estate Assets in Kenya (4629)

This paper has not been presented at the congress.
TS 9G – Quality in Surveying Education
Thursday, 15 April 14:00–15:30
Venue: Bayside 203, SCEC
Commission: 7
Chair: Dr. Mats Backman, Sweden
Louisa J. M. Jansen (the Netherlands), Mustafa Karatas, Gürsel Küsek (Turkey), Christian Lemmen and Rik Wouters (the Netherlands): The Computerised Land Re-allotment Process in Turkey and the Netherlands in Multi-purpose Land Consolidation Projects (4574)
Alfred Bollinger (Switzerland): From Land-consolidation to Rural Development Projects in Switzerland (3844)
P. P. Oli (Nepal): Land Pooling / Readjustment Programmes in Nepal (4553)
Seija Kotilainen and Heikki Seppänen (Finland): A Study on the Experiences of Arable Land Owners on Land Rearrangement – Project-related Land Consolidation with a Public Road Project at Pajuneva in Finland (3990)
This is a peer reviewed paper.

TS 9H – Marine Cartography
Thursday, 15 April 14:00–15:30
Venue: Bayside 203, SCEC
Commission: 7
Chair: Mr. Adam Greenland, New Zealand
Rapporteur: Mr. David Neale, Trinidad and Tobago
Gareth Hodkinsson (New Zealand): Introducing the Revolution in New Zealand Paper Chart Production (3982)
Kristian Jones (New Zealand): Implementation of a Hydrographic Product Database Solution for Land Information New Zealand Hydrographic Services: Challenges and Efficiency Gains (4115)
Marina Christofidis and Thobias Leoncio Rotta Furlanetti (Brazil): Evaluating the Intelligibility of Cartographic Representation Techniques Used for Water Quality Monitoring Framework in Brazil (4490)
Kazeem Akorede Shitta (Nigeria): Lithostratigraphy of Nigeria – An Overview (4418)
Roderick Nairn (Australia): The Challenge of Surveying and Charting the Antarctic (4531)

TS 9I – Land Administration Projects
Thursday, 15 April 14:00–15:30
Venue: Bayside 101, SCEC
Commission: 7
Chair: Mr. Arvo Kokkonen, Finland
Rapporteur: Mr. Lars Palm, Sweden
Oksana Sukhova (Ukraine): Is It Real to Have Effective Land Administration When There is Power Disproportion? (3856)
Sergey Volkov and Alexander Sagaydak (Russia): Land Administration in the Russian Federation (4579)
Leslie C. Fehlhaber and Jemma A. Picco (Australia): Surveying Challenges to Deliver Tenure for the Eastern Kuku Yalanji People’s Native Title Determination in the Wet Tropics of Far North Queensland (4112)
Aune Rummukainen (Finland): Indigenous Peoples Rights to Land – as an Example Sami People in Finland and Veddha People in Sri Lanka (3867)
William Kalande (Kenya): Stretching Beyond the Limitations of Social Based Land Dispute Classifications: Formulation of a Cadstral Land Dispute Classification Model (4411)

TS 9J – Land Administration
Thursday, 15 April 14:00–15:30
Venue: Bayside Gallery A, SCEC
Commission: 4
Chair: Mr. A. Picco, Australia
Rapporteur: Mr. Mwenda Makathimo and Joycelyn Makena Kaaria-Ogto (Kenya): The Role of Surveyors in Land Policy Formulation: Best Practices from the Kenyan Experience (4663)
Olusola Atilola (Nigeria): Land Reform in Nigeria (4758)
Anthony Arko-Adjei (Ghana), Arbind Tuladhar, Jitske De Jong and Jaap Zevenbergen (the Netherlands): Customary Tenure Institutions and Good Governance (4279)
This is a peer reviewed paper.

INV 4 – Land Policies in Africa
Thursday, 15 April 14:00–15:30
Venue: Bayside Gallery A, SCEC
Chair: Dr. Diane Dumashie, Chair of FIG Africa Task Force, United Kingdom
Mwenda Makathimo and Joycelyn Makena Kaaria-Ogto (Kenya): The Role of Surveyors in Land Policy Formulation: Best Practices from the Kenyan Experience (4663)
Olusola Atilola (Nigeria): Land Reform in Nigeria (4758)
Anthony Arko-Adjei (Ghana), Arbind Tuladhar, Jitske De Jong and Jaap Zevenbergen (the Netherlands): Customary Tenure Institutions and Good Governance (4279)
This is a peer reviewed paper.

FIG Corporate Members Meeting
Thursday, 15 April 14:00–15:30
Venue: Bayside 107, SCEC
Commission: FIG Corporate Members
- by invitation only
Thursday, 15 April 2010 16:00–17:30

TS 10A – New Development in Cadastre – Developed Countries
Thursday, 15 April 16:00–17:30
Venue: Bayside Auditorium A, SCEC
Commission: 7
Chair: Mr. Gottfried Barnasconi, the Netherlands
Rapporteur: Mr. András Osskó, Chair of FIG Commission 7, Hungary
Tarja Myllymäki and Tarja Pykälä (Finland): Challenge to Implement International Cadastral Models – Case Finland (3876)

Mick Strack (New Zealand): Property Rights for a New World: Adapting to an Ethic of Sustainability (4149)
This is a peer reviewed paper.

Daniel Roberge (Canada): Re-thinking and Re-engineering Cadastral and Land Administration Activities in Quebec to Better Face the Challenges (4101)

Elisabetta Genovese and Francis Roy (Canada): From Parcel to Global Cadastre: Challenges and Issues of the Post-reform Quebec Cadastre (4499)

TS 10B – Spatial Information Infrastructures to Address Social Aspects
Thursday, 15 April 16:00–17:30
Venue: Bayside 103, SCEC
Commission: 3, 7 and 8
Chair: Dr. Vladimir Tikhonov, Russian Federation

Michael Barry, Andrew Hunter (Canada), Richard Molero (Venezuela) and Thaer Shunnaar (Palestinian Authority): Flexible Database Structures for Land Records (4426)

Kevin McDougall and Dev Raj Paudyal (Australia): Spatial Data Infrastructure for Pro-poor Land Management (4171)
This is a peer reviewed paper.

Mabel Alvarez (Argentina), Tatiana Delgado Fernández and Rafael Cruz Iglesias (Cuba): Social SDI’s a Challenge for Land Surveyors (4356)
This paper has not been presented at the congress.

Bruce Douglas (Australia): Hammers and Nails – Some Pragmatic Views of the Spatial Information Industry in Australia and New Zealand (4618)

TS 10C – GNSS Modernisation and Trends
Thursday, 15 April 16:00–17:30
Venue: Bayside 104, SCEC
Commission: 5
Chair: Mr. Dave Doyle, USA
Rapporteur: Ms. Christina Kempe, Sweden

Katrin Huber, Florian Heuberger, Ana Karabatic, Robert Weber, Philipp Berglez and Christoph Abart (Austria): PPP: Precise Point Positioning – Constraints and Opportunities (4040)

Lennard Huisman and Peter Teunissen (Australia): On the Robustness of Next Generation GNSS Phase-Only Real-Time Kinematic Positioning (4095)

Chris Rizos (Australia): Impact of Next Generation GNSS on Australasian Geodetic Infrastructure (4148)

Larry Hothem (USA): GNSS Modernization Program Update and GNSS International Cooperation (4366)

Yamming Feng (Australia) and Bofeng Li (China, P.R.): 4D Real Time Kinematic Positioning (4392)

TS 10D – Building Measurement and Modelling
Thursday, 15 April 16:00–17:30
Venue: Bayside 102, SCEC
Commission: 6
Chair: Prof. Alojz Kopacik, Chair of FIG Commission 6, Slovakia
Rapporteur: Dr. Volker Schwieger, Germany

Volker Schwieger, Li Zhang and Matthias Wengert (Germany): A Quality Model for Residential Houses Construction Processes (3881)

Christian Manthe and Christian Clemen (Germany): Room-Element-Aggregation to Enhance the Quality of Observed 3D Building Information (4172)

Valeriu Manolache (Romania): Methods for Analysis of Building Deformations, Determined through Geodetic Measurements (4516)

TS 10E – Disaster Management: Preparedness and Resilience
Thursday, 15 April 16:00–17:30
Venue: Bayside 105, SCEC
Commission: 8, 3 and 7
Chair: Mr. Daniel Roberge, Chair Elect of FIG Commission 7, Canada
Rapporteur: Ms. Sophie Schetke, Germany

Raphael Legouge (France), Rangsimsa Sunila, Kirsí Pirantaus and Hannes Seppänen (Finland): Risk and Vulnerability Analysis in the Gulf of Finland (4195)
This is a peer reviewed paper.

Darren Motolini, Ian Hyde and Bandarian (Australia): Implementing a Spatial Vision for Western Australia: Engaging Citizens through a Coordinated and Collaborative Approach to Spatial Information Management (3836)

Arif Cagdas Aydinoglu and Elif Demir (Turkey): Designing Provincial Level Emergency and Disaster Management System for Turkey (4310)

Matthew Ibitoye and Adebayo Eludoyin (Nigeria): Land Exposure and Soil Erosion in Part of Humid Region of South-west Nigeria (3936)
This is a peer reviewed paper.

TS 10F – Land Taxation and Fiscal Cadastre
Thursday, 15 April 16:00–17:30
Venue: Bayside 201, SCEC
Commission: 9 and 7
Chair: Dr. Frances Plimmer, Chair Elect of FIG Commission 9, United Kingdom
Rapporteur: Dr. Winrich Voss, Germany

Francis Gäbele and Marc Vanderschueren (Belgium): The Immovable Valuation Missions of the General Administration of the Patrimonial Documentation of Belgium (3890)

Jukka Nieminen and Tuomo Heinonen (Finland): Zanzibar Land Administration and Revenue Generation System (LARGE) (4620)

Yuliana Susilowati, Bambang Edhi Leksono and Denissanto (Indonesia): The Influence of Urban Accessibility in Determining Average Indicated Land Values for the Region (4317)

Kambiz Borna, Saeed Megzarie, Saeed Borna and Majid Hamrah (Iran): To Apply Fuzzy Method for a Rural Fiscal Cadastre Using Google Maps Data (3846)
This is a flash presentation.
Thursday, 15 April 2010 16:00–17:30

**TS 10G – Knowledge Sharing**
Thursday, 15 April 16:00–17:30
Venue: Bayside 202, SCEC
Commission: 2 and 1
Chair: Ms. Leonie Newnham, Chair Elect of FIG Commission 1, Australia
Rapporteur: Prof. Bela Markus, Chair of FIG Commission 2, Hungary

Lesly Lam and Canon Tong (Hong Kong SAR, China): Causal Ambiguity and Knowledge Transfer between Public and Private Sectors Organisations in Private Finance Initiatives Projects (4169)

Karolina Larsson (Sweden) and Endri Diyanto (Indonesia): Exchange of Experiences and Knowledge in Land Administration and Cadastre Services between Sweden and Indonesia (4204)

Paul Kenny (Australia): Training the Other Surveyor (3722)

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**TS 10H – Land Consolidation II**
Thursday, 15 April 16:00–17:30
Venue: Bayside 203, SCEC
Commission: 7
Chair: Mr. Rik Wouters, the Netherlands
Rapporteur: Ms. Louisa J. M. Jansen, the Netherlands

Mats Backman (Sweden): Cost-benefit Analysis of Land Consolidation in Sweden from the Viewpoint of Society and a Land Owner (3811)

Juhana Hiironen (Finland): Renewing the Evaluation of Land Consolidation Effects (4025)

Visa Korhonen (Finland): Forest Land Consolidations and Jointly Owned Forests – The Way towards Better Competitiveness of Forestry (4485)

Tayfun Cay and Fatih Iscan (Turkey): Application of Fuzzy Logic in Land Consolidation Activities (4351)

This is a peer reviewed paper.

Suvi Panschin and Arvo Vitikainen (Finland): Land Consolidation and Agricultural Traffic – Instrument for Calculating the Traffic Volume (4179)

This is a peer reviewed paper.

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**TS 10I – Vertical Reference Frame**
Thursday, 15 April 16:00–17:30
Venue: Bayside 106, SCEC
Commission: 4 and 5
Chair: Mr. Darren Burns, Australia
Rapporteur: Mr. Gordon Johnston, United Kingdom

William Mitchell and James Chittleborough (Australia): Monitoring Sea Level Trends in the South West Pacific (4402)

Nicholas Dando and Bill Mitchell (Australia): Tidal Planes and MSL Errors (4119)

David Dodd (Canada), Jerry Mills (USA), Dean Battilana (Australia) and Michael Gourley (Canada): Hydrographic Surveying Using the Ellipsoid as the Vertical Reference Surface (4197)

John Hannah (New Zealand): The Problems and Challenges in Using Tide Gauges to Monitor Long-term sea Level Change (3786)

This is a peer reviewed paper.

Matt Amos (New Zealand): New Zealand Vertical Datum 2009 – A Geoid Based Height System for the Unification of Disparate Local Vertical Datums (3884)

Renee Shields (USA): Height Modernization in the United States: Plans for a New Vertical Datum (4494)

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**TS 10J – Spatial Information Modelling II**
Thursday, 15 April 16:00–17:30
Venue: Bayside 101, SCEC
Commission: 3
Chair: Dr. Haim Srebro, Israel
Rapporteur: Dr. Michael Barry, Canada

Volkan Yildirim and Recep Nisanci (Turkey): Developing a Geospatial Model for Power Transmission Line Routing in Turkey (4270)

Tahsin Yomralioglu and Arif Cagdas Aydinoglu (Turkey): State-of-Play towards Building Turkey GI (4330)

Xu Aigong and Askey Harinda Lakmal (China, PR): Logical Process Modeling of Spatial – Temporal Application (3872)

This is a peer reviewed paper.

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**TS 10K – Cadastral Boundary Issues**
Thursday, 15 April 16:00–17:30
Venue: Bayside Gallery A, SCEC
Commission: 7
Chair: Mr. Gyula Iván, Hungary
Rapporteur: Mr. Libor Tomandl, Czech Republic

Graham Wallis (Australia): Boundary Determinations by Government – Have They Been Successful? (3987)

Robert W. Foster (USA): Boundary Disputes – The U.S. Surveyor’s Role (4352)

Jennifer Whittal (South Africa) and Susan Jones (New Zealand): Locating the Positions of the Original Cape Farms of the 1660’s – a Demonstration of Cadastral Reconstruction Using Regular Techniques and GIS Cadastral Fabrics (4026)

This is a peer reviewed paper.

Conrad Tang (Hong Kong SAR, China) and Linda Guan (China, PR): Correlation of Paddy Field for Land Boundary Record (4140)

Bruno Razzo (Italy): The Public’s Understanding of a Real Estate Cadastral Status and the Surveyor’s Measurements Probative Role (4345)

Shane Simmons (Australia): Part-parcel Adverse Possession as a Means to Resolving Survey Areas (4400)

Joseph Owusu and Jonathan Quaye Ballard (Ghana): Satellite Positioning (GPS) in Customary Land Boundary Demarcation in peri-urban Ghana – Case Study: Ejisu Paramount Stool Land (3848)

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**Presidents’ Meeting**
Friday, 16 April 08:30–10:30
Venue: Bayside 202, SCEC
Chair: Prof. Stig Enemark, FIG President, Denmark

– For Presidents of FIG Member Associations
– By invitation only

**FIG General Assembly – Session II**
Friday, 16 April 11:00–14:00
Venue: Grand Ballroom B, SCEC
Commission: All
Chair: Mr. Paul Harcombe, Congress Director, Australia

Michael Giudici, SSSI President (Australia): Closing Address (4740)

Stig Enemark, FIG President (Denmark): Closing Address and Congress Resolutions (4739)

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**Gala Dinner**
Thursday, 15 April 19:00–23:00
Dockside, Cockle Bay

The congress dinner will take place at the Dockside restaurant positioned above the busy Darling Harbour waterfront.

– cost: 165 AUD
– sponsored by Leica Geosystems
FIG Congress – SIDS Workshop
Small Island Developing States and The Millennium Development Goals
14th & 15th April 2010
Bayside Gallery B

The aim is to emphasise the important role of land governance in addressing the MDGs but also articulating the input of land professionals and their contribution that promotes engagement from all sectors of society. This will require a strong and deep commitment to establishing a healthy land professional’s network.

The participatory attendance for this workshop is on invitation only. Congress delegates will be able to witness the debate.

Workshop themes:

1. Building Professional Capacity

The opening session aims at setting the scene for professional capacity building in the region by identifying the specific gaps in capacity in the region, and discussing ways in which land practitioners could contribute towards closing the gaps and thus assist with the achievement of the MDGs in the region.

2. Climate change and natural disasters

This session on climate change and disaster mitigation develops the relationship between climate change, community resilience and land tenure. The tsunami that hit Samoa and other Pacific Island Countries in September 2009 was graphic evidence of the vulnerability of coastal communities. The objective of this session is to articulate the input and contribution of land professionals in the preparedness, mitigation, emergency response, recovery and rehabilitation stages of Disaster Risk Management.

3. Access to land, coastal and marine resources

The challenge of access to land and marine resources due to a lack of clearly defined real property rights is often cited as a major cause of dispute and resultant instability for SIDS. In this session we explore institutional impediments to land and resource access in SIDS. We investigate the issues of gender and intergenerational equity, and the application of land trusts, with a view to proposing workable leasehold solutions.

4. Good governance in land tenure and administration

The land sector is particularly susceptible to corruption and rent seeking. The small island states in the Pacific, typically grouped into three regions: Melanesia, Micronesia and Polynesia, cover a very wide expanse of the world’s surface. The prevalence and importance of customary tenure in the Pacific adds a level of complexity to any consideration of land governance but nonetheless, land governance is an important topic for the Pacific region. This session will explore the topic of land governance as it applies to small island states.

5. Building Professional Capacity

This closing session aims at developing strategies and activities for building the professional capacity of land administration practitioners and professionals in the region; and identifying the roles that land administration practitioners can play towards achieving the MDGs in the region.

A joint FIG/Sponsors publication will be prepared including some key reference material and a joint declaration to be adopted by the conference. This publication will be published in the FIG publication series. The full proceedings will be published on the FIG and Sponsor Websites and will be made available as a CDROM.

Wednesday, 14 April 2010

8:15–10:30 – Session 1:
Building Professional Capacity
Venue: Bayside Gallery B
Chair: Mele Rakai (Fiji)
Discussant: Jude Wallace (Australia)
Rapporteur: Spike Boydell (Australia)

Diane Dumashie, SIDS Seminar Convener, Chair of FIG Commission 8, UK:
Opening Remarks and Setting the Timetable for the Day

Stig Enemark, FIG President:
Welcome Address

Mele Rakai, PILPA President:
Welcome Presentation

Comments & Questions

Antonio Wycliffe, ASPNG:
Capacity Building needs and Role of Land Professionals in PNG

Jackson Vaikota, Surveyor-General:
Capacity Building needs and Role of Land Professionals in Solomon Islands

Fa’atasi Malologa, Surveyor-General:
Capacity Building needs and Role of Land Professionals in Tuvalu

David Neale, Cane Associates Co Ltd, Trinidad:
Capacity Building experiences and insights in the Caribbean

Marnie Leybourne, Australia, Past SSSI President:
Building Professional networks – possible role of SSSI

Discussion/Comments/Questions

Jude Wallace:
Discussant Summary and Close

10:30–12.00 Congress Plenary Session 3: The Big Challenges
Venue: Bayside Auditorium A

13:00–14:00 – Session 2:
Climate Change and Natural Disasters
Venue: Bayside Gallery B
Chair: Johnny Edmonds (New Zealand)

Discussant: Daniel Fitzpatrick (Australia)
Rapporteur: David Mitchell (Australia)

Grenville Barnes (USA):
Overview of the major lands issues associated with land tenure and natural disasters in SIDS, and the role of land professionals

Toelau Julio (Samoa):
Case study of responding to land issues after the 2009 tsunami in Samoa, from a Department of Lands perspective

Eric Gorapava (Solomon Islands):
Case study of land tenure and climate change from a Department of Planning perspective

Masang Bagingdo (Papua New Guinea):
Case study of the Papua New Guinea experience with natural disasters from a land practitioners perspective

Discussion

Discussant summary and close

14.00–15:30 – Session 3:
Access to Land and Resources
Venue: Bayside Gallery B
Chair: Russell Nari (Vanuatu)
Rapporteur: Bill Robertson (New Zealand)

Opening comments from the Max Kepp (Papua New Guinea):
Urbanisation Issues and Priorities in PNG and the Region including different forms of collective tenure

Faanimo Reti-Warren (Western Samoa):
Resource Access issues and priorities in Samoa and the Region including land tenure issues

Charlie Terapii (Cook Islands):
Access to Land Resources in the Pacific

Kulene Sokota (Tuvalu):
Land issues and Priorities for Small Pacific Island Countries including sea level rise

Azzan Rashid (Zanzibar):
Local and Regional Resource Access Issues and Priorities including land and marine resource issues

Questions and Discussion

Summary and listing of critical lines of enquiry and action for the next four years FIG term and close

Thursday, 15 April 2010

8:30–10:30 – Session 5:
Building Professional Capacity
Venue: Bayside Gallery B
Chair: Mele Rakai (Fiji)
Discussant: Ian Williamson (Australia)
Rapporteur: Spike Boydell (Australia)

Chris Lunay (Australia):
Capacity Building experiences and insights in Asia/Africa

Discussion/Comments/Questions

Next Steps – Identifying capacity building strategies and activities for land practitioners in the region:

– Uelegitone Seiuli, Samoa
– Sevanaia Dakaica, Fiji
– Marnie Leybourne, Australia

Next Steps – Contributions of land practitioners towards achieving MDGs in region:

– Stanley Waleanisia, Solomon Islands
– Martin Sokomanu, Vanuatu
– Tony Bevin, New Zealand

Discussant Summary – Ian Williamson

Draft Declaration – Chairs or Rapporteurs for all Sessions

Session 1: Mele Rakai

Session 2: David Mitchell

Session 3: Bill Robertson

Session 4: Tony Burns

Session 5: Spike Boydell

Dr Diane Dumashie, SIDS Seminar Convener, Chair of FIG Commission 8, UK:
Conclusions and Close of Seminar

Venue: Bayside Gallery B
Technical Sessions
– Bayside 101, 102, 103, 104, 105, 106 and 108

Plenary Sessions / Technical Sessions
– Bayside Auditorium A

Opening Ceremony / Plenary Session
– Bayside Auditorium B

FIG Meeting Room
– Bayside 108

Technical Sessions
– Bayside Gallery A and B
The XXIV FIG
International Congress 2010
Facing the Challenges – Building the Capacity
11 – 16 April 2010
Sydney Convention & Exhibition Centre
Sydney, Australia

FIG 2010 Organisers
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Congress Website
www.fig2010.com

Congress Proceedings
www.fig.net/pub/fig2010

Surveying and Spatial Sciences Institute
27 – 29 Napier Close Deakin
ACT Australia 2600
www.spatialsciences.org.au

Next FIG Working Weeks:
18–22 May, Marrakech, Morocco
FIG Working Week 2011 – Bridging the Gap between Cultures
www.fig.net/fig2011

6–11 May, Rome, Italy
FIG Working Week 2012 – Territory, Environment and Cultural Heritage
www.fig.net/fig2012

www.fig2010.com