

FIG Commission 3 – Spatial Information Management (SIM)

Work Plan 2007–2010

1 Title

Spatial Information Management.

2 Terms of reference

- Management of spatial information about land, property and marine data (data, tools, methods, policies, processes, procedures);
- Spatial data infrastructure – data collection, analysis, visualization, standardization, and dissemination (technical, organizational, personnel, administrative, financial, policy, and legal aspects);
- Management and transfer of knowledge and skills for SIM (educational, professional development and capacity building aspects);
- Impacts on organizational structure, business models, public-private-partnerships, professional practice and administration;
- Management of spatial information supporting good governance (sustainable development, social and economic growth and poverty reduction, environment protection, democracy, freedom, participation in decision making, social security).

3 Mission Statement

- Increase awareness about successful SIM approaches in the “e-Society” by showing good practice like available, reliable and accessible spatial information for better decision-making.
- Support the use of spatial information and SIM tools by surveyors and by all participants in decision-making to serve the goals of good governance.
- Share good practices on managerial processes and infrastructure required for handling data, using information and distributing knowledge.
- Share good practices and develop high-level methods and techniques for merging and managing updated spatial information at various levels according to market requirements.
- Encourage the use of spatial information within e-government and e-commerce.
- Implement the general FIG Work Plan through working groups (WGs), Joint-WGs, Task Force, annual meetings, workshops, and seminars held during and/or outside FIG Working Weeks (WWs) and Regional Conferences; publications; and progress reports about these events.
- Present the final outcomes of Commission work through the web.
- Cooperate and coordinate with the related United Nations committees and other geo-spatial information societies and organizations active in the field, such as the International Society for Photogrammetry and Remote Sensing (ISPRS), the International Cartographic Association (ICA), the International Association of Geodesy (IAG), the Global Spatial Data Infrastructure Association (GSDI), the European Umbrella Organisation for Geographic Information (EUROGI), the United Nations Economic Commission for Europe, Working Party on Land Administration (UN/ECE WPLA), the United Nations Economic Commission for Europe,

Committee on Housing and Land Management and the United Nations Human Settlements Programme (UN-Habitat).

- Increase the contribution of the surveying profession to the implementation of the UN Millennium Development Goals.

4 General

Commission 3 and its Working Groups (WGs) focus on contribution of spatial information for sustainable development. The main output of Commission 3 will be a publication on the topic: *"Spatial Information toward Managing Mega Cities"*, to be delivered by 2010. For that purpose Commission 3 will organize three specific annual Workshops under the sub-topics:

1. Spatial Information Management toward Legalizing Informal Urban Development", 28-31 March 2007, Athens, Greece (http://www.psdm.gr/fig_Commission_3_wpla.htm)
2. Spatial Information in Environmental Management of Mega Cities, January 2008, Valencia, Spain
3. Seminar 2009 (Topic and venue to be decided)

Commission 3 delegates will organize additional specific Workshops and meetings either during the FIG Working Weeks and Regional Conferences and/or independently, according to the needs.

In addition, Commission 3 will contribute to joint activities:

- FIG Task Force (involving Commissions 3, 7, 8, 9, 10) for the preparation of the FIG/UN-Habitat Seminar on *"Improving Slum Conditions through Innovative Financing. Bridging the gap between affordable shelter that is inadequate and adequate shelter that is unaffordable"* in Stockholm in June 2008, and
- FIG Task Force (involving Commissions 3, 7, 8, and 9) for cooperation between FIG and UN-Habitat in the framework of the Global Land Tools Network (GLTN); especially in the field of raising awareness in SIM tools and in providing low cost methods, tools and policies toward promoting sustainable development, environmental monitoring of unplanned urban development, and sustainable urbanization. Commission 3 will also provide for this Task Force methods and tools as facilitators among professionals in a well-understood context of planning, development and control.

FIG Commission 3 delegates have expressed their strong interest in:

- Activating the national delegate, the correspondent, and the academic member network in order to work together, identify the needs in our common fields of interest, and exchange experience and knowledge for the common benefit
- Organizing Commission 3 annual meetings and workshops focused on the specifically identified needs and topics. Commission 3 will provide and certify optional double blind peer review for authors of papers submitted for Commission 3 Workshops. Papers of authors not wishing peer review will be equally welcome in the Commission 3 Workshop proceedings. Commission 3 delegates consider that the close cooperation and coordination among delegates coming from the public and private sectors and from the FIG academic members is of great and equal value for all.

Commission 3 delegates have identified the following sub-topics to be of interest:

- e-Governance for the citizen, democracy, and transparency
- Web Services and Metadata
- SIM Infrastructure
- State of the Art of Spatial Data Infrastructure
- Technical aspects, integration of information, 3D / 4D applications of SDI, visualization of information, seamless information management
- Standardization of Information (technical, legal, semantics and ontology)
- Geo-data policy issues with a focus on pricing and access policies for National Spatial Data Infrastructure (NSDI), equal opportunities and access to spatial information
- SIM applications for environmental protection, disaster management and risk assessment, social and economic growth, cultural heritage documentation and development, informal/unplanned development management, quantifying and localizing cultural diversity, coastal zone and marine data management, real estate markets, valuation and taxation, real estate finance and development
- Educational aspects in SDI and SIM, e-learning
- Transferring / sharing knowledge focusing on “low-cost” methods and tools for spatial information collection and management

In addition to the specific activities above, the Commission will support and contribute to FIG Task Forces and the Standards Network. The Commission will also respond to the FIG Council to address new issues as they emerge.

5 Working Groups

Working Group 3.1 – e-Government and e-Citizen

Interactive information flow and communication between providers, partners and customers Public Private Partnerships (PPP).

Policy Issues

SIM is a facilitator for IT based services for administration as well as for citizens. By this SIMS will have the role of an integrator of components for a Spatial Information Infrastructure within an information society.

- Services and workflows for decision makers and citizens in participatory democracy
- Government – business – customers: relations and activities
- Integration and cooperation in a distributed environment
- Individual vs. business in SIM
- Mobile society
- SIM and Location Based Services (LBS) in an e-Government context

Chair

- Kari Strande, Norway, E-mail: kari.strande@statkart.no

Specific Projects and Outputs

Based on cooperation with other WGs and other commissions WG 3.1 will:

- Report on good practice of Spatial Information within e-Government in order to

support citizens in participatory democracy, providing equal access to information for all with transparency, and to reduce corruption caused by inefficient land governance in Mega Cities

- Facilitate experience exchange in e-Government toward sustainable development and environmental management of Mega Cities
- Provide recommendations to the way forward within SIM in e-Government development; low cost approaches for upgrading informal settlements
- Provide links to information and publish minutes of workshops
- Facilitate network and meeting places for local authorities for their e-Government development and experience exchange
- Contribute to the Commission 3 annual meetings and specific Workshops
- Contribute to the publication on the topic: *“Spatial Information toward Managing Mega Cities”*, to be delivered by 2010.
- Contribute to the FIG Task Force for the preparation of the FIG-UN Habitat Seminar on *“Improving Slum Conditions through Innovative Financing. Bridging the gap between affordable shelter that is inadequate and Adequate shelter that is unaffordable”*
- Contribute to the deliverables that Commission 3 will provide to the FIG Task Force in the framework of the UN-Habitat Global Land Tool Network.

A detailed work plan with milestones will be published on the website of Commission 3.

Workshops

- Athens, 28–31 March 2007
- Norway, sub-Working Groups meetings
- FIG WW Hong Kong, 12–17 May 2007
- FIG Regional Conference, Costa Rica, 12–15 November 2007
- Valencia, January 2008
- Workshop and FIG Working Week, Stockholm, 14–19 June 2008
- Commission 3 Workshop, 2009
- Workshop and FIG Working Week, Eilat, Israel, 3–8 May 2009
- FIG Regional Conference, 2009
- FIG Congress, Sydney, Australia, 9–16 April 2010

Beneficiaries

- Surveyors, planners, politicians, and citizens accessing and contributing to e-Government on a national as well as on a local level. Contributing to better access to general users of spatial data, and to better tools and more participation in local authorities.

Working Group 3.2 – Spatial Data Infrastructure

Requirements for data, information, tools and workflows as components of local, national and global spatial data infrastructures (SDI).

Policy Issues

- Institutional arrangements, information policy and legal frameworks needed to create and share data, information and tools within and between levels of government
- Respective roles of government, private sector, professional bodies and com-

- munity groups in creating and managing SDI
- Technical innovation needed to enable use of SDI, including spatial data capture, management, visualization and access
- Implementing international best practice standards in SIM at all levels, including use of ISO/TC 211, Open GIS Consortium, etc.
- Sharing experience, developing visions for the future, identifying productive roles for surveyors and other spatial professionals and informing relevant forums of the role of SIM.

Chair

- Paul Kelly, Director, Spatial Strategies Pty Ltd, Australia, E-mail: spatials@smart-chat.net.au
- Co-Chair: Prof. Dr.-Ing. Hartmut Mueller, Fachhochschule Mainz, Germany, E-mail: mueller@geoinform.fh-mainz.de

Specific Projects and Outputs

Based on cooperation with other WGs and other commissions this WG will:

- Support discussion on the role of local and regional SDI in managing mega cities; low cost and realistic policies and infrastructure for unplanned urban sprawl management and control
- Identify institutional, policy and legal frameworks that can be incorporated in SDI to address mega city issues related to sound land governance
- Identify specific technical innovations in SIM that can improve management of mega cities
- Contribute to the Commission 3 annual meetings and specific Workshops
- Contribute to the publication on the topic "*Spatial Information toward Managing Mega Cities*", to be delivered by 2010.
- Contribute to the FIG Task Force for the preparation of the FIG-UN Habitat Seminar on "*Improving Slum Conditions through Innovative Financing. Bridging the gap between affordable shelter that is inadequate and Adequate shelter that is unaffordable*"
- Contribute to the deliverables that Commission 3 will provide to the FIG Task Force in the framework of the UN-Habitat Global Land Tool Network(GLTN)

Workshops

- Athens, 28–31 March 2007
- FIG Working Week, Hong Kong SAR, 13–17 May 2007
- FIG Regional Conference, San José, Costa Rica, 12–15 November 2007
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- FIG Regional Conference, 2009
- FIG Congress, Sydney, Australia, 9–16 April 2010

Beneficiaries

Surveyors, government, associations engaged with spatial data and users of spatial data and spatial information.

Working Group 3.3 – Multi Dimensional Aspects in Spatial Information Management

Review, evaluation and further development of technologies and technological trends for multi dimensional spatial information management in general and data models, visualization and data fusion techniques in particular.

Some novel approaches in modeling, visualization and fusion of spatial data have recently gained the attention of both academic and commercial communities, due to an increase of capabilities of Spatial DataBase Management Systems (SDBMS), as well as the awareness in the necessity for 3D geospatial information within the surveying and the engineering communities.

Policy issues

WG 3.3 will focus on the topics related to above targets, such as (but not limited to):

- Methods for measuring and gathering 3D spatial information and databases
- 3D data model for building information systems (built on top of SDBMS)
- Algorithms for detection of relations between spatial objects in 3D
- Fully www based approach to visualization of spatial data in 2D and 3D
- Event oriented approach to modeling changes in spatial information systems
- Continuous temporal approaches for handling 2D and 3D spatial information systems
- Accuracy aspects of spatial information vs. needs & budgets of the public and private sectors

Specific Projects and Outputs

- Support discussion on the role of local and regional SDI in managing mega cities; low cost and realistic policies and infrastructure for unplanned urban sprawl management and control
- Expansion and development of existing data models
- Increase the involvement of surveyors in development of data models
- Disseminate accumulated knowledge and experience
- Provide new methods and tools for city-wide environmental monitoring of unplanned urban development
- Contribute to the Commission 3 annual meetings and specific Workshops
- Contribute to the publication on the topic "*Spatial Information toward Managing Mega Cities*", to be delivered by 2010.
- Contribute to the FIG Task Force for the preparation of the FIG-UN Habitat Seminar on "*Improving Slum Conditions through Innovative Financing. Bridging the gap between affordable shelter that is inadequate and Adequate shelter that is unaffordable*"
- Contribute to the deliverables that Commission 3 will provide to the FIG Task Force in the framework of the UN-Habitat Global Land Tool network (GLTN)

Chair

- Prof. dr. sc. Miodrag Roic, Croatia, E-mail: mroic@geof.hr

Workshops

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Beneficiaries

Surveyors, governments, associations engaged with spatial data and users of spatial data and spatial information.

6 Commission 3 Workshops

- 37th CIPA International Workshop on the “e-volution of Information Technology in Cultural Heritage – Where Hi-Tech Touches the Past: Risks and Challenges for the 21st Century”, held on 30 October – 4 November 2006, Cyprus. (<http://www.vast2006.org> or <http://www.cipa2006.org>)
- FIG Commission 3 2007 annual meeting and workshop in Athens, Greece, on 28-31 March 2007, in parallel to the joint Workshop of the UN/ECE Committee on Housing and Land Management and the UN/ECE Working Party on Land Administration on “Informal Settlements”. The topic of the FIG Commission 3 Workshop is: “*Spatial Information Management toward Legalizing Informal Urban Development*”. (http://www.psdadm.gr/fig_com3_wpla.htm)
- FIG Commission 3 2008 annual meeting and Workshop in Valencia, Spain, in January 2008, on environmental and cultural heritage documentation issues, in parallel to the International Congress of Cartography and Surveying and the National Spanish Congress TOP-CART 2008. FIG Com2 organizes a Workshop in Valencia at the same time. Plans are made for some joint sessions of Commission 2 and Commission 3 on educational issues and other sub-topics of common interest. The topic of FIG Commission 3 2008 annual meeting and Workshop is: “*Spatial Information in Environmental Management of Mega Cities*”
- FIG Commission 3 annual meeting and Workshop of 2009. Topic, venue (declared interest for hosting the workshop by the Association of Nigeria), and dates remain to be decided.
- XXI CIPA International Symposium on “AntiCIPAting the Future of the Cultural Past”, to be held in Athens, 1–6 October 2007 (Co-sponsored by Commission 3) (http://www.survey.ntua.gr/hosted/cipathens_2007/)
- Workshop on “Improving Slum Conditions through Innovative Financing. Bridging the gap between Affordable shelter that is inadequate and Adequate shelter that is unaffordable” during the FIG WW 2008 in Sweden as a Follow-up of the Commission 3 annual Workshops in Athens (2007) and in Valencia (2008)
- A specific Workshop on “3D and 4D Spatial Information Management”, during the FIG WW 2009, in Eilat, Israel (proposed by Prof Y. Doytsher) (to be confirmed)
- Commission 3 delegates may organize a specific Workshop on “Pricing of Spatial Data and Services”, (proposed by Dr J.A. Zevenbergen, the Netherlands) (to be confirmed)

Commission 3 will always provide and certify *optional double blind peer review* of papers if requested by the authors. Since the experience and knowledge sharing among all

participants, professionals of the public and private sectors and academics, is considered to be of great value for the common benefit of all countries, *all papers* (reviewed or not) will be included at the proceedings of the workshops. Commission 3 has established a group of reviewers for the responsibilities of the Athens Workshop in 2007. The composition of the reviewers group may vary according to the specific topics and availability of the reviewers.

Prof Yerach Doytsher, Israel, will be the director of the peer review process for the Commission 3 specific Workshops.

7 Co-operation with Sister Associations

Cooperation with UN/ECE WPLA, UN/ECE Committee on Housing and Land Management and UN-Habitat

Cooperation on Spatial Information Management toward Legalizing Informal Urban Development with UN-ECE-WPLA and UN-ECE-Committee on Housing and Land Management.

The FIG Commission 3 2007 annual meeting and Workshop will be followed by joint FIG Commission 3 and UN/ECE Working Party on Land Administration, and Committee for Housing and Land Management sessions, on March 2007, under the general topic: "*Informal Settlements and National Economy -The Value of Good Land Administration and Land Management*".

Cooperation with UN-HABITAT

Commission 3 delegates will support the cooperation between FIG and UN Habitat (Land and Tenure Section) in the framework of the Global Land Tools Network (GLTN).

Cooperation with Professional Organisations

Commission 3 supported the 37th CIPA International Workshop on the "e-volution of Information Technology in Cultural Heritage – Where Hi-Tech Touches the Past: Risks and Challenges for the 21st Century", held on 30 October – 4 November 2006, Cyprus. Prof Hartmut Mueller, Germany, represented Commission 3 in that event. Web site: <http://www.vast2006.org> or <http://www.cipa2006.org>.

Commission 3 delegates will contribute to the XXI CIPA International Symposium on "*AntiCIPAting the Future of the Cultural Past*", to be held in Athens, 1–6 October 2007 (http://www.survey.ntua.gr/hosted/cipathens_2007/)

Cooperation with ISPRS

Commission 3 may organize some joint sessions with ISPRS Commission 2, WG 6 (<http://www.commission2.isprs.org/wg6/>) during the Workshop and annual meeting 2008 in Valencia, Spain (to be decided).

Cooperation on international standards on spatial data with ISO and OPENGIS

Commission 3 supports the FIG inter-commission activity in this field. Commission 3 representative to the joint WG on standards Network, chaired by I. Greenway, is Ms Helen Murray, from Ireland.

8 List of the International Partners of Commission 3

Professional Associations

- International Society for Photogrammetry and Remote Sensing (ISPRS), especially with ISPRS-Commission IV-Spatial Information Systems and Digital Mapping (<http://www.commission4.isprs.org>)
- International Committee for Architectural Photogrammetry (CIPA) (cipa.icomos.org)
- International Cartographic Association (ICA) <http://www.icaci.org>
- International Geographical Union, Commission on Geographical Information Science (<http://www.hku.hk/cupem/igugisc>)

United Nations and other international partners

- Food and Agriculture Organization (FAO) www.fao.org
- UN-Cartographic section: www.un.org/Depts/Cartographic/english/htmain.htm
- United Nations Economic Commission for Europe, Working Party on Land Administration (UN/ECE WPLA – www.unece.org/env/hs/wpla/welcome.html)
- United Nations Economic Commission for Europe Committee on Housing and Land Management (UN/ECE CHLM)
- United Nations Economic Commission for Africa (UN/ECA)
- ISPRS-COM4 and www.oeepe.org
- Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP)
- European Umbrella Organization for Geographic Information (EUROGI)
- Permanent Committee on SDI for the Americas (PC-IDEA)
- GSDI, including a FIG-Commission 3-position paper for GSDI-conference Budapest
- International Standards Organization, Technical Committee 211 (ISO-TC-211)
- Open Geospatial Consortium (OGC – www.opengeospatial.org)
- High Level Commission for the Legal Empowerment of the Poor

9 Inter-Commission Activities

- FIG Commission 3 will contribute in a seminar to be held during the FIG Working Week 2008 in Stockholm about “slum upgrading”.
- Inter-commission activity with FIG Commission 7 on 3D Cadastre
- FIG Commission 9 WG 9.2 – Improving Slum Conditions through Innovative Financing and in WG 9.5 – GIS analyses in Real Estate Market Analyses and Valuation. Involvement is planned by Commission 3 delegate: Mr. Tassos Labropoulos (taslab@central.ntua.gr)
- Commissions 3, 4 and 8 are discussing the possibility of organizing Joint Workshops.

10 Active Involvement of Regions

Commission 3 will continue to be actively involved with underrepresented regions like Africa, Latin America, Middle East, and Asia by exchanging information. Commission 3 will try to reduce conference fees in order to enable or to encourage regional participation and try to raise money for funding participation of groups like students. Commission 3 will also encourage participation by using e-mail and web.

Commission 3 will support the Workshop on “*Good Land Administration and its Role in Economic Development*”, to be held on the 27–28 of June 2007, in Ulanbaatar, Mongolia. Commission 3 chair is invited to present the highlights of the Athens 2007 annual meeting and Workshop on “*Spatial Information Management toward Legalizing Informal Urban Development*”, for the benefit of the country and the region.

11 Calendar of Events

2006

- 30 October – 4 November, Cyprus, 37th CIPA International Workshop on the e-volution of Information Technology in Cultural Heritage – Where Hi-Tech Touches the Past: Risks and Challenges for the 21st Century. Co-sponsored by FIG Commission 3.

2007

- 28–31 March, FIG Commission 3 annual meeting and Workshop, Athens, Greece
- 13–17 May, FIG XXX General Assembly and Working Week Hong Kong SAR, China
- 1–6 October, XXI CIPA International Symposium, Athens, Greece
- 12–15 November, FIG Regional Conference, San Jose, Costa Rica
- 27–28 June 2007, Ulanbaatar, Mongolia

2008

- January, Commission 3 annual meeting and Workshop, Valencia, Spain
- 14–19 June, FIG Working Week and XXXI General Assembly, Stockholm, Sweden
- 3–11 July, XXI Congress of the International Society for Photogrammetry and Remote Sensing – Silk Road for Information from Imagery. Beijing, China P. R.

2009

- 3–8 May, Workshop and FIG Working Week and XXXII General Assembly, Eilat, Israel

2010

- 9–16 April, FIG XXIV Congress and Working Week and XXXIII General Assembly Sydney, Australia

12 Commission Officers

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