

IGU Commission on Geographic Information Science C 04.13
Report 2004 – 2008

Background

Greatly increased use of the Internet, location-based services and mobile geospatial technologies present significant new opportunities and challenges in the acquisition, handling, analysis and dissemination of geographical information. The Commission has existed since 2000; previously it was an IGU Study Group on Geographic Information Systems. Geographical Information Science is concerned with the formalization, representation, and visualization of geographical data in computer systems; the advancement in the efficiency, power, functionality of geospatial data handling methods; the study of accuracy and uncertainty; and policy creation for data dissemination and data exchange standards. The emphasis of Geographic Information Science is on the core knowledge, theory, and concepts required for leading and supporting the development and effective use of Geographic Information Systems (GIS) Global Positioning Systems (GPS), and remote sensing.

1. Membership

A. Steering Committee members

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B. The number of commission members in total and *by country* as of 31 December 2007. The counts of members by country are exceedingly helpful in documenting to the International Council for Science (ICSU) and other international organizations the IGU's extensive reach.

The commission has not kept records of "members." The list of attendees at the IGU Congress and the International Symposia of Spatial Data Handling gives an indication of the size and diversity of participation.

2. Meetings

30th International Congress of Geographers – Glasgow, Scotland – 15 and 19 August, 2004.

This meeting featured two complete days of scientific sessions organized by the Commission, for a total of 12 sessions, followed by the business meeting. Forty eight papers were presented and approximately 30 attended each session for a total of 360.

The 11th International Symposium of Spatial Data Handling, 22-24 August, 2004
University of Leicester UK, 120 participants. This symposium was organized as a

post Congress event following the 30th International Congress. The International Symposium on Spatial Data Handling (SDH) is the premier long-running forum in geographical information science, providing a prestigious outlet to geographers, cartographers, computer scientists and others in this rapidly developing multidisciplinary area. This conference has been organized as an activity of the International Geographical Union since it was first started in Zurich in 1984.

The 12th International Symposium of Spatial Data Handling, 2006, University of Vienna, Austria, 300+ participants. This Symposium was held in conjunction with in conjunction with "Geoinformation Connecting Societies - GICON 2006." GICON 2006 combined the activities of: International Cartographic Association (ICA): Workshop on geospatial analysis and modelling, and the ISPRS: Technical Commission II Symposium.

IGU-2006 Brisbane Conference, 3-7 July 2006, Queensland University of Technology, Australia. Specialist paper sessions and joint sessions were held with the Commission Land Use and Land Cover Change C04.24.

B. A brief summary of the questions addressed at each meeting and the findings or conclusions resulting from the discussions. Please highlight the new ideas and insights identified at each meeting and their immediate and long-term theoretical and practical implications.

Topics investigated include Spatial Cognition; Spatial Data Models; Data Mining; Data Retrieval; Data Quality; Integration and Fusion; Semantics and Ontologies; 2D-and 3D-Visualization; Generalization; Uncertainty; and Elevation Modeling.

C. Meetings or other events planned in 2008.

The 13th International Symposium on Spatial Data Handling 2008 (SDH08) 23 - 25th June, SupAgro Campus, University of Montpellier, France

To be held in conjunction with SAGEO (Spatial Analysis and GEomatics) An international colloquium of geomatics and spatial analysis / *un colloque international de géomatique et d'analyse spatiale*. *La conférence SAGEO a pour objectifs de: présenter les recherches récentes des domaines de la Géomatique et de l'Analyse Spatiale; réunir des communautés de chercheurs venant de disciplines diverses; promouvoir les relations entre les spécialistes développant et valorisant des recherches dans les organismes publics, dans les entreprises et dans les collectivités territoriales; et fournir un lieu d'information et d'échange sur les recherches et les développements de l'information géographique en général, à un niveau national et international.*

Scientific sessions and a business meeting will be held at the 31st Congress in Tunis August 12-17th 2008

3. *Networking*

- A. The commission has collaborated with other IGU Commissions in the 2004 through 2008 period.

Joint paper sessions were held with C04.24. Land Use and Land Cover Change at the Glasgow, Scotland International Geographical Congress and the Brisbane, Australia IGU regional meetings

- B. The Commission has been active in collaborating with ISPRS, ICA and SAGEO from 2004 through 2008.

See meetings above.

Co-sponsor of sessions at ISPRS meetings in Vienna, 2006, and Beijing, July, 2008.

4. *Publications*

2004 SDH Symposium Proceedings: Developments in Spatial Data Handling, 11th International Symposium on Spatial Data Handling, Fisher, Peter F. (Ed.) 2005, ISBN: 3-540-22610-9

2006 SDH Symposium Proceedings: Progress in Spatial Data Handling, 12th International Symposium on Spatial Data Handling, Kainz, W., Riedl, A., and Elmes, G. (Eds). 2006, Springer.

2008 Proceedings of the 13th SDH Symposium: Forthcoming, June 2008, Springer.

5. Copies of the SDH proceedings will be transmitted to the Home of Geography, Villa Celimontana.

6. The commission's web site is: <http://www.igugis.org/>

7. *Continuation*

- A. Name: IGU Commission on Geographic Information Science (Unchanged)

B. The mission of the Commission on Geographic Information Science (GISc) is to advance the study of geographical information science internationally, and to enhance the role and contributions of geographers in the development of Geographic Information Science and of Geographic Information Science in the development of geography. The commission creates a network of people and research centers in geography that are related to geographical information science and serve as a focus for the worldwide GISc education and research community. A goal of the commission is to establish international research and educational priorities in GISc and evaluate and promote the role of geography as a discipline. The Commission strives to promote the effective, efficient and responsible use of geographical information in society.

- C. Steering Committee 2008-2012

Professor Brian Lees is prepared to chair the Commission from 2008 – 2012.

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D. Work plan for 2008-2012

Meetings

The International Symposium for Spatial Data Handling will be held in 2010 and 2012.

The Commission will continue to organize sessions with the International Society for Photogrammetry and Remote Sensing in 2010 and 2012. We are having discussions to seek ways in which we can strengthen this collaboration to our mutual benefit. It would seem that joint organization of more frequent regional events would be both possible and sensible.

The productive collaboration with the IGU Commission C04.24 Land Use and Land Cover Change will continue. Additional collaboration and interaction will be sought with Commissions C04.01 Applied Geography and C04.29 Modelling Geographical Systems at IGU meetings.

Publications

The Commission is committed to the publication of the Proceedings of the International Symposium for Spatial Data Handling. Scholarly publication of papers presented at the International Geographical Congress and Regional IGU meetings will be encouraged. The closer relationship with the major journals in our sub-field (International Journal of Geographic Information Science, Transactions in GIS) we now enjoy should assist in this process.

Membership

The Commission recognizes the enormous potential for expansion of its membership especially in Asia and Australasia. We plan to make a determined effort to establish the Commission as one of the pre-eminent international organizations in the very strong community of Geographic Information Scientists in this growing region. Formal records of membership and participation will be maintained and greater communication will be established with the IGU's National Committees to bring awareness of the mission and activities of the Commission.

E. Scholarly importance of the commission's work.

In the past decades geographic information and technology has transformed activities ranging from research to business practices, a transformation that continues to accelerate. Whilst geographers have been involved with GISc from the outset, the first phase of the development of GISc lay largely with computer science. The second phase concentrated on the move from analog to digital spatial data, a concern mainly for geomatics. The third, and current phase, is largely applications oriented and is very much the domain of geographers. The past development of techniques for spatial analysis and some of the work on data types by geographers feeds directly into the current conceptual basis of GISc. Geography also continues to have a significant role in contributing to the effective and ethical use of geographic information science and technology. Intellectual exchange between Geographers and the burgeoning geospatial community worldwide will introduce non-geographers to many important geographical principles and insights that otherwise may fail to be recognized or will have to be reinvented. Given that many of the world's current problems have strong geographical dimensions, it is entirely appropriate that geographers take a leading role in the use and application of this powerful, geographic, enabling technology.