

Commission nominations:

#### *FUNDAMENTALS*

1. *Cognitive visualisation [chair Fabrikant: nomination by Switzerland] ;*
2. *Map Design [chair Field: nomination by UK] ;*
3. *Art and Cartography [chair Caquard: nomination by Canada] ;*
4. *History of Cartography [chair Liebenberg: nomination by South Africa] ;*
5. *Map Projections [chair Lapaine: nomination by Croatia] ;*
6. *Theoretical Cartography [chair Du: nomination by China] ;*
7. *Data Quality [chair Chen: nomination by China] ;*

#### *METHODS & TECHNIQUES*

8. *Atlases [chair Jordan: nomination by Austria] ;*
9. *Mapping from Remote Sensor Imagery [chair Yang: nomination by USA] ;*
10. *Geospatial Analysis and Modelling [chair Jiang: nomination by Sweden] ;*
11. *Geovisualization [chair Andrienko: nomination by Germany] ;*
12. *Maps and the Internet [chair Cammack: nomination by USA] ;*
13. *Ubiquitous cartography [chair Arikawa: nomination by Japan] ;*
14. *Digital Technologies in Cartographic Heritage [chair Livieratos nomination by Greece] ;*
15. *Open source Geospatial Technologies [chair Anand: nomination by UK] ;*
16. *Generalisation and Multiple Representation [chair Burghardt: nomination by Germany] ;*

#### *THEMATIC*

17. *Planetary Cartography [chair Hargitai: nomination by Hungary] ;*
18. *Mountain Cartography [chair Kriz: nomination by Austria] ;*

#### *USERS*

19. *Neocartography [chair Chilton: nomination by UK] ;*
20. *Maps and Graphics for Blind and Partially Sighted People [chair Coll: nomination by Chile] ;*
21. *Maps and Society [chair Perkins: nomination by UK] ;*
22. *Use and User Issues [chair van Elzakker: nomination by Netherlands] ;*
23. *Cartography and Children [chair Jesus Reyes: nomination by Hungary] ;*
24. *Education and Training [chair Fraser: nomination by Australia] ;*

## INITIATIVES

25. *GI for Sustainability [chair Tikunov: nomination by Russia] ;*

26. *Map Production and Geo-business [chair de Maeyer: nomination by Norway] ;*

27. *Cartography in Early Warning and Crises Management [chair Konecny: nomination by Czech Republic] ;*

28. *Geoinformation Infrastructures and Standards [chair Cooper: nomination by South Africa].*

### **1. Cognitive Visualization**

This is a new nomination.

The proposal for a new Commission of the International Cartographic Association (ICA) on Cognitive Issues in Geographic Information Visualization (CogVis) complements and extends the ongoing work of the Geovisualization Commission, which has been key in establishing the emergent discipline of Geovisualization since 1995: the more recent Use and User Issues Commission, which since 2005 has been focusing on usability issues and users of cartographic products: and the new Map Design Commission, which will be proposed at the 2011 ICC in Paris. France. The vision of the proposed Cog Vis Commission Chairs is that this commission will work to provide the empirical basis for developing a cognition and perception-informed theoretical framework on which the design of successful static, dynamic and interactive maps, geovisual analytics displays and systems, and effective human-computer interaction should rest. We are also committed to building linkages with cognate disciplines from which the other mentioned three Commissions might benefit such as like-minded researchers in psychology, cognitive science, vision science, human-computer interaction, and the design sciences. Thereby, the proposed Cog Vis Commission's work would support that of other existing ICA Commissions, while in turn our own work will be informed by map, geovisualization and human-computer interaction design problems identified by the above-mentioned ICA Commissions and others. For example, while the Map Design Commission aims to identify examples of good cartographic practice that underpin high quality, effective map design (i.e., what), our Commission would empirically assess the identified examples to understand why, how and for whom the employed practices lead to a good quality design. Similarly, while the Geovis Commission aims to identify novel methods and develop new tools for the analysis of spatio-temporal information through interactive visual interfaces (i.e. what & how), our commission would empirically assess the developed examples to understand why and for whom human inference, analytical reasoning, and spatio-temporal decision making with visual displays work more effectively and efficiently. Finally, while the Use and User Issues Commission aims to study map use context including users, use cases, and usability (i.e. who and how), our commission would provide the empirically ground theoretical framework to understand identified use and user issues (i.e. why and for whom).

Proposed Chair: Sara Fabrikant (Switzerland)

Proposed Vice-Chair: Amy Griffin (Australia)

Proposed Terms of Reference 2011-2015 :

The overall goals of the new Commission on Cognitive Issues in Geographic Information Visualization (CogVis) from 2011-2015 will be to:

- promote the awareness of cognitive issues in cartography developing human-centered cartographic theory and practice based on sound empirical findings on the use of cartographic displays for spatio-temporal inference and decision-making.

- define short and medium term research goals that address key issues associated with building a sound theoretical base to support the construction and use of cognitively adequate and perceptually salient visual displays of geographic information.
- Specific envisioned research foci will include (but are not limited to):
  - empirical geovisualization design research (2-3D, static, animated and interactive, virtual and immersive, mobile, etc.)
  - the application of cognitive theories and methods to understanding visuo-spatial displays and tool use for inference and decision-making (including mental maps, space-time behavior, navigation, etc.)
  - the application of visuo-spatial displays and tools to understanding spatial cognition - spatial reasoning, inference and decision making with visuo-spatial displays and tools
  - cognitive principles supporting human-visualization interaction research
- Encourage interdisciplinary and international collaboration with cognate disciplines and relevant stakeholders, including other ICA commissions and working groups.

Proposed Activities of the Commission 2011-2015:

- Organize sessions at the 2013 and 2015 ICC Conferences that focus on cognitive processes associated with using maps and interactive geovisual analytical systems.
- Organize annual meetings of the commission, in conjunction with the ICC and other relevant conferences, with an attempt to co-locate commission meetings with those put on by the Geovisualization, Use and User Issues, and Map Design commissions to facilitate interaction and knowledge sharing with these other commissions.
- Disseminate the findings of our annual meetings through an up-to-date Commission website, and peer-reviewed scholarly outlets such as, edited books, collection of high quality articles in special issues of journals. etc. at least every second year.
- Proactively seek out the involvement of and recruit young researchers interested in the Commission's work by including opportunities for training at our annual events (e.g., workshops on eye-tracking, experimental methods, neuroimaging, etc).
- Maintain a website for electronic dissemination of research on Commission-relevant issues, including: - an evolving research agenda allowing pro-active participation (e.g., Wiki), - a membership database, - a bibliographic database, - examples of research projects, approaches, tools, including those from cognate disciplines, - links to related web sites, and (optionally) an electronic discussion list.

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## **2. Map Design**

This is a new nomination.

The Commission will seek to engage international experts in cartographic design in all forms to provide a body of knowledge that guides cartography as it tackles the challenges brought about by GIS, the Internet and Cloud-based computing. Such changes bring with them new map-makers who have not been formally trained in cartography yet still require knowledge in the basic tenets of good cartographic design. Additionally, emerging production and display environments require new approaches to effectively implement well-understood design techniques alongside tackling the challenges and harnessing the opportunities brought about by new technologies.

The Commission will seek to establish inter-linkages between existing ICA Commissions and also engage the wider community of cartographers as well as amateur (non-trained) map-makers for whom design is often given little consideration or emphasis in the map-making process. Most ICA Commissions adopt a narrow remit in exploring those aspects of cartography that specifically relate to their subject areas. In contrast, we propose to create a Commission that explores cartographic design issues that cross-cut the foci

of the other Commissions. For example, cartographic design for Web maps, hybrid orthophoto maps or small display devices will also naturally overlap with the interests of one or more of the other ICA Commissions. The purpose of this Commission is not to duplicate the work of other Commissions but to complement them by focusing on design. For instance, there is an obvious potential overlap with the Commissions on Use and User Issues and Maps and the Internet. Our focus, however, will be the specific design aspects of the types of maps that these Commissions might explore. For instance, while the Maps and the Internet Commission is mainly concerned with technical issues, the Map Design Commission will focus on design aspects that apply to the display of on-screen maps.

The objectives of the ICA Map Design Commission which follow will serve as the overarching framework for the more specific terms of reference:

1. To discuss, develop, illustrate and promote the principles of map design;
2. To identify examples of good cartographic practice which underpin high quality, effective map design;
3. To provide appropriate mechanisms and support for the dissemination of current map design research;
4. To develop high quality materials to support cartographers and map-makers in the development of their own maps (e.g., books, exemplars, tutorials);
5. To develop support for the design of specific cartographic products that are challenged by new modes of production (e.g., design for maps that use imagery as the base);
6. To inform, enthuse and engage with fledgling map-makers (such as neo-cartographers) in a mutual exchange of methods, needs and ideas;
7. To maintain a Web site that includes a bibliographical database of map design research, a community identity for those who work in the area of map design, resources to assist map-makers in their design endeavors, and a forum for the exchange of ideas and expertise;
8. To work with other ICA Commissions which incorporate a design perspective; and
9. To have fun designing maps and enthuse others to approach their own work with an eye on design.

Analysis of presentations at the last three ICCs (Santiago, Moscow and A Coruna) revealed over 100 papers focused on or dealing in part with map design, yet much of this work is not formally represented in an ICA Commission. The opportunity for ICA participants who are interested in this topic to formally engage in a Map Design Commission will bring map design more formally into the framework of the ICA's work.

Allied to these mainstream developments in cartography is a rise in so-called 'neo-cartography' which broadly encompasses those non-experts who are making maps, often using various online map services and datasets mashed-up to create a new product. Many of these maps would benefit from better cartographical design, especially given that some are used in practical applications and their poor design could have serious ramifications. This new Map Design Commission will actively seek the involvement of the neo-carto community to provide cartographic best practices and inform about design concepts but also to better understand the desires and needs of this new mapping community. The need to inform, enthuse and engage with new map-makers will be a goal of the new Commission. It will also help to bring the role and importance of the ICA to the attention of many who are not currently aware of its existence or benefits.

Proposed Chair: Kenneth Field (UK)

Proposed Vice-Chairs: Aileen Buckley (USA), Bernhard Jenny (Switzerland)

Proposed Terms of Reference 2011-2015:

- To develop a Map Design Web site as a focal resource for researchers in map design and map-makers of all kinds;
- To organize sessions at ICA conferences in 2013 and 2015 focused on map design theory and practice;
- To organize annual Commission meetings either independent of or in conjunction with other cartographic events to promote interest and participation in the Commission;
- To publish every two years special issue of a cartographic journal or book on products arising from the work of the Commission; and
- To collaborate with colleagues in other ICA Commissions as appropriate in complementary areas of interest.

The terms of reference will be achieved by exploring map design issues that are prioritized to reflect the current needs of the map making community. These priorities will shape the work of the Commission's ad hoc groups and the resulting products and deliverables in order to meet the terms of reference.

Proposed Activities of the Commission 2011-2015:

The Commission will hold regular meetings in conjunction with the ICC, but also potentially with other conferences such as British Cartographic Society Symposium, AutoCarto, and GeoCart. Meetings will take the form of traditional paper format sessions to encourage the development of design theory for cartography as well as workshops and break out sessions to provide a focus for the discussion of new techniques and concepts using the latest design and production tools (e.g., mapping with GIS or mashups on the Web). The Commission will seek to use traditional forms of dissemination through the publication of books, peer-reviewed journal articles and journal special issues that expose the wider world of cartography to the work of those dealing with map design issues. The Commission will also take advantage of opportunities to disseminate to a wide audience through the publication of content on the Commission's Web site. We anticipate that this form of communication will not only allow the exchange of ideas in a push-pull model through, for example, the forum, but it will also allow us to publish the Commission's work and resources quickly so as to keep pace with the rapidly changing frontier of map making in response to technological transitions.

To that end, a key focus for the work of the Commission will be to develop and host a Web site that will provide access to an online repository of key works, papers and materials that will help others in applying good design in their own work. This will take the form not only of original content but also as a gateway to established, high quality online resources. We believe that the Web site will provide a mechanism to engage with practitioners beyond the traditional cartographic community, to inform as well as encourage them to explore cartography more formally and to participate in the Commission as well as through the various national and international organizations.

The Map Design Commission will have parallel academic and applied strands aimed at developing theory as well as sharing best practices. A proposed agenda includes the following priorities: *Priority One*: Web map design, Temporal or animated map design (focusing on issues relating to mapping phenomena that change over time), Interactive map design (focusing on the applications of the interface and their relationship to map design), 3D map design; *Priority Two*: Hybrid orthophoto image map design (e.g., orthophotos draped with vector overlays), Small format map design (for mobile devices and smartphones), Base map design and the relationship of base maps to special purpose mapping; *Priority Three*: Black and white map design, The representation of terrain on maps, The representation of quantitative data on maps (choropleths, cartograms, prism maps, graduated symbol maps, etc.), The design of special purpose maps (e.g., epidemiology, public safety, demography etc.)

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### **3. Art and Cartography**

This is a nomination to transform a Working Group into a Commission.

Across different domains of knowledge and practice, mapping is a method that many use to make sense of information and communicate it to others. However expectations and conventions around mapping differ tremendously. While in cartography, mapping refers to specific techniques and concepts for representing information related to places, in the arts and humanities this term is used more broadly and includes a diversity of practices and expectations. More than just data, artists and other creative practitioners express understandings, fears, hopes, emotions and perceptions about places and people through maps, and these dimensions are essential for fully understanding our relation to places in the world today. Exposing cartography to the mapping from the arts – and vice versa – might help to develop new ways of representing and understating information and places in depth.

The proposed commission on Art and Cartography aims to encourage and explore the interactions between cartographers, artists, designers and any other area of ‘arts’ (poets, writers, dancers, gamers) who work in the various aspects of spatial representation. This interaction is envisioned as a way to stimulate the emergence of new forms of spatial expression that could contribute to a broader and deeper understanding of geographic phenomenon.

Proposed Chair: Sébastien Caquard (Canada)

Proposed Vice-Chair: Barbara Piatti (Switzerland)

Proposed Terms of reference 2011-2015:

- explore the art element of cartography  
Art in cartography means much more than designing aesthetically pleasing maps. Exploring the interaction at large between art and cartography entails: developing an inclusive approach of artistic mapping expressions; facilitating and encouraging interaction between cartographers who work with the Art aspects of cartography and artists who produce cartographic artefacts; and developing conceptual elements about the relationships between art and cartography.
- facilitate interdisciplinary cross-fertilisation of ideas and practices  
Cartographers, artists, researchers from the humanities need to work collaboratively in order to redefine the contours of the relationships between arts and cartography. Real interdisciplinary activities call for special measures, such as developing a common language and a mutual understanding; promoting the development of hybrid cartographic practices; and promoting diversity in terms of activities and outcomes (e.g. festivals, public lectures, performances, exhibitions, screenings, etc.).
- produce and disseminate knowledge and artefacts emerging from the interaction of art and cartography by facilitating installations with associated annotated catalogues, developing multiple forms of expression (e.g. blogs, exhibits), publishing special issues of journals, developing and publishing books.

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### **4. History of Cartography**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: Elri Liebenberg (South Africa)

Proposed Vice-Chairs: Imre Josef Demhardt (USA), Dr Peter Collier (UK)

Proposed Terms of Reference 2011-2015:

- Investigate the impact of technological innovations (printing methods, topographical surveying, aerial photography, satellite imagery and geographical information systems) on cartography during the last two centuries.
  - Document the recent history of GI science in general and computer-aided mapping and Geographical Information Systems in particular.
  - Examine the changing role of maps worldwide as cartographical (as opposed to historical) documents in history during the 19th and 20th centuries.
  - Examine the significance of the cartographical work undertaken during the 19th and 20<sup>th</sup> centuries by the traditional colonial powers and all countries which extended their sovereignty over territory beyond their borders.
  - Compile a list of useful sources on the history of cartography since 1800, which do not as yet appear in published catalogues or electronic databases.
  - Maintain a dedicated website to act as a database for interested researchers.
  - Hold annual meetings/conferences to discuss and monitor research work undertaken.
  - Publish research findings in accredited journals and on the Commission website.
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## **5. Map Projections**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

In each country, topographic mapping has its own traditions, including selection of the map projections and datum. Nowadays in many countries the geocentric WGS84 based systems are applied, but it is still an important part of cartography to know the properties and applications of various projections and manage their application and the conversions between them. In practice many GIS software tools offer transformations from projections and coordinate systems to others, while mobile and ubiquitous applications might sometimes require transformations on the fly. Map projections and transformations, along with associated mathematical studies of distortion, are valid areas of cartographic research. It is noteworthy that it is not only topographic mapping which must address these issues: the importance of reference frames to mobile applications, and the study of transformations of raster imagery (from satellite, aerial platforms and ground-based) are also essential (Virrantaus, K. et al.: ICA Research Agenda on Cartography and GI Science, The Cartographic Journal, 2009).

Proposed Chair Miljenko Lapaine (Croatia)

Proposed Vice chair:

Proposed Terms of Reference 2011-2015:

- Prepare an Operational Plan, which will acknowledge the Terms of Reference approved by the General Assembly and which will be used to set achievable targets for the Commission for a four year period. Organise and maintain the Commission web site.
- Promote and foster research on map projections, coordinate systems, transformations and conversions, and disseminate the outcomes. Expected result: an enhanced set of online bibliographic tools and web links on map projections, coordinate systems, transformations and conversions.
- Organise sessions and meetings at least once a year to stimulate a debate on all aspects of map projections with the aim of collecting and publishing the research results. Expected result: a collection of papers on case studies in map projections.
- Promote the proper use of map projections at all levels of education. Expected result: a publication with recommended approach to map projections at different levels of education.
- Study terminology on map projections and prepare the multilingual dictionary for this area of cartography. Expected result: the dictionary on map projections, coordinate systems, transformations

and conversions.

- Provide consultative support in relation to map projections. Expected result: appropriate support as required.
  - Last but not least — work for reaching the general aims conceived in the ICA Statutes taking into account the recommendations of the ICA Executive Committee.
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## **6. Theoretical Cartography**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

The development of Cartography, especially digital Cartography and GIS, as well as map as public media makes us face to new challenge of theoretical and methodological re-construction for our discipline. To conduct research and relevant activities for this purpose is an urgent need for so many unanswered questions are arising continuously.

Extending our sight to more comprehensive sister disciplines, especially Philosophy and Methodology is extremely important. A cross-cultural and historical investigation of theoretical interests is also beneficial to our goal.

Proposed Chair: Qingyun Du (China)

Proposed Vice-Chair:

Proposed Terms of Reference (2011-2015):

- comparing and studying selected topics of theoretical interest in a multi-disciplinary, cross-cultural and historical, methodological perspective.
  - promoting the research topics from carto-semiotics to more general philosophical concerns for Cartography theory construction including Ontology, Epistemology and Linguistics etc.
  - promoting the application of theoretical research fruits and relevant adaption and improvement in cartographic and GIS practice.
  - establishing an efficient information system to facilitate collaboration among the researchers in the field by maintaining an up-to-date Commission website with news important for the membership, reports on the activities of the commission, information on recent publications of interest, on the past and future meetings in the field, etc.
  - promoting the existing glossary in multi-language in the circle of researcher and extending the glossary with the further research interest.
  - conducting workshops or symposia about selected aspects of theoretical cartography in different nations.
  - compiling and publishing reports and collected papers about the work of the commission.
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## **7. Data Quality**

This is a new nomination.

Proposed Chair: Xiaoyong Chen (China)

Proposed Vice-chair: Ron Li (USA)

Proposed Terms of Reference 2011-2015:

- Networking cartographers, geographic information scientists and other researchers involved in geospatial data quality
- Define short and medium term research goals that address key issues associated with geospatial data quality and its application



- Encourage a multi-disciplinary and international approach to knowledge creation of uncertainties in geospatial data
  - Foster a new research community centered on modeling and visualizing error propagation in spatial analysis
  - Organize ICC sessions and ICA workshops focusing on geospatial data quality
  - Edit and publish geospatial data quality related reports, books, and special issues with some scientific journals.
  - Website of the commission on Geospatial Data Quality
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## **8. Atlases**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair, but with a slightly modified name.

Proposed Chair: Peter Jordan (Austria)

Proposed Vice-Chair René Sieber (Switzerland)

Proposed Terms of Reference 2011-2015

- Produce a cookbook for the production of (digital) national and regional atlases.
  - Promote and support the design, production and use of national, regional, city and thematic atlases and atlas information systems.
  - Conduct workshops and / or seminars that present recent and potential atlas developments and innovations.
  - Document guidelines and procedures for the design, production and use of national, regional, city and thematic atlases.
  - Elaborate and maintain an electronic inventory of national, regional, city and thematic atlases containing the main characteristics of these map works as well as relevant addresses in order to support information exchange between atlas editors as well as to disseminate information on atlases to a wider public.
  - Maintain a commission website and update it regularly with the major aims of providing for information exchange between commission members and disseminating information on activities in this field to a wider public.
  - Encourage efforts for integrating data for the development of electronic atlases and national and regional atlas information systems by:
    - o evaluating metadata standards as they apply to atlas design, creation and dissemination.
    - o acknowledging requirements for diverse geographic and temporal data themes.
    - o identifying and exploring various alternatives to data integration issues.
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## **9. Mapping from Remote Sensor Imagery**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair, but with a slightly modified name.

The name has changed from ‘Mapping from Satellite Imagery’. This slight modification of the Commission name allows the inclusion of the products from airborne remote sensing platforms.

Proposed Chair: Xiaojun Yang (USA)

Proposed Vice Chair: Jonathan Li (Canada)

Proposed Terms of Reference 2011-2015:

- Promote the original and practical research concerning the development and use of existing and forthcoming aerospace remote sensor systems for topographic and thematic mapping.
  - Produce a book with a state-of-the-art review on remote sensors and data processing techniques applied for topographic and thematic mapping. It reviews the latest developments in remote sensors and information extraction techniques, examines the utilities of sensors and techniques for cartographic feature extraction, and showcases latest developments in thematic mapping.
  - Network with ISRPS, IAG, FIG, and other ICA commissions with similar interests in applications of remote sensor imagery. Such networking would help organize one or more joint workshops, seminars, or symposia during 2011-2015.
  - Develop closer links with international organizations concerned with the use of remote sensor imagery (e.g. UNOOSA, UNEP, PAIGH) for strengthening ICA's presence and developing joint courses or seminars on cartographic applications of remote sensor imagery.
  - Promote knowledge transfer at fundamental and advanced levels on the use of remote sensor imagery for cartographic applications related to natural and built environments, early warning and natural disaster mitigation.
  - Prepare promotional materials reflecting the Commission's terms of reference and activities that can be used to support ICA's presence at international forums (e.g. World Map, Map Middle East, meetings of the Joint Board of Geospatial Information Societies (JB GIS), UN meetings, and other regional conferences).
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## **10. Geospatial Analysis and Modeling**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

This ICA commission was established in 2007, following a two-year term of working group (2005-2007) (<http://fromto.hig.se/~bjg/ica/>).

Proposed Chair: Bin Jiang (Sweden)

Proposed Vice-chair: Xiaobai Yao (USA)

Proposed Terms of Reference (2011-2015):

- To network cartographers, geographic information scientists, and other researchers involved in geospatial analysis and modeling
  - To facilitate the interaction and communication between the computational community and cartographic community for creation of geographic knowledge
  - To foster a new research community centered on visual geospatial analysis and modeling
  - To organize ICC sessions and ICA workshops on geospatial analysis and modeling
  - To edit and publish geospatial analysis and modeling related reports, books, and special issues with some scientific journals
  - Activities including (1) Organization of the 4th ICA workshop and continuation of the ICA workshop series in general; (2) Use of Web 2.0 technologies for networking and recruiting more members and researchers; (3) Organization of specialty tutorials for young researchers
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## **11. Geovisualization**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: Gennady Andrienko (Germany)

Proposed Vice-Chair: Jason Dykes (UK)

Proposed Terms of Reference (2011-2015):

- promote, develop and report upon the use of cartography in its widest sense in the exploration and analysis of spatial information through interactive visual interfaces;
- define short and medium term research goals that address key issues associated with this work and its application;
- encourage a multi-disciplinary and international approach to this work that draws upon and contributes to the efforts of relevant stakeholders (such as international and national organisations promoting and coordinating research), cognate disciplines and commissions and working groups.

This will be achieved through regular meetings, publications, and web-log of activities.

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## **12. Maps and the Internet**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

Proposed Chair: Rex Cammack (USA)

Proposed Vice Chair: Pyry Kettunen (Finland)

Proposed Terms of Reference 2011-2015:

1. Focus scholarship on disseminating maps and spatial data through distributed data networks. Product: Journal articles and web pages.
  2. Examine Internet map usage to better serve users in a multi-platform environment. Product: Oral or published report.
  3. Examine the use of new Internet mapping technologies for social interaction and empowerment with online maps. Product: Oral or published report.
  4. Examine differences in the application of Internet maps between countries. Product: Oral or published report.
  5. Examine the role of Internet maps in both the data rich and data poor societies. Product: Oral or published report.
  6. Examine the potential of Internet map metadata. Product: Oral or published report.
  7. Examine an international construction kit for Internet maps that supports multinational and multicultural perspectives. Product: Oral and Published report.
  8. Examine the role of Internet maps in the growing field of Location-based services. Product: Collaboration with Map Use and Ubiquitous mapping Commissions and Published reports
  9. Promote instruction on Internet mapping through collaboration / coordination with agencies for research and mapping. Product: Materials to be used in workshops.
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### **13. Ubiquitous cartography**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

Proposed Chair: Masatoshi Arikawa (Japan)

Proposed Vice-Chair: Yuefeng Liu (China)

Proposed Terms of Reference 2011-2015:

- Place the notion of Ubiquitous Mapping based on real-world map interaction and ICT-based context-aware mapping services in the domain of Theoretical Cartography; examining (1) Primal mapping between geomeia (real, graphic and language spaces) and human (cognitive space), and (2) Secondary or ICT-based mapping between geomeia (real, graphic and language spaces) and geodatabase.
  - Develop the theory of Map Evolution on ICT enabled socio-cultural environment, by (1) Clarifying similarity and difference in comparing variant systems to establish an evaluation scheme, (2) Revealing significant factors such as ubiquity and egocentrism for Map Evolution on ICT, and (3) Creating map evolutionary tree diagrams representing natural selection of maps in past, current and future according to real ICT-based ubiquitous mapping services and socio-cultural environment of different countries, particularly East Asia including Japan, China and Korea.
  - Organize regional workshops including site observation to comprehend contemporary situation of ubiquitous mapping.
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### **14. Digital Technologies in Cartographic Heritage**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: Evangelos Livieratos (Greece)

Proposed Vice-Chairs: Alastair Pearson (United Kingdom), Carme Montaner (Spain)

Proposed Terms of Reference 2011 - 2015

- Theoretical deepening and broadening of the issue of cartographic heritage.
  - Development of methodologies and standards applied on proper two and three- dimensional digitization of Cartographic heritage objects, materials and documents.
  - Study and implementation of analytical tools applied on the comparative research concerning the geometric and thematic content of old maps.
  - Digital map libraries and map collections: Archiving, matching, management, networking and accessibility in-situ and in the web.
  - Modern information technologies and interactivity in attracting the general public to Cartographic heritage: Implementations in Museology and virtual map exhibitions.
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### **15. Open Source Geospatial Technologies**

This is a nomination to transform a Working Group into a Commission.

It is very important to have open source GIS and standards (OGC, ISO TC 211) based solutions to achieve widespread application of geotools at grassroots level especially in developing countries. Open source GIS provides accessibility, low cost solutions and lowers the entry barriers for the use of geospatial

technologies for all. Therefore, this aim should be clearly visible to the outside world as well as within ICA itself. One of the ways of achieving this is to upgrade the Working Group to an ICA Commission on Open Source Geospatial Technologies.

The Open Source Geospatial Technologies Commission aims to promote multi-national holistic research in free and open source geospatial technologies in order to make accessible the latest developments in open source tools to the wider cartographic community. The Commission attempts to enhance the usage of free and open source geospatial tools among the cartographic community worldwide, especially for education.

The Commission will promote the usage of professional and technical standards (ISO TC 211, OGC) for the development of free and open source geospatial software. Promotional strategies include regular e-mails to members, meetings, conferences, workshops, promotion of geospatial standards and publications.

Proposed Chair: Suchith Anand (UK)

Proposed Vice-Chair: Thierry Badard (Canada)

Proposed Terms of Reference 2011-2015:

- Maintain a website for the exchange of knowledge, news and information on use and user issues issues in open source geospatial technologies (<http://ica-opensource.scg.ulaval.ca/index.php?page=home> ).
- Maintain an on-line bibliographical database.
- Maintain Web discussion forum.
- Maintain a database of individuals working on, or with expertise in, open source GIS to stimulate exchange of information.
- Produce a major publication on Open Source Geospatial Technologies (either a special issue of a refereed journal or a text book).
- Organize sessions on Open Source GIS at future ICA conferences.
- Participate in / contribute to other workshops / seminars organized by representatives of other disciplines or by other ICA Commissions / Working Groups.

It is proposed to have four regional senior representatives for the commission (one each from Africa, South America, Asia and Australia)

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## **16. Generalization and Multiple Representations**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

Proposed Chair: Dirk Burghardt (Germany)

Proposed Vice-Chair: William Mackaness (UK)

Proposed Terms of Reference 2011-2015:

- To foster research and practical experience in multi-scale issues and automated map generalisation and to form a network and focal point for researchers and practitioners in this domain.

- To foster and maintain a liaison with related commissions and working groups within the ICA as well as in related national and international organisations (e.g. ISPRS, IGU, EuroSDR), including: identification of contact persons, timely mutual updating on planned activities, organisation of joint conference sessions and/or workshops.
  - To maintain a World Wide Web site for electronic dissemination of research on multiscale issues and map generalisation, including a membership database, a bibliographic database, examples of research projects and test data, links to related web sites.
  - To organise sessions and meetings for exploring the issues named above, including workshops held every two years in conjunction with international cartographic conferences, special sessions and/or panel sessions at international cartographic conferences, in collaboration with local organisers.
  - To produce publications for dissemination of the above efforts, including one special issue of a peer-reviewed scientific journal or a book every two years.
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## **17. Planetary Cartography**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

The activity of this commission is focused on the *Mapping of Planets*, satellites, asteroids, icy bodies and cometary nuclei: all objects in the Solar System which possess a solid surface. This subject might be extended to the mapping of planetary systems as systems, planetary rings, gaseous planetary bodies, the Solar System or the Sky (Constellations, Deep Space objects) if there is considerable interest in this field by the commission members.

Proposed Chair: Henrik Hargitai (Hungary)

Proposed Vice Chair: Kira B. Shingareva (Russian Federation)

Proposed Terms of Reference and Activities 2011-2015:

### **1. Multilingual Maps of Terrestrial Planets and their Moons**

This effort was organized initially through the cooperation of Dresden TU (Germany) and Moscow State University of Geodesy and Cartography (Russia) and to date two full editions have been successfully published.

Production: Updating of the *Multilingual Maps of Terrestrial Planets and their Moons* series

- Special focus on the new map of Mercury
- Initiating and international discussion and possibly publication on the possibilities and rationalities of publishing planetary maps for language groups that use a non-latin alphabet (Chinese, Japanese, Arabic etc.)
- Discussion and production on new thematic maps that combine topography, geology and morphology
- Production of a new generation of landing site maps using new visualization methods
- Creation of an established visualization method for large scale planetary maps that may be used for landing site selection
- As a continuation of the above mentioned multilingual series, its extension to the *Jovian moons and Titan* during this term, at least for one language group.
- New focus on free advertising of planetary maps: Guerilla Marketing / ScreenSavers / Youtube annotated travel / Lonely Planet Mars / Wikipedia / Facebook / Collaborative sites / Prezi shows

### **2. Participation in Specialized Planetary Cartography GIS projects**

- Collaboration with the Russian State Library's Specialized Planetary Cartography GIS
- Collaboration with Collegium Budapest's Mars GIS that combining data from various missions for landing site selection

### **3. Planetary Nomenclature / Gazetteer supplements**

Discussion on the IAU rules and the Gazetteer

- Clarification of the specific names adoption methods/process
- Clarification of selection of Descriptor terms
- Localization issues

- a) Creation of the **Russian version** of the Gazetteer in Russian and English
- b) Revisions
  - Independent research on **explanations** of feature name origins with references
- c) Additions
  - **Pronunciation** for each name in the language of origin in pronunciation alphabet
  - Short geological **interpretation** of each individual feature with references
  - Addition of the *language of origin* for each name
  - Addition of romanization method used for the particular name and publication of general romanization methods used by IAU
  - Names in their original script / alphabet
  - references to the name that may be in the original language, not only English
  - references to the feature type
  - references to the feature
- d) List of **Problematic names** and proposals for naming rules
  - Names in English (Ionian etc.)
  - Name variations in Russian and IAU versions (More Mechty, GIRD etc)
  - Double names (Itokawa nomenclature; Earth/Mars doubles, Mars/Moon doubles)
- f) Proposals for Incorporation of the now-**informal names** in Romanized forms (from Tiger Stripes to Tharsis Rise) having a historical importance

#### 4. Education and outreach

- Foundation of a new, bi-annual international children's and student's drawing competition, with special focus on planetary cartography
- Development of a curriculum for geography or physics teachers at high school level, in which they can use planetary cartographic products
- Participation in the making of a textbook on Extraterrestrial Geography at high school and university level, and creation of cartographic products for this available online
- Development of new Wikipedia articles used as an educational tool on various planetary cartography topics, possibly in several languages, with copyright free maps as illustrations that could be used worldwide for education and outreach
- Special focus on countries with large population but only few and/or low quality materials available on extraterrestrial geography
- Promotion of our activities for developments and analysis by MSc and PhD students in Cartography.

#### 5. Online resources

- Creation of a **new, updated website for the commission** with various resources for the planetary cartographer community worldwide, including the International Planetary Cartography Database which is a documentation, bibliography and analysis of the international planetary cartography products
- Creation of an entry on the commission on Wikipedia

#### 6. Seminars/Workshops, annual business meetings

It is planned to make one commission meeting each year; either at ICC events or other cartographic or planetary science conferences (ISPRS, Intercarto or other). These commission meeting would be combined to an open seminar on the topic for which members and non-members are equally invited. Abstracts presented at these seminars are planned to be published online.

#### 7. Publications planned to date

- Localization rules of planetary surface feature nomenclature: Russian and Hungarian localization rules of formal and informal names
- Encouraging workers in the field to publish their results alone or together in *Cartographica*, *Cartographic Journal* or Springer's *Lecture Notes*' series.

#### 8. Relations to other organizations

Making official contacts with the WG of Extraterrestrial Mapping at ISPRS, with IAU Commission on Solar System Nomenclature, with planetary mapping groups in Germany (DLR), the USA (NASA/USGS), China and Japan

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### **18. Mountain Cartography**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: Karl Kriz (Austria)

Proposed Vice-Chair:

Proposed Terms of Reference 2011-2015:

- Further define the topics of Mountain Cartography and promote the methods and knowledge of mountain cartography among scientists and professionals in cartography and related fields.
  - Provide an updated, attractive web-site with information about Commission activities, links to other events and theme-specific knowledge.
  - Provide an updated web-portal with links to related web-sites and bibliographic information.
  - Emphasise cartographic design issues and map related representations in large scale topographic mapping.
  - Continue the well-established workshop series.
  - Promote publication activities (proceedings, web-proceedings, journal articles and special issues) and common research activities.
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### **19. Neocartography**

This is a new nomination.

Proposed Chair: Steve Chilton (UK)

Proposed Vice-Chairs: Manuela Schmidt (Austria), Andrew Turner (USA)

Proposed Terms of Reference 2011-2015:

- investigate the emergence of Neocartography and develop a web site to act as a shop window and reference point for researchers and practitioners in this area
  - organise sessions at future ICA conferences (commencing with ICC2013 in Dresden) and collaborate and with representatives of other disciplines and ICA Commissions in meetings and seminars (eg Maps and Society)
  - organize specialist conferences/workshops on topics related to Neocartography. These would be local meetings to encourage ICA participation from groups who might not normally do so
  - encourage publication in this area, specifically publication in what may be considered traditional cartography journals - such as the Cartographic Journal, Society of Cartographers Bulletin, and Cartographica
  - support research into, creation of, and dissemination of information about appropriate web-tools
  - hold joint meetings with mapping and allied communities. In the first four years these might focus upon participatory community mapping and map design.
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### **20. Maps and Graphics for Blind and Partially Sighted People**

This is a nomination for continuation of the 2007-2011 Commission with a different Chair.

Proposed Chair: Alejandra Coll (Chile)

Proposed Vice-Chair: Waldirene Ribeiro (Brazil)



Proposed Terms of Reference 2011-2015:

- Exchange and disseminate information on the design of and production technologies for maps and graphics for blind and partially sighted people.
- Study and evaluate developing and appropriate technologies and resources for the improvement of maps and graphics for blind and visually-impaired people.
- Explore the potential value of maps and graphics designed for blind and visually-impaired people to other user groups (e.g. children and those with learning difficulties, Develop closer links with the World Blind Union and extend this co-operation to deaf, mentally retarded children and old people).
- Engage with the International Mobility Conference and other appropriate organizations in order to further world-wide co-operation, communication and education in the use of maps and graphics by blind and visually-impaired people.
- Integrate the workings of this commission more closely with other ICA commissions, in order to expand the topics and facilitate access to information for disabilities people.

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## **21. Maps and Society**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

The ethos of the Commission continues to be to encourage the use of social scientific and critical approaches to mapping and to encourage a more active engagement between cartographers and other groups in society engaged in mapping activities. In the four years since being established we have held meetings at ICA conferences and have organised outside meetings, including workshops and conferences held by interest groups outside the orbit of ICA and also joint meetings with other ICA Commissions. Publication of papers from these meetings has taken place. We would see the emphasis of the Commission shifting in the next four years towards theme issue and book publication and towards facilitating research agendas, but the core parallel themes would be carried forward.

Proposed Chair: Chris Perkins (UK)

Proposed Vice-Chair:

Proposed Terms of Reference 2011- 2015:

- Develop the Maps and Society web site to act as a clearinghouse and one-stop shop for researchers and practitioners in this area
- Sponsor and organise sessions at future ICA conferences
- Organize two specialist workshops on topics related to Maps and Society These would be local meetings to generate increased ICA participation from groups in different global contexts
- Encourage publication in this area, specifically publication of a theme issue of The Cartographic Journal or Cartographica around critical approaches to mapping practice, and publication of a research monograph on Maps and Society
- Collaborate with representatives of other disciplines in meetings and seminars
- Hold joint meetings with specific mapping communities focusing upon different mapping encounters. In the next four years these might focus upon: mapping as artistic practice; graphic designer practice; active collaboration with crowdsourcing communities.

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## **22. Use and User Issues**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: Corné van Elzakker (Netherlands)

Proposed Vice-Chairs: David Forrest (UK), Kristien Ooms (Belgium), Alexander Pucher (Austria)

Proposed Terms of Reference 2011-2015

- Maintain and expand the website ( [www.univie.ac.at/icacomuse](http://www.univie.ac.at/icacomuse) ) for the exchange of knowledge, news and information on use and user issues in cartography and geo-information processing and dissemination
- Maintain and fill the on-line bibliographical database on use and user issues which is accessible through the website ([http://www.univie.ac.at/cartography/project/ica\\_user/bibliography/index.php/topics](http://www.univie.ac.at/cartography/project/ica_user/bibliography/index.php/topics)).
- Set-up and maintain a database of individuals working on, or with expertise in, the various use and user issues and denote it with keywords (similar to the listings used in the bibliography) to stimulate exchange of information. This database will be accessible through the current website.
- Provide a Web discussion forum through the current website.
- Produce The Handbook for User Research in Geoinformation (textbook publication focusing on methods and techniques of use, user and usability research in cartography and geo-information processing and dissemination).
- Foster, stimulate and contribute to other publications on use and user issues in cartography and geo-information processing and dissemination.
- Organize (or help organizing) sessions on use and user issues at future ICA conferences.
- Establish one or more “Project Groups” that deal with a specific aspect of use and user issues in cartography and geo-information processing and dissemination. The Project Groups will execute concrete tasks within a given time span.
- Organize (or help organizing) specialist workshops or seminars on focused topics related to use and user issues in cartography and geo-information processing and dissemination.
- Participate in / contribute to other workshops / seminars organized by representatives of other disciplines (e.g. human computer interaction, computer science) or by other ICA Commissions / Working Groups.
- Involve young (PhD) researchers in all Commission activities.

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### **23. Cartography and Children**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair.

Proposed chair: José Jesús Reyes Nuñez (Hungary)

Proposed Vice-Chair:

Proposed Terms of Reference 2011-2015:

- disseminating the outcomes of research into map use by children and young people. Deliverable: an enhanced set of online bibliography and web links on cartography and children
- developing stronger links between the ICA and relevant international and regional organizations related to Cartography and Children. Deliverable: following the contacts with the Commission for Geography Education of the International Geographical Union and other international/regional organizations.
- stimulating a debate on the different aspects of cartography for children in interest of collecting and publishing (in digital or/and printed format) the research results. Deliverable: representing the commission in events and publications related to this theme.
- following the promotion of the use of digital cartography, web cartography and GIS in schools. Deliverable: representing the commission in events and publications related to this theme.
- providing consultative support to the ICA Executive in relation to the rules and judging of the Barbara Petchenik Children's World Map Competition. Deliverable: appropriate support as required

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## **24. Education and Training**

This is a nomination for continuation of the 2007-2011 Commission under the same Chair.

Proposed Chair: David Fraser (Australia)

Proposed Vice-Chair: Laszlo Zentai (Hungary)

Proposed Terms of Reference 2011-2015

- Work for reaching the general aims conceived in the ICA Statutes.
- Support cartography and cartographic education in developing nations by holding seminars in these nations.
- Develop the existing ICA-sponsored Internet cartography teaching programme (modules), with regional workshops for training the teachers.
- Produce an ICA-sponsored Internet programme for continuing professional development, with regional workshops for training the teachers.
- Produce appropriate publications for dissemination of results of the above efforts and publish it according to the IOF publication policy.
- Promote integration by establishing linkage with the committees on education of sister surveying and mapping disciplines, by maintaining the list of institutions providing cartography course programmes, and interact as much as possible with other ICA commissions and working groups (organize joint meetings).
- Improving dissemination of information on educational theory and practice of cartography to the members across the world.
- Contribute to international forums where applicable.
- Investigate the role of emerging technologies for use in education and training.
- Develop mapping awareness competitions.

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## **25. GI for Sustainability**

This is a nomination to transform a Working Group into a Commission.

Sustainable Development is an area of cartographic research which is not currently covered by any Commission and which needs further encouragement.

Proposed Chair: Vladimir Tikunov (Russia)

Proposed Vice-Chair: Horst Kremers (Germany)

Proposed Terms of Reference 2011-2015:

- To produce a methodological structure for GIS and Cartographic basis of sustainable development (SD) of territories.
  - The organization of events (including presentations of projects, holding conferences etc.), on which experts from the different spheres of Cartography, Geoinformation and neighboring disciplines (environmental sciences, regional and cross-border planning etc.) would be involved. In particular to hold conferences that will bring together the different experts interested in sustainable development of territories. The press will be involved for propagation of achievements of cartography and GIS.
  - To organise regional workshops and summer-schools on GIS and Cartography for developing projects in Sustainable Development.
  - To provide the connections and performance of teamwork, holding conferences, schools with the adjacent organizations - the IGU Commission on Geographical Information Sciences, CODATA (ICSU Committee on Data for Science and Technology), Digital Earth, UNIGIS, ENVIROINFO etc.
  - To continue the work on realization of international conferences InterCarto, which since 1994 were annually carried out in Russia and in other countries (<http://susgis.net>).
  - Document and publish best practice results, proceedings of conferences, textbook on geoinformatics contributions to sustainable development.
  - To encourage and support the involvement of student cartographers in the commission activities. Since two years there is continuing success of funding student participation in the SD Commission activities.
  - Cooperate with other ICA Commissions (e.g. "Education and training", "Management and Economics of Map Production", "Digital Technologies in Cartographic Heritage")
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## **26. Map Production and Geo-business**

This nomination is for a continuation of the 2007-2011 Commission with a slightly different name.

It is proposed to change the name of the Commission from 'Management and Economics of Map Production' to better reflect the wider scope of Commission's interests and activities. It better reflects the interest not only in the map production and economic aspects of the map production but build bridges from cartographic research to cartographic business models.

Proposed Chair: Philippe de Maeyer (Belgium)

Proposed Vice-Chair: Markus Jobst (Austria)

Proposed Terms of Reference 2011-2015

- Enhance the study on map production- and process management, map economics and geobusiness;
- Research on the impact by the modern communication methods on map production, business models, change management and design thinking;
- Research the impact of Service Oriented Architectures and future technologies on Map-Production, Publishing and Archiving.
- Encourage international collaboration on the study of map production and geobusiness with particular emphasis on bridging research, government and commercial sectors;
- Participate and contribute to activities of other relevant ICA interests groups (e.g. Commission on Use and User Issues, National Mapping Organisations).

These terms of reference should be achieved by specific meetings involving the different sectors, knowledge transfer via workshops and the wide usage of publication media.

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## **27. Cartography in early warning and crises management**

This is a nomination to transform a Working Group into a Commission.

Proposed Chair: Milan Konecny (Czech Republic)

Proposed Vice-Chair: Christophe Lienert (Switzerland)

Proposed Terms of Reference 2011-2015:

- Provide leadership in the development of concepts, ontologisation and standardization for early warning, hazard, risk and vulnerability mapping.
  - Promote the cartographic use of remotely sensed and other geospatial data for early warning and crisis management through scientific conferences, seminars and workshops.
  - Investigate psychological condition of end user given by their personal character and situation and psychological condition of rescued persons (with support of ubiquitous and adaptive mapping).
  - Foster quality mapping and cartographic modeling, including state-of-the-art visualization technologies, geospatial processing and publishing tools, for early warning and crisis management through topic related publication activities.
  - Participate and contribute to global initiatives in early warning and crisis management through the maintenance of a website, newsletters and social network channels.
  - Promote the development of dynamic and real-time cartographic visualization concepts and techniques for enhanced operational early warning activities through active collaboration with governmental authorities.
  - Establish and cultivate professional networks for exchange of information among stakeholders in the domains of crisis management and early warning.
  - Develop mechanisms of command and control systems intergration as well as improve real-time data-centric intelligence based on field sensors for purposes of Crisis Management.
  - Develop mapping methodologies and technologies for EW&CM in children perspectives. Promote the process of teaching, understanding and using maps for EW&CM in children aspects.
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## **28. Geoinformation Infrastructures and Standards**

This nomination is for a continuation of the 2007-2011 Commission under the same Chair, but with a slightly modified name.

The ICA Commission on Geoinformation Infrastructures and Standards will research the development and implementation of spatial data infrastructures (SDIs) at the global, regional, national and local levels, and of the theory and notions behind them, while considering the implications for the ICA.

Proposed Chair: Anthony Cooper (South Africa)

Proposed Vice-Chair:

Proposed Terms of Reference 2011-2015:

- In collaboration with other ICA Commissions, explore research on the impact and use in SDIs of cartography, standards, spatial semantics, ontologies, volunteered geographical information (VGI), virtual globes and other technological developments that might become relevant in future, and identify the associated education needs.

- Continue the work on developing conceptual models of an SDI using various modelling techniques, working in the areas of science, technology and standards.
- Participate at the scientific level with other organizations active in SDIs, standards and geospatial quality.
- Develop reports, conference presentations and/or journal articles on our work and help to arrange workshops, conferences or other meetings on SDIs and standards, and present tutorials at them.
- Organize reporting sessions on the Commission's activities at the 2013 and 2015 International Cartographic Conferences.
- Organize and hold full Commission meetings in 2012, 2013, 2014 and 2015, and mini-meetings of the Commission at suitable meetings.
- Continue to serve as the Category A Scientific Liaison for the ICA to ISO/TC211, Geographic Information/Geomatics, and establish liaisons with various SDI organizations.
- Maintain the Commission website and mailing list.