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**International Cartographic Association** **Association Cartographique Internationale**

# ICA Executive Committee

## ICA Executive Committee

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*"The children and flowers will make a better world", entry to the Barbara Barbara Petchenik Children's Map Competition of the 21st ICC, Durban, South Africa, 2003. Author: Leny Vladimirova Mircheva, age 11, Bulgaria*

## Editorial

Members of the ICA Executive Committee and Commission Chairs have successfully accomplished several initiatives over the last six months. The ICA has now a continuing presence within the audience of the GIM International Journal (a magazine of widespread circulation amongst professionals of the spatial sciences). About six columns have already been published by members of the ICA. Likewise, Ferjan Ormeling reports on innovations that are taking place within the EC, as six portfolios have now been identified, namely Society, Professional Development, Cartography Science, Education, Workshops and GISciences. Each Vice-President is now responsible for a portfolio.

A reminder to all National ICA representatives that the deadline for the submission of materials for the Children's Map Competition is on the 1st June 2005. Guidelines for the competition were announced in the previous issue of the ICA Newsletter (June 2004). Likewise, the deadline for the ICA Travel Awards is 15th December 2004, and forms can be downloaded from the ICC 2005 website (www.icc2005.org). This issue provides guidelines for the International Map Exhibition, and Ramón Lorenzo, Chair of the LOC reports on the hand over of the ICA Flag to the Mayor of A Coruña.

This newsletter contains reports of activities undertaken or planned for the near future by the Commissions on Gender and Cartography, Theoretical Cartography, Education, Visualisation and Virtual Environments, Mountain Cartography, Planetary Cartography, Generalisation and Multiple representations, Maps and Internet. Our regular section 'Special Features' reports on the creation of a National Historical Geographic Information System (NHGIS) in the USA, and the Cooperative Research Centre for Spatial Information, established in Australia in 2003.

On a happy note, I am pleased to announce the granting of the British Cartography Society Medal to our colleague, Dr Christopher Board (former Editor of the ICA Newsletter). Sadly, I also report the passing of Professor Arthur Robinson, well known to the cartographic community for such works as the 'Elements of Cartography' textbook widely used in many undergraduate Cartography programmes. Arthur's son has prepared an obituary that reflects on the multiple contributions his father made to the discipline of Cartography.

The Festive Season is approaching once again. I hope that we can all find a quiet time to reflect and celebrate on all the positive achievements of this year, as well as what 'could have been done better', so that we have the energy and strength for a very successful year 2005 in all aspects of life.

As usual, I look forward to your continuing support in 2005, to make this newsletter a proud representation of our Association.

Happy beginning to 2005

*Graciela Metternicht*
*Editor*

## Obituaries

### Arthur H. Robinson

Arthur H. Robinson, of 7707 N. Brookline Dr Apt 302, Madison, Wisconsin, died at Meriter Hospital in Madison on October 10, 2004 after a brief illness. Arthur Robinson was born in Montréal, Canada on January 5, 1915, the son of James Howard Robinson and Elizabeth (Peavey) Robinson. His early education was in the United States and in England, after which he took the Bachelor of Arts degree at Miami University, Oxford, Ohio, in 1936, the M.A. at the University of Wisconsin, Madison, Wisconsin in 1938 and the Ph.D. at Ohio State University in 1947.

From mid-1941 until 1946 he worked in Washington, DC with the Office of Strategic Services (OSS), the forerunner of the CIA, and for almost all of that time he was Chief of the Map Division of the OSS. In that position he supervised numerous types of cartographic work, including the preparation of nearly 5,000 maps, in support of the global war effort. During the war he was commissioned in the Army with the initial rank of captain, and was later promoted to major. For his distinguished service in the OSS he received the Legion of Merit.

In 1945 the University of Wisconsin at Madison offered Robinson a faculty position in the Department of Geography, and he began teaching there in 1946. He rose rapidly in the ranks of the faculty, becoming Professor of Geography and, in 1967, Lawrence Martin Professor of Cartography. He retired in 1980 with the rank of Professor Emeritus.

During his long career he produced fifteen books and monographs, one of which, Elements of Cartography, went through six editions and became the pre-eminent textbook in cartography. However, the contribution for which he is probably best known to the public was the creation of the Robinson Projection, a map projection that he referred to as "a portrait of the earth." In 1988 the National Geographic Society adopted that projection as its standard for producing world maps. The Robinson projection was adopted by agencies of the U.S. Government and many other users.

Robinson's work was internationally recognized, and among his many honors were two honorary degrees (from Miami University (Ohio) and from Ohio State University), the Distinguished Service Award and the Helen Culver Gold Medal from the Geographic Society of Chicago, the Carl Mannerfelt Medal of the International Cartographic Association, the Silver Medal of the British Cartographic Society, and the John Oliver LaGorce Medal of the National Geographic Society. He served as president of the International Cartographic Association, and as vice president and president of the Association of American Geographers.

Robinson's marriage of more than 50 years to the former Mary Elizabeth Coffin ended in 1992 with her death. He later remarried, and is survived by his wife Martha E. Robinson of Madison, son Stephen M. Robinson (Chong-Suk Robinson) of Madison, daughter Patricia A. Robinson (Leslie Kramer) of Sonoita, Arizona, stepdaughter Carita Baker (Ron Baker) of Hamilton, Ohio, stepson Carl James Phillips (Sandie Phillips) of Hamilton, Ohio, stepdaughter Clarissa Lowry (Miles Lowry) of Wheaton, IL, granddaughter Diana M. Oestreich (Nathan Oestreich) of Menlo Park, California, grandson James A. Robinson of Palo Alto, California, and families of the above.

*Stephen M. Robinson*

## The British Cartographic Society Medal

The British Cartographic Society is pleased to announce that Dr. Christopher Board was presented with the Society Medal at an Award Ceremony on 11 September 2004 during the 41st Annual BCS Symposium held at the University of Durham. The Citation reads:

"Chris Board has selflessly served the geographic and cartographic communities for over four decades. As a tireless leader at national and international levels, his academic, organisational and unique personal abilities have combined to help transform ideas in cartographic thinking and to focus the many diverse cartographic groupings in the UK towards important global goals.

Following university education and research in England and South Africa, his academic career became centred at the London School of Economics where he was an enthusiastic teacher and innovative thinker. Through seminal research papers he helped pioneer the new concepts of cartographic communication, focus attention on the importance of geographical education for effective map use, and led national and international research into the history of cartography. Not satisfied with this full professional life, he expanded his activities as an inspirational and active organiser within mapping communities. Membership of the influential Royal Society sub-Committee for Cartography (from 1972) led to its chairmanship (from 1984) and of its successor, the British Cartographic Society (BCS) UK Cartography Committee, until 2004. He was a founding member of the Charles Close Society for the Study of Ordnance Survey Maps, and has been its Chair since 1996. He was President of the UK Society of Cartographers (1985-90), and, after years of dedicated Council membership, was elected vice-President and President of the British Cartographic Society (1990-94).

From 1964 he became increasingly involved, with leading roles in many aspects of the International Cartographic Association (ICA) and as holder of the prestigious post of UK national delegate (reporting to the Royal Society) he has led and represented British cartographers to ICA and related international events for over 20 years. The immense respect he earned from the communities he served led to recognitions such as Honorary Fellowships of the Royal Geographical Society (1998) and the ICA (1999). For his many outstanding contributions (as trustworthy background worker, perceptive and influential committee leader, experienced editor, policy-maker, and simply as someone who 'got things done'!) he is both liked and greatly admired by friends and professional peers in Cartography throughout the world.

His influence on the British Cartographic Society and on individual cartographers in the UK and abroad, his enthusiasm for and dedication to the Society and its aims as well as to cartography itself, and his devoted service to the subject make him an ideal recipient of the British Cartographic Society Medal".

*Chris Board receives the BCS Medal from President Mick Ashworth*

## President's Report

Dear Colleagues, friends and readers of the ICA News,

I would like to briefly comment on activities that occurred during 2004 where I participated on behalf of the ICA, and had the opportunity to conduct fruitful discussions with colleagues affiliated to different international organisations dealing with in one way or another with Cartography.

I begun the year in India, where I flew just after our Prague Executive Committee meeting. I was very pleased to give two speeches, one at Map India 2004 and the second at the GSDI conference held in Bangalore, where I had the opportunity to appreciate activities of Indian colleagues around Dr. Narayan and Ravi Gusta and Dr Nag. I used these occasions for discussions with representatives of other organisations, as well as for representing ICA at the Global Map project meeting. At the GSDI meeting I challenged our SDI friends by stating that cartography begins where SDIs finishes. This statement aimed at pointing out that once SDI overcomes issues related to data availability, access and legislative conditions, cartography comes in as a discipline prepared to visualize, interpret and deliver visual versions of the data to the users, offering also customized and individua way of this process. Naturally, cartography also participates in the creation of SDI.

I was also very glad to accept an invitation of the Pan-American Institute of Geography and History (PAIGH) to stop in Mexico City on my way to the Geomatica 2004 event organised in Havana, Cuba (commented in the ICA News 42). I visited the PAIGH and gave a lecture about the role of cartography and GI in economic development of the region. I had excellent discussions with the PAIGH's Secretary General, Dr. Santiago Borrero, where we analysed possibilities of closer cooperation between ICA and PAIGH. He offered the PAIGH Office as a place for the next EC meeting (February 2005), offer that was accepted on the July meeting of the EC. One of the reasons for this decision is to realize one of the Strategic Plan objectives, that is, to develop better links between ICA and the Latin American community of cartographers and GI specialists, so that their participation at the A Coruña ICC 2005 is maximised.

On April I accepted an invitation by FIG's president, Prof. Magel, to attend the FIG Working week in Athens. I undertook strategic discussions with president Magel, the FIG Director Willuka and the president of the IAG, Prof. Beuchtel, about future cooperation amongst our societies and the realistic role of the Joint Board, which was created on basis of an ICA initiative. I ensured my colleagues that ICA's intention is not to create a new administrative body, but to exchange information about our activities and to integrate our efforts at a global level, as a community dealing with spatial information.

After temperatures fell down to around 15 C, I visited the 225-years old, and world famous Moscow University for geodesist and cartographers – MIGAIK. In discussions with its Rector, astronaut Savinych, the Dean Kalugin and university cartographers, I invited them to take an active participation in the preparation of the ICC 2007 in Moscow. I had the opportunity to test some of Moscow's attractions like the world famous Star City. Related to the ICC 2007 topic was also a meeting of the representatives of the Russian Cartographic Society (Vescerjakova, Tikunov) and Dr. Borodko, newly established director of the Federal Agency of Geodesy and Cartography of the Russian State. I am satisfied with the high level of care devoted by our Russian colleagues to the organisation of the ICC 2007.

Very important was our Executive Committee meeting in A Coruña, Spain. I was satisfied with the level of preparation of the ICC 2005 led

by ICA vice-president Ramon Lorenzo and I believe it will be an attractive, very well organised event and will push all cartographic fields ahead.

On my way back from A Coruña I met in Amsterdam with ICA SG Ormeling and the representative of GIM, Mr Boesjes. We discussed the idea of a permanent column of ICA within the GIM magazine, as well as some problems related to the cooperation between ICA, and GIM and Elsevier. After several months I want to say that our cooperation with Elsevier is improving and I hope any outstanding problem will be resolved soon.

On July, at the ISPRS congress in Istanbul I gave a speech, and jointly with ICA Past President Bengt Rystedt participated in the Joint Board meeting. It was the first time that so many presidents, Secretary Generals and/or directors of international organisation met together. I regret reporting that we did not reach THE expected results but a very open, friendly and critical discussion about a closer future cooperation left doors open for continuing discussions. It was evident that all organisations have their own traditions and philosophies coming from their members, who are the first to be convinced about the fact that a Joint Board has sense for them. The next Joint Board meeting will be held in Cairo. John Trinder, who strongly supported the cooperation between ICA and ISPRS finished his presidential term, and I hope that the incoming president Ian Dowman will continue with this effort. I like to express my sincere congratulations to Professor Dowman on his appointment as ISPRS President. One of the most memorable moments of my visit in Istanbul was a meeting with Turkish cartographers organised by Necla Ulugtekin. Together with PPs Rystedt and Fraser Taylor we had the opportunity to answer many questions raised by Turkish cartographers and share their ideas.

In Beijing I participated in the successful conference Map Asia 2004. The joint organization by Indians and Chinese created a very friendly atmosphere, that sent a good political and scientific message for the world. I got a chance to promulgate ICA in several situations, but mainly in the round table panel. I also held discussions with Chinese cartographers Chen Shupeng, Liao Ke, Li Li, Deren Li, Yan Kai and the Secretary General of the Chinese Academy of Science, Guo Huadong. With Professor Guo I discussed the ongoing cooperation between ICA and the International Society on Digital Earth, which was established in China last year.

In Japan I participated in the first joint meeting of the Commission on Ubiquitous Mapping chaired by Takashi Morita and Michael Peterson, chair of the Commission on Maps and Internet. Vice-President William Cartwright participated in this event as well, held together with the SVG Open meeting. The meeting was complemented by excellent excursions to Japanese cartographic enterprises and the Tokyo Police Traffic Management, where participants had a chance to see the excellent navigation system supported by information infrastructures coming from private and public areas. Together with T. Morita, T. Kanakubo, G. Gartner and A. Wolodtschenko I visited the general director of the Geographic Survey Institute, Prof. S. Watanabe and the Secretary General of the Global Map project, H. Maruayama, where we explained the support of ICA to the Global Map project. While in Japan I also had my first earthquake experience! As GD Watanabe mentioned, Japan moved that day 4 cm South direction. But my personal feeling was that ICA moved ahead several kilometres.

I also participated in the Book Trade Fair in Frankfurt a.m. in Germany, and met the IMTA representatives, Peter Joly and J. Whitby. I had a fruitful discussion with IMTA's Ukrainian and Russian representatives. In the future ICA should devote greater efforts to a representation in events like this.

While in Germany I also participated at the "Cartographic Cutting-Edge Technology for Natural Hazard Management" conference organized by Prof. M. Buchroithner at the Technical University of Dresden. It was a very well organized cartographic event, with strong contribution from the German speaking community. Prof. Buchroithner organized a press conference stating the objectives of the meeting.

As a closing end to my report I would like to recommend you reading the paper Mapping Opportunities, published in Nature (Vol.427, January 2004, p.376-7). This article gives a positive view of the future of mapping. In there, a statement of the US Department of Labour identifies geotechnology (including mapping) as one of the three most important emerging and evolving fields, after nanotechnology and biotechnology.

Our nearest targets? To ask all commissions and working groups to demonstrate their results from the last two years activities at the ICC 2005 in A Coruña, and as all ICA community to do our best for making of this an excellent cartographic event.

*Milan Konecny*
*President*

## Report of the A Coruña meeting of the ICA Executive Committee

The EC met on July 2-3 2004 at A Coruña and discussed applications for ICA membership from Benin, Cyprus and Geosud (a Sudan organization promoting education and development of geographical information technology). The Publications committee reported on new ICA books to be published by Elsevier. The President informed about the offer from the editors of the GIM journal to provide space for a series of 12 columns on the ICA to be inserted in 12 consecutive issues (by the time you read this the series might be already halfway). Past President Bengt Rystedt reported on meetings of the Indian cartographic association INCA and of the Bulgarian Union of Surveyors and Land Managers.

Regarding the upcoming international cartographic conference in A Coruña, Ramon Lorenzo reported on the progress made by the local organising committee. It will be the first ICA conference where both students and pensioners will only have to pay half the registration fee. The A Coruña conference will have two special students' sessions where PhD students will be able to present their research in front of an ICA commission chairs forum. For regular participants the registration costs also cover the lunches, a most useful innovation introduced by our South-African colleagues last year in Durban. A list was presented of the various workshops, seminars and commission meetings to be held prior to the conference. A maritime cartography workshop might be organised in Ferrol, across the bay from A Coruña. The brand new conference building by the side of the sea was inspected: it is a wonderful location, within walking distance of all the city hotels.

The EC members are now all responsible for different fields, such as Society, Professional practice, Cartographic science, Education, Workshops and GIScience. The developments in these fields made by ICA were reported on as well. Regarding 'Science', Kirsi Virrantaus will develop a new research agenda for ICA, to be presented in A Coruña.

The next EC meeting will be held in Mexico, February 6/7, 2005.

*Ferjan Ormeling,*
*ICA General Secretary*

## The ICA Flag hand over to the Mayor of A Coruña

The official act of handing over the flag of the International Cartographic Association to the Town Hall of A Coruña was held last 4th of June. The flag was delivered to the Council for them to keep it until it is hoisted in the new Congress Centre in the inauguration of the XII International Cartographic Conference in the Congress Palace next year, on Monday the 11th of July.

The act of delivery of the flag began with a little speech of the Director of the Conference and Vice President of the ICA, Ramón Lorenzo, who explained the meaning of the act and after delivered the flag to the Mayor of A Coruña, Francisco Vázquez who thanked the ICA the election of A Coruña as the venue for the Conference. He also promised all the support from the Council for the success of the organization of the Conference and showed his satisfaction for receiving this flag, that is guarded in the office of the Mayor of A Coruña.

*"Representation of the Local Organization Committee of the Conference and of the different collaborating institutions in the official act of delivery the ICA flag to the Town Hall of A Coruña".*

*"Ramón Lorenzo delivers to Francisco Vázquez,Mayor of A Coruña, the ICA Flag".*

## The XXII Conference ICC 2005: Mapping Approaches into a Changing World

### Pre - Congress Schedule:

- Call for abstracts: March 1st, 2004.
- Deadline for submission of abstracts: Nov. 1st, 2004.
- Notification of authors: 15 January 2004.
- Deadline for submission of full papers: 30 April 2005.
- Deadline guaranteed hotel reservation: 15 June 2005.

You may also find the "Call for Abstracts" application form and the "ICA Travel Award" application form in our website www.icc2005.org for downloading (PDF format) and for sending it via internet (online) www.icc2005.org

### Registration fees categories.

| | By 30 april 2005 | After 30 april 2005 |
|---|---|---|
| Full participant | 460 | 520 |
| Students/Senior* | 230 | 260 |
| Accompanying person | 140 | 160 |

*Students must be less than 30 year old by 1 July 2005 and should include proof of their student status. Seniors must be 65 years or older by 1 July 2005 and should include a copy of the related page of their passport.

Registration fee of participants, full time students and seniors will include:

- Attendance to the Congress.
- Congress documents, bag, badge, CD of the Conferences, certificate of attendance.
- Participation in the Opening and Closing Ceremonies and Welcome Reception.
- Participation in the Exhibitors´ Reception.
- Lunch from Monday, 11, to Friday, July 15at the Conference venue.

Registration fee of accompanying persons will include:

- Attendance to the Opening and Closing Ceremonies and Welcome Reception.
- Special bag, badge, touristic brochures, city maps.
- Participation in the Exhibitors´ Reception.
- Meeting room with coffee and tea.
- Lunch from Monday, 11, to Friday, July 15 at the Conference venue.

### Themes for the Conference:

1. Theoretical Cartography.
2. Map Projections.
3. Map Design and Production.
4. Education and Training in Cartography. Internet courses.
5. Digital Cartography and GIS for Sustainable Development of Territories
6. Spatial Data Infrastructures (NSDI, GSDI and SDI). Development, Standards, Prices and Copyright.
7. Data Capture and Quality Assessment of Spatial Data.
8. Incremental Updating and Versioning of Spatial Data Bases.

9. Cartographic Generalization and Multiple Representation.
10. Cartography and Satellite Imagery for the Management of Natural Resources and the Environment.
11. Maps and the Internet.
12. Internet Location-Based Services, Mobile Mapping and Navigation Systems.
13. Marine Cartography, Navigation and Ocean Mapping.
14. National and Regional Atlases. Electronic atlases. Thematic and Multimedia Cartography
15. Virtual models, Visualisation, Animation and Cartography.
16. History of Cartography.
17. World and Aeronautical Cartography and Military Mapping.
18. Mountain Cartography.
19. Tourist Cartography
20. Cartography and Children. Educational Products.
21. Gender and under-represented groups and Cartography.
22. Maps for the Blind and Visually Impaired.
23. Planetary Cartography.
24. Research and Development: New products and Cartographic Systems.
25. History of Colonial Cartography in the 19th. and 20th. centuries.
26. Other themes: Cartography and Advertising, Maps in the Media, Census Cartography, Cadastral Maps, Three dimensional Mapping, New concepts in Cartographic Symbology, Space and Time in GIS, Toponymy.

### Workshops

Provisional list of workshops, tutorials and courses in preparation by September 2004.

Additional information will be incorporated to www.icc2005.org.

## The ICC 2005 International Map Exhibition

Among the activities scheduled for the XII International Cartographic Conference is the International Map Exhibition. One essential objective of this exhibition is to present the results of the main cartographic projects in the world and their most recent developments.

All types of cartographic products should be considered. The exhibition will include regional and national atlases, electronic atlases, topographical and hydrographical maps, satellite images, urban maps, relief maps, maps of mountains, tourism, natural parks, geological maps, globes, education and multi-media material.

ICA National representative bodies should nominate a contact person or coordinator for the country.The names of the national coordinators should be made known to the A Coruña LOC for ICC 2005 Technical Secretary, by e-mail: secretary@icc2005.org, preferably before November 1, 2004. The LOC requires the name of the contact person who will be in charge of the national coordination of the participation, as well as the organization to which he belongs, address, city and country, e-mail address, telephone and fax.

Deadline for receipt of all maps and cartographic materials to be exhibited is **May 10, 2005**. However we must receive the input forms or descriptions of each map and cartographic material to be exhibited **no later than March 1, 2005**. The LOC provides the contact person with detailed instructions on how this is to be prepared, upon receipt of their names and addresses.

*Ramón Lorenzo, Chairman*
*Local Organizing Committee for ICC 2005*

| Date | Workshop | Place |
|---|---|---|
| 7-8 July | Workshop on Generalisation and Multiple Representation | A Coruña |
| 7-8 July | Galileo and Egnos Maritime Applications Workshop | Ferrol |
| 7-8 July | ICA Commissions on Cartography and Children, Education and Training, National and Regional Atlases, Maps and the Internet | |
| | Joint Workshop | Madrid |
| 8-10 July | 6th Joint ICA/ISPRS/EuroGeographics Workshop on Incremental Updating and Versioning of Spatial Data Bases. | A Coruña |
| 10 July | Tutorial on Generalisation and Multiple | |
| | Representation | A Coruña |
| 12 July | Standards Workshop. ISO/TC211, ICA | |
| | Commission on Spatial Data, OGC, CEN/TC287 | A Coruña |
| Not fixed | Interoperability Workshop. Intergraph | A Coruña |
| 6-8 July | Cartography with ArcGIS. ESRI Course | Santiago |

## Visualization and Virtual Environments

The Chair reports on three events:

1) The ICA Commission on Visualization and Virtual Environments has organized a Pre GIScience 2004 **Geovisualization developers workshop** on the 20th October 2004 devoted to demonstrations, presentations, discussion, and sharing focused on recent geovisualization software developments. For details see: http://kartoweb.itc.nl/icavis/icavis-giscience.htm

2) The Commission on Visualization & Virtual Environments is pleased to announce the forthcoming publication by Elsevier Science of *Exploring Geovisualization* (Jason Dykes, Alan M. MacEachren, and Menno-Jan Kraak editors) -- due late fall. This refereed book includes collaborative and individual chapters that derive from an multidisciplinary workshop held at the Department of Informatics of the City University in London. Several additional chapters were solicited after the workshop to provide depth and breadth. The quote below from the concluding chapter provides a preview of what to expect.

   "In the introduction to this book we define geovisualization as a loosely bounded domain that *addresses* the visual exploration, analysis, synthesis and presentation of data that contains geographic information by *integrating* approaches from disciplines including cartography with those from scientific visualization, image analysis, information visualization, exploratory data analysis and GIScience. The chapters that have followed offer individually and collectively presented examples of ways in which these disciplines can provide theory, methods and tools for a field that can be considered a new branch of cartography that results in an increasingly interdisciplinary role for the map. As we have seen, this is not the 'map' as many readers will know it. While retaining the traditional roles of information repository and presentation device, the modern map should also be seen as a flexible, usable and carefully designed interface to geospatial data. Maps for geovisualization draw upon sophisticated and elegant computational tools to offer interaction with the data behind the representation. They are instruments that encourage exploration of the nature of the geospatial data at hand. As such they are used to stimulate (visual) thinking about geospatial patterns, relationships, and trends and are increasingly employed throughout the GIScientific process. As many contributions in this book have demonstrated, maps for geovisualization often consist of multiple transitory linked views, each displaying a specific alternative representation of any number of phenomena. When designed from a user-centred perspective these instruments for insight can support distributed information access and act as an active mediator among human collaborators in group work with geospatial information. Creating maps that support map use of this form requires geovisualization to be wide in scope, as our exploration has demonstrated".

   For details, see:
   http://www.elsevier.com/wps/find/bookdescription.cws_home/703524/description#description

3) The ITC in The Netherlands has taken over hosting the Commission's web site: see: http://kartoweb.itc.nl/icavis

4) Two Commission members, Theresa-Marie Rhyne and Alan MacEachren presented a half day course on Geovisualization as part of the ACM SIGGRAPH 2004 Conference. For details, see:http://www.siggraph.org/s2004/conference/courses/30.php?pageID=conference
   http://www.geovista.psu.edu/SIGGRAPH04/
   http://www.siggraph.org/%7erhyne/carto/course04/

   Theresa-Marie also hosted the SIGGRAPH Carto BOF, a SIGGRAPH-Commission collaborative information exchange session that has happened every year since 1998. A summary of this year's activity is at:http://www.siggraph.org/%7Erhyne/carto/carto04sum.html

*Alan MacEachren*
*Commission Chair*

## 4th ICA Mountain Cartography Workshop

### Vall de Núria, Catalonia, Spain
### 30th September – 2nd October 2004

The International Cartographic Association Commission on Mountain Cartography held its 4th Mountain Cartography Workshop in Spain in the region of Vall de Núria in the Catalan Pyrenees. This location is situated in the North of Catalonia, Spain, at 2.000 meters altitude and is surrounded by mountains that reach nearly 3.000 meters. The valley can only be reached by a silent cog railway and has a wealth of history and tradition, documented since 1087. It was a perfect meeting place to discuss and confer about current issues within the field of mountain cartography.

This workshop that is held biannually within the activities of the commission covered many topics related to mountain cartography such as avalanche and glacier mapping, relief presentation, tourist mapping, data capture, photogrammetry, remote sensing, geo-visualisation and multimedia. All in all there were 40 participants from Austria, Canada, France, Germany, Poland, Romania, Slovenia, Spain, Switzerland and the USA who spent three very interesting and fruitful days together.

The workshop was sponsored and perfectly organised by the ICC (Institut Cartogràfic de Catalunya) – special thanks go to Maria Pla and Blanca Baella - and covered the following six topics.

- Risk and natural hazard mapping, snow avalanches
- Cartography of glacial phenomena
- Visualisation, rendering, animation
- Alpine cartography, cave mapping, mountain tourist mapping
- Topographic mountain cartography: relief representation, hillshading, cliff drawing, remote sensing

Within the session "Risk and natural hazard mapping, snow avalanches" six papers were presented. Three of them dealt with snow avalanches in the areas of the Tyrolean Alps and Catalan Pyrenees. A further paper discussed a geo-spatial system for data management, modelling, visualisation, and analysis within an alpine valley that displayed the use of a Hazard Tool environment. One paper introduced an interesting approach to understand the dynamics of an avalanche path in the Pyrenees using tree damage and tree-ring information and explained the utilisation of environmental issue to understand avalanche hazards. The last presentation in this session dealt with LIDAR applications to rock fall hazard assessment in the Pyrenees (Vall de Núria) and examined two examples of possible applications related with

the detection of potential instabilities areas and rock fall hazard assessment.

The session on "Cartography of glacial phenomena" included four presentations that primarily considered issues on rock glaciers. Three papers had their focus in the Austrian Alps using photogrammetric methods to explain the retreat of a small debris-covered cirque glacier, the change detection of a mountain slope and a report for the years 1995-2004. The final paper introduced geomatic techniques applied to the cartography of rock glaciers in the Sierra Nevada and the Pyrenees.

The third main topic on "Visualisation, rendering, animation" included six very scientifically profound as well as visually appealing presentations. All contributions focused on special 3D methods and their utilisation for cartographic communication. Two demonstrations dealt with the basics of 3D visualisation concentrating on design and graphic variables as well as new approaches for mountain maps. One presentation introduced a very interesting application using True 3D methods by means of Lenticular Foil Technology. The concluding three papers all presented applied implementations of 3D visualisation methods in mountainous areas around the world – Olympic National Park (USA), Catalan Pyrenees (Spain) and Julian Alps (Slovenia).

The session on "Alpine cartography, cave mapping, mountain tourist mapping" comprised four presentations mainly focusing on different ways of communicating "mountain mapping". One contribution introduced a concept of a new tourist map in the Tibles Mountains, Romania of a region that has not yet been intensively covered from a cartographic perspective for public purpose. Another presentation discussed an interesting approach on evaluating National Park Service 3D trailhead maps in order to understand whether 3D maps in general can be useful or even better then conventional maps for orientation. The final two papers discussed issues that had some connection to the past. One presentation brought back traditional panorama perspectives from the painter's canvas to the digital realm and explained how various approaches are associated to modern methods in cartography. Another contribution described an approach of designing and producing natural-colour shaded relief maps with satellite land cover data based on the pioneer knowledge of Hal Shelton, a retired USGS (US Geological Survey) cartographer.

The following session on "Topographic mountain cartography: relief representation, hillshading, cliff drawing" included six presentations that covered general topics of topographic mountain cartography. One contribution introduced a profound overview of free and low cost datasets for international mountain cartography demonstrating that a variety of data is available; however usability is in some cases restricted for quality use within topographic mountain cartography. Two presentations dealt with special mountain-related issues within the new version of the Atlas of Switzerland, describing the versatility and high quality of this outstanding product. The final three papers all showed examples of topographic mountain maps of different regions of the world – Cartography in the Andes: a new version of the topographic database and map of the Argentinean Republic at 1:100,000, Cordillera Real Bolivia by aero-photogrammetric restitution and "Nevado Ojos del Salado" - a new type of "Alpenverein" map generated for the world's highest volcano.

The final session on "Topographic mountain cartography: relief representation, hillshading, remote sensing" that consisted of six papers, described a heterogeneous variety of issues concerning relief representation within topographic mountain cartography. One paper illustrated the use of hillshading in Canadian mountain cartography, explaining the past as well as the somewhat unsatisfactory current situation. Another contribution went into detail on field checking as a vital part of mountain mapping, elaborating on interesting details during the process of data acquisition. Two papers introduced ways of representing terrain using direction of slope and lighting as well as using height points for generalisation in trail maps. The final two presentations characterised the utilisation of aerial photographs as a useful tool for constructing maps of mountain areas as well as using mountain shadow profiles for geo-referencing historical documents.

All papers will be published in the publication series of ICC. Abstracts can be accessed on the commissions web-site www.karto.ethz.ch/ica-cmc

*Dr. Karel Kriz*
*Vice-Chair, ICA Commission on Mountain Cartography*

*Participants of the Nuria Workshop (photo courtesy of Martin Gurtner)*

# Commissions' Report

## Marine Cartography

The ICA Commission on Marine Cartography has few members numerically but they interact effectively with a number of other associations to bring cartographic and spatial expertise to bear on issues coming from a marine or maritime perspective. Mostly, the members work by correspondence, but hold a working meeting whenever and wherever they can, usually at the regular biennial International Cartographic Conferences. Anybody with an interest in marine cartography is welcome to attend. However, membership of the Commission does not make attendance at any meeting mandatory since it works best and by design through correspondence.

A meeting of the Commission is planned to take place at the next ICC in A Coruña, Spain, in 2005 during which the future of the Commission will be discussed and a future Chair sought. The present Chair has retired from full-time employment though he remains very active within the industry. However, it is time to look ahead and seek ideas for the future role of the Commission as well as new ideas. Ideally we will work towards a newly formed Commission with a brand new set of references to move forward at and after ICC 2007, scheduled to be held in Moscow during 2007.

The Commission is fairly settled presently and is working on a number of ongoing initiatives.

One major initiative between this Commission and the International Geographical Union's Commission on Coastal Systems, over the last decade or so, has resulted in the international collaboration known as CoastGIS (see www.coastgis.org). Readers of this Newsletter will recall that there have been held five biennial conferences that bring together professional and student researchers and practitioners focussed on spatial issues relating to coastal regions and on the potential of geographic information systems. The next two will be held in Aberdeen, Scotland in 2005 (www.coastgis2005.org.uk) and Australia in 2006 (www.uow.edu.au/science/eesc/conferences/coastgis06.html). Australia is, in effect, an additional offering to the planned biennial schedule due to demand.

Spatial information technology offers many exciting opportunities for the rapid and far-reaching dissemination of geographical data. There has been extensive development of Geographical Information Systems (GIS) in relation to terrestrial natural resources information, recently extended to include socio-economic data, but there has been a slower uptake in relation to coastal and marine systems. The international CoastGIS collaboration seeks to extend an examination of the latest state of data, modelling and management to examine the requirements for extending the so-called Spatial Data Infrastructure.

The vast majority of humankind lives on or near the coast and by whatever definition is taken for defining coastal regions, it is generally agreed that human pressures threaten them all. These threats, together with such issues as hugely different time-scales, varying data sets and interpretive perspectives, bring unique but exciting challenges to GIS and cartographic professionals and practitioners as they seek to use their skills to bring out the potential of GIS to aid in the management of the world's coastal regions.

The significance of the effort required internationally to produce hydrographic surveys and nautical charts covering the worlds' oceans and coastal regions is under-recognised. Collaboration between ICA and the International Hydrographic Organization (IHO) and the International Federation of Surveyors (FIG) has led to two members from this ICA Commission being appointed to and working on the FIG/IHO/ICA Advisory Board for Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. The recent introduction of internationally accepted standards of competency for nautical cartographers has come out of the collaboration and internationally, at the time of writing, the Chinese Naval Academy at Dalian, PRC, will be awarded the very first recognition by the Advisory Board for its degree course in nautical cartography. The Standards can be downloaded from www.iho.shom.fr. Approved and recognised Standards of Competence for Hydrographic Surveyors have been in existence for many years, but only in 2003 were such standards finally approved and accepted by the parent bodies of the Advisory Board. This has been a significant step for nautical cartography.

A small group in Hungary is working on a multi-lingual gazetter of marine names.

Please consider if you are interested in working with or through the Commission on Marine Cartography. We have built up an astonishingly fine group of professionals around the world who might just be able to help you with your issue or problem. If you have been nominated as your national representative then rest assured that the Chair looks forward to hearing from you about your ideas for contributing to the work and future of the Commission. Terms of Reference for the Commission can be found at www.icaci.org.

*Ron Furness, Chair (rfurness@ozemail.com.au)*

## Planetary Cartography

### Moscow-Vladivostok (May-July, 2004)

This year the Commission on Planetary Cartography held two meetings in Russia during two International Cartographic events organized in Moscow and Vladivostok. It was done in such a way because of the great distances between these territories. Some cartographers could participate in the Moscow sessions, whereas others visited the session in the Far East. It was especially important because for the first time specialists from such scientific centers as Irkutsk, Magadan, Petropavlovsk-Kamchatsky and others big Siberian and the Far East cities were brought together with scientists from China.

On May 24-25, 2004 the Jubilee International Scientific and Technical Conference devoted to the 225th anniversary of the Moscow State University for Geodesy and Cartography (MIIGAiK) took place in Moscow, Russia. The title of this Conference was "Geodesy, Cartography, and Cadastre at the service of Russia". Scientific and technical presentations in the following fields were accepted:

- Geodesy and Cartography Development in Russia
- Academic and Methodology Problems of Further Development of Cartography and Geodesy Education
- Modern Methods for Cartographic and Surveying Work
- Earth Aero and Space Remote Sensing Methods and Photogrammetry
- Cartographic and Surveying Support for Land and Property Cadastre, Urban Cadastre
- Geoinformation Systems (GIS) in Surveying, Cartography and Cadastre
- Geoecology
- Geoinformatics
- Optical and Optoelectronic Measuring Devices and Complexes
- Humanitarian and Social Problems of Geodetic Education Development.

There were also two sessions on Planetary Cartography and a meeting of the ICA commission on Planetary Cartography, with 17 papers related to Maps of Mars, Venus, the Moon and Mercury.

V.V.Shevchenko (Sternberg State Astronomical Institute at Moscow Lomonosov State University) spoke about planetary cartography of the invisible. It was a very informative review about the state in planetary spectroscopy and its perspectives in connection with thematic cartography. Furthermore, Egon Dorrer (Mars Express HRSC-team, Germany, ECA) spoke about investigations into shape from shading for the refinement of digital elevation models derived from Mars Express HRSC image data. Manfred Buchroithner (Dresden Technology University, Germany) demonstrated results in geometric optimization of true-3D presentations using lenticular foil with its adaptation to Mars relief.

Kira Shingareva ( MIIGAiK) presented further steps in the Multilingual Planetary Map Series, namely the preliminary version of the Mercury map which was prepared together with TUD (Germany). In the development of this theme Henrik Hargitai (Eotvos University, Budapest, Hungary) spoke about planetary maps for the public, especially on the new Map of the Moon in the multilingual planetary map series printed in Hungary, and planetary maps in the Topographic World Atlas. Likewise, A. Kurpichev (MIIGAiK) dealt with the compilation of Data Organization on the Zond Program for access by Internet.

Janna Rodionova of the Sternberg State Astronomical Institute Moscow, Lomonosov State University presented a compilation of hypsometric maps of the Moon and a process for automated production of the map of Isidis Basin. G.Burba of the Vernadsky Institute of Geochemistry and Analytical Chemistry (RAN) discussed historical and current status of cartographic aspects of Venus, whereas M. Fleis of the Institute of Geography, Russian Academy of Science presented a paper on Coordinate System Transformation for Non-spherical Celestial Bodies.

There were several interesting poster presentations from Canada, USA and Germany.

Philip Stooke of the Department of Geography (University of Western Ontario, Canada), working for a long time on modern history of the Moon explorations, contributed to the meeting with a poster on the theme "Russia on the Moon: recording space history in The International Atlas of Lunar Exploration". Jim Zimbelman, of the Smithsonien Institution, in Washington D.C. presented a paper related to the new geologic mapping of Mars using THEMIS daytime thermal images from Mars Odyssey spacecraft. Another interesting poster was introduced by a team of the Institute of Planetary Research (German Aerospace Center) and the Department Photogrammetry and Cartography of the Technical University of Berlin. Its theme dealt with "Combining Mars Data in the open source Geo Information System GRASS for Geological Mapping".

The meeting of the Commission on Planetary Cartography included some discussion concerning the main projects of the Commission's activity, especially concerning the next version of the Glossary and GIS structure on Planetary Cartography. An excursion to the Star City was organised for the conference participants.

On July 2004 the Scientific Conference "INTERCARTO-10" took place in Vladivostok (12-15 July 2004) and Chan-Chun, China (16-19 July 2004). The title of this Conference was "Sustainable Development of Territories: GIS and Practical Experience". The main themes of this Conference focused on:

- GIS and ecological, economical, social and political components of sustainable development;
- Political and ethnographical aspects of sustainable development of territories;
- Sustainable development and tourism;
- New media-technology and education for sustainable development.;
- Planetary Cartography: current state and perspectives.

A session on Planetary Cartography and the Commission's meeting took place during the conference. The Program of the session included the following presentations:

- *Development of the Concept for Electronic Atlas of Terrestrial Planets and their moons* (K.B.Shingareva, S.M.Leonenko, Laboratory of Planetary Cartography and I.P.Karachevtseva, Centre of Thematic Cartography, MIIGAiK, Moscow, Russia)
- *GIS Development on the results of the Russian Space Program* (Krasnopevtseva B.V., Kurpichev A.V. Moscow State University for Geodesy and Cartography, Moscow, Russia).
- *Multilingual Planetary Maps for Non-Professional Audience: Visualisation and Nomenclature* (H. I. Hargitai, Eötvös Loránd University, Budapest ;
- *Morphographic Projection Transformation in Compound Projection of Triaxial Ellipsoid* (L.M.Bugaevsky, K.B.Shingareva, Moscow State University for Geodesy and Cartography(MIIGAIK), M.E.Fleis, Institute of Geography, Russian Academy of Science, Moscow, Russia).

There were many questions concerning the current state and development of Planetary Cartography. An excursion on a ship along Vladivostok bay was organized as a post-conference event.

*Kira Shingareva, Chair ICA Commission on Planetary Cartography*

*Participants of the Planetary Cartography Session in Vladivostok.*

*The Jubilee International Scientific and Technical Conference. Participants of the Planetary Cartography Session (from left to right): Alex Kurpichev, Eugen Kastorny, Maria Fleis, Janna Rodionova, Kira Shingareva, Egon Dorrer, Tantyana Skobeleva, Henrik Hargetai, Sultan Valeev, Vladislav Shevchenko.*

*Visit to Star city: (from the left) Ekaterine V.Kastornaya, Eugen M.Kastorny, B.V.Krasnopevtseva, Milan Konecny, Henrik Hargetai, Egon Dorrer*

*Jubileum Conference party. Harold Mollering and his wife with Kira Shingareva.*

## Theoretical Cartography and Education and Training

### Joint Seminar in Vilnius (Lithuania)

The seminar 'Cartographic Education and Training' was held on the 29th June 2004 at Vilnius University. It was the second joint seminar organized by the ICA Commissions on Theoretical Cartography (CTC) and Education and Training (CET). The Cartographic Centre of Vilnius University was the host of the first joint seminar, held on March 2003.

The agenda of the one-day meeting organised by Giedre Beconyte (which was held the day after the annual meeting of the Lithuanian Cartographers) included two oral sessions with seven papers, a poster session with five posters, and a closing round table. The organizers plan to publish the results of the joint seminar as a collection of papers.

*Laszlo Zentai (Chair, ICA Commission on Education and Training) and Alexander Wolodtschenko (Chair, ICA Commission on Theoretical Cartography)*

*Participants of the Vilnius Seminar*

## Generalisation and Multiple Representation

The Commission is planning two events prior to the ICC 2005 in A Coruña.

- **A one day tutorial on the science of map generalisation and multiple representation.**

  In essence, the tutorial intends to encourage new membership to our commission. The day could have been entitled 'All you ever wanted to know about generalisation but were afraid to ask', and it is aimed at those with brief knowledge of the topic, but wanting to know more about the theory behind it, and how it might be used. This one day tutorial will take place in A Coruña on Sunday 10th July 2005.

- **Workshop:**

  Following on the series of annual workshops organized by the Commission, our next workshop will be held on the 7-8 July, in A Coruña, Spain. The two days of presentations, brain storming sessions and discussions will focus on, but not limited to: 3D and temporal generalisation, mutli-scale databases, categorical and thematic database generalisation, methodologies and algorithms for

generalisation, evaluation and quality control techniques for generalisation solutions, management of update in the context of multiple representation, generalisation in the context of multiple representation databases, interface design and intuitive methods for map specification.

More information about the events and registration is available at: htpp://ica.ign.fr

*William A Mackaness and Anne Ruas*
*ICA Commission on Generalisation*

## Theoretical Cartography

Under the motto 'The selected problems of Theoretical Cartography' the commission on Theoretical Cartography held its third seminar between the 3–4 August 2004 in Kyiv, the capital of Ukraine. Participants from Canada, Germany, Lithuania, Russia and the host country, Ukraine, met at the Kyiv Production Center 'Cartografia' led by Dr Rostyslav Sossa. On the first day, two sessions with eight papers and two posters, followed by discussions were organised. The following papers were presented:

- 'A contribution to the semantic analysis of map symbolism', by H. Schlichtmann (Canada);
- 'Present State of Mapping of the Ukraine Territory', by R. Sossa (Ukraine);
- 'Cartosemiotic analysis of the Ecologic Atlas of the Dnipropetroskk Region, by I. Rotanova (Russia) and A. Wolodtschenko (Germany);
- 'Some aspects of the development of cartosemiotics in Ukraine', by A/ Gordyeyev and V. Shevchenko (Ukraine);
- 'Cartosemiotic analysis of the Lithuanian Historical Atlases', by G. Beconyte, J. Spuraite (Lithuania), and A. Wolodtschenko (Germany);
- 'Cartosemiotic Features of Symbols construction for charts of the Ukraine National Collection', by O. Maarchenko (Ukraine);
- 'Comparison of thematic maps for landscape typology using GIS', by J. Konstantinova, M. Pileckas, J. Spuraite (Lithuania);
- 'On cartographic and cartosemiotic research methods', by A. Wolodtschenko (Germany).

On the second day, the organizers planned a cultural program that included visits to the Kyiv National Museum of Nature (with the oldest pre-historic map of the Ukraine), and the Archeaological Museum in Trypilie (Trypilie Culture).

The results of this seminar will be published as a collection of papers. The next Commission meeting is planned in A Coruña, coinciding with the ICC 2005.

*Alexander Wolodtschenko*
*Chair, ICA Commission on Theoretical Cartography*

*Organizers of the Seminar: A. Wolodtschenko (left) and R. Sossa (right).*

*Participants of the Kyiv Seminar*

## Spatial Data Standards

Since June 2004, our ICA book, *"World Spatial Metadata Standards"* has been in galley proof production at Elsevier. Just now the galley proof copies are being sent to the approximately 50 chapter authors of the book. The master manuscript of Parts 1 - 4 were sent to Elsevier in April, 2003, and the final manuscript of the version 7.0, Part 5 "Spatial Metadata Standards Crosstable" and the front sections or the book were sent to Elsevier in May of this year.

At the Berlin Plenary meetings a copy of the "ICA Prototype V 6.0 Spatial Metadata Standards Crosstable" was presented to TC211 Chair Olaf Østensen as part of the ICA Spatial Data Standards Commission Report to the TC211 Plenary Meetings. This metadata crosstable is another tangible contribution that the ICA Standards Commission has made to the work of TC211 over the years. The Volume 3 book on "World Spatial Metadata Standards" will come out a bit later.

On July, 2004 the Commission held a meeting at the IHB Headquarters in Monaco. The Commission continued its work on modeling the SDI. A major part of its 2003-07 work on the SDI will be to develop a UML model of the SDI. This idea developed out of a basic discussion begun in a couple of years ago, and developed in more detail at more recent meetings. This new scientific thrust by the Commission was proposed and approved as the major task in the 2003-07 Terms of Reference at the Durban ICA General Assembly the following week. The 2004 Commission meeting held at the International Hydrographic Bureau headquarters in Monaco was devoted to extend this SDI modeling effort.

We also plan to establish a scientific liaison status with all of the major SDI groups in the world, similar to our Category A Scientific Liaison we hold with TC211.

*Harold Moellering*
*Chair, ICA Commission on Spatial Data Standards*

## Gender and Cartography

The Commission Chair reports on three issues:

- The "Population and the Environment" Commission of the International Geographic Union (IGU) is interested in the Commission's project associated to the production of guidelines related to preparing interactive maps of population's structure illustrating complexity of spatial distribution of various groups of people living in the same territory. This problem is of important practical meaning for many official bodies and social organizations steering from the sustainable development of the environment;
- Our proposal of exchanging actual information and developing closer collaboration between the GaC and FIG's WG "Women in Geodesy" has been accepted. Potential forms of exchange have been suggested for further discussion using the FIG's WG internet page (ICA Newsletter, June 2004);
- Several of GaC members are interested in active participation in 22nd ICC. A session devoted to 21st theme: "Gender and other under-represented groups and Cartography" will be probably organized.

*Ewa Krzywicka-Blum*
*Chair, ICA Commission on Gender and Cartography*

## Working meeting in Wroclaw (Poland)

The ICA Commissions on Gender and Cartography and Theoretical Cartography are pleased to announce that initial works connected with the preparation of a joint working meeting have been successfully completed. As such the event will take place in Wroclaw (Poland), on the **11-12 February 2005**.

The meeting will focus on theoretical and practical solutions related to new demographic maps namely: subject of modelling, spatio-temporal completeness of data, review of the most comprehensive and usable methods of presentation and choice of the most effective ways of disseminating new types of cartographic products.

Discussions will be preceded by an introduction given by a speaker of high authority in the area. The organizers invite all persons interested in the actual role of cartography in the recognition of rapidly changing spatial distribution of different minority-groups of people, at regional as well as global scale. Maps presenting gender-oriented groups will be one of the main problems to be considered. All participants will have the opportunity to present and analyse selected results related to their own researches and experiments, as well as other solutions well known and widely applied but not the most effective for interested users.

Wroclaw is a very attractive university city with many old monuments, beautiful gothic, renaissance and modernistic architecture (the People Hall), many cultural institutions, theatres, opera, museums, and art galleries.

Preliminary intention of attendance to the meeting should be made before the 15th December 2004, because of the need of earlier reservation of sufficient number of university guest rooms as well as computer laboratory with suitable number of individual places.

More information will be accessible later at:
http://www.geo.ar.wroc.pl/GC/
Register your interest in participating on this event by emailing to:
ekblum@kgf.ar.wroc.pl

Postal address:
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*Ewa Krzywicka-Blum*
*Chair, ICA Commission on Gender and Cartography*

## Maps and the Internet

A workshop on Geo-Hypermedia will be held on April 4-5, 2005 in Denver, Colorado (USA), immediately prior to the meeting of the Association of American Geographers (www.aag.org). This workshop will be closely tied to a publication of a book entitled Geo-Hypermedia. More details on this workshop and the book will be forthcoming.

*Michael Paterson*
*Chair, ICA Commission on Maps and the Internet*

# The Cooperative Research Centre for Spatial Information:

***An Australian example of joint venture between universities, government organisations and private enterprises.***

## What are the Cooperative Research Centres?

The CRC Programme supports research partnerships between the public sector (universities and government research agencies) and the private sector (firms and industry organisations). CRCs turn their research results into commercial products and services or transfer new know-how to industry or other users. They also train researchers in the skills needed to work in industry and improve private sector research and development. The CRC Programme was launched in 1990, funded under a scheme of the Australian government aimed at backing Australia's ability to promote science and innovation (URL 1). From 2004, the Cooperative Research Centres (CRC) Programme has a stronger commercial focus. The Australian Government will provide an extra $65 million for selection rounds in 2006 and 2008, as well as to fund successful applicants from the 2004 round. This builds on the $62.5 million additional funding provided in the 2003–04 Budget. A total of $925.9 million is being provided for administered grants between 2006–07 and 2010–11. At present there are about 70 Cooperative Research Centres in Australia covering a wide range of applications (e.g. Geotechnologies, Biosecurity, Desert Knowledge, Fire Management, Landscape Environment and Minerals, Tropical Savannas, etc.). Last year, the New Scientist Magazine described Australia's CRCs as *'the role model for collaboration between business, academic and government the world over'*. Since 1990 the CRC programme has received over $1 billion from the Commonwealth government and over $4 billion from the industry sector.

## The Cooperative Research Centre for Spatial Information (CRC-SI)

This Centre is a joint venture that begun in July 2003, with an initial duration of seven years, and the purpose of creating new wealth for the participants of the CRCSI and for the nation through research innovation and commercialisation, educational activities and powerful collaboration to build institutional capacity. At present the Centre has 56 participants ranging from Universities, government departments and small to medium, sized enterprises (SMEs). The Centre's vision is to *'make the CRCSI a world leader in spatial information applications that are affordable, useful and readily available to all, at any time and in any place'*. The application of the vision in Australia leads to the concept of Virtual Australia, ie the holistic representation of the vast array of information about our world in three dimensions and at any useful scale. In simple terms this means one can remotely access map-based information, combine it with information from other sources, conduct analyses, view the information in three dimensions, conduct forecasts (the fourth dimension), analyse historic trends, supply information and analyses to others, and know one's geographic position. Moreover it provides us with the ability to convey this position to others, at any time. Spatial information and its enabling technologies are therefore inextricably linked through the vision. The same concept can be applied anywhere in the world and the CRCSI wishes to develop the application of the vision wherever there is a demand. It is implicit in the vision that new or existing spatial information and other information will be seamlessly integrated for the benefit of the user at an affordable price, since it is recognised that for most applications spatial information is used with non-spatial information.

The Vision of the CRC will be realised when spatial information is made useful and available to all – at any time and in any place. Implicit in this vision is that the needs of SI users will be met through the development of the necessary supporting products and services. These will provide accessibility and knowledgeable use of SI within a favourable environment of regulatory policies and institutional frameworks. An enhancement of industry and user capabilities is essential if the broad spectrum of SI needs within society is to be satisfied. New developments in the acquisition, analysis, synthesis and delivery of SI are being continually called for. This in turn requires active research and development in the science and technologies of positioning, modelling and data processing, integration and archiving, and dissemination and visualisation of SI. The CRCSI research portfolio focuses upon data collection technologies, including:

- Global navigation satellite systems and integrated multi-sensor positioning systems (programme 1)
- Space and airborne imaging and ranging systems, and inertial measuring units (programme 2)
- Spatial database technology and geographic information systems to support a national spatial data infrastructure (programme 3)
- Earth observation technologies for environmental and resource monitoring and management (programme 4)
- Visualisation techniques and tools for enhanced decision support capability (programme 5).

In formulating its research projects the CRCSI will maintain a focus upon meeting the needs of the user of SI, and be responsive to the future needs of the Australian SI industry. This demands early stage planning for user adoption and utilisation of research outcomes, along with commercialisation of technological innovations for the benefit of CRCSI participants, the SI industry and Australia as a whole. In the external environment relevant societal and technological trends include on-line government with greater access to and interchange of SI; the devolution of many non-policy functions within government to industry; the growing volume and value of technological innovations emerging from the SME sector; multi-disciplinary research collaboration to address complex national environmental issues; greater sectoral integration in these same issues and others; a shorter lifecycle for many SI technologies; and the 'consumerisation' of formally specialist products, systems and procedures afforded by miniaturisation in electronics, and advances in computing and in information and communications technology. The path from adoption of project outcomes to realisation of the vision is by no means direct, yet all research projects will be designed to produce innovative solutions, through the generation of new intellectual property, to problems that currently impede progress towards "useful spatial information for all at any time and place." Project outputs will enhance capability within the SI industry and user community, which in turn will contribute to the usability of SI and to the knowledge base to support broader SI utilisation.

The emerging research programme is based on 15 projects, namely:

1. Enhancing Australia's core geodetic infrastructure
2. Quality control issues for real-time positioning
3. Integrated positions and geo-referencing platform
4. Automated mapping and feature extraction from space, aerial and terrestrial imagery

5. Fundamental modelling, analysis and systems development for integrated imaging and positioning sensors
6. Concepts and principles for Virtual Australia
7. Intelligent geocoding
8. Access to spatial data
9. Near real-time remote sensing products from MODIS based NADIR surface reflectance and bio-physical models
10. Digital elevation model generation and differential interferometric synthetic aperture radar (InSAR)
11. A near real time crop and pasture package: integrated remote sensing technologies for improved farm management
12. Development of imaging spectrometry (hyperspectral imagery) products for characterising, mapping, monitoring and managing environmental stress
13. Support tools for spatial data mining and agent-based modelling
14. Interfacing visualisation with SDI for collaborative decision making
15. Communicating spatial data quality.

More information about these projects and the CRCSI can be accessed through the Centre's website www.crcsi.com.au or by contacting its Chief Executive Officer, Peter Woodgate at crcsi@crcsi.com.au

*Graciela Metternicht, Curtin University of Technology*

**Acknowledgements:**

This article was compiled by Graciela Metternicht, Leader of the CRC-SI project 'A near real time crop and pasture package: integrated remote sensing technologies for improved farm management', with information of the CRCSI Annual Report 2004, kindly provided by Mike Ridout, CRCSI Communication's Director.

URL1: http://backingaus.innovation.gov.au/2004/commercial/crc.htm

## The National Historical Geographic Information System (NHGIS)

The National Historic Geographic Information System (NHGIS) is a five-year NSF-funded project designed to create a comprehensive U.S. census database – at the census tract and county level – for both the geographical and attribute data. Technological change presents an unprecedented opportunity to make these data readily available for social science research; thus bringing the complete census within reach of social scientists will unlock the potential of two centuries of data collection, and will stimulate research in economics, history, sociology, geography and other fields.

The project consists of three major components: data and documentation, mapping, and data access. The data and documentation component gathers all extant machine-readable census summary data; fills holes in the surviving machine-readable data through data entry of paper census tabulations; harmonizes the formats and documentation of all files; and produces standardized electronic documentation according to the recently developed Data Documentation Initiative (DDI) specification. The mapping component creates consistent historical electronic boundary files for tracts, minor civil divisions, counties and larger geographic units. The data access component creates a powerful but user-friendly web-based browser and extraction system, based on the new DDI metadata standard. The system provides public access free of charge to both documentation and data, and presents results in the form of tables or maps.

Over the past twenty years, there has been a rapid growth in the area of geographic information systems (GISs) – powerful computer-based methods for the acquisition, storage, analysis, and display of spatial data – and the related creation of spatially-addressable data sets. Much of these spatial data are related to population statistics, including the Bureau of the Census' TIGER files (geocoded street and enumeration-unit files that allow for spatial analysis and mapping). GIS has significantly broadened the scope of questions that can be asked with geospatial data, has enabled a rapid growth in spatial analysis, and has popularized the use of mapping techniques for the display of spatial information. GIS has facilitated the rapid growth of geodemographic analysis, including geomarketing, and many forms of population analysis in general, by integrating together the wealth of population data that are now spatially-referenced with the powerful spatial-analytic capabilities of GISs. Examples of these spatial analyses include the assessment of environmental justice/racism at multiple spatial scales (regional, urban, community); the calculation of segregation indices and evaluation of urban poverty, and the indentification of concentrated poverty; the development of neighborhood indicators, including a multitude of economic and social measures based on population data; and the spatial/temporal analysis of census data.

Increasingly, researchers are attempting to use the census geographic base files for historical geodemographic analyses. For instance, after the 1990 census it was possible to document the changes in geodemographics between 1980 and 1990, using the 1990 TIGER files. A common application was mapping the change in minority populations between the two periods. However, researchers are constrained mostly to two or three decades of temporal analysis with the availability of only pre-1970 digital files. The development of digital geographic base files for the period 1940 to 1990 would allow a detailed analysis of population change, at much finer levels of resolution (especially tract level), for most urban areas. Many potential research projects/application areas would benefit from the availability of such boundary files.

To address these needs, the National Historic Geographic Information System (NHGIS) is a five-year NSF-funded project to build a comprehensive census database, for both boundary files and attribute data, for the entire United States at both the county and census tract level. Using both existing digital data, and scanned census maps, a temporal database is being built. At the same time, all available statistical data are being digitized so that users will be able to pursue true spatio-temporal analyses. This database will enable researchers to pursue many types of geodemographic analysis not possible before. Two research activities for the project include areal interpolation and cartographic generalization. We are now developing and testing a multitude of different interpolation algorithms that will allow researchers to make direct statistical comparisons across decades. For instance, a user might wish to calculate the percent change in poverty from 1960 to 1990 for Los Angeles. Research on the project is also exploring the creation of multiple scale databases at 1:150,000, 1:400,000, and 1:1,000,000 through the application of generalization algorithms. All boundary and statistical data will be delivered through a Web interface, and available in the summer of 2006.

For further information on the project, please see the Website: http://www.nhgis.org/

*Robert B. McMaster, ICA Vice-President (USA)*
*Department of Geography, University of Minnesota*

## Tail Pieces

### Affiliates

One of ICA's affiliates, BARCO GRAPHICS, became ESKO GRAPHICS and the Cartographic Division of ESKO GRAPHICS has been taken over by the STAR Informatic Group. STAR Informatic Group is the leading European GIS Editor based in Belgium (www.star.be). The Cartographic Division of ESKO Graphics became the Publishing Solutions Business Unit of the STAR Informatic Group, headed by Mr Paul Duré.

## Forthcoming Events

**2004 International Symposium on GPS/GNSS**
Date: 6 - 8 December
Venue: Sydney, Australia
University of New South Wales
http://www.gnss2004.org/

**International Conference On Sustainable Transportation in Developing Countries "ENVIRONMENT 2005"**
Date: 30 Jan - 2 Feb 2005
Venue: Abu Dhabi, United Arab Emirates
www.ee-uae.com/conference/index.html

**Map India 2005**
Date: February 7 - 9, 2005
Venue: Hotal Taj Palace, New Delhi, India
Email: info@mapindia.org
web: www.mapindia.org

**Kuwait 1st International GIS Conference & Exhibition**
Date: 5-7 Feb 2005
Venue: Kuwait, KUWAIT
www.gulfgis.com

**IMTA (EAME) Conference and Trade Show**
Date: 11 –12 February 2005
Venue: London (UK)
http://www.maptrade.org/docs/events/43/London%2005.pdf

**Auto-Carto2005**
Date: March 18-23, 2005
Venue: Riviera Hotel, Las Vegas, Nevada (USA)
http://www.acsm.net/cagis/carto2005/

**First International Symposium on Geo-Information for Disaster Management**
Date: 21-23 March, 2005
Venue: Delft, The Netherlands
Email : e.fendel@otb.tudelft.nl
WebSite : http://www.gdmc.nl/gi4dm

**ASPRS Annual Conference**
Date: 7-11 Mar 2005
Venue: Baltimore, USA
http://www.asprs.org/baltimore2005/index.html

**4th International Symposium on Digital Earth**
Date: 28-31 Mar 2005
Venue: Tokyo, JAPAN
http://www.isde-j.com

**12th ESRI South Asia User Conference 2005**
Date: 2 – 4 March 2005
Venue: Nusa Dua, Bali
http://http://www.esrisa.com/pages/NewsEvents

**ASPRS Annual Conference**
Date: March 7-11, 2005
Venue: Marriott Waterfront Hotel, Baltimore Maryland
http://www.asprs.org/baltimore2005/index.html

**GITA's Annual Conference 28, Crossing Boundaries,**
Date: March 6-9, 2005
Venue: Colorado Convention Center, Denver, Colorado
www.gita.org/events/annual/28/index.html

**5th International Symposium Remote Sensing of Urban Areas (URS 2005)**
Date: March 14-16, 2005
Venue: Arizona State University, USA
http://www.urban-remote-sensing.org

**GSDI-8 CONFERENCE and FIG Working Week**
Date: 16 – 21 April 2005
Venue: Semiramis Intercontinental Hotel, Cairo Egypt
http://www.fig.net/cairo

**International exhibition of geodesy, cartography, geology, geoinformation systems**
Date: 27 – 29 April 2005.
Venue: Novosibirsk, Russia
http://www.sibfair.ru

**8th International Conference Remote Sensing for Marine and Coastal Environments**
Date: 17 – 19 May 2005
Venue: Casino Nova Scotia Hotel, Halifax, Nova Scotia, Canada
http://www.waterobserver.org/event-2005-05/

**31st International Symposium on Remote Sensing of Environment "Global Monitoring for Sustainability & Security"**
Date: 20-24 Jun 2005
Venue: Saint Petersburg, RUSSIAN FEDERATION
www.niersc.spb.ru/isrse/index.shtml

# Forthcoming Events

For Your Diary

**GIS PLANET 2005**
Date: May 30 - June 2, 2005
Location : Lisboa, Portugal
Email : planet@gisplanet.org
WebSite : www.gisplanet.org

**EARSeL Symposium — Global Developments in Environmental Earth Observation From Space**
Date: June 6-11, 2005.
Venue: Porto, Portugal
http://www.fc.up.pt/ earsel2005.

**6th Joint ICA/ISPRS/EuroGeographics Workshop on Incremental Updating & Versioning of Spatial Data Bases**
Date: 8-10 July 2005
Venue: A Coruña, Spain
geo.haifa.ac.il/~icaupdt/meetings/meetings.htm

**22nd International Cartographic Conference**
Date: 9 – 16 July 2005
Venue: A Coruña, Spain
www.icc2005.org

**4th FIG Regional Conference for Latin America and the Caribbean.**
Date: 25-29 September 2005
Venue: Havana, Cuba
Contact: FIG Office, email: fig@fig.net

**1st Regional Biannual Conference: Africa Chapter of International Association of Lands Ecology (Africa-IALE)**
Date: 19 – 23 July 2005,
Venue: Elmina, Ghana.
http://calmit.unl.edu/africa-iale/cd/.

**21st International Conference on the History of Cartography.**
Date: July 17-22, 2005
Venue: Eötvös Loránd University, Budapest, Hungary
http://lazarus.elte.hu/~zoltorok/ichc2005.htm

**Africa GIS'05**
Date: 29 August – 2 September 2005
Venue: Sandton Convention Centre, Johannesburg, South Africa.
http://www.africagis2005.org.za.

**The 16th William T. Pecora Memorial Remote Sensing Symposium**
Date: October 23-27, 2005
Venue: Sioux Falls Convention Center Sioux Falls, South Dakota

**Gulf Traffic - GIS Zone**
Date: 12-14 December, 2005
Venue: Dubai International Exhibition Centre
Email : davyd.farrell@iirme.com
WebSite : www.gulftraffic.com

**6th International Conference on Argumentation of the ISSA**
Date: 27 – 30 June 2006
Venue: University of Amsterdam
www.hum.uva.nl/issa

**CONTENTS**



## Contributions

Please send contributions to:
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http://www.incaindia.org/membership.htm

*The International Cartographic Association welcomes new affiliate members.*

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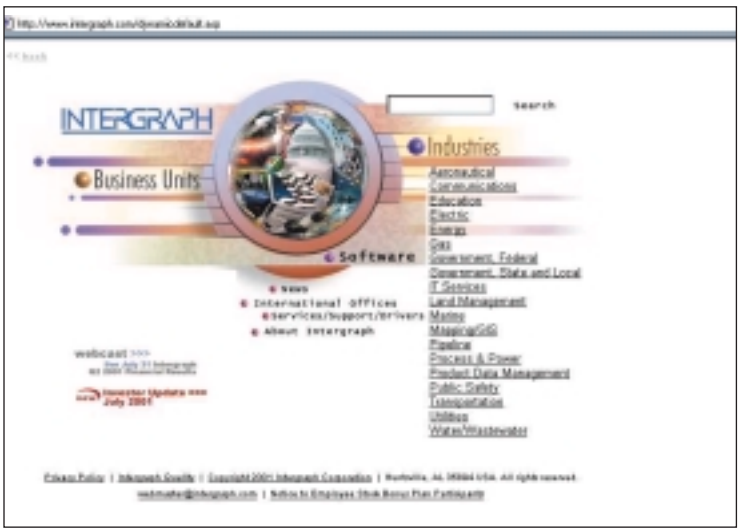


**Intergraph:**www.intergraph.com


**ESKO Graphics:**www.star.be


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