

### Editorial

**T**his issue features a variety of contributions from all over the world. We join the celebrations of the Institute of Cartography at ETH Zurich, Switzerland, and the South Africa's National Mapping Organization in their achievements of 75 and 80 years of service excellence to the field of Cartography and Mapping.

Ferjan Ormeling and Michael Wood present short reports of meetings with the International Geographic Union (IGU) in Seoul and the International Map Trade Association (IMTA) in Heidelberg. Several ICA commissions had active agendas over the last six months with workshops, conferences and seminars organised in almost all continents. Likewise, the reports' and upcoming events' sections summarise the Commissions' workshops and seminars planned to take place before the 20th ICC Conference in Beijing.

A very interesting initiative on the Websites of National Mapping Agencies is presented by Nicolie Emmer and Menno Kraak of the International Institute for Aerospace Survey and Earth Sciences (ITC). A request for paper contributions to the Geographical Sciences Bulletin of the National Institute of Cartography and Remote Sensing, Algeria is included as well.

Special thanks to the Commissions' Chairs for their prompt reaction to my bi-annual request for contributions. This Newsletter will continue to be successful with your sustained support. In this regard, I encourage your feedback on new developments in the Newsletter and how it may better serve our Society.

*Graciela Metternicht, Editor*



*The ICA Executive Committee, Local Organizing Committee of the 20<sup>TH</sup> ICC, and ICA Editor at the August 2000 ICA Executive meeting.*

### A Joint Message from the Editor and the Executive Committee

**A**n ICA Executive meeting was held in Beijing, from August 7-9, 2000. In addition to discussions on the ICA commissions' activities, ICA involvement with sister societies and in global projects such as digital Earth, we were briefed on the preliminary program organized by the Local Organizing Committee of the 20<sup>TH</sup> ICC to be held at the International Convention Centre in Beijing, next August. The call for abstract submissions closed on the 31 October 2000, and authors will soon be notified about the acceptance of their papers. The Conference program is being finalised, and it promises to be as successful as the previous International Cartographic Conferences.

In an effort to integrate cartography, culture and entertainment, the LOC is organizing pre- and post- conference trips to cover all range of expectations.

Excursions to places like the Three Gorges, Xian, Lhasa, Chengdu, Hangzhou and Guilin are being finalized. Please keep checking the 20<sup>TH</sup> ICC website ([www.sbsm.gov.cn/icc2001/](http://www.sbsm.gov.cn/icc2001/)).

We would like to thank the LOC for all the efforts made so far, and for sharing with us a 'slice' of the social program ahead. Please stay 'tuned' to the ICC and ICA web sites for the latest announcements, and do not hesitate to contact the Local Organizing Committee for the 20<sup>TH</sup> ICC at [icc2001@sbsm.gov.cn](mailto:icc2001@sbsm.gov.cn) if you require any further information.

We look forward to seeing you in Beijing!!

*Bengt, Ferjan, Kirs, Alberta, Takashi, Li Li, Elri, Robert, Milan, Michael and Graciela.*

# 20th International Cartographic Conference

## Barbara Petchenik Children's World Map Competition

The Barbara Petchenik Award was created by the International Cartographic Association in 1993 as a memorial for Barbara Petchenik, a past Vice president of the ICA and cartographer who worked through her life with maps related to children. The aim of the contest is to promote the creative representation of the world in graphic form by children.

The awards are given every two years during an ICA conference or an ICA general assembly, preferably at least one for each continent, with special consideration to the age of the child producing the drawing. The awarded drawings are submitted to UNICEF for consideration as greeting cards.

Participating nations are encouraged to report on the ways they have used for collecting drawing (video report, etc.) and to collect and archive maps for further research.

### Objective of the competition

The aims of the competition are to promote children's creative representation of the world, to enhance their cartographic awareness and to make them more conscious of their environment.

### Rules of the competition

ICA member nations will collect maps, on the theme "Save the Earth," produced by children under 16 years of age. The international judging will focus on three criteria: 1) a recognizable message, 2) cartographic content, and 3) the quality of execution.

In other words, judges will be looking for:

1. A recognizable connection between the form, shape, and use of cartographic elements which creatively address the Competition's theme;
2. A recognizable image of all or a large portion of the world in which the shapes and relative locations of land masses and oceans are as correct as can reasonably be expected for the child's age and within the context of the "system of projection" used;
3. Appropriate cartographic elements such as symbols, colors, names and labels, etc., which help address the Competition's theme;

4. Clarity and legibility of the point, line and area symbols appropriate to the media of expression, whether on paper or other surfaces, whether drawn or made up of indigenous materials;
5. Expressive rendering and appropriate use of the perceptual dimensions of color, i.e., changes in value for quantitative distinctions and changes in hue for qualitative distinctions;
6. Overall aesthetic quality in such matters as balance and harmony among the image elements.

The maximum size of a map must not exceed A3 (420 mm x 297 mm or 17 x 11 inches). Any number of "systems of projection" can be used to generate the coastlines and other base material (e.g., international boundaries and graticule). These can include tracing or copying an existing world map or using a computer program.

Each map must have the following information on a label attached to the back side of the representation: the name, age, school address and country of its author, and the title in either English or French as well as in the author's language.

The winning entries will be submitted to the UNICEF International Art Committee by the ICA Executive for consideration as greeting card designs. ICA may use them as well. Any participant agrees that his/her representation may be reproduced by ICA or UNICEF or scanned for publication on the Internet by Carleton University without consultation or copyright fees. Competition maps are archived at Carleton University's Map Library and are being prepared for web viewing (see <http://collections.ic.gc.ca/children/> and <http://www.library.carleton.ca/madgic/maps/children/index.htm>).

### National coordinator's guidelines for handling the competition

Each member nation must nominate a coordinator to run the contest in his/her country. The name of the coordinator must be received by the ICA Secretary General at least one year prior to the submission date of map entries. Countries in which no national coordinator is identified may participate provided that the Executive receives the name of a country member willing to act as the coordinator for that country.

Each national committee will select a maximum of five maps to be forwarded to the ICA Secretary General. For the purposes of the national competition, criteria other than those used for the international competition may be considered. The maps selected by the national committees must be sent to the ICA Secretary General and not to the Conference site. They will be displayed during the 20th International Cartographic Conference of the International Cartographic Association in Beijing, China, 6-10 August 2001.

When submitting their selected entries to the ICA Secretary General, national bodies are requested to include a letter which, for each submission, gives the following information: the name, age, school address and country of its author, and the title in either English or French (the ICA's official languages) as well as in the author's language. All entries to the ICA Secretary General must have a label attached to the back side of the representation which includes the name, age, school address and country of its author, and the title in either English or French (the ICA's official languages) as well as the author's language.

### Deadlines:

The maps and accompanying letter should be sent so as to arrive by June 1, 2001 for the Beijing conference (or June 1, 2003 for the Durban conference) to:

ICA Secretariat  
c/o Faculty of Geographic Sciences  
Utrecht University  
P.O. Box 80115  
3508 TC Utrecht  
The Netherlands

National bodies are responsible for distributing the certificates awarded by the ICA Executive. These certificates will be produced and provided by the ICA Executive. Participating nations are encouraged to collect and archive all of the entries in their national competitions and to report to the Commission on their methods of announcing the competition, establishing any other judging criteria, and the selection process used. This information will be of value in evaluating the success of the Competition and in making adjustments in the future.

## 75 years of cartography at ETH Zurich

The Institute of Cartography (IKA) at ETH Zurich was founded in 1925 by Professor Eduard Imhof. Therefore, in 2000 it can look back on 75 years of history. The institute evolved during all those years from a "one professor service" into a modern research and teaching institution with over 20 employees. It also reflects the changing history of cartography in the 20th century. Many milestones in modern cartography were influenced by members and projects of IKA. In fact, the Institute of Cartography at ETH Zurich is the first cartographic university institute worldwide. The two "International University Training Courses in Cartography" in 1957 and 1960 were the first continuing education courses at ETH Zurich. Both atlas projects, the "Swiss World Atlas" (formerly "Schweizerischer Mittelschulatlas", the official Swiss School Atlas) and the "Atlas of Switzerland" (the Swiss National Atlas) provided major contributions to develop the comprehensive cartographic doctrine of the professors Eduard Imhof and Ernst Spiess as well as to the challenging level of Swiss cartography. The institute maintains manifold scientific and application-oriented contacts, exchange of ideas and collaborations, for instance in the Swiss Society of Cartography (SGK) and in the International Cartographic Association (ICA). Since October 1, 1999, the Institute is part of the new Department of Civil engineering, Environmental Engineering and Geomatics at ETH Zurich. The academic staff mainly instructs students in geomatics engineering, environmental engineering, earth science and geography on how to apply cartographic design rules in a digital environment. Nowadays, a large amount of geodata is processed automatically. But more than ever, the competence of the graduates in evaluating and implementing map based products on paper or on screen is considered very important.

On October 6, 2000, more than 270 members, alumni and friends of the Institute of Cartography gathered in Zurich to celebrate the anniversary with a festive-colloquium. In her opening address, Viola Imhof, Eduard Imhof's wife, was looking back to the roots of the "Zurich school" which started already in 1850 with the topographic and relief maps of Johannes Wild and Fridolin Becker. Ernst Spiess and Lorenz Hurni gave an overview of the years after the retirement of Eduard Imhof which were marked by an enormous technical change. Jürg Bühler informed about the map collection of ETH

Zurich which is one of the largest collection of contemporary maps in Europe. In the second part, members of the institute presented current research projects: René Sieber announced the further development of the new "Atlas of Switzerland – interactive". Due to the success of the first edition, extended GIS, 3D and raster functions as well as data about nature and environment will be included in the next version in early 2003. In this context, Barbara Schneider presented a new, user-friendly interface which allows to query, select, group and intersect GIS data sets in a multimedia environment. Ernst Spiess informed about the planned 4th edition of the "Swiss School Atlas" which will contain 16 additional pages. A CD-ROM version is also under preparation. Andrea Terribilini and Christian Häberling discussed the extension of classical 2D map symbolisation to a full 3D map with specially designed symbols. The latest developments in Web technologies like XML and SVG, and their promising application in cartography, were presented by Andreas Neumann. Christoph Brandenberger demonstrated a free on-line service for calculating map projections over the Internet. Lorenz Hurni and Ernst Hutzler presented a downloadable Freehand-plugin which allows to design a simplified cliff-drawing interactively for topographical maps. Bernhard Jenny presented a new software tool for analytical shadings using different illumination models which can be applied locally and globally. All presentations were published in the Journal "Vermessung, Photogrammetrie, Kulturtechnik" (German, partly French). The institute can provide a limited number of the journal to interested institutions and individuals.

### Links:

Institute of Cartography: [www.karto.ethz.ch](http://www.karto.ethz.ch)  
Atlas of Switzerland: [www.atlasofswitzerland.ch](http://www.atlasofswitzerland.ch)  
Swiss World Atlas: <http://www.educeth.ethz.ch/geographie/weltatlas/>  
ETH map collection: [www.maps.ethz.ch](http://www.maps.ethz.ch)  
Content of colloquium presentations: [http://www.vpk.ch/inhalt\\_1000.html](http://www.vpk.ch/inhalt_1000.html)  
Swiss Society of Cartography: [www.cartography.ch](http://www.cartography.ch)

*Lorenz Hurni*  
*Head of the Institute of Cartography at ETH Zurich*



*A large audience attended the 75th anniversary celebration of the Institute of Cartography at ETH Zurich*



*Hans-Uli Feldmann (left), the president of the Swiss Society of Cartography, and Prof. Lorenz Hurni, head of the Institute of Cartography*



*Walter Imhof (left) and Viola Imhof, son and wife of Eduard Imhof, and Prof. Lorenz Hurni, head of the Institute of Cartography*

## South Africa's National Mapping Organization celebrates 80 years of service excellence

South Africa's National Mapping Organization, the Chief Directorate: Surveys and Mapping in the Department of Land Affairs, celebrated 80 years of service excellence to the people of South Africa in October this year.

The birthday celebrations kicked off with the official function on the 17th October at



# Celebrating Cartography

which many dignitaries and special guests were invited. The Deputy Minister of Land Affairs Professor Dirk du Toit spoke in glowing terms of the contributions of the Chief Directorate to the spatial planning of the country. There is an increasing awareness of the important part that the Chief Directorate has played, continues to play and will play in the development of South Africa. On the one hand the Chief Directorate preserves the rich heritage of survey and mapping, while on the other, it promotes the knowledge and necessity of geo-spatial products, maintains the survey and mapping system and assists with the land reform process.

The Director-General of Land Affairs, Dr GP Mayende presented a short summary of the achievements of the Chief Directorate over the past 80 years. If one is compelled to single out the most significant achievement of the Chief Directorate, it must be South Africa's integrated survey system. It is this system that provides the backbone for all of the Chief Directorate's other achievements. The system is defined by a homogeneous, country wide co-ordinate system, physical evidence of which are the familiar trigonometrical beacons dotted around the country on prominent topographical features. Most surveys and maps are referenced to this system. But like many great achievements, it is largely unappreciated.

This event also saw the launch of the MapAware MapTrix kit. 2,000 of these kits were handed to the Minister of Education Professor Kader Asmal for use in underprivileged schools. The MapTrix kit is a self-study aid designed for learners in secondary schools with a view to promoting greater map literacy. The 2 000 kits also contained a copy of the brand new millennium map of South Africa prepared especially for the celebrations. The handing over of these kits was seen as our "gift to the nation". In his acceptance Minister Kader Asmal related his passion for maps and was confident that these kits would generate a similar passion in the learners.

The celebratory events also included various "funday" and social events, the erection of a GPS commemorative plaque at the Cape Town's Waterfront and the opening up of the Chief Directorate's premises for a number of "open days" for the public and learners from schools in the vicinity. The reaction to the "open days" was overwhelming and the interest shown by the public who attended certainly indicated that the art of map making is something that captures the imagination of both old and young.

A commemorative book detailing the rich history of the organization was also published together with a reprint of the first map series

of 4 maps, produced by the organization, of the Cape Peninsula area dating way back to 1930. These old historical maps have generated huge enthusiasm and it is interesting to see how people from all walks of life and different cultures and background share a common ground in looking at old maps.

The celebratory events generated a deep sense of pride in the employees of Surveys and Mapping as they looked back on 80 years of really exceptional achievements.

*Paul Tickner, Director Cartographic Services, Surveys and Mapping South Africa*



*Minister of Education Professor Kader Asmal receiving the 'gift to the nation' MapTrix kit*

## Students' exchange between China and Sweden

Since 1995 a co-operative project has been in operation between Hebei Bureau of Surveying and Mapping, China, and Swedish counterpart, Swedesurvey, the overseas agency of the Swedish National Land Survey. In an attempt to broaden the view of teenagers and to enhance the friendship between the two countries' land surveyors, the Surveying and Mapping Association of Hebei Province and the Sweden Surveyors' Association of Falun arranged a students' exchange visit this year.

This program was put into reality this summer, from August 4 to 25th. During the program, rich and colorful activities were arranged, and the two countries' youngsters really have had a wonderful and memorable time. On August 5th, six Swedish students arrived in Shijiazhuang, the capital city of Hebei province. After a welcome dinner, their Chinese partners led them to their host families. From then on, they began their Chinese adventure, living in a Chinese family, experiencing the daily life, and visiting the most famous tourist sights. There can't be a better way to experience a country in ten days. Since the Swedish students were quite interested in farmers' life, they were showed around a village near Shijiazhuang, seeing the farmers' houses, the pear orchards, and the meeting yard of that village. The visit made

them start thinking about how many ways of living there were. They also had been invited to a teahouse where they experienced a complicated ceremony of drinking Chinese tea and enjoyed the performance of a big Chinese string instrument, called "Zheng" in Chinese. They also went to Beijing, visiting the Great Wall, the Forbidden City, and the Summer Palace and watching the Beijing opera.

During their stay in China, the Swedish students were looked after by Chinese host families. Although the customs were quite different from theirs, they didn't feel it was a problem. Sometimes things they experienced were fascinating to them, like bikes in the street, going to Beijing by train, watching Chinese television, tasting Chinese food with chopsticks etc. They enjoyed the trip very much.

Regretfully, ten days went by very quickly, and they soon returned to their home country. On August 15th, six Chinese students joined their fellow Swedish friends back to Sweden. To the Chinese students who have never been abroad, everything that happened during their trip was just like a dream. The beautiful environment of Sweden, the fresh air, the blue sky, the white clouds and limpid lakes, impressed all the six Chinese students. In the following days, they visited a famous copper mine, the Santa Claus Park, an amusement park and a museum in Falun.

A ten-day tour seems very short. Both countries' children are looking forward to repeat this experience in the near future to see a little bit more about the country and to experience a little more of the culture. Besides, both organizing units believe that the aims of the exchange, to make the students' perspectives of life wider, to enhance the friendship and to get better understanding of the cultures, have been reached. They also believe that this kind of exchanges is beneficial, and therefore, it should be carried on in the future.



*Chinese and Swedish students participating in the exchange program.*

*Caoli, Zhangxianli, Malin, Surveying and Mapping Organization of Hebei, China*

## Meeting with IGU Executive, Seoul, 13 to 15 August 2000

On Sunday 13 August the ICA President and Secretary General joined the IGU executive meeting with their commission chairs. The IGU President, Bruno Messerli, stated that since January 2001, IGU will have its permanent pied-a-terre in Rome in the Villa Celomontana, which will be known as the Home of Geography. The IGU archives now will be transferred from London to Rome, and the house will serve to boost the identity and collective memory of IGU. It will provide a meeting room that can be hired at nominal costs.

During the meeting Bengt Rystedt, presented the plans of ICA regarding international spatial database projects, which stimulated much interest. Some positive aspects such as encouraging cooperation between IGU and ICA commissions, and facilitating exchange of information between both organizations were addressed during the three-day meeting.

*Ferjan Ormeling, ICA Secretary General*

## Hope from Heidelberg?

Earlier this year, during the International Map Trade Association (IMTA) Trade Show and Conference in Heidelberg, there was an important meeting of minds. There were six senior representatives from IMTA, including two from the international organisation, John Coerper (President), Norm Strasma (Executive Director), and four from IMTA-EAME\*, Laurence Barnet (President), Peter Bleekrode (Immediate Past President), Mike Cranidge (Executive Director) and Tony Atkinson (Board Member). Cartography was represented by Peter Nyhlén (Chairman, Swedish Cartographic Association), Theodor Wintges (German Cartographic Society) and Mike Wood (ICA).

Peter Bleekrode chaired the meeting and provided an overview of progress to date. Presentations were then made by Mike Wood and Theodor Wintges, the main themes being Map Production, Education and Marketing. Before this meeting Mike had contacted ICA Commissions, requesting ideas on co-operation with IMTA. Responses, although limited, had been imaginative and enthusiastic and provided encouraging contributions to the group. On Map Production/Publishing/User Needs, there have already been discussions about a joint IMTA-ICA presentation in Beijing, 2001 (possible topics including

content, style and readability). Education activities were discussed in some depth by Theodor Wintges (who outlined the German experience) and progress is anticipated between him, the ICA Commission on Education and Training, and Sweden. IMTA expressed particular interest in education matters. Marketing is obviously a key concern for IMTA members. Their International Marketing Committee seemed keen to contact all cartographers, especially the ICA and the European Cartographic Union (ECU), with a view to investigating solutions on the technical side of the business. The IMTA Marketing Committee were also enthusiastic about the Beijing ideas.

An important key term for the future is 'information exchange' between the organisations. Efforts would be made to link websites and provide full access to all relevant contact addresses. The sharing of printed materials (such as newsletters) was also advocated. All organisations should be aware of the dates and locations of conferences and trade shows to facilitate co-ordination and planning for linked meetings.

We believe that there is hope and enthusiasm for fruitful co-operation between our organisations. The seeds of ideas have now been well sown but we must look for nourishment at root level before further progress can be made. Nothing but good can come of such new co-operation. Let us seek ways of developing it together.

\* Europe, Africa, and the Middle East

*Peter Bleekrode, Michael Wood (Immediate Past-President of the ICA)*

## Theoretical Cartography

The seminar "The Selected Problems of Theoretical Cartography 2000" of the Commission on Theoretical Cartography was held on the 14th and the 15th of October 2000 in Dresden (Germany). It was the first seminar of the ICA Commission on Theoretical Cartography after the last 19th ICC held in Ottawa.

Following approval of its terms of reference in Ottawa, the Commission has continued its activities (See Commission two years program in ICA News December 1999, p.14) with own seminar. The meeting program included 12 papers (7 were presented in the first day and 5 in the second day), discussions in coffee breaks and a closing discussion.

The following papers were presented and discussed in two-days seminar:

- P.Neytchev : *Syntactic components of cartographic sentence*
- H.Schlichtmann: *Identifying sign units in map symbolism*

- V.Shevchenko: *Cartosemiotic analysis of atlases*
- T.Morita: *Visual characteristics of Tanaka Kichiro's relief representation method through observation of eye movements*
- A.Wolodtschenko: *Selected cartosemiotic activities in the 1990s*
- T.Zarycki: *Cartographic communication in the perspective of linguistic pragmatics*
- I.Rotanova: *Issues of information formalization under landscape-environmental mapping of the territory as a subject of cartographic semiotics*
- W.G.Koch: *Theoretic cartography in the Scientific Journal of the Dresden University of Technology, 1956-1999*
- F.Kelnhofer: *User defined maps-cartography without cartographers?*
- S.Kirschenbauer: *"Real" 3D representation - a semiotic reflection*
- G.D.Kuroshv & L.E.Smirnov: *Geography-geodetic monitoring of the Earth*
- J.Koricka-Skorupa: *From date to cartographic presentation forms*

The goals for the seminar were to allow all participants to report on their current theoretical or theoretic-technological research, to activate and to support in particular young scientists, to develop the traditional cooperation between East and West cartography theorists. In addition, four doctoral students have presented their papers during the Seminar, and A.Wolodtschenko also prepared a small exhibition with main cartosemiotic and map language monographs from last 10-12 years.

The Commission plans to publish the collected papers as proceedings of seminar. The next seminar will take place at the Gdansk University (Poland) in July 2002.

*T.Morita (ICA Vice-President) and A.Wolodtschenko (Chair, ICA Commission on Theoretical Cartography)*



*Front: A.Wolodtschenko (Germany), V.Shevchenko (Ukraine), S.Kirschenbauer (Germany), K.Kelgenbaeva (Kirghizstan), T.Zarycki (Poland), W.G.Koch (Germany), G.Kuroshv (Russia), P.Neytchev (Poland). Seated: T.Morita (Japan), J.Koricka-Skorupa (Poland). At the Institute for Cartography, Dresden University of Technology.*

# Conference and Workshop Reports

## Mountain Cartography Workshop "High Mountain Cartography 2000"

Forty four participants from 9 nations gathered between March 29 and April 2, 2000 for the 2nd Workshop on High Mountain Cartography at Rudolfshütte/Austria. The workshop was held under the auspices of the ICA Commission on Mountain Cartography and was organised by *Manfred Buchroithner* and his team from the Technical University of Dresden/Germany and by *Heinz Slupetzky* of the University of Salzburg. It followed a similar event held two years before at Silvretta-Bielerhöhe/Austria (see ICA News No. 30). The aim of the workshop was to cover all aspects of the visualisation of high mountain terrain, both topographic and thematic, as well as multimedia developments.

A first block of presentations covered current applications in topographic mapping. *Lorenz Hurni* of the Institute of Cartography at ETH Zurich presented the new multimedia version of the "Atlas of Switzerland", the Swiss national atlas. Besides the possibility to visualise every area of the country in panorama and block diagram mode using a 25 m DEM, the atlas also covers thematic and mountain related aspects such as tourism, population decrease, alpine transit, etc. Further information can be found at [www.atlasofswitzerland.ch](http://www.atlasofswitzerland.ch). *Ernst Hauber* (DLR, Berlin) et al. presented the first results of a high resolution mapping of the Sonnblick Glacier in Austria by the new digital HRSC-A camera which will also fly on the Mars Express mission in 2003. *Thomas Damoiseaux* of DLR Oberpfaffenhofen focused on InSAR mapping of mountainous areas. *Martin Heller* from the University of Zurich presented a new approach in terrain modelling using tension minimising triangular meshes. Two presentations by *Nikolas Prechtel* (TU Dresden) as well as by *Lorenz Hurni* and *Bernhard Jenny* (ETH Zurich) covered significant advances in analytical shading by applying a broad set of numerical and graphical tools on a DEM both locally and globally. *Karel Kriz* from the University of Vienna pledged for special topographic winter maps in accordance with winter activities in sports and tourism. *Blanca Baella* and *Maria Pla* from the Institut Cartografic de Catalunya presented the first results of standardised generalisation routines for topographic mountain maps applied to a data base 1:5000. *Dusan Petrovic* from the University of Ljubljana covered aspects of different representations of mountain tracks on classical and multimedia maps. *Markus Hauser* (Zurich) closed the presentations by giving insights in his extensive topographic database of the Pamir mountains. He can provide this base data set to interested researchers for

different thematic applications.

The second session mainly covered multimedia aspects in mountain cartography. *Georg Gartner* (TU Vienna) provided information about the state-of-the-art in mapping using cellular WAP phones. Although the resolution of displays is very limited, one can imagine applications for mountain safety purposes. *Peter Sykora* (Uni Vienna) presented a GPS map interface for high mountain regions. *Theodor Wintges* and *Karsten Snger* (University of Applied Sciences Munich) presented a 3D-map of a mountain tourist area using a specially developed 3D map symbology. Together with *Eduard Hrner*, *Theodor Wintges* then demonstrated a 3D animation of the avalanche catastrophe at Galtr/Austria. *Andi Neumann* (ETH Zurich), *Martin Heller* (Zurich) and *Manfred Buchroithner* (TU Dresden) reported on latest advances in 2D and 3D cave mapping using sophisticated surveying, mapping and display methods. The session closed with a homage to the late *Heinrich Berann*, the most renowned panorama artist who passed away on December 4, 1999. *Michael Wood* (University of Aberdeen) remembered his personal relationship to *Heinrich Berann* and his time as a student at his home in Tyrol/Austria. *Tom Patterson* (US National Park Service) gave a deep insight into *Heinrich Berann's* artistic and constructive methods.

In the third block, different thematic applications in mountain cartography were presented. *Viktor Kaufmann* (TU Graz) reported on the reconstruction and visualisation of the retreat of glaciers in the Austrian Alps since 1850 by methods of dynamic computer animation. *Caterina Gentizon* and *Philippe Schoeneich* (Uni Lausanne) presented GIS and geomorphological mapping as management tools in alpine periglacial areas. *Klaus Granica* et al. (Joanneum Graz) reported on an EU sponsored project for monitoring and visualisation of protection forests in high-alpine terrain using satellite data. *Martin Galanda* (University of Vienna) presented an interactive information tool for on-line visualisation of the avalanche bulletin. *Gloria Marti* (Institut Cartografic de Catalunya) summarized the current avalanche mapping activities in the Catalan Pyrenees whereas *Karel Kriz* reported about similar projects in Austria.

During several evening sessions and round tables, the participants had the opportunity to discuss the projects and other activities. Besides, *Heinz Slupetzky* and a group of participants recorded a snow profile of almost five meters depth for the official Austrian snow and avalanche bulletin. Some participants even trained their skiing and orientation skills on a ski climbing trip on the nearby Sonnblick glacier! All participants

were very pleased and convinced by the organisation and the quality of the workshop. Our warmest thanks go to *Manfred Buchroithner*, *Heinz Slupetzky* and their collaborators! The proceedings of the workshop will be published by TU Dresden. It is planned to organise a next workshop from May 15 to 19, 2002 at Mount Hood, Oregon, USA.

Further information about current activities, publications and workshops can be found on the commission's homepage: [www.karto.ethz.ch/ica-cmc](http://www.karto.ethz.ch/ica-cmc).

*Lorenz Hurni, Chair of the ICA Commission on Mountain Cartography*



Participants of the the 2nd Workshop on High Mountain Cartography at Rudolfshütte/Austria.



Applied mountain cartography I: Digging a snow profile for the Austrian avalanche bulletin.

## 6th International Symposium on High Mountain Remote Sensing Cartography

From September 3 – 18, 2000, the 6th event in the series of High Mountain Remote Sensing Cartography (HMRSC VI) Symposia took place in Ethiopia, Kenya and Tanzania. Under the organisational responsibility of Prof. Dr. Hugh Bloemer from the Ohio University in Athens, Ohio, a small group of scientists from 7 countries in 4 continents convened to deal with the Symposium motto "The Need for Eco-Tourism in High Mountain Environments" in paper sessions; on technical excursions to institutions, and during field trips with line maps of different provenance and satellite imagery. Ecotourism is one of the magic buzzwords which give some hope for countries



# Conference and Workshop Reports

with only few other economic possibilities. In this respect the use of remote sensing data and GIS is very essential. It was a pity that due to the Ethiopian-Eritrean War, which ended only a short time before the Symposium, many of the announced participants finally withdrew their registration. Despite this fact, the meeting was a great benefit for all participants.

Within 6 sessions presentations were given in the Semien Hotel in Addis Ababa and in the Guest House of the "Literature Ministry Seminary" in Nairobi, accompanied by a small exhibition of cartographic products and satellite imagery. The topics comprehended a wide spectrum, starting from theoretical studies via reports about completed or current application projects, the presentation of (further) interesting tasks for which remote sensing could significantly contribute to papers about the expectations in remote sensing in the field of high mountain cartography.

A visit of UNEP/GRID in Nairobi, the unit for the world-wide U.N. environmental programmes/the geo-data center of the UN permitted insight into the tasks, working conditions and capacities of this international organisation. It was an interesting detail to learn about the strong future involvement of ESRI in the work of UNEP/GRID. One of the most striking examples of the application of remote sensing data to mountain areas was a study of Mt. Kenya, the second-highest peak of Africa, and its surroundings, aiming at the monitoring of tropical forest clear-cuts. Today, this mountain massif, once worshipped as "The God's Mountain" represents an ecological disaster area with heavy erosion.

Like during previous symposia of this series the oral presentations were completed by extensive field excursions. Those led to the unique geological feature of the African Rift Valley, both in connection with a trip to the high mountain region of the Bale Mountains in South-East Ethiopia and in Central Kenya. A visit of the Kilimanjaro National Park in Tanzania with the climbing of its highest summit, the Uhuru Peak (5895 m) concluded the post-symposium excursions. This trip very drastically revealed the interaction between nature protection and touristic usage. Moreover, it also demonstrated the urgent need for the generation of modern high-standard maps and, in particular, the up-dating of existing topographic maps.

Within the decade from 1990 to 2000 the international symposium series on High Mountain Remote Sensing Cartography (HMRSC) provided the possibility to study programmes of high mountain cartography at various places in 5 continents and to trace the developments of remote sensing application within this period. The first event took place in 1990 in Schladming, Austria, followed by the second one in Lhasa, Tibet, and Kathmandu,

Nepal. In 1994 with Mendoza, in the Andes mountains, Western Argentina, and Chile followed. Subsequently HMRSC visited Northern Scandinavia from Kiruna to Tromsø with the organiser of the University of Karlstad, Sweden. 1998 led the high mountain community to Northern California and High Sierra of the United States. Finally in the year 2000 the "10th Anniversary" brought HMRSC to the high mountain regions of East Africa. For 2001 the publication of symposium proceedings is envisaged.

Presently various international and national expert organisations deal with the application of remote sensing to the mountain regions of our world. In 1999 the High Mountain Remote Sensing Cartography gained its entitled importance through the integration into the Commission on Mountain Cartography (CMC) of the International Cartographic Association (ICA). The events of HMRSC I to VI allowed to follow, study and develop the activities of High Mountain Remote Sensing Cartography from the first relief mapping of mountain chains from space to the fascinating present possibilities.

*Manfred Buchroithner, High Mountain Remote Sensing Cartography Group, University of Dresden*

## Cartography and Children

### "Teaching Maps for Children: Theories and Perspectives Beginning the 3rd Millennium," September 6-8, 2000, Hungary

The conference was organized by Jesús Reyes Nuñez, Ildikó Horváth, Katalin Fehér Verebiné, Zsuzsa Draskovits and their colleagues from the Department of Geography, Eötvös Loránd University in Budapest, Hungary. It was open by István Klinghammer, Rector of the University and Head of the Department of Cartography, and Árpád Papp-Váry, President of the National Committee of the ICA. Jacqueline Anderson, Chair of the "Cartography and Children Commission" also spoke about the work of the Commission and identified its new Internet site: <<http://artsandscience.concordia.ca/ica-ccc>>.

The first two days featured 18 presentations by 16 individuals from ten different countries. Twenty-eight people attended the presentations which ranged from such general topics as "Children's understanding of Generalization transformations" to "Mapping as a Challenge to Improve Active Readers Investigating Children's Geographical Skills". Other presentations examined specific atlases, concepts, experiments, and projects at national and local levels.

The afternoon of the second day was kept for four special presentations. For the first time, at an International conference of the Commission, Geography teachers from elementary and secondary schools were invited to attend and exchange their opinions. The participation of the eleven teachers was organised by the programme committee with the collaboration of the Geography Teachers Association of Budapest. It was a very useful experience to be followed at future conferences to be organised in other countries, as teachers are a constituency that the Commission wishes to reach out to in its future regional meetings.

During the conference participants were able to visit an exhibition of 20th Century Hungarian School Atlases and wall maps prepared by the Library of the Department of Cartography.

The abstracts of papers presented (listed below) as well as more than 70 photos taken during the conference can be found on the next Web address:

<http://lazarus.elte.hu/hun/dolgozo/jesus/meeting2/bp2000.html>

During the last day of the meeting Commission members discussed the future activities of the commission and issues associated with the "Barbara Petchenik" Children's Map Competition. A day before the beginning of the conference (September 5) the Commission on "Gender and Cartography" held its annual meeting in this city.

**Presentations in Hungary -- Alphabetical order by country (September 6-7, 2000)**

"An Atlas designed for Children: *The Electronic Approach and Reality*".

Jacqueline Anderson (Canada), Janine LeSann (Brasil), Jean Carrière (Canada).

"An Atlas designed for Children: *The Initial Pilot*". Jean Carrière (Canada) Jacqueline Anderson (Canada), Janine LeSann (Brasil).

"*Risk Mapping and Popular Participation: An instrument presenting sliding hazards in slump slopes*". Antonia Brito (Brasil) – Poster.

"*Graphs: make and understand*". Prof. Dra. Elza Yasuko Passini (Brasil).

"*A Rio de Janeiro School Atlas: a proposal for a local study*". Tania Targino (Brasil).

"*Atlas of the Municipality of Santa Helena, Brasil*". Miriam H. Zaar and Vera B. Köhler (Brasil).

"*Knowledge of maps and extraction information from them in the Bulgarian schools*". Temenoujka Bandrova, Valentina Nikolova (Bulgaria).

"*Children's understanding of Generalization transformations*". Vassili Filippakopoulou, Byron Nakos and Evanthia Michaelidou (Greece).

"*Tourist Map for Children*". Bettina Balassa (Hungary).

# Conference and Workshop Reports

*"Complementary Methods in Teaching Geography: Hands-on materials and computer software". István Lénárt (Hungary).*

*"The Place of Cartography in geography teaching and a survey of the legend system of the different levels of school atlas." Zsuzsa Turcsán (Hungary).*

*"Map Tales - an educational CD-ROM project for teaching modern cartography and its history." Zsolt Török (Hungary).*

*"Hungarian Homepage About Maps for Children: the last chapter". Jesús Reyes (Hungary).*

*"A Controlled Experiment in Teaching Physical Map Skills to Grade 4 Pupils in Elementary Schools". Shimshon Livni, Varda Bar (Israel).*

*"Mapping as a Challenge to improve active readers investigating Children Geographical Skills". Ana Francisca de Azevedo (Portugal).*

*"Our experience in extraterrestrial mapping for children". Kira B. Shingareva, Bianna V. Krasnopevtseva (Russia).*

*"The CD-ROM: Atlas of Switzerland and CD-ROM: Swiss Map Trophy". Hans-Uli Feldmann (Switzerland).*

*"A Teacher's Introduction to the Barbara Petchenik International World Map Design Competition". Henry W. Castner (USA).*

*Jacqueline Anderson, Chair, ICA Commission on Cartography and Children*

*Henry Castner, Assistant Chair, ICA Commission on Cartography and Children*

*Jesús Reyes Nuñez, Chair Organizing Committee*



*A view of the conference room with the participants.*



*The opening ceremony, István Klinghammer, Árpád Papp-Váry, and Jacqueline Anderson.*

## Maps and Internet

The Internet is redefining how maps are used. No longer restricted to paper, maps are now transmitted almost instantly and delivered to the user in a fraction of the time required to distribute maps on paper. They are also viewed in a more timely fashion. Weather maps, for example, are updated continuously throughout the day. Most importantly, maps on the Internet are more interactive. They are accessed through a hyperlinking structure that makes it possible to engage the map user on a higher-level than is possible with a map on paper. Finally, the Internet is making it possible to more easily distribute different kinds of cartographic displays such as animations. The Internet presents the map user with both a faster method of map distribution and different forms of human-map interaction.

Recognizing these changes in map distribution and map use, the International Cartographic Association (ICA) established a Commission on Maps and the Internet at its meeting in Ottawa, Canada, in August of 1999. Commissions of the ICA promote international cooperation and research in specific areas of cartography. The Maps and Internet Commission was established to promote multi-national cartographic research in order to solve scientific and applied problems related to the distribution and use of maps through the Internet. In addition, the commission promotes Internet-based cartographic education and professional and technical standards for maps available through the Internet. The web-site for the new commission is:

["http://maps.unomaha.edu/ica/"](http://maps.unomaha.edu/ica/).

On October 11, 2000, the commission held its first international meeting. Knoxville, Tennessee, was the site of the symposium co-sponsored with the North American Cartographic Information Society (NACIS) and held prior to its annual meeting. The symposium examined various issues facing the distribution and use of maps through the Internet. Eighty-three people were in attendance from a number of countries, including Canada, the Netherlands, Iceland and the United States. The symposium consisted of a number of paper presentations and a round-table discussion that examined needed areas of research in both Internet map use and Internet map creation.

Six major themes emerged from the symposium. The first theme centered on issues of Internet map use. This theme was best exemplified by two presentations: Corné van Elzakker (ITC, The Netherlands) spoke on the "Uses and Users of Maps on the Web" while Peter Keller (University of Victoria, B.C., Canada) presented the work done with Erin Richmond on "The Role of the Map in Internet-Based Travel Destination Marketing."

Elzakker pointed out that the two major advantages of the web is the increased accessibility to maps (for example, to historical maps that have limited copies) and the actuality of maps (for example, constantly updated weather and traffic maps). Keller, on the other hand, looked at the use of maps in the specific area of tourism. His research involved looking at tourism maps for 30 worldwide tourism destinations.

The second general theme involved questions of privacy and security in the distribution of Internet maps. Mark Monmonier's (Syracuse University) paper on "Webcams, Interactive Index Maps, and our Brave New World's Brave New Globe" touched on the increased use of webcams as a monitoring device and the ability to integrate webcam images as point symbols within maps. In contrast, Rex G. Cammack (Southwest Missouri State University) presenting on "Internet Maps in the Context of Community Right-to-Know versus Public Safety" co-authored with Lindsay Svadbik focused on the mapping of chemical hazard sites to provide environmental awareness through maps. Government organizations, worried about the use of the maps by terrorists, have placed legal restrictions on the information available on chemical hazard sites.

The third theme involved new technologies that are available to distribute maps. Two presentations dealt with the eXtensible Markup Language (XML). XML is a simple text-based system to encode data and uses a system of tags like HTML. Ilya Zaslavsky (Supercomputer Center, University of California at San Diego) discussed the possibilities of XML and presented a working product called AxioMap in a presentation entitled "Client-Side 2D Vector Rendering and XML in Web Interactive Mapping." Ignacio Guerrero (Intergraph Corporation, Huntsville, AL) spoke on "Maximizing the Value of Existing GIS Software by Using OPENGIS XML Based Interface." Jandirk Bulens (Wageningen University, Amsterdam, The Netherlands) discussed VRML, a standard format for three-dimensional displays over the web, in his presentation entitled "A Geodata 3D Viewer for the Web."

The fourth theme involved the use of the Internet to gain access to large spatial data sets. Steve Tanner (University of Alabama in Huntsville) spoke on a method of accessing a large database of passive-microwave data in "Visualization of On-demand Virtual Data Products in a Distributed Environment," co-authored with Mike Botts, Ken Keiser, Helen Conover and Sara Grave.

A fifth theme involved the use of the Internet to distribute spatial data that can be used to produce maps, conduct statistical inquiries, or perform analysis. Robert Cromley



# Conference and Workshop Reports

and Patrick McGlamery (University of Connecticut) spoke on "A Geo-Relational Approach to the Dissemination of Geographic Information on the Internet."

The sixth and final theme of the symposium was education. Jacqueline Anderson (Concordia University, Montréal) spoke on the creation of an Internet-based school atlas in "A School Atlas for the Province of Quebec, Canada, on the web," authored with Jean Carrière (Université du Québec à Montréal) and Janine Le Sann (Universidade Federal de Minas Gerais, Brazil).

Working groups on Internet Map Use and Internet Map Creation then met to discuss future possibilities and problems. Possible research themes noted were on archiving of web maps, turning user questions or motivations into web map metadata, applying user research results to improve effectiveness of web maps, and methods of obtaining web map user feedback. Other likely activities of the commission were to agree on a classification of web maps and identify excellence in web map effectiveness by setting up a showcase. Issues also needing to be addressed were ownership, security and copyright.

Two meetings of the Commission will be held in 2001. The first is in conjunction with the annual meeting of the Association of American Geographers, February 27 - March 3, 2001 in New York City and will be co-sponsored by the Cartography Specialty Group of the AAG. Rex Cammack has organized a paper and a panel session. The panel will address the question of "Why should cartographers abandon paper?"

The second meeting of 2001 will be a workshop held just prior to the International Cartographic Conference in Beijing in August 2001. The workshop will be held in Guangzhou, China, between July 31-Aug. 2. The workshop is co-sponsored by the South China Normal University and the Guangdong Academy of Sciences. Guangzhou is located just north of Hong Kong. The International Cartographic Conference will meet the following week in Beijing (Aug. 6-10). Further meetings are planned for Austria in 2002 and Stellenbosch, South Africa, in 2003.

Members of ICA commissions are appointed by the cartographic delegations from individual countries. Most participants in the meetings of the commission are corresponding members. Corresponding members receive regular updates on commission activities and call for papers through e-mail. To become a corresponding member of the commission simply forward an e-mail request to Michael\_Peterson@unomaha.edu.

*Michael P. Peterson, Chair, Maps and Internet Commission of the ICA*



*Symposium speakers - Back row: Ignacio Guerrero (Intergraph Corporation, Huntsville, AL, USA), Jandirk Bulens (Wageningen University, Amsterdam, The Netherlands), Corné van Elzakker (ITC, The Netherlands), Robert Cromley and Patrick McGlamery (University of Connecticut, USA), Rex G. Cammack (Southwest Missouri State University, USA), Michael Peterson, Commission Chair (University of Nebraska at Omaha, USA), Mark Monmonier (Syracuse University, USA); Front row: Jacqueline Anderson (Concordia University, Montréal, Canada), Ilya Zaslavsky (Supercomputer Center, University of California at San Diego, USA)*



*Michael Peterson, Commission Chair (University of Nebraska at Omaha, USA).*

## Map Production

The Commission on Map Production (CMP) co-operated in the Geomatics congress 2000 organized in La Havana, Cuba (see ICA News No. 34). Erkki-Sakari Harju (CMP member) and Hans Kern (former CMP member) presented lectures and assisted in exercises, while Vladimir Tikunov, chair of the Commission on Education and Training (CET) and Ferjan Ormeling (ICA-SG) participated in the lecturing team, as well.

Sjef van der Steen and the ICA-Atlas Commission supported the local organiser Tatiana Delgado in the production of the Seminar/workshop 'Map and Atlas production', run during the congress. With the co-operation of three ICA Commissions, ICA has successfully profiled itself for the first time in the Cuban region. To emphasise that the workshop proved to be successful the ICA and

the CMP recently received a new invitation for a similar congress in 2002.

From 21-23 September 2000, some 50 participants visited Barcelona, where the weather was still a very pleasant factor to support the post-summer seminar. In conjunction with the Institut Cartografic de Catalunya ICC, the ICA commissions on Generalization and Map Production organised a seminar with the theme on demand mapping.

In combination researchers and professionals presented their views and experiences on 'On Demand Mapping' related to 'Generalization'. Because it was aimed for a seminar, the programme contained a good balance of presentations concerning cartographic production and generalisation items.

The seminar began with a view on the actual situation regarding the progress of development on the Interactive Generalisation: 'Challenges for Generalisation and Web Mapping'. Yet, the algorithms are either missing, incomplete or inadequate, but the good news is that technology enables faster and newer tools. With the question: 'Is new mobile phone and SMS/WAP technology reason for increase 'on demand' mapping' discussions for the coming days were initiated.

Modern visions on on-demand mapping also imply the dissemination of maps. With the introduction of new technologies the management of the production of maps receives new impulses on new approaches for the stock production of maps. Publishing on demand (POD) allows for a much more controlled number of prints. In conjunction, PDF format and digital technology and/or new visions on production, a 'just-in-time', as limited as possible production can be enabled. Expensive stock production or over-time publications can be reduced, so that cost exceeding and out-of-date deliverance are past time.

The cooperating companies and institutes that presented their views on the theme of the seminar were: the City of Hamburg, Germany; ESRI, United States; Geodata Oy, Finland; Intergraph, United States; Institut Geographique National, France; Kart-og Matrikelstyrelsen, Denmark; Laser-Scan Ltd, United Kingdom.

Thanks to enthusiastic discussions during the interactive event, commissions and participants experienced a very successful seminar. Both ICA commissions have expressed the wish to repeat similar co-operative activities of commissions. The seminar conclusions and overall results will be soon displayed on the Internet sites of these ICA commissions.

*Sjef van der Steen, Chair ICA Commission on Map Production*

# Commissions' Reports

## Gender and Cartography

The Commission CGC held its 2000 annual meeting in Budapest, Hungary in September, 5th, a day before the beginning of conference "Teaching maps for children: theories, experiences and perspectives beginning the 3rd millennium", ICA commission on Children and Cartography. Both events took place at the Department of Cartography, Eotvos Lorand University.

The main purpose of the open CGC's meeting was discussion of the form and contents of a new thematic atlas. According to the plan of commission's activity in the 1999-2003, accepted by the Executive Committee, the atlas should present the problems determined by the name of the commission. As a general rule such standpoint is fully right! But as it can be observed often the starting point of a very new project is the best occasion for the appropriate revision of the whole direction of a future activity.

The initial limitation of maps' contents in the atlas only to 'women groups' as unique under-represented one and next, as the result of many discussions, has been changed. The first cause was the ICA's declaration formulated in the first article of the statutes: "non-discrimination on the basis of politics, nationality, religion, race, and gender". The second reason was comparing the professional character of our CGC with more social one represented in case of sister-commissions, within FIG and IGU. Both chair-persons of Task Force/Comm. of mentioned organisations: Gabriele Dasse and Joos Droogeleever Fortuijn are interested in the future co-operation with CGC in the development of the atlas referred to under-represented groups of people. The final cause was the result of analysis of world as well as regional maps, atlases and other sources concerning the 'gender problems'. Up to date the unique actual atlas referred to the females, as the world sub-population is the one prepared by Prof. Joni Seager. There are many gaps in the available sources and the time-correspondence between the collections of data is not preserved, so edition of very actual and detailed new atlas referred to only women group seems to be a very complicated task.

For these all reasons our proposal to overcome the existing barriers was to change the scope of preparing atlas. We decided to enlarge the contents of the atlas by addition to 'gender' group another under-represented groups of people, separating groups 'with special cartographic needs'. Four or five regional parts will complement these two global parts of the atlas. Such solution makes possible to show some basic problems more precisely than in global parts as well as

enables to turn users' attention for specific regional issues. Those point of view is rarely or even not represented in typical demographic atlases because of lack of actual data, very complicated for global presentation spatial distribution of 'too small' groups of people as well as existing socio-political barriers.

Owing to some financial support given by the General Surveyor of Poland and Chair of The Main Office of Geodesy and Cartography it has been possible to prepare, in both electronic and paper form, the first 5 pages of the regional insertion 'Poland'. Up to day we have obtained two initial proposition of preparing Australian and Turkish parts. Prof. Joni Seager agreed to serve as the consultant of our project.

We believe that our proposal will be accepted and the atlas will be interesting for different kind of users. No text commenting from whatever position the contents of maps in the ICA atlas are planned as we want only turn public attention towards chosen under-represented groups of people according to previously mentioned declaration accepted by ICA.

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

## History of Cartography

A business meeting of the Commission was held on Saturday, September 9th at Oxford Brookes University. Thanks are owed to the organisers of Cartography 2000, in particular Susie Hart, who made this possible. The chairman Dr C. Board and co-chairman, Professor A.V. Postnikov were joined by Francis Herbert, the Curator of Maps of the Royal Geographical Society (with the Institute of British Geographers). He has been consulted on the format of the bibliography of major works on the history of national mapping agencies and has provided valuable guidance. Members will be aware that it was proposed to base the bibliography on the model adopted by Francis Herbert in *Imago Mundi*, the Journal of the International Society for the History of Cartography. The agenda for the meeting followed the pattern suggested in newsletter 2. Most time was spent on the scope of the bibliography and the format to be adopted for collecting references. The Commission would however play a part before the opening of the Madrid conference on the History of Cartography July 2001 on the day traditionally devoted to ICA and other work. Some further thought was given to future plans up to the Durban conference of ICA in 2003, and even beyond that.

### Scope of the Bibliography

1. It was agreed that there would be no time limit on items selected for the

bibliography. It was recognised that there were standard works that had not been replaced as sources for the history of a mapping agency since their publication. One such was the three-volume study by Berthaud on France published in 1898-99, another a study of Russian land estate mapping published in 1910.

2. It was felt helpful for users of the bibliography to identify one major source with cross references. In some cases it would be helpful to add versions, or summaries of the main work if they appeared as more accessible publications in the ICA languages, or more easily obtainable to researchers because they had appeared in conference papers or regular periodicals.
3. We also considered that it would useful to include items which concentrated on some part of the activity of a mapping agency, particularly if the contents were set in the context of the agency's policy and practice. A good example of the latter is the group of four papers by Thomas on the South African 1:50,000 series.
4. It was agreed that due recognition should be paid to hydrographic mapping and charting since this kind of mapping was of general significance, especially in the representation of features on the surface of the Earth and the fact that such mapping was mostly undertaken by state or official organisations.

### 2. Format of the Bibliography

Adopting Francis Herbert's scheme as a model for entries in our bibliography, some effort was made to simplify the elements and their treatment. We were conscious that those collecting material should not be frightened by a complex scheme where spaces, and particular methods of punctuation were of special significance. We were also aware that some subtle aspects of spacing and punctuation might not survive transmission by e-mail, which will probably be the main vehicle for assembling entries. The list of elements given in newsletter 2 was critically examined. Francis Herbert explained that his full scheme was designed to provide the maximum amount of information, but that for a scholar's guide such as the Commission proposes, a maximal approach was not required. It was agreed that they should in future be limited to the following:

*Author:* Name; given name(s) or initials if given names are not known.

*Title of work*

*Edition*

*Place of publication*

*Publisher*

*Date of Publication*

*Number of pages, including preliminaries*

*Illustrations:* number in the body of the text,

number of plates, with an indication of how many are in colour, how many are maps and how many of those are in colour.

*Height in centimetres:* as an index of quality of publication, but not essential

*Sources:* bibliography (with an idea of the number of items if possible, either counted or by giving page numbers), references, archives consulted, whether these are grouped in any way.

*Comments:* these may expand on the content, kinds of illustrations, format such as whether maps are in a pocket, or a separate volume; cross references to other works; any assessment of value, e.g. this is the only work in English, or, this summary in English is derived from an unpublished report in Russian.

*ISBN:* where available

*Index:* length can also be indicated by page numbers.

Here follows an example of a new publication which is not immediately recognised as a history of the British Ordnance Surveys.

*Hellyer, Roger*

*Ordnance Survey Small-Scale Maps Indexes: 1801-1998*

*First edition*

*Kerry, Newtown, Montgomeryshire, Wales 1999*

*David Archer*

*xxiv and 264pp.*

*Many but not all indexes are shown. All are in black and white*

*30,5 cm*

*Bibliography pp 245-7*

*Sources material p.248*

*ISBN 0 9517579 54*

*Index pp. 253-264*

Altogether 133 distinct maps (or map series) are listed. There are several appendices: comparative tables of sheet numbers; military map serial numbers; abbreviations commonly used; library sigla; grids and squaring systems. There is a foreword by Brian Adams pp.vii-x. The introduction by the author explains the system of classification and numbering used in this volume. This volume provides a guide to maps of scale 1:63,360 and smaller indicating where known the degree of completeness of each map series.

When sending in entries to the chairman this may be done by e-mail as he now has Mac Link Plus version 11 which is supposed to allow most e-mail messages and attachments created on PCs to be read on his Power Macintosh G3.

Ideally, all entries proposed should have been examined by the contributor as we do not wish to perpetuate errors in existing bibliographies. The latter should be used only to identify potential entries in this Commission's bibliography. CB reported that he had trawled through Larsgaard's books

(1984,1993), the Inventory of World Topographic Mapping by Boehme and the first edition of World Mapping by Parry and Perkins. When writing to individual countries to report on this meeting and to ask for help from contributors, relevant entries from these sources will be quoted as possibilities for inclusion in our bibliography. A new circulation will be sent to existing contacts, a renewed invitation to participate will be sent to each national committee and commission, enclosing a revised statement of the objective of the Commission. We shall exploit existing contacts with Jim Smith who is undertaking work on the history of technology in surveying and geodesy. In the restatement of our objectives we shall stress that we are keen to include works which are more than listings of mapping by an agency, but which treat the process of mapping, refer to the policies and practices of data collection, compilation, map production and sale. For example J. Brian Harley's Ordnance Survey Maps a descriptive catalogue of Ordnance Survey (OS) maps from earliest times, but is a useful source of information on OS activities. However the Descriptions of Small, Large and Medium scale maps published by the Ordnance Survey between 1900 and 1957 tend to list only the currently available mapping in a brief context.

### 3. Future Plans

We aim to prepare a sample bibliography for a few countries to demonstrate a range of types of entry and sizes of mapping enterprise found. This will be prepared as a report for the ICA conference in Beijing in August 2001. It is hoped that a more complete set of entries for all ICA members and some other countries should be prepared for publication by the time of the Durban conference of ICA in August 2003, subject to review by the ICA secretariat and Executive. The establishment of a web site could be hastened if a small expenditure could be devoted to its initial design. However, we should welcome an offer for someone with time and relevant expertise to come forward to manage the web site as web master.

We believe that it would be valuable to advertise our activity on a new web site to be linked to the ICA main site and to other relevant sites. The draft entries can be put up on this web site to illustrate the kind of material with which we are dealing. It may also encourage others who have not been invited to participate to become involved in the venture. Ultimately this might lead to an expansion of ICA membership.

*Christopher Board, Chair ICA Commission on History of Cartography*

## Map Production

Current efforts are particularly concentrated on the ICC to be held in Beijing next year. The commission is preparing a pre-conference seminar in conjunction with the ICA Commission on Mapping from Satellite Imagery. A preliminary program with topics related to map trade, satellite imagery, map production and management has been drafted.

The latest pre-conference programme, to be held from 2-4 August 2001 is entitled 'The market for production of satellite image maps with implementation of GIS'.

### Objectives:

- To keep up to date with respect to GIS and image mapping,
- To be confronted with the latest developments with respect to output of GIS,
- To introduce terms and techniques for marketing and trade,
- To highlight the importance of control of production in the digital era,
- To experience the shift of the activities of the cartographer.

### Subjects for teaching

- GIS and Satellite image map production,
- Dissemination of geographical data: available cartographic products and results to be expected
- Marketing, Trade and Production management,
- The role of the cartographer: the change from partly productive to advisory and supervisory tasks.

### Preliminary program:

*Wednesday 1 August 2001: the database for SIM*

1. Welcome participants
2. Objectives seminar
3. Data sources for Satellite Image Maps: SPOT, Landsat, Ikonos: Specifications and characteristics
4. The preparation of the database for SIM: General database; Specific SIM database: topology and cartographic components
5. Exercise: data base construction and implementation of SIM data
6. Discussion on the day's activities and opinions

*Thursday 2 August 2001: the image map production line*

*Theory:*

7. The workflow of a SIM
8. Cartographic enhancement: layout, symbology
9. Exercise: Cartographic implementation: attributes/linking tables

*Friday 3 August 2001: Marketing sales and project management*

12. Marketing, sales and project management
13. The translation from sales to the technical workflow/production



# Commissions' Reports

14. Cost price calculation: emphasis on pre-production calculation
15. Exercise: cost price calculation
16. The offer and contract
17. The process workflow (like executed on day 2) and the implementation of Quality Specifications
18. Exercise: quality control with guidance of the specification list
19. Discussions: seminar wrap-up session, evaluation and conclusions.

*Sjef van der Steen, Chair ICA Commission on Map Production*

## Mapping from Satellite

A year has passed since the Ottawa conference, and a result of efforts from a small group of enthusiastic people, an initial compilation of satellite-derived mapping publications has been produced. This is a draft document which runs to over 50 pages, and can be found at the following FTP address: [ftp.spotimage.fr/incoming/Sle\\_Blanc](ftp.spotimage.fr/incoming/Sle_Blanc)

This document will now serve as a starting point for the commission's work, as detailed in the terms of reference (see ICA No. 33). I would ask each of you, in your specialist field of interest, to suggest improvements to this document so that we can finalize and publish it in time for the next conference in Beijing 2001. This is an initial effort intended to outline the final document, so feel free to subject it to critical review. The entire document plan is open to change, but I am hoping in particular that your input will enrich the content of each chapter, providing more detailed discussions of the topics covered. You will realise that examples in the document are somewhat focussed on applications of Spot imagery. We need to include other case studies looking at other sources of satellite data, and at what other project teams outside Spot Image and its usual partners have achieved. I would also ask you to respond quickly to this document and to give me some feedback on the work plan that I intend to adopt. In particular, let me and your other colleagues on the commission know which parts of the document you would like to work on. I will coordinate the document review process and incorporate all revision in the final document. For further enquires please contact Serge Le Blanc at [Serge.Le\\_Blanc@spotimage.fr](mailto:Serge.Le_Blanc@spotimage.fr)

*Serge Le Blanc, Chair ICA Commission on Mapping from Satellite Imagery*

## Education and Training

A meeting was held in Apatity last August, jointly with the Intercarto-6 Conference. Those who attended the ICA Education and Training Commission meeting were:

Vladimiar Tikinov (Chair), M.V. Lomonosov State University, Russia,  
Fejan Ormeling, Department of Geography, Utrecht University, The Netherlands,

Laszlo Zentai, Department of Cartography, Eotvos Lorand University, Budapest, Hungary  
David Fraser, Department of Geospatial Science, RMIT University, Australia  
Horste Kramer, Berlin, Germany  
Tore Tollaksen, Norway

Listed below are the initial topics that will be developed by the Commission as part of the web course on cartography:

Maps and cartography: main definitions  
Map projections I and II  
Nature of cartographic representation  
Generalization I, II and III  
Topographic mapping I and II (including relief representation)  
Statistical map design  
Colour use  
Map Use  
Atlases  
Mathematical-cartographic modelling  
Cartograms  
Toponymy  
Copyright  
Reproduction processes  
Databases  
Digital mapping (raster/vector)  
Graphic formats and conversion  
Internet mapping  
Cartometry

The next ICA Education and Training Commission meeting will be held in Paris during May 2001, followed by a meeting in Pertozaovodsk in August 2001, before the ICA conference in Beijing.

*David Fraser, Department of Geospatial Science, RMIT University, Australia*

## Marine Cartography

Halifax, Canada will be the site for the 4th international symposium dedicated to GIS for the coastal zone to be held from the 18 to 20 June 2001. It follows in the tradition of excellence and intimacy of the previous CoastGIS symposia held in Cork, Aberdeen and Brest. The three-day program will be composed of invited papers, contributed papers, poster sessions and new for CoastGIS, a demonstration session where authors will be able to demonstrate their application in action.

CoastGIS 2001 is held under the auspices of the Marine Cartography Commission of the International Cartographic Association and the Commission on Coastal Systems of the International Geographical Union. In addition, three Canadian organizations are sponsors, the Coastal Zone Canada Association, the Atlantic Coastal Zone Information Steering Committee and the Geomatics Association of Nova Scotia.

The theme for CoastGIS 2001 is Managing the Interfaces, a theme with a multi-tiered meaning. The most obvious meaning is the sea to land interface recognizing the ultimate purpose of our work is the improved management and understanding of the coastal

zone. There are other interfaces which the CoastGIS 2001 symposium will address, the interface between technology and the human being, the interface between traditional and scientific approaches to knowledge, the interface between data providers and users and the human-computer interface of GIS. Authors are asked to target their abstracts to one of the following sub-themes:

1. Technology and the non-specialist - Human problems and human solutions.
2. Data policy with regard to sharing, access and dissemination.
3. Tools and standards with regard to data and information access.
4. The TEK/Technology interface.
5. Information infrastructure in support of geospatial applications.
6. Measuring and modeling the interface.

To submit an abstract for consideration by the Program Committee send an electronic mail message to [coastgis2001@agc.bio.ns.ca](mailto:coastgis2001@agc.bio.ns.ca) containing:

1. The name and affiliation of all the authors and the full contact details of the principal author including his/her electronic mail address.
2. An extended abstract (Maximum 1000 words)
3. The sub-theme (see over) you are targeting and the type of presentation you prefer i.e. oral presentation, poster, or demonstration.

Important Notes for Authors: E-mail attachments must be in rtf format. The Program Committee will correspond with the principal author. The preferred form of communication is electronic mail. Abstracts may be in English, French or Spanish. Full papers will be distributed to delegates at the symposium. The Program Committee will review full papers and selected papers will be published in a book.

Deadlines: abstract, 30 November 2000;  
Author notification of acceptance: 15 January 2001; Deadline for receipt of full papers: 15 May 2001.

Address: CoastGIS 2001, P.O. Box 1006, Dartmouth, NS, Canada B2Y4A2

Electronic mail:  
[Coastgis2001@agc.bio.ns.ca](mailto:Coastgis2001@agc.bio.ns.ca)  
Website: [agc.bio.ns.ca/coastgis2001](http://agc.bio.ns.ca/coastgis2001)

*Ron Furness, Chair ICA Commission on Marine Cartography*

## Proceedings of the Ottawa International Cartographic Conference

The Canadian Institute of Geomatics (CIG) has been delegated to handle the sales of the 1999 ICC proceedings. They are available on CD-ROM and the cost per CD is \$35.00, plus shipping and handling. The

shipping and handling are on a per order basis and are as follows: \$6.00 for Canadian Destinations and \$12.00 per order for all other countries. Also note that if ordering within Canada a 7% GST charge is applicable on the order and the shipping and handling.

The proceedings can be ordered from CIG at:

Canadian Institute of Geomatics  
1390 Prince of Wales Drive Suite 400  
Ottawa, ON K2C 3N6, Canada  
Phone (613) 224-9851 Fax (613) 224 9577

## Geographical Sciences Bulletin of the National Institute of Cartography and Remote Sensing, Algeria

**T**he INCT publishes since three years a Bulletin intended to the national as well as the international scientific community of earth sciences.

This six-monthly Bulletin deals with all subjects related to geographers, cartographers, photogrammetrists, land surveyors, geodesists, geomatists, developers, town planners, experts in remote sensing, in gravimetry, in GPS techniques and GIS activities. It is also an area in, which are presented techniques and the material necessary for the practice of such professions.

Articles are divided up into two rubrics: Research-Development, Synthesis.

### RESEARCH-DEVELOPMENT

**ARTICLES:** Deal either with works having an originality and an innovatory contribution, helping in the development of the geographical sciences, or deal with concrete studies and achievements presenting an interest in the mastery of geographical sciences.

**SYNTHESIS ARTICLES:** Are aiming to bring out, theories, methods, techniques or processes related to geographical sciences with notably precise cases of application.

**LANGUAGES:** Articles appear mainly in Arabic, French, and English.

**CRITERIA OF PUBLICATION:** All papers presenting an interest, will be diffused whatever their origins. Membership of their authors to the INCT is not required.

Articles must be provided on diskette, written with Word 7, in column, in A4 format, with a double space between the lines, and with a maximum margin of 2,5cm on each of the four sides.

All papers must have a tittle, which must be brief and informative.

**THE ABSTRACT:** All papers must have an abstract in a language different of the article language.

**BIBLIOGRAPHY:** References must be complete and presented in alphabetical order of author's names. The references must clearly

mention the name and the first name of the author, followed by the year of publication, the work title, the editor and the place of edition. All references must be mentioned in the text by the name and the surname of the author followed by the two last figures of the year of publication.

**MODE OF PUBLICATION:** All Articles are submitted to the evaluation of two members of the reading panel, in the case of opposite opinion, they are submitted to a third member.

**DATES OF PUBLICATION:** The Bulletin appears twice in a year, at the end of October, and at the end of April.

For further information contact Saadi Nadir, email: [inct99@wissal.dz](mailto:inct99@wissal.dz)

*Source: Saadi Nadir, General Director  
'Institut National de Cartographie et de  
teledetection, Alger*

## Websites of National Mapping Agencies

**A**t a growing speed, the World Wide Web (WWW) evolves into an interesting medium for National Mapping Agencies (NMAs) to present and disseminate spatial data. Why is the WWW so interesting? The answer is that a presentation on the Web is virtually platform-independent, unrivalled in its capacity to reach many users at minimal costs and is easy to update frequently. Furthermore, it allows for dynamic and interactive dissemination of spatial data, offering new mapping techniques and use possibilities. It is interesting to examine whether NMAs fully exploit the potentials of the WWW.

Traditionally the division of Geoinformatics, Cartography and Visualization of the International Institute of Aerospace Survey and Earth Sciences (ITC) is in contact with clients originating mainly from NMAs from over the whole world. To comply with our customer's current and future needs the division has set up a project to examine activities of NMAs on the WWW. The project consisted in the first place of an inventory on whether NMAs maintain a homepage on the WWW or not. Secondly, NMA homepages were evaluated on their information content. To report on the progress of the project a website has been set up to present the results to a wider public (<http://www.itc.nl/~carto/nmo/>).

The results of our investigation on whether or not NMAs do maintain a homepage are visualized through a map that is kept up-to-date. This map is simultaneously the main entrance of the website and shows the distribution of NMA homepages over the world. As such the map functions as a switchboard to, at this moment (August 2000), seventy homepages of NMAs. Approximately, seventy-five percent of the listed websites are

located in Europa, America, Southeast Asia and Oceania. Africa and Asia have the least coverage (see figure 1 and URL 1).

A second step in the inventory of NMA activities on the WWW is the evaluation of the information content of their homepages. For this purpose a table was designed in which websites are evaluated on different criteria. Among them are language, general info, index map, maps (analogue and digital products), samples, price info, other services/products and links. Although, this investigation gives general insight into the content of NMA websites it can not say anything about the quality of websites since the sites are evaluated on absence or presence of criteria. Hootsmans and Kraak (1999) have reported on results of this evaluation through several publications. Via our website access to the above mentioned table and publications is provided.

Now that the above inventory is in a 'maintenance' phase it is time to move on to a more qualitative investigation of NMA homepages. For example, more insight is needed into how NMAs put their maps on the Web. Our divisions has gained a lot of expertise on publishing web maps on the Web (Kraak and Brown, 2000) and from this perspective we like to evaluate the maps presented on the homepages of NMAs. Subsequently, it is interesting to investigate to what extent NMAs fully exploit the possibilities of web maps. When considering web maps an important distinction is made between static and dynamic maps. Examples are the static presentation with the map as index to other information or just as sample of paper map products. Dynamic options include different kinds of animations as well as VRML-solutions (see also URL 2). From the web sites explored earlier it is obvious that the web maps in use are all without exception either 'static, view only' or 'static, interactive'. Dynamic maps are hardly present - and if they are, then they serve demonstration purposes only (Hootsmans, 2000).

In correlation with above aspects one could think of closely examining gazetteers provided by the NMAs. For example the Australian NMA (URL 3) provides a fine example of a gazetteer: typing in a geographic name depicts its location on a scanned map fragment. Aspects on which gazetteers could be evaluated are readability, colours, navigability, interactivity, usability and so on.

An important point made by Hootsmans and Kraak (1999) is the importance for NMAs to note that for a well-considered website design, a website should be evaluated from both a producer's and a customer's perspective. From the inquiry it became obvious that most NMAs have a supply drive character. In the future, NMAs should work towards a more customer-oriented approach.

# Cartographic Literature & Special Features

Our prospective continuation of the project will follow this path. Within this framework the following aspects can be taken into account: online ordering, selecting required data sets through an user specified area, possibilities to order certain layers of a digital dataset, information on consulting services or links to companies that provide services using NMA data sets.

The function of the website (URL 1) will not be limited as a platform to report on the obtained results of the project. It will also have an informative function, where to find homepages, addresses and website examples. So stay tuned to: <http://www.itc.nl/~carto/nmo>.

## Bibliography

- Hootsmans, R.M. (2000). Web maps and National Mapping Organisations. In: Web Cartography - developments and prospects. M. J. Kraak and A. Brown. London, Taylor & Francis, pp.109-122.  
<<http://kartoweb.itc.nl/webcartography/webbook/ch08/ch08.htm>>
- Hootsmans, R.M. & M.J. Kraak (1999). Website Considerations for National Mapping Organisations: A Fast Medium Used by impatient people. In: Geoinformatics, June issue, pp.6-9.
- Kraak, M. J. and A. Brown, Eds. (2000). Web Cartography - developments and prospects. London, Taylor & Francis.  
<<http://kartoweb.itc.nl/webcartography/webbook/>>
- URL 1: NMAs and the WWW.  
<<http://www.itc.nl/~carto/nmo/>>
- URL 2: Classification of web maps  
<<http://kartoweb.itc.nl/webcartography/webmaps/classification.htm>>
- URL 3: Australian Surveying and Land Information Group. Interactive gazetteer.  
<<http://www.auslig.gov.au/mapping/name/s/names.htm>>

## Flexible education: The Challenge for Cartography and GIScience Education

The field of geographic information science (GIScience) has grown immensely in recent years with a wide range of educational programs being offered to cater for the expanding career opportunities. Yet, finding the appropriate educational program for the desired career path is not an easy choice. This is due to the diversity in the programs offered, the different requirements of the wide range of career opportunities available, and of skills required in the GIScience field. There is a growing shift to increased flexibility in the provision of higher education and it is a challenge that disciplines such as GIS and Cartography need to address. This flexibility refers to on-campus education as well as the provision of distance studies.

Geographic information systems (GIS) are used across a wide range of disciplines including surveying, geography, computing and information technology, geology, environmental science, urban and regional planning, business management, among others. Applications can, for example, range from the measurement and collection of spatial data for asset management, to the analysis and modelling of population distribution and growth patterns in urban planning. The use of GIS and the skills required can vary considerably across these areas. Further, many potential GIScience students may already have a background or have developed skills in one or more of these areas.

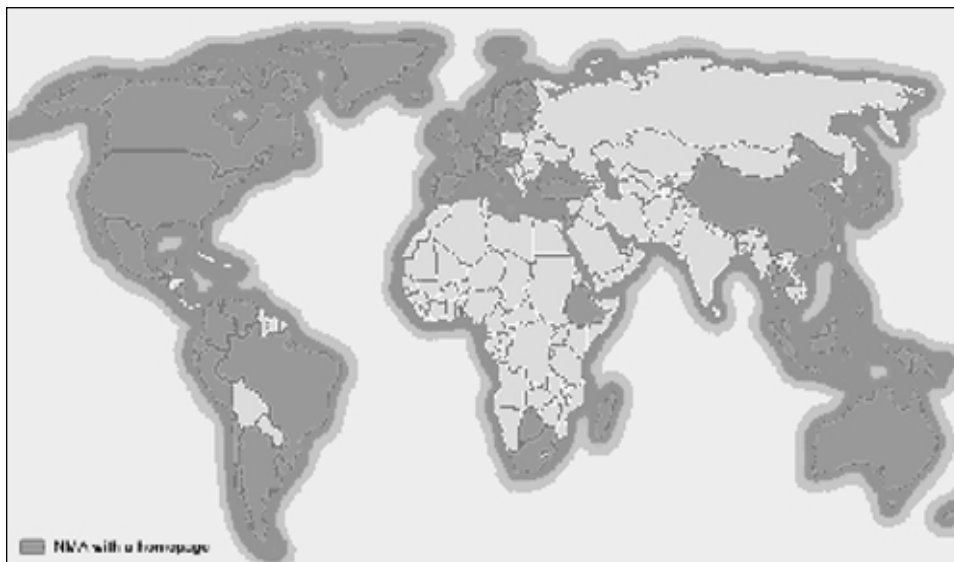
Because of the diversity among GIScience learners, their educational needs will vary,

and the programs offered must take into account their background and how they want to utilise GIS within their particular applications or professions. The programs offered may approach the GIScience program from a geomatics, a geography or an information technology viewpoint, which influences the emphasis placed on each of these components. However, each of these components is essential and must build on the students' qualifications and requirements.

The explosive growth of the world wide web and online technologies have opened the way to facilitate the delivery of flexible learning programs. Flexible learning encompasses both the traditional style of delivery (eg. lectures) and the individually negotiated learning activities, as well as everything in between. Flexible learning brings together the learners (and their needs), the learning resources (including instructors) and the technology to deliver and facilitate the learning program.

Flexible learning brings about a challenge for GIScience and Cartography programs. Having traditionally been centered on classrooms and laboratories, GIScience education must now provide additional and new ways of reaching out to flexible and distance learners. The Internet, as a very valuable resource, must be effectively utilised in providing a flexible learning environment. How do we "deliver lectures" outside the classroom? How do we "develop practical skills" outside the laboratory? How do we "involve" the distance student in his or her absence?

These are teaching and learning issues being explored and examined by many higher educational institutions. For example, Curtin University of Technology has a GIScience program that is offered via distance studies and other flexible modes (see [www.cage.curtin.edu.au/gis](http://www.cage.curtin.edu.au/gis)). The program is fully web-based and utilises online learning technologies to provide a student-directed learning environment. The units in the program provide the students with a study plan (administration, requirements, outline, etc.), a study guide (content, materials, expected outcomes and summaries, resources and links to other resources) and a work guide (practical exercises, assignments, virtual field trips, online quizzes, etc.). Students are able to interact with their peers, lecturers, tutors, administrators, etc. via a discussion forum and real-time chat rooms, in addition to the email, telephone and fax options. Further, students are provided with orientation and navigational aids to guide them through the unit materials and web site, and distance students additionally have access to a distance guide that leads them through a "virtual" campus (library, bookshop, services, administration, etc.).



National Mapping Agencies on the WWW (August 2000)  
Nicolie Emmer, Menno Kraak



# Forthcoming Conferences & Workshops

The greater flexibility being provided in GIScience education is proving to be an exciting and challenging venture for students and educators alike. Flexible learning is rethinking and reshaping the way we teach and learn. Although the knowledge and skills that are fundamental to a GIScience program must remain, they are being imparted to the student using flexible and online methods of teaching and learning. The challenge is to find the appropriate methods that enhance and promote the learning opportunities for Spatial Sciences students.

International Organizations in the field of Spatial Sciences are aware of the needs for flexible and continuing learning. For instance, the ICA Commission on Education and Training has taken the decision to develop a web course for university lectures, which will be available over the Internet. The initial topics cover aspects common to Cartography and GIS education (see David Fraser's report in this issue). It is expected that efforts such as begun at Curtin University will help strengthen and fulfil the educational goals set by organizations like ICA, FIG and ISPRS.

*Bert Veenendaal, Graciela Metternicht,  
Department of Spatial Sciences, Curtin  
University*

## Digital Earth 2001

Digital Earth 2001, June 24-28, 2001, Sheraton Hotel, Fredericton, New Brunswick, Canada, is an opportunity for interaction between representatives from government, industry and academia involved in the planning, development, management, application and integration of information from a wide variety of sources and disciplines in the global community.

Digital Earth addresses the cultural, institutional, scientific and technical challenges that allow the citizen, scientists, planners and policy makers to visualize the Earth, and all places within it, to access information about it and to understand and influence the social, economic and environmental issues that affect their lives in their neighbourhoods, their countries and the Earth.

The conference theme, Beyond Information Infrastructure, provides an opportunity to bring together for the first time five distinct conferences - each with its own history and unique focus:

- 1) the International Symposium on Digital Earth has for the past two years been a focal point for global leaders interested creating a "Digital Earth" - a virtual representation of our planet that enables a person to explore and interact with the

vast amounts of natural and cultural information gathered about the Earth;

- 2) the Canadian Institute of Geomatics Annual General Meeting and Conference - the leading Canadian Conference on Geomatics - provides an international and national forum on topics related to GIS, GPS, Remote Sensing, and Geographic Information Science;
- 3) Geomatics Atlantic has a 17 year history of showcasing a living laboratory of geomatics theory, concepts and evolution;
- 4) TExpo - an annual national conference which focuses on emerging technologies hosted by Greater Fredericton Economic Development Corporation (GFEDC); and
- 5) CEOS EO/GEO - The Annual Workshop of the Committee for Earth Observation Satellites Working Group on Information Systems and Services - developers of Web and Internet based systems for Earth Observation, Global change and GIS.

For more information visit  
[www.digitalearth.ca](http://www.digitalearth.ca), e-mail:  
[info@digitalearth.ca](mailto:info@digitalearth.ca)

*Sheri Flanagan, Conference Organizing  
Committee*

## 2nd Joint ICA/ISPRS Workshop on Updating, Incremental updating and Versioning of Spatial Data Bases

Call For papers and registration:

Dates: 4-5 August, 2001

(just prior to the ICA Congress)

Venue: Beijing International Convention

Center (BICC) (same as the ICA Congress)

Fee: \$100 for 2-days ; \$60 for 1-day

Include: Proceedings Abstracts; Lunch; Coffee and refreshments

Registration: Through the Beijing ICA Congress Registration

Contact: Ammatzia Peled e-mail:

[peled@geo.haifa.ac.il](mailto:peled@geo.haifa.ac.il); Antony Cooper  
([ACooper@csir.co.za](mailto:ACooper@csir.co.za)); Christian Heipke  
([heipke@ipi.uni-hannover.de](mailto:heipke@ipi.uni-hannover.de)); Felicitas Lang  
([lang@ipi.uni-hannover.de](mailto:lang@ipi.uni-hannover.de))

During the Congress the WG will hold: a) A technical session on Incremental updating and versioning; b) An open session to report on it's work since Ottawa Congress.

Abstracts for the workshop may be submitted to [icaupdt@geo.haifa.ac.il](mailto:icaupdt@geo.haifa.ac.il), or to any of the above mentioned points of contact. Abstracts for the technical session may be submitted as soon as possible to:

[Peled@geo.haifa.ac.il](mailto:Peled@geo.haifa.ac.il). More details:  
<http://geo.haifa.ac.il/~icaupdt/meetings.htm>

*Ammatzia Peled, Co-chair, WG on  
Incremental Updating and Versioning*

## The Atlas of Ukrania

The presentation of The Atlas of Ukraine (CD-pilot project) took place in Kiev in last month. It has been developed by The Institute of Geography (National Sciences Academy) and ISGEO Company. The CD consists of English and Ukrainian versions of product. The Atlas consists of 176 maps, 200 photos and many text articles about natural resources, population, economy, ecology of Ukraine. The product runs on PC-Windows software. All maps are in vector format (scalable). Also it is possible to make search of attribute and spatial data with "find" function. More details can be obtained from Dmitry Llyashenko ([dima\\_l@geogr.freenet.kiev.ua](mailto:dima_l@geogr.freenet.kiev.ua))

*Dimitry Lyashenko*

## Resources for Earth Science and Geography

To give students access to the best web sites in geography, earth and environmental sciences, "RESOURCES FOR EARTH SCIENCE AND GEOGRAPHY INSTRUCTION" at <http://www.cmich.edu/~franc1m/homepage.htm> has been developed. The 600 + sites selected are based on image quality, ease with which lesson plans can be developed, organization, authenticity, scope, and format. Please make your students aware of these sites if you feel it would be useful.

A weekly "Earth Science Site of the Week" listserv, reviewing two of the most interesting sites found at the resource page is maintained. If you would like to be added to this listserv please contact:  
[Mark.Francek@cmich.edu](mailto:Mark.Francek@cmich.edu)

*Mark Francek, Central Michigan University*

# For Your Diary

20th International Cartographic Conference  
Beijing, International Convention Centre,  
China

Date: 6 – 10 August

Contact: LOC for ICC 2001

(icc2001@sbsm.gov.cn)

Internet: www.sbsm.gov.cn/icc2001

International Map Trade Association (EAME  
Region), 8th Annual Conference and Trade  
Show.

Krakow, Poland

Date: 15 – 17 February 2001

Contact: Sue Cranidge

(imtaeurope@compuserve.com)

Internet: http://www.maptrade.org

Digital Earth 2001

Fredericton, New Brunswick, Canada

Date: 24 – 28 June 2001.

Contact: David Finley

(programchair@digitalearth.ca)

Internet: http://www.DigitalEarth.ca

20th Brazilian Congress of Cartography, 9th  
Congress of Land Survey Engineering, 8th  
Iberoamerican Conference on GIS

Porto Alegre, Rio Grande do Sul, Brazil

Date: 7 – 12 October 2001

Contact: Francisco Braganca de Souza

(xxcbc@orion.ufrgs.br)

Internet: http://www.ufrgs.br/xxcbc

National Geo-spatial conference GeoCart  
2001

New Zealand, Wairakei Resort

Date: 30 April - 2 May 2001

Contact: Igor Drewcki

(info@cartography.org.nz)

Internet:

http://www.cartography.org.nz/geocart2001

CONSAS 2001

12th conference of southern African

Surveyors, Cape Town, South Africa

Date: 12 – 14 March 2001

Contact: Brian Mellor

(bjmellon@iafrica.com)

Internet: www.plato.org.za

GIS 2001

Vancouver Trade and Convention Centre,

Vancouver, BC

Date: 19 – 22 February, 2001

Contact: Matt Ball (Email: mball@aip.com)

Internet: www.GIS2001.com

2nd Joint ICA/ISPRS Workshop on Updating,  
Incremental updating and  
Versioning of Spatial Data Bases

Dates: 4-5 August, 2001

(just prior to the ICA Congress)

Venue: Beijing International Convention  
Center (BICC) (same as the ICA Congress)

Contact: Ammatzia Peled

(peled@geo.haifa.ac.il)

Internet:

http://geo.haifa.ac.il/~icaupdt/meetings.htm

CoastGIS 2001

Halifax, Nova Scotia, Canada

Date: 18 – 19 June 2001

Contact: coastgis2001@agc.bio.ns.ca

Internet: agc.bio.ns.ca/coastgis2001

Map India 2001

New Delhi, India

Date: 6 – 8 February 2001

Contact: CSDMS (info@mapindia.org)

Internet: www.csdms.org

Geomatic 80

Tehran, Iran

Date: 30 April – 4 May 2001

Contact: National Cartographic Centre

(geo80con@ncc.neda.net.ir)

Geoinformatics & DMGIS 2001

Asian Institute of Technology, Bangkok,

Thailand

Date: 23 – 25 May 2001

Contact: Dr Xiaoyong Chen

(xychen@ait.ac.th)

IGARSS 2001

Sydney, Australia

Date: 9 – 13 July 2001

Contact: Tammy Stein (tstein@phoenix.net)

Internet: www.igarss.org

Barbara Petchenik Award	2
75 years of Cartography at ETH	3
Cartography and Children	7
Education and Training	12
Flexible Education	14
Forthcoming Conferences	15,16
Gender and Cartography	10
Geographical Sciences Bulletin	13
History of Cartography	10
Hope from Heidelberg	5
IGU meeting	5
Map Production	9, 11
Mapping from Satellite	12
Maps and Internet	8
Marine Cartography	12
Mountain Cartography	6
Proceedings ICC Ottawa	13
South Africa National Mapping Organization	3
Students' exchange	4
Theoretical Cartography	5
Websites of National Mapping Agencies	13

## Contributions

Please send contributions to:  
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Curtin University of Technology  
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Western Australia  
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Ftp: alpha.cage.curtin.edu.au  
Login and pwd: anonymous  
Directory: /graciela/ICA/incoming