

president's report



Dear Colleagues

No doubt you are aware of the ICA's Research Agenda (icaci.org/research-agenda/introduction/). It was written almost ten years ago and since we have witnessed so

many changes in technology and society that influence our discipline, it is time to revisit the Agenda. This is an ongoing top-down and bottom-up process. Several ICA Commissions have recently published a number of articles concerning the future of cartographic research in our journal, a special open issue of the *International Journal of Cartography*, Vol 3, Supplement 1 (www.tandfonline.com/toc/tica20/3/sup1), and other Commissions are currently preparing similar contributions. The ICA Executive Committee will bring these

together in an update of the current ICA Research Agenda.

Research is necessary to make sure our discipline remains relevant. However, the results have to be disseminated too. Education is one of the means to do so, although it might take a while before cutting edge research ends up in the educational curricula. New developments should be linked or incorporated into existing domain knowledge. This existing domain knowledge is sometimes typified as a domain's Body of Knowledge (BoK) – the complete set of concepts, terms and activities that make up a professional domain, as defined by the relevant learned society or professional association.

In this context ICA sees it as its duty to help educators by defining a BoK for cartography. To do so the Executive Committee has decided to establish a new Working Group on the Body of Knowledge for Cartography (CartoBoK), to be chaired by ICA Vice President Lynn Usery, and



Paper presentation at the 11th ICA Mountain Cartography Workshop held in Hvar, Croatia, 21-25 May 2018 | *Photography courtesy of Dušan Petrović*

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ica publications

In 2017 the ICA Executive Committee introduced a new Publications Policy, which focuses on the conference proceedings. In order to give them an adequate visibility and reputation, a conference publication series has been established, which is administered and hosted by a professional publisher. There are three publication options, depending on the review and the extent of the papers (see below). The benefits of such arrangement will be manifold:

- **Visibility** – one single point of contact for the publications of ICA events
- **Reliability** – the publications will be available at the time of the conference
- **Open Access** – the publications are published online and under the Creative Commons licence
- **Reputation** – the publisher will suggest the *Advances* and *Proceedings of the ICA* for inclusion in several data bases and indices (e.g. Scopus, Web of Science)
- **Standardisation** – one standardised format of the publications

The new policy will not interfere with publications in ICA related journals; in contrast, it will provide an excellent basis for developing high-level journal publications.

New ICA Conference and Event Publications

Starting from 2017, the ICA records their conferences like International and Regional Cartographic Conferences (ICC and RCC), as well as all other ICA events, in three official publication outlets which are hosted by a commercial publisher, Copernicus GmbH:

- **Advances in Cartography and GIScience of the International Cartographic Association** (in short: *Advances of the ICA*) – a single-blind peer review based on a full paper
- **Proceedings of the International Cartographic Association** (in short: *Proceedings of the ICA*) – a single-blind peer review based on submitted abstracts, developed to a full paper
- **Abstracts of the International Cartographic Association** (in short: *Abstracts of the ICA*) – a single-blind peer review based on submitted abstracts, publication of abstract only

With these three series, the ICA can offer excellent opportunities for the authors to present their work – full papers for more research-oriented work, abstract based full papers for advanced

Recently I have been researching ICA membership. At the first General Assembly in Paris in 1961, 26 member nations were ratified, 13 of which were the 1959 'founding members'. This number steadily grew over the years to 84 in 2007, with a record of 20 new members ratified at the 10th GA in Barcelona in 1995. At the last count in Washington D.C., the ICA had 72 national members, being over a third of all sovereign states of the world. These numbers in themselves are a wonderful achievement.

But what does it really mean to be a member of the ICA? I wonder what sort of answer the 'fathers' of our Association gave when they were setting up the ICA almost 60 years ago... The statistics given above prove that the appeal of becoming an ICA member has not diminished, but is it because of the rights, obligations and entitlements of the member nations listed in the ICA Statutes and By-laws that the ICA enjoys such an uptake, or is it for something else?

I tend to think about the ICA as a family of families. Cartographers become individual members of their national societies and organisations creating a community of like-minded professionals and enthusiasts who want to share, exchange, publish, create, organise and spend time together. Given time, mutual understanding and common drive, these communities transform into families, where members find support and encouragement, share willingly their talents and celebrate cartography. I am sure our 'fathers' had similar experiences back in Sweden, France, Switzerland or the USA, and wanted to take that experience to the next level! Perhaps family of families was their answer and the International Cartographic Association was born.

The new ICA Publication Policy is an important development reported in this issue of *ICA News*. We also learn about ICC 2019 preparations and are reminded about the beginnings of the Barbara Petchenik Children's World Map Awards.

Thanking all contributors and readers for your continuous support.

Igor Drecki | Editor ICA News | ICA ■

The *ica news* is published by the International Cartographic Association (ICA).

President: **Menno-Jan Kraak** | University of Twente | *The Netherlands*

Secretary General & Treasurer: **László Zentai** | Eötvös Loránd University | *Hungary*

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president's report cont...

supported by ICA Past President Georg Gartner and David Fairbairn, Chair of the ICA Commission on Education and Training. They are in the process of adding a few more members. The Working Group will report on the progress it is making at the 2019 International Cartographic Conference in Tokyo, Japan. Since cartography is not a standalone discipline, they will consult others in related disciplines who are also working on their respective BoKs and might have incorporated cartographic terms.

According to the Terms of Reference, the Working Group will start with an inventory of existing BoKs, such as those provided by the University Consortium for Geographic Information Science, the Association of Geographic Information Laboratories in Europe, the National Geospatial Intelligence Agency and the

United States Geological Survey, the Association for Computing Machinery, and others relevant to CartoBoK. The next step will include top-down and bottom-up process to define an initial set of topics to capture cartographic knowledge and concepts for the CartoBoK. This will be followed by soliciting, reviewing and publishing individual contributions, and developing a procedure for updating and refining CartoBoK beyond the initial delivery so that it becomes a dynamic, living document that changes as the discipline of cartography is changing. A close link with the ICA Research Agenda will be maintained. A dedicated web page for the Working Group will be created soon to keep us all informed.

Menno-Jan Kraak | President | ICA ■

ica publications cont...

work-in-progress, as well as abstracts for practically oriented work or artwork, which typically are not adequately represented in a full paper.

For the ICCs and for the RCCs, *Advances* and *Proceedings of the ICA* are published; for other ICA events, either *Advances* or *Proceedings of the ICA* are published. Exceptions from this rule require prior approval from the Executive Committee. All other ICA events have the option of publishing the *Abstracts of the ICA*.

These publications are generated from all ICA events. Organisers will be required to provide Copernicus with camera-ready manuscripts in PDF format, together with the respective metadata, four to six weeks prior to the scheduled meeting, depending on the size of the event. For each published paper a moderate article processing charge (APC) has to be paid (as of 1 January 2018 it is €17.50). This sum should be included in the event fees.

The first papers published in the new series come from the ICC 2017 held in Washington D.C., and appear in the *Proceedings of the International Cartographic Association*, Volume 1, 2018. They are accessible from www.proc-int-cartogr-assoc.net/.

The screenshot shows the website for 'Proceedings of the ICA'. At the top left is the ICA logo. The main heading is 'Proceedings of the ICA'. Below this is a navigation bar with 'ICA | ICA Publications | Imprint'. On the left side, there is a sidebar with a 'Conference Publications of the Int. Cartographic Association' section containing links for 'About', 'Articles', 'Review process', 'Licence & copyright', 'Publication ethics', 'Article level metrics', 'ICA Word template', and 'ICA LaTeX template'. The main content area is titled 'Volumes' and lists 'Volume 1, 2018' for the '28th International Cartographic Conference' held from 2-7 July 2017 in Washington DC, USA, edited by C. A. Brewer. On the right side, there is a 'Copernicus Publications' logo and two search boxes: 'Search articles' and 'Search web pages', both with search input fields and magnifying glass icons.

Role of *International Journal of Cartography*

In order to promote the *International Journal of Cartography* (IJC), there is a special option for the International Cartographic Conferences (ICCs): the IJC can select 8-12 papers from the full paper peer-review track for a special issue published at the event.

In addition to the regulations above, all event organizers are expected to seek high quality papers at the conferences and meetings to be published in the *International Journal of Cartography*. Furthermore, they do always have the option to approach the IJC for a special issue.

ICA Publications Policy in a Nutshell

Here are the main changes introduced by the new ICA Publications Policy:

- one visible location (at Copernicus) and structure for all ICA event publications
- no longer the need for event organizers to arrange for their own publications because all go into one of the ICA series
- no longer ICA Springer books from our biennial International Cartographic Conferences (ICCs)
- ICA Springer books will be available for special events (old agreements will be honoured)
- Conference papers may be extended and handed in for a journal publication after the event

Monika Sester | Chair | ICA Publications Committee | ICA ■

icc 2019 tokyo · japan



Dear Colleagues

The 29th International Cartographic Conference (ICC) and 18th General Assembly of the ICA to be held in Tokyo, 15-20 July 2019, is just

12 month away! The Local Organising Committee meets regularly, at least once a month, to discuss progress being made and shortly will receive members of the ICA Executive Committee for the inspection of the conference site.

In accordance with the recently released new ICA Publications Policy (see pages 1-3), the ICC 2019 Proceedings will have three publication options based on the review and extent of accepted papers:

- *ICA Advances* (full paper)
- *ICA Proceedings* (abstract / full paper)
- *ICA Abstracts* (abstract)

The details will be announced on the conference website soon.

Call for Special Sessions

As with previous ICA conferences, the organisation of oral sessions into themes will be based on the subject areas of the ICA Commissions and Working Groups. However, the LOC may propose special sessions reflecting on the dynamic nature of cartography and the latest developments in related disciplines. We are considering important topics, such as for example Sustainable Development Goals, but we welcome proposals from enthusiastic cartographers that promote new approaches to advancing cartography and geographic information sciences. If you have any good ideas for a special session, please get in touch (icc2019.org/).

For your calendar, a call for papers opens on 1 August 2018.

Looking forward to receiving your contributions and seeing you in Tokyo.

Takashi Morita | Conference Director | ICC 2019 Local Organising Committee | Japan ■

ica executive committee

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Mapping Everything for Everyone

ica news contributions

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Submission Deadlines

15 May for June editions

15 November for December editions

olawale oluwafemi



My passion for drawing and colouring started about 25 years ago. Growing up in the family where my parents are both teachers gave me an opportunity to learn arts even in a resource constrained country like Nigeria.

As a teenager, I became espoused with atlases – an interest which later propelled my academic career towards BSc degree in Geography and two master degrees, one in GIS and another in Remote Sensing. My masters dissertation focused on using cartographic design tools to model the impact of artisanal mining in a traditional African city. My research interest in cartography grew stronger while working on my masters thesis.

The topics of my masters research projects captured the attention of my employer and consequently I was offered a Scientific Officer and Cartographer position at the Centre for Geodesy and Geodynamics of the Nigerian Space Agency in Toro, Bauchi State, Nigeria. I have been involved in several national cartographic and research projects within the West African sub-region. These projects were multidisciplinary and involved collaboration with researchers from many different scientific domains and industry such as health, security, geodesy, and environmental impact assessment.

In pursuit of showcasing my research and expanding my knowledge in Cartography and GIScience, I applied for the ICA scholarship and submitted two papers to the 28th International Cartographic Conference (ICC) in Washington D.C. I felt joyous to have received the ICC 2017 Young Scholarship award as the only recipient from West Africa. I am also pleased to be part of the team working on the Geohazard zonation mapping project of Nigeria which has been covered in a book publication.

Olawale Oluwafemi | Centre for Geodesy and Geodynamics of the Nigerian Space Agency | Nigeria | walefemi007@yahoo.com

Map of Nigeria showing location of natural hazards, such as volcanoes and faults. It identifies hazard potential classified into low, moderate, high and very high categories. State boundaries, major rivers and lakes are also marked. The map was produced in 2013 by the Centre for Geodesy and Geodynamics of the National Space Research and development Agency, Toro.

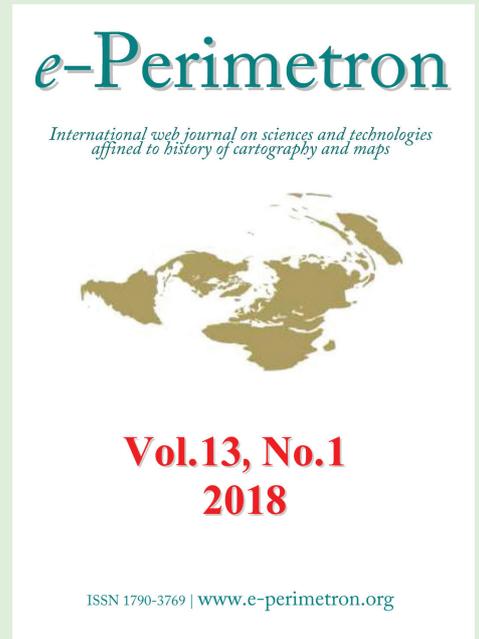
www.e-perimetron.org/

e-Perimetron (from a Greek word for a map) is an open access “international web journal on sciences and technologies affined to the history of cartography and maps”. Established in 2006, this innovative e-journal brings together map historians, scholars and experts in digital technologies to create a common platform for exchanging research ideas concerning cartographic and map heritage expertise.

The idea of creating a pluralist, peer reviewed international e-journal, which does not follow any particular ideological, theoretical or methodological approach in dealing with issues relating to cartographic and map heritage, was first presented in 2001 by Evangelos Livieratos (Aristotle University, Thessaloniki) to a small group of colleagues, representing humanistic, scientific and technological views of cartography: Piero Falchetta (Marciana National Library, Venice), Carto Monti (Politecnico, Milan) and George Toliás (National Research Foundation, Athens). The original idea was finally implemented in 2006 coinciding with the creation of the ICA Working Group on Digital Technologies in Cartographic Heritage a year earlier during the International Cartographic Conference in A Coruña, Spain.

e-Perimetron is published quarterly. Its unique content comes primarily from the work of the ICA Commission on Cartographic Heritage into the Digital (formerly ICA Working Group / Commission on Digital Technologies in Cartographic Heritage), and usually consists of a selection of papers presented at the Commission’s annual conferences. In the twelve volumes published between 2006 and 2017, there were 48 issues containing 254 papers – a total of 3,061 pages.

The journal accepts contributions in English and French on a wide range of topics covered by the Commission interests. Its target audiences are research communities, students

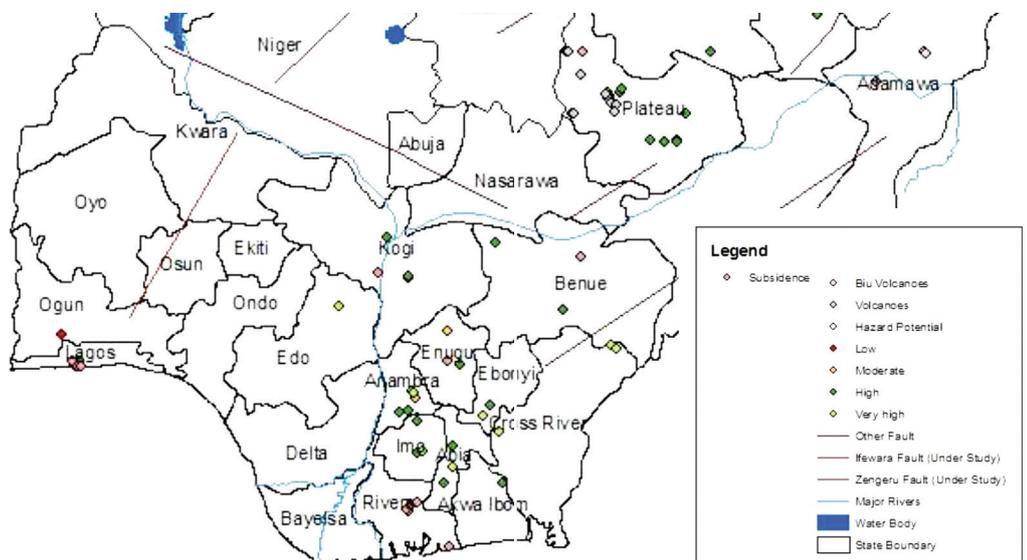


and general public interested in cartoheritage and associated digital technologies. Accepted papers are published online without delay and are freely available.

Since December 2009, *e-Perimetron* was viewed, on average, more than 6,000 times per year, by around 10 visitors per day. Its readership comes from 145 countries, with the top ten coming from Greece (20.2%), USA (17.3%), Italy (7.6%), UK (4.6%), Germany (4.5%), France (3.7%), Spain (3.3%), Brazil (3.2%), China (2.7%) and Switzerland (2.6%).

e-Perimetron is administrated by members of the AUTH CartoGeoLab at Aristotle University, Thessaloniki.

Evangelos Livieratos | Editor | e-Perimetron | Greece



www.itc.nl

In 1950, within the framework of United Nations Technical Aid programmes for developing countries, Prime Minister Professor Schermerhorn established the International Training Centre (ITC) for Aerial Survey in the Netherlands. In 1971, a cartography department was set up with its own series of courses for mid-career professionals from all over the world. Ferdinand Jan Ormeling was ITC's first cartography professor. At that time he was also ICA's Secretary General and Treasurer, a function he occupied from 1964 to 1976; he later became ICA President (1976-1984) and Past President (1984-1987). Having such close links and international focus, both ITC and ICA supported each other and benefited from their coexistence.

Gradually, ITC's focus changed to research and scientific education and since 2010 it is known as Faculty of Geo-information and Earth Observation of the University of Twente in Enschede. Masters degree (MSc) programme in cartography was first offered in 1977 and the first doctoral degree (PhD) was awarded in 1991. Shortly after, cartography became a specialization in the geoinformatics programme of the ITC's MSc in Geo-Information Science and Earth Observation. This programme still exists today, but has just been overhauled and now has a 2-year duration. Also starting in September 2018 is a completely new MSc programme in Spatial Engineering.

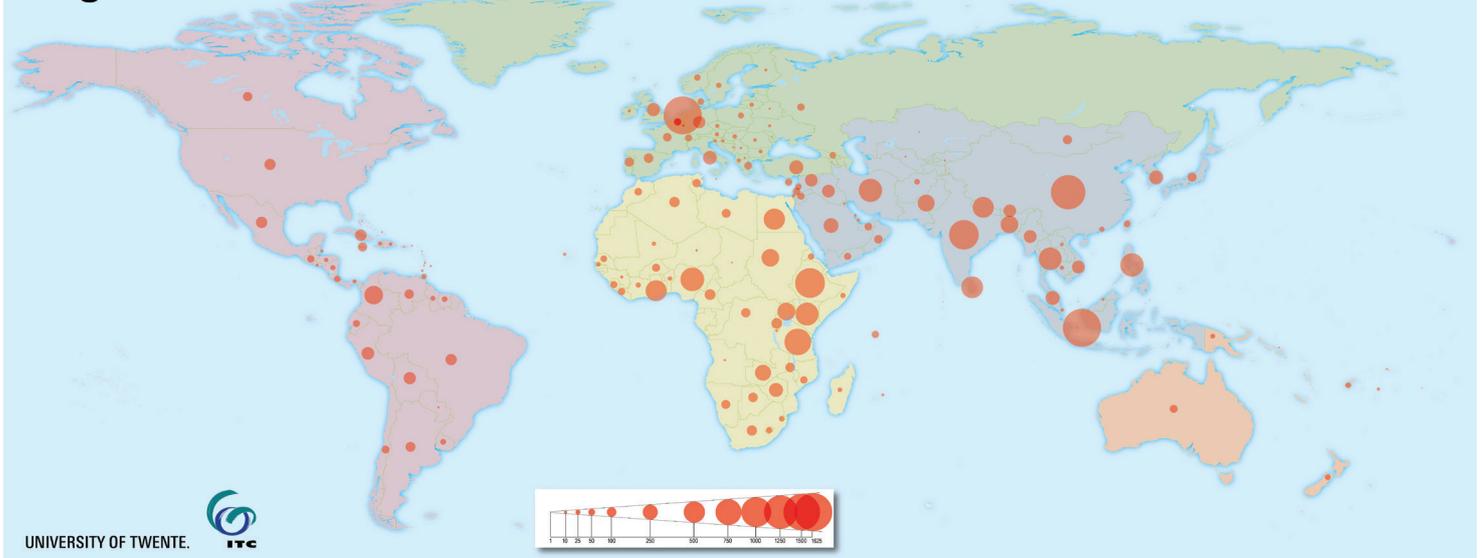
The close ties between ITC and ICA still remain strong. ITC staff plays an active role in

many ICA Commissions and serves in the ICA Executive Committee; ITC's current cartography professor, Menno-Jan Kraak, is also ICA President. Through the links with ICA, ITC is again involved in an international MSc Cartography programme (www.cartographymaster.eu), together with our partners TU München, TU Wien and TU Dresden.

The mission of ITC is to develop global capacity, particularly in less developed countries, and to utilize geospatial solutions to deal with national and global problems, through education, research and project services.

Corné van Elzakker | University of Twente | Netherlands ■

Origin of ITC students since 1950



ica news 25 years ago...

The piece reprinted below does not need an introduction...

Igor Drecki | Editor ICA News | ICA ■

ICA Newsletter, No 21, May 1993

World Wide Map Contest for Children

In memory of Barbara Petchenik, who was a member of the Executive Committee and who passed away in 1992, the ICA is launching a

world wide map competition for children under the age of 16. The theme is *A World Map* and the competition aims to promote a better understanding of the world in the 1990s as seen and portrayed in maps through the eyes of children internationally. Entries from around the world will be part of a special exhibition at the 16th International Cartographic Conference in Cologne, Germany in May. The selection will be made by international panel of judges, winners will be announced from each continent and prizes awarded. Then, the International Art Committee of UNICEF has agreed to consider five

winning entries, one from each continent, as part of their greeting card collection. The competition is being organized in member nations through their ICA representative institutions.

As initiator of the idea for the contest, President [D.R. Fraser] Taylor is especially looking forward to the entries from the thousands of children who will participate. "It will be a unique opportunity to see how children from different countries and cultures view the world".

Cartographic Heritage into the Digital

cartography.web.auth.gr/ica-heritage/

Conference in Madrid, Spain

The 13th Conference on Digital Approaches to Cartographic Heritage (cartography.web.auth.gr/ICA-Heritage/Madrid2018/) was held in Madrid, Spain, 18-20 April 2018. It was organized by the ICA Commission on Cartographic Heritage into the Digital and hosted by the Instituto Geográfico Nacional (IGN) of Spain, one of the affiliate members of ICA. The Conference was supported by the Sociedad Española de Cartografía, Fotogrametría y Teledetección (Spanish Society of Cartography, Photogrammetry and Remote Sensing), the Biblioteca Nacional de España (National Library of Spain), the Museo Naval (Naval Museum) of the Royal Spanish Navy, the Map Archive of the Geographical Centre of the Spanish Army, the Aristotle University of Thessaloniki (AUTH CartoGeoLab and AUTH Library and Information Centre), and the Map and Geoinformation Curators Group.

Almost 120 participants and contributors from 25 countries attended the Conference, in which 45 papers were presented on the following thematic areas:

- Cartoheritage in Digital Humanities
- Interconnection of cartographic archival sources, especially maps and textual data
- Interaction of cartoheritage with map and geoinformation curatorship of cartodiversity
- Digitisation and georeferencing
- Content analysis in terms of geometry and thematics of cartodiversity
- Landscape change studies based on map archival sources
- Visualisation of cartoheritage, including thematic portals
- Cartoheritage web providing issues
- Development of cartoheritage as a cultural issue in the context of GLAM (Galleries,



Participants of the 13th ICA Conference on Digital Approaches to Cartographic Heritage held in Madrid | Photograph courtesy of Evangelos Livieratos

Libraries, Archives, Museums), addressed to education and to the general public

During the Conference, participants had the opportunity to visit a map exhibition in the IGN Map Library entitled *Oikoumene: the evolution of the Image of the World*, as well as participate in the guided tour of the National Library of Spain to see an important map exhibition *Cartographies of the unknown*. In addition, they visited the Naval Museum to see all its treasures of naval travelling, navigation and sciences, and an exhibition at the Cartographic Archive of the Spanish Army Geographical Centre (for more information about these visits, please see cartography.web.auth.gr/ICA-Heritage/Madrid2018/exhibition.html).

Scientific event in Brescia, Italy

The Commission supported an important scientific event *Il mappamondo cinese di Giulio Aleni (The Chinese World Map by Giulio Aleni)* organized in Brescia, Italy, by the Fondazione Civiltà Bresciana and the University of Brescia, on 3 May 2018. The event was held on the occasion of the facsimile reproduction of the Vatican copy of Aleni's map (cartography.web.auth.gr/ICA-Heritage/FCB-Mappa-Aleni

[-giornata-di-studio-1.jpg](#)). The event focused on presenting to the public a rare world map made in China the first half of 17th century by the Brescia born scholar Giulio Aleni (1582-1649) and discussed two major versions of the map, one held by the Vatican Apostolic Library, Holy See, and the other by the Ambrosiana Library in Milan, Italy.

Cartoheritage issues in the International Master of Cartography

Cartoheritage issues researched and examined by the Commission were presented to students enrolled in the Cartography Erasmus Mundus Master of Science Programme (cartography-master.eu) as part of the second semester teaching at the Technical University of Vienna (TUW). Between 14-16 May 2018, Professor Evangelos Livieratos, Commission Chair, delivered a series of lectures on *Mining in Cartoheritage*. He also delivered a presentation on *Digitisation and comparison of old and modern maps* (cartography.tuwien.ac.at/cartotalk-evangelos-livieratos-digitisation-and-comparison-of-old-and-modern-maps/) within a CartoTalk series organized by the TUW Cartography Research Group.

A group of students enrolled in the Cartography Erasmus Mundus Master of Science Programme with the Commission Chair Evangelos Livieratos (fourth from right), and Head of TUW Cartography Research Group Georg Gartner (right) | Photograph courtesy of Evangelos Livieratos



Evangelos Livieratos | Chair | ICA Commission on Cartographic Heritage into the Digital | Greece ■

Cartography in Early Warning and Crisis Management

comcewa.geogr.muni.cz/

International Forum in Novosibirsk, Russia

The International Forum GEOBUILDING 2018, incorporating the conference *Geospatial Solutions for Structural Design, Construction and Maintenance* and an exhibition, was held in Novosibirsk between 21-23 March 2018. The



Prof Milan Konečný at the GEOBUILDING 2018 Forum, Russia | Photograph courtesy of Milan Konečný

forum was organised by Novosibirsk State University of Architecture and Civil Engineering (Sibstrin), Construction Association of Novosibirsk Region (CRO ASONO) and Exhibition operator *ExpoGEO*, and opened by Professor Vladimir Seredovich, forum chair.

The ICA Commission on Cartography in Early Warning and Crisis Management coordinated a session in Section 6 of the forum covering the following themes: contemporary trends in urban studies/urban geography and urban planning covering crisis management; BIM in design, construction and maintenance of engineering structures; urban studies/urban geography; geodesign; digital and transparent construction; construction quality and highway maintenance control; bank supervision in construction; and 3D technologies in architecture and construction.

On 21 March 2018, Commission chair Milan Konečný delivered an invited address *Smart Cities: How to Deal and Improve Disaster Risk Reduction?* Other speakers included:

- Prof Ammatzia Peled, University of Haifa, Israel – *Automated change detection of new constructions for updating spatial data bases*
- Dr-Ing Karel Vach, EuroGV, Czech Republic – *Large-scale photogrammetric survey of inaccessible rock walls and quarry sides by historic aerial imagery*
- Prof Anatoly Okhotin, National Research Irkutsk State Technical University, Russia – *TIM – the Irkutsk Region Centre at the Irkutsk National Research Technical University*
- Prof Vladimir Seredovich, The Construction Association of Novosibirsk Region, Russia – *Techniques and technologies for geometry control in construction*

The forum benefited greatly from the excellent work of Ms Argina Novickaya, who supports activities of ICA and other sister organisations in Siberia, especially Novosibirsk, for almost 20 years.

Conference in Novosibirsk, Russia

The 14th International Exhibition and Scientific Congress INTEREXPO GEO-SIBERIA 2018 titled

Open-Source Geospatial Solutions for Public Benefit was held in Novosibirsk Expocenter between 25–27 April 2018. The event was organised by the Ministry of Education and Science of the Russian Federation and Siberian State University of Geosystems and Technologies (SSUGT). In his opening address, Rector Prof Alexander Karpik said: *“Advanced scientific achievements in geosciences address the society with new challenges focused on systematic representation of surrounding reality, development of integral information and communication environment, satisfying the needs of the state in spatial data and electronic geospace, being a part of national informatization and digital economy programs”*.

The conference programme included a Panel discussion *Big Data and Real Estate*, a Plenary session *Digital economy and geospatial solutions*, a Roundtable *Remote sensing: data acquisition, processing and use*, a Masters student scientific session *First steps in science*, and an international event *Geospatial support of engineering constructions, road and transport infrastructure life cycles*. An important part of the programme consisted of an international event *Smart city, Internet of things and BIM technologies*, a Plenary session *Russian geodesy and cartography: history, current state and perspectives*, an international forum *Cross-border cooperation of Russia and Kazakhstan: creation of unified geoinformation support for rational environmental management system*, and an information session about the Siberian State University of Geosystems and Technologies.

Our Commission organised its 9th International Conference on *Early warning and Crises Management in the Big Data era* on 26 April 2018, covering the following themes: role, present state and current achievements of Earth sciences (geodesy, remote sensing, satellite imagery, geophysics, geomatics etc.); use of geoinformation for monitoring, early warning and crises management; current

solutions and achievements in the field of increased mobility, decision making, monitoring of disaster development, and reduction of crises impact in the era of Big Data; reduction of negative effects of disasters in the era of Big Data; efficient management and analysis of Big Data in the theory and practice of crises management; analysis, interpolation, and visualization of big data; and extraction of useful information from Big Data databases and data flows.

The conference was moderated by Prof Milan Konečný, Commission chair, Prof Dmitry V. Lisitskiy and Assoc Prof Svetlana Yankelevich, both from SSGUT. The following papers were presented:

- Milan Konečný, Masaryk University, Czech Republic – *Crises management: risk reduction, global challenges and Big Data*
- Volker Schwieger, Stuttgart University, Germany – *Integrated monitoring of a rock fall at the Yangtze River*
- O. Gordeeva, I. Rublev, Siberian Center FGBU SRC Planeta, Russia – *Detection of dangerous hydro meteorological phenomena using Earth remote sensing data*
- Ammatzia Peled, University of Haifa, Israel – *Automatic updating of spatial data bases*
- T. Bugakova, Siberian State University of Geosystems and Technologies, Russia – *Integrated algorithm for detection of spatio-temporal state of man-made objects based on geodetic data*
- Katerina Morozova, University of Latvia and Riga Technical University, Latvia; Reiner Jäger, Hochschule Karlsruhe – University of Applied Sciences, Germany; Saandaar Mijiddorj, MonMap Engineering Services Co. Ltd, Mongolia; Gunars Silabriedis, University of Latvia, Latvia; Janis Balodis, University of Latvia, Latvia; Janis Kaminskis, Riga Technical University and University of Latvia, Latvia – *Ulaanbaatar Q-geoid computation, parameter estimation and optimization concepts for gravity field determination*

> 08

Participants of the 14th International Exhibition and Scientific Congress INTEREXPO GEO-SIBERIA 2018 take part in a discussion concerning implementation of the UN Disaster Risk Reduction Conference directives | Photograph courtesy of Milan Konečný



- M. Karmanova, Siberian State University of Geosystems and Technologies, Russia – *Multilevel cross-cluster information model as core digital system of cartographical support of regional authorities in emergency situations*
 - I. Knol, Siberian State University of Geosystems and Technologies, Russia – *Development of visualization technology for technogenic objects based on a network of wireless intelligent mobile robots*
 - A. Sharapov, Siberian State University of Geosystems and Technologies, Russia – *Development of a multi-purpose system controlling the spatio-temporal state of man-made objects*
 - V. Rudoy, Here Technologies, Russia – *Use of a location-based platform in crisis situations*
 - A. Vakhrusheva, Siberian State University of Geosystems and Technologies, Russia – *Use of indoor navigation in crisis situations*
- Participants, many of them students of SSUGT and other universities, discussed the roles of geospatial specialists, cartographers, photogrammetrists and remote sensing specialists in the implementation of directives from the 2015 UN Disaster Risk Reduction Conference held in Sendai, Japan, and the intentions of UN GGIM.

Future plans

Our Commission is involved in two upcoming events. The first is a Seminar on Early Warning and Disaster Management being organised within the 7th International Conference on Cartography and GIS programme, Sozopol, Bulgaria, 18-23 June 2018 (iccgis2018.cartography-gis.com/). The second one is a joint conference organised by the Shenzhen University, our Commission and the Shenzhen City Hall – *Early Warning and Disaster Risk Management for Urban Areas in Big data Era: How to be part of Smart Cities Concept?* The conference will be held in Shenzhen, China, at the beginning of December 2018.

Milan Konečný | Chair | ICA Commission on Cartography in Early Warning and Crisis Management | Czech Republic ■

Cognitive Issues in Geographic Information Visualization

cogvis.icaci.org/

Workshop in Olomouc, Czech Republic

Between 27-30 April 2018, the ICA Commission on Cognitive Issues in Geographic Information Visualization and the ICA Commission on Use, User and Usability Issues, had the opportunity to return to Olomouc, Czechia. Having



Workshop on *Reproducibility in Cartography*, Olomouc, Czech Republic: (left) Researchers from Germany, Australia, the Netherlands, Malaysia/UK, and Ukraine discuss issues related to building and maintenance of a cartographic user studies database; (right); Arzu Çöltekin from Switzerland, introduces definitions of reproducibility in the scientific literature | *Photography Viktor Cap Photography*

experienced Palacky University's excellent hospitality at the Cartocon2014 meeting, when Vit Voženilek, current ICA Vice President, invited our participation in a four-day conference, we jumped at the opportunity to hold a workshop on one of those days (programme available from cogvis.icaci.org/18_reproducibility.html), in cooperation with one of our 'sister-groups' from ISPRS, their Working Group IV/9 – Geovisualization, Augmented and Virtual Reality.

On 27 April, we had a day-long discussion involving about 30 scientists and post-graduate students from more than 10 countries around the world on the topic of *Reproducibility in Cartography*. The idea for this workshop sprang from conversations among commission members over the last two ICA conferences in Brazil and the USA. We had noticed a trend of other disciplines, such as psychology and medicine, conducting large-scale reproducibility studies in which they tried to reproduce the findings of published work across a range of influential studies. Attempts to reproduce scientific findings have been common in the natural sciences for a long time, but have been comparatively less common in the social sciences. We wondered if cartography needed or would benefit from such an effort, so decided to organise a workshop to consider the matter in more depth.

This workshop was very productive and provided many perspectives on the topic of reproducibility and what can be done to support robust empirical cartographic research. We will not report on the full findings of the workshop in the newsletter, but interested readers can see an overview of what was discussed at docs.google.com/document/d/1e1Gct9e91sh9uRAAgly8sZncfikVmJhOkUQFbuRo-24/edit?usp=sharing.

We identified a number of potential activities that our commissions and the ISPRS working group could develop to support high-quality cartographic research and will be working on organising those future events and opportuni-

ties in the medium term. Please keep an eye on our respective list-servs and websites to find out about these opportunities.

Amy Griffin and Robert Roth | Chairs | ICA Commission on Cognitive Issues in Geographic Information Visualization / ICA Commission on Use, User and Usability Issues | *Australia / USA* ■

Geospatial Analysis and Modeling

gam.icaci.org/

Commission activities

As part of the efforts to set research agenda, the ICA Commission on Geospatial Analysis and Modeling had a research agenda panel session at the American Association of Geographers Conference on 10 April 2018 in New Orleans, USA. This panel session was organized by the commission Research Agenda chair Clio Andris. Panelists included Bin Jiang, Jean-Claude Thill, Xiaobai Angela Yao, Xinyue Ye, and Diansheng Guo.

It was a brainstorming session to discuss the frontiers of geospatial analysis and modeling within the context of GIS and cartography. The panel invited all Commission members to join, as well as any other interested participants of the AAG conference. The goal was to share cutting-edge research directions to promote new avenues and important debates in this field. The panel discussions were lively and inspiring. The contents of this panel are being solidified into a larger, more comprehensive research agenda for the commission.

Xiaobai Angela Yao | Chair | ICA Commission on Geospatial Analysis and Modeling | *USA* ■

Location Based Services

lbs.icaci.org/

LBS 2018 Conference in Zurich, Switzerland

The LBS conference series started in 2002 in Vienna, Austria, initiated by Prof Georg Gartner from TU Wien. Since 2015, it has become the annual conference of the ICA Commission on Location Based Services. In the past years, the LBS conferences travelled around the world, with venues in Hong Kong, Salzburg, Nottingham, Munich, Shanghai, Vienna, and Augsburg.

In 2018, the 14th International Conference on Location Based Services (LBS 2018) was hosted by ETH Zurich in Switzerland, between 15-17 January 2018. More than 120 participants from all over the world gathered in the historical main building of ETH Zurich. The conference was opened by Rector Prof Sarah Springman and Conference General Chair Prof Martin Raubal.

The conference featured two keynote presentations by Johannes Schöning from University of Bremen and Michael Gould from Esri. A total of 28 oral presentations have been given in 8 single-stream sessions, together with 25 posters and 6 showcases. The conference also featured the *Best Paper Session*, in which 3 full papers and 2 'work in progress' presentations were delivered. These oral presentations, showcases and posters provided a general picture of recent research activities related to the LBS domain. Such activities emerged in the last few years, especially concerning issues of outdoor/indoor positioning, smart environment, spatial modelling, personalization, context-awareness, cartographic communication, novel user interfaces, crowdsourcing, social media, big data analysis, usability and privacy.

The ICA kindly provided four ICA Scholarships for PhD/MSc students to attend the

conference, together with another eight travel grants sponsored by Esri.

A selection of peer-reviewed full papers has been published in the book *Progress in Location-Based Services 2018* within the Springer's Lecture Notes in Geoinformation and Cartography series. Work in progress and showcase submissions are included in the conference online proceedings, published by the ETH Zurich Research collection ([doi: 10.3929/ethz-b-000224043](https://doi.org/10.3929/ethz-b-000224043)).

A pre-conference workshop on *Eyetracking for LBS Research* was organized by the local organizer ETH Zurich on 14 January 2018. The workshop attracted more than 50 participants. It covered different topics related to eyetracking methodology and applications.

More details regarding LBS 2018 can be found at lbsconference.org. The next LBS conference will be hosted by Prof Georg Gartner at TU Wien, Austria, in November 2019. We look forward to meeting you there.

Special issues of international journals

A special issue on *Location-Based Services* of the ISPRS International Journal of Geo-Information (IJGI) is being published in 2018. This special issue aims to provide a general research activities related to location-based services. Currently, 18 papers have been accepted following a peer-reviewing process. For more details, please refer to www.mdpi.com/journal/ijgi/special_issues/LBS.

A special issue on *Representation and Analytical Models for Location-based Social Media Data and Tracking Data* of the International Journal of Geographical Information Science (IJGIS) is planned for 2018. It is a joint activity with the ICA Commission on Geospatial Analysis and Modeling. The special issue will contain invited submissions from the ICC 2017 Pre-Conference Symposium (LSMTD 2017), as well as other relevant papers. All the submissions have been peer-reviewed, and initial decisions have been made.

LBS Research Agenda

To motivate further LBS research and stimulate collective efforts, the Commission started an initiative in 2016 to develop a cross-cutting research agenda, identifying key research questions and challenges that are essential for the LBS development in the next 5 or 10 years.

Based on the feedback, comments, and suggestions collected from the workshops in Vienna and Washington D.C., the Commission chairs together with several invited experts are now compiling and revising the LBS research agenda. During LBS 2018 in Zurich, a first draft of the research agenda paper was discussed and further constructive inputs were collected. These inputs will help to finalize the research agenda paper, which is expected to be completed soon.

Haosheng Huang | Chair | ICA Commission on Location Based Services | *Switzerland / China*

Map Design

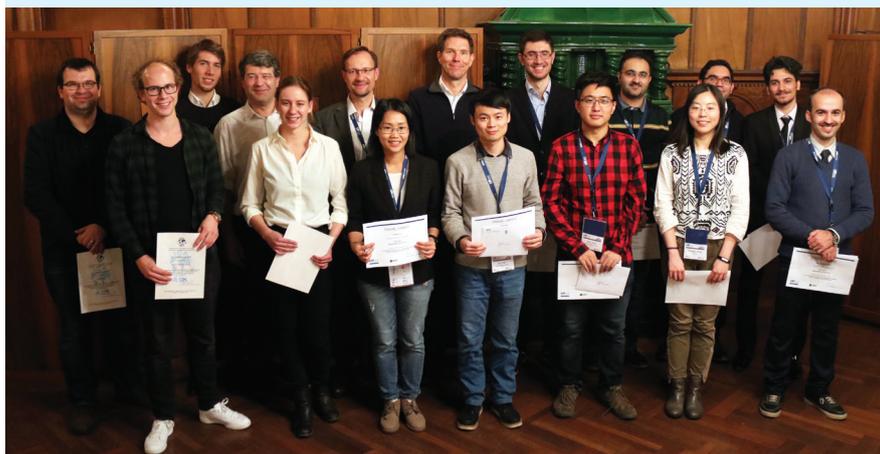
mapdesign.icaci.org/

Commission activities

It's been both a quiet and, yet, busy couple of years for the ICA Commission on Map Design. After being approved for a new four year term at the General Assembly in Rio in 2015 one of our first major projects was to initiate the creation of a series of design templates – style guides for cartographic design. The idea was to elicit contributions from the wider community and to use the Commission's web site to share the results. These would be in the form of style guides that gave cartographers a one-stop-shop for resources that supported particular aesthetics. We created a demonstration style guide for an art deco aesthetic bringing together inspirational imagery, art, fonts and colour schemes. Despite some excellent feedback and interest after several

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Recipients of the ICA Scholarships and Esri travel awards at the LBS 2018 Conference (left); Professor Martin Raubal at the opening session of the LBS 2018 Conference held in Zurich, Switzerland | Photograph courtesy of The Chair of Geoinformation Engineering, ETH Zurich



conference presentations (on three continents!) no contributions materialized. We were disappointed in what was a good idea, and one that the general community were supportive of. However, it wasn't our intent for the Commission's core members to do all the work. We neither could, nor should. What concerns us, perhaps more than anything, is what this means for Commissions more generally. Are they simply mechanisms for those very closely involved to use as a vehicle to publicize their own work? They shouldn't be. Or are they a conduit to present work from a wide group of people? This, they should be. However, actually getting people to contribute, outside of their own busy schedules is difficult. It's certainly something for the ICA Executive Committee to consider when reviewing the role and purpose of Commissions.

The way people develop, share, and use resources these days has dramatically changed and there perhaps needs to be some review of how this affects the way in which Commissions operate and their value to the wider community. So, for the time being, the cartographic style guide idea is on hold. Just because it was a good idea does not mean it's viable if the wider community doesn't contribute.

In more positive news, Commission members have been busy preparing and delivering a MOOC (Massive Open Online Course) on Cartography through Esri's MOOC programme. The focus of the course is on map design and we designed and delivered short films (six in total) alongside workbooks, exercises and quizzes. The course was delivered entirely online (www.esri.com/training/catalog/596e584bb826875993ba4ebf/cartography/) and provided free of charge to over 35,000 students who signed up. THIRTY-FIVE THOUSAND!!! The map we made to showcase the spread of our global classroom illustrated the way in which we touched all corners of the world. The feedback from the course has been extremely positive and we run a second offering in September 2018. Again, it's free to enrol and take and provides a great entry point to digital cartography and many of the fundamental principles of cartographic work.

Kenneth Field and Ian Muehlenhaus | Chair / Vice Chair | ICA Commission on Map Design | *United Kingdom / USA* ■

Map Projections

ica-proj.kartografija.hr/

Commission activities

The next meeting of the ICA Commission on Map Projections is planned in June 2018, as a part of the 7th International Conference on Cartography and GIS to be held in Sozopol,

Bulgaria (iccgis2018.cartography-gis.com), 23-28 June 2018.

The 14th International Conference on Geoinformation and Cartography and the 10th SDI Days 2018 will be organized by the Croatian Cartographic Society, the State Geodetic Administration and the Faculty of Geodesy of the University of Zagreb in Zagreb between 27-29 September 2018. The main topics of the conference are going to be national spatial data infrastructure and geographical names. A meeting of the ICA Commission on Map Projections will be included in the conference program (www.kartografija.hr).

Miljenko Lapaine | Chair | ICA Commission on Map Projections | *Croatia* ■

Maps and Graphics for Blind and Partially Sighted People

internet.icaci.org/

Commission activities

The ICA Commission on Maps and Graphics for Blind and Partially Sighted People has published a new book *Teaching and learning about space through touch: methodological guidance*, as announced in the previous issue of *ICA News* (No 69, December 2017, page 12). On 13 December 2017, a launch event was held at the Metropolitan Technological University (UTEM) in Santiago, Chile, attended by the authors of and contributors, representatives of the relevant authorities in Chile, some of the book users and Commission Chair and Technical Secretary. This event heralded a completion of an important project undertaken in recent years by both, this Commission and the ICA. The



Display of the book *Teaching and learning about space through touch: methodological guidance* | Photograph courtesy of Tactile Cartography Centre, Metropolitan Technological University, Santiago

book is published in two languages (English and Spanish) to provide a bilingual guide to teachers and educators about how to teach geography and cartography to blind persons.

In April 2018, the fourth newsletter of the Commission was distributed to members and interested people. Anyone interested in receiving the newsletter may request a copy by contacting Technical Secretary on rrii@igm.cl.

The newsletter reports, among other matters, on the following:

- participation of the Commission on Maps and Graphics for Blind and Partially Sighted People in the ICC 2017, Washington, D.C.
- publication of the book and related launch event mentioned above
- a report by Prof Andrey Medvedev, Russia, about the tactile cartographic material intended for blind people and available from several centres nationally
- two reports about activities involving specialized learning projects in Brazil, obtained through the Commission Vice Chair, Prof Waldirene Ribeiro.

Alejandra Coll Escanilla and Edwin Hunt | Chair / Technical Secretary | ICA Commission on Maps and Graphics for Blind and Partially Sighted People | *Chile* ■

Book launch event at the Metropolitan Technological University in Santiago, Chile | Photograph courtesy of Tactile Cartography Centre, Metropolitan Technological University, Santiago





Participants of the 11th ICA Mountain Cartography Workshop *Mapping for Outdoor Activities in Mountains* organised by the ICA Commission on Mountain Cartography in Hvar, Croatia | Photographs courtesy of Dušan Petrovič

Mountain Cartography

mountaincartography.org/

Workshop in Hvar, Croatia

The 11th ICA Mountain Cartography Workshop organised by the ICA Commission on Mountain Cartography (CMC) was held from 21-25 May 2018 in Hvar (island and city), Croatia. Workshops are held every second year, alternating with the International Cartographic Conferences (ICC). This year the workshop venue did not follow the tradition of visiting high mountains. Instead, we met on a rugged island off the Dalmatian Coast. What 628m Sveti Nikola, the highest peak on Hvar, lacks in altitude is compensated for with its cliffs, maritime setting, history, and human interaction with the natural environment. Dražen Tutić, Matjaž Štanfel and Ana Kuveždić Divjak from Faculty of Geodesy, University of Zagreb, together with Milo Tadic from Event&Travel Service, Stuttgart, Germany were main organizers of the workshop. Dušan Petrovič, CMC Chair, and Tom Patterson, CMC Vice Chair, supported organizers in preparation of the workshop.

Workshop goals are to further define the topics of mountain cartography, to promote the methods and knowledge of mountain cartography and to demonstrate and discuss state of the art issues on practical and theoretical mountain cartography. The overall theme of this year's workshop was *Mapping for Outdoor Activities in Mountains* with the idea to address local issues in the field of mountain cartography. The two-day workshop featured 35 presentations divided into nine sessions with following topics:

- Mapping Mountains
- Automation
- Recreation
- Caves, Volcanoes, Islands, and Oceans
- Relief Presentation
- Glaciers
- Mountain Safety
- Education
- Visualization

The workshop was attended by 44 participants from the USA, Canada, New Zealand, Russia, Austria, Switzerland, Romania, Norway, United Kingdom, Germany, Philippines, Slovenia, and Croatia.

Four participants – Maša Arnež (Slovenia), Lukas Neugebauer and Benedikt Hajek (Austria), and Tomislav Jogun (Croatia) – were present at the workshop thanks to the ICA Young Mountain Cartographer Awards that enabled these gifted young scientists to present their work.

The Workshop began on Monday evening with welcoming remarks from the local organizer, Dražen Tutić and the Commission Chair, Dušan Petrovič. The program continued with a welcome dinner. The next two days were reserved for presentations. Each day started with a keynote presentation, first by Alex Tait from National Geographic Society with a talk titled *Mount Everest: What is left to Map?* and second by Tom Patterson from U.S. National Park Service with a talk titled *Designing 3D Terrain Maps*. On Wednesday, the Commission had a meeting where Dušan Petrovič delivered the current agenda and issues of CMC.

On Tuesday evening participants enjoyed a mountain trivia contest prepared by Tom Patterson. Thursday was a day for outdoor activities. In the first part, participants had an

option for hiking to Sveti Nikola peak, or to walk to the nearby Hvar Observatory where astronomer, Jaša Čalogović from the Faculty of Geodesy gave a presentation of observations of the Sun that are conducted by this observatory. In the afternoon, the boat tour around Pakleni Islands offered swimming opportunity, views of the city of Hvar from seaside, as well as the famous beaches which attract many tourists. The day concluded with a gala dinner. Friday was a final day for most of the participants, and after a wrap up and closing session, they departed Hvar. For those who stayed on the island, the organization team prepared a hiking tour from Velo Grablje to Milna and back to Hvar, and for the evening a wine tasting in village Vrboska.

For more information about the workshop, please visit the Commission website.

Dušan Petrovič, Tom Patterson and Dražen Tutić | Chair / Vice Chair / Organiser | ICA Commission on Mountain Cartography / University of Zagreb | Slovenia / USA / Croatia ■

Recipients of the ICA Young Mountain Cartographer Awards: (from 2nd left) Maša Arnež, Benedikt Hajek, Lukas Neugebauer and Tomislav Jogun, with Commission Chair Dušan Petrovič (left) and Vice Chair Tom Patterson (right) | Photograph courtesy of Dušan Petrovič



SDI and Standards

sdistandards.icaci.org/

Joint ICA Commissions Workshop in Pretoria, South Africa

The ICA Commission on SDI and Standards and the ICA Commission on Map Production and Geoinformation Management are hosting a joint workshop on *Collaborative custodianship and collaborative cloud mapping – challenges and opportunities*. The workshop is co-organized with the South African Committee for Spatial Information Subcommittee on Education and Training and will be held between 14-15 September 2018 at the University of Pretoria in South Africa. Collaborative custodianship refers

to an arrangement where a number of custodians collaborate to produce a national SDI dataset, e.g. local authorities contributing addresses or street data to a national SDI dataset. Collaborative cloud mapping allows for ubiquitous convenient on-demand configured and tailor-made mapping with shared resources between various entities collaborating on a specific initiative such as an SDI or for disaster management. The workshop will introduce attendees to collaborative custodianship and collaborative cloud mapping through presentations, demonstrations and case studies. Subsequently, challenges and opportunities for implementing collaborative custodianship through collaborative cloud mapping will be explored in discussions and work sessions. The results of the workshop will be presented at the AfricaGEO 2018 conference (africageo.org.za),

to be held from 17-19 September 2018 in Johannesburg, South Africa. The presentation will summarize challenges and opportunities identified during the workshop, and will be followed by a 45-minute panel discussion on the topic.

Serena Coetzee | Chair | ICA Commission on SDI and Standards | *South Africa* ■

Use, User and Usability Issues

see **Cognitive Issues in Geographic Information Visualization** for joint report

reports ica working groups

Marine Cartography

Working Group activities

The primary focus of the ICA Working Group on Marine Cartography remains the consolidation of its membership as it strives towards achieving Commission status once again at the 18th ICA General Assembly in Tokyo in 2019. Close ties have been forged since ICC 2017 with the nautical cartography group within the U.S. National Oceanic and Atmospheric Administration's Office of Coast Survey. Support from the group is strong and it is currently planned to conduct both a physical and a webinar-styled meeting of the Working Group (WG) members during the last week of July 2018. This is presently planned to emanate from Washington D.C. intending to provide access for WG members situated anywhere who are not able to travel. The Chair and Vice Chair have drafted suggested Commission Terms of Reference for consideration by the members. A priority issue remains the establishment of an active core of members to sustain Commission status, to address areas of research interest and to agree on a succession plan for the Chair and Vice Chair. Equally important is the future participation of at least two members with the required expertise on the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) with details locatable at www.iho.int/srv1/index.php?option=com_content&view=article&id=440&Itemid=398&lang=en.

The 41st meeting of IBSC has recently been conducted at the Institute of Technology Bandung, Indonesia hosted by the School of

Geodesy and Geomatics Engineering, Faculty of Earth Sciences and Technology. The Chair and Vice Chair attended this, their 17th consecutive meeting representing ICA on this important body. The meeting is convened annually and meets to review and consider recognition of educational/training programmes submitted against the published Standards of competence: S-5 (Hydrographic Surveyors) and S-8 (Nautical Cartographers) and update the Standards where there is a need for. The existing versions of the Standards, at both levels of Category A and B, can be downloaded from www.iho.int/iho_pubs/IHO_Download.htm.

The sixteen submissions considered during this two-week period of intense evaluation

included cartographic programs from China and Argentina. It is inconceivable that ICA might not continue to be represented on the IBSC as the international authoritative voice of Cartography. It is of some note that one ICA representative has served as Chair of IBSC while the second is about to serve. We are both keen to hear from those ICA members interested in nautical cartography and the IBSC: the intangible rewards for those who serve as members of IBSC are immense. Contact either author through ron.furness@gmail.com if you require more information.

Ron Furness and Lysandros Tsoulos | Chair / Vice Chair | ICA Working Group on Marine Cartography | *Australia / Greece* ■

FIG/IHO/ICA International Board on campus at the Institut Teknologi Bandung Opening Ceremony for IBSC 41 with orange-jacketed students' welcoming committee | *Photograph courtesy of Ron Furness*





Participants of the ICA Commission on Map Projections meeting held at the 13th International Conference on Geoheritage, Geoinformation and Cartography in Selce, Croatia | Photographs courtesy of Miljenko Lapaine

13th International Conference on Geoheritage, Geoinformation and Cartography

The Croatian Cartographic Society and the Faculty of Geodesy of the University of Zagreb, organised the 13th International Conference on Geoheritage, Geoinformation and Cartography in Selce, Croatia, between 7-9 September 2017. The aim was to contribute to the development of geoinformation, cartography, geography and related fields, with a special emphasis on geodiversity. A wide range of topics and well-known invited speakers ensured the sessions were interesting and a contemporary approach was taken to discuss issues raised. The conference was held under auspices of the International Cartographic Association (ICA), the Croatian Academy of Engineering, the University of Zagreb, and the University of Zadar. Seventy participants attended the event, which lasted three days.

Miljenko Lapaine | Croatian Cartographic Society | Croatia

International Scientific Conference in Perm, Russia

Between 28-30 November 2017, the Department of Cartography and Geoinformatics of Perm State National Research University, Russia, hosted the International Scientific

Conference *From the maps of the past – to the maps of the future*. The Grant of the Russian Geographical Society for the preservation, study and popularization of the heritage of the Ural cartographers in the mid 18th to early 20th century supported the conference.

The purpose of the conference was to provide a forum for the exchange of experiences and demonstrations of scientific and practical achievements in the creation and maintenance of digital data banks of cartographic sources in Russia between 18th and 20th century, as well as modern possibilities of creating web-mapping services based on historical information and popularization of cartographic activity in general.

More than 130 delegates from four countries – Russia, Czech Republic, Germany and Armenia – attended the conference. The International Cartographic Association was represented by Prof Milan Konečný, Chair of the

ICA Commission on Cartography in Early Warning and Crisis Management. The conference proceedings consist of three volumes of more than 650 pages and contain around 90 contributions.

The conference programme was varied and included a large number of activities, such as plenary and paper sessions, discussions, open lectures, practical workshops, and a geo-quest for Komi-Permyak district school children. This allowed participants to take full advantage of the conference and bring scientific achievements closer to the practical activities of state authorities and businesses, as well as to show the students modern technological solutions in the field of digital mapping.

The research and academic institutions, industry, state government of Perm Krai and the representatives of archives, museums, libraries and other cultural institutions of various levels (federal, regional and local) showed interest in the conference.

During the conference (both in Perm and Kudymkar) there was a mobile exhibition. It included a number of themes:

- Preservation, study and popularization of the heritage of the Ural cartographers in the mid 18th to early 20th centuries
- The heritage of Ivan Yakovlevich Krivoshchekov
- Ivan Yakovlevich Krivoshchekov: the topography of life
- Three stages in the life of Leo S. Bagrov (1881-1957)

The participants had a chance to participate in associated events, including a tour of literary places in Perm, a visit to the exposition *The Book Treasures of the First in the Urals* at PSU Scientific Library, get a taste of the traditions and culture of Perm Krai and Komi-Permyak region at the Perm Branch of the Institute of History and Archeology of the Ural Branch of the Russian Academy of Sciences, an excursion

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Participants of the ICA International Scientific Conference hosted by the Perm State national University in Perm, Russia | Photographs courtesy of Sergey V. Pyankov



to Komi-Permyak Ethnocultural Center, a sightseeing tour around the city of Kudymkar and a visit to Komi-Permyak Regional Museum.

Sergey V. Pyankov | Perm State National Research University | *Russia* ■

Mapping Events Organised by United Arab Emirates University

Listed below are several events organised or coordinated by Dr Naeema Alhosani from the College of Humanities and Social Sciences of the United Arab Emirates University's (UAEU), an affiliate member of the International Cartographic Association.

6 February 2018: Symposium on Big Data Application in Urban Planning and Geospatial Workshop, Living Lab Experience in Geospatial Science, and Students' Geospatial Innovative Research Exhibition, as part of celebrating the month of innovation in United Arab Emirates.

21 February 2018: Workshop on *Creating Spatial and Tabular Data in ArcGIS* for geography and urban planning students, and Brain storming session to UAEU students entitled *Innovative Map Ideas*, contributing to celebration of the month of innovation in UAE.

11 April 2018: Seminar session entitled *The Geographical Book Review* to discuss books in the fields of Cartography, Urban Planning, and Environment; the students enjoyed the session and found it helpful.

8-10 May 2018: GISWORX Conference, which was attended by UAEU geography and urban planning students. GISWORX is an annual GIS conference which also serves as gistic's proactive technical support delivery system. This event provided a unique, in-depth learning

environment on the different aspects of GIS to beginners and advanced users through several technical workshops.

Naeema Alhosani | United Arab Emirates University | *United Arab Emirates* ■

Tribute to Professor Waldo Rudolph Tobler



One of the most famous cartographers of our epoch, Professor Emeritus Waldo Rudolph Tobler, passed away on 20 February 2018. He used computers in geographic research for over fifty years, with emphasis

on mathematical modelling and graphic interpretations. Well known for his publications, he formulated the *First law of geography* in 1970 while producing a computer movie, and was the inventor of novel and unusual map projections, including the first derivation of partial differential equations for area cartograms. He also invented a method for smooth two-dimensional mass-preserving area data redistribution. According to Tony Campbell, Waldo was a major figure in the analysis of the mathematics underlying cartography. He was the most distinguished member of the ICA Commission on Map Projections. Let his work inspire us all!

Miljenko Lapaine | Croatian Cartographic Society | *Croatia* ■

july 2018

03-06: **GI_Forum Symposium 2018** | Salzburg | *Austria* | www.gi-forum.org

19-22: **InterCarto/InterGIS-24 (Russian part)** (co-organised by the ICA Commission on Geographic Information for Sustainability) | *Digital Earth and Sustainable Development of Territories* | Petrozavodsk | *Russia* | nwpi-karelia.ru/events/4995/5006/

24-27: **InterCarto/InterGIS-24 (German part)** (co-organised by the ICA Commission on Geographic Information for Sustainability) | *Digital Earth and Sustainable Development of Territories* | Bonn | *Germany* | intercarto24.net/

30-01 August: **InterCarto/InterGIS-24 (USA part)** (co-organised by the ICA Commission on Geographic Information for Sustainability) | *Digital Earth and Sustainable Development of Territories* | Anchorage, Alaska | *USA*

august

28: **GVIS 2018: Workshop of the Commission on Visual Analytics** | *New Directions in Geovisual Analytics: Visualization, Computation, and Evaluation* | Melbourne | *Australia* | viz.icaci.org/GVIZ2018/

september

05-07: **GeoCart'2018 Cartographic Conference** | *Cartographies of Change: Then, Now and Tomorrow* | Wellington | *New Zealand* | geocart.cartography.org.nz/

13-15: **7th International Symposium on the History of Cartography** (organised by the ICA Commissions on the History of Cartography, and Topographic Mapping) | *Mapping Empires Colonial Cartographies of Land and Sea* | Oxford | *United Kingdom* | mappingempires.icaci.org/

27-29: **14th International Conference on Geoinformation and Cartography / 10th SDI Days 2018** (incorporating a meeting of the ICA Commissions on Map Projections) | Zagreb | *Croatia* | www.kartografija.hr/

october 2018

02-04: **6th International FIG 3D Cadastre Workshop** (organised in conjunction with the ISPRS Commission IV Symposium, the 3D Geoinfo Conference, and Smart Data and Smart Cities Conference) | Delft | *Netherlands* | www.gdmc.nl/3DCadastres/workshop2018/

april 2019

02-04: **Geospatial World Forum 2019** | *#geospatialbydefault - Empowering Billions!* | Amsterdam | *Netherlands* | geospatial-worldforum.org/

july 2019

15-20: **29th International Cartographic Conference and 18th General Assembly** | Tokyo | *Japan* | www.icc2019.org/

(left) Participants of the Symposium of Big Data Application in Urban Planning; (right) Dr Naeema Alhosani (left) with her colleagues at the Geographical Book Review session | Photographs courtesy of Naeema Alhosani



ica affiliate members

Organisations, institutions and companies wishing to support the mission and activities of the International Cartographic Association can become affiliate members. The following organisations support the ICA:

2011 **Association of Polish Cartographers** | *Poland* | www.polishcartography.pl

Attn: Assoc Prof Joanna Bac-Bronowicz | joanna.bac-bronowicz@pwr.wroc.pl

1999 **Centro Argentino de Cartografía** | *Argentina* | www.centroargentinodecartografia.org

Attn: Jorge Horacio Machuca | cac@centroargentinodecartografia.org

2011 **Chinese Cartographic Association (Chinese Taipei)** | *Taiwan-China* | www.ccartoa.org.tw

Attn: Dr Ching Jen Kao | ccartoa@gmail.com

2007 **Dubai Municipality** | *United Arab Emirates* | www.dm.gov.ae

Attn: Hussein Mohammed Abdulmuttalib | huseinma@dm.gov.ae

2007 **East View Geospatial** | *United States of America* | www.geospatial.com

Attn: Kent Lee | geospatial@eastview.com

2005 **Eko-Graf Publishing House** | *Poland* | www.ekograf.pl

Attn: Roman Janusiewicz | ekograf@ekograf.pl

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2003 **Esri** | *United States of America* | www.esri.com

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1995 **Geospatial Information Authority of Japan** | *Japan* | www.gsi.go.jp

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2015 **GeoTechVision Enterprise Limited** | *Jamaica* | www.techvisionenterprise.com

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2007 **German Federal Agency for Cartography and Geodesy** | *Germany* | www.bkg.bund.de

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2003 **Indian National Cartographic Association (INCA)** | *India* | www.incaindia.org

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1995 **Institut National de l'Information Géographique at Forestière (IGN)** | *France* | www.ign.fr

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2011 **Land Information New Zealand** | *New Zealand* | www.linz.govt.nz

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2017 **Library and Archives Canada** | *Canada* | www.bac-lac.gc.ca

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1995 **Moscow State University of Geodesy and Cartography** | *Russia* | www.miigaik.ru

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1995 **National Hydrographic Office** | *India* | www.hydrobharat.nic.in

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2011 **National Land Survey of Finland** | *Finland* | www.nls.fi

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2007 **Ordnance Survey** | *United Kingdom* | www.ordnance-survey.co.uk

57

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2003 **Regional Centre for Mapping of Resources for Development (RCMRD)** | *Kenya* | www.rcmr.org

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2015 **Surveying and Spatial Sciences Institute (SSSI)** | *Australia* | www.sssi.org.au

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2015 **UNIGIS International Association** | *Austria* | www.unigis.net

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2003 **Union of Chambers of Turkish Engineers and Architects, Chamber of Surveying and Cadastre Engineers (UCTEA-CSCE)** | *Turkey* | www.hkmo.org.tr

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2015 **United Arab Emirates University** | *United Arab Emirates* | www.chss.uaeu.ac.ae/en/

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2011 **United Nations Geospatial Information Section** | *United Nations* | www.un.org/depts/cartographic/english/htmain.htm

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1995 **United States Geological Survey** | *United States of America* | cegis.usgs.gov

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2007 **University of Architecture, Civil Engineering and Geodesy** | *Bulgaria* | www.uacg.bg

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2017 **University of Lay Adventists of Kigali** | *Rwanda* | www.unilak.ac.rw

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1995 **University of Twente, Faculty of Geo-Information Science and Earth Observation (ITC)** | *The Netherlands* | www.itc.nl

70

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2015 **Wuda Geoinformatics** | *China* | www.geostar.com.cn

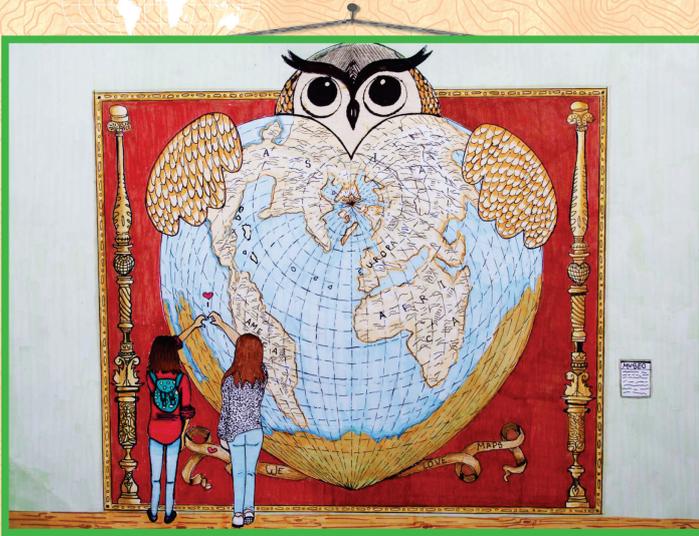
Attn: Song Aihong | songaihong@geostar.com.cn

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1995 – year of ratification by the ICA General Assembly

65 – affiliate member's profile published in *ICA News* (issue number)

children's map gallery 2017 winners



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Noemi Sanchez Avramova and Alba Serrano Suarez | 12 | *Oncce Fine through Our Eyes* | Colegio Arturo Soria: Madrid | Spain

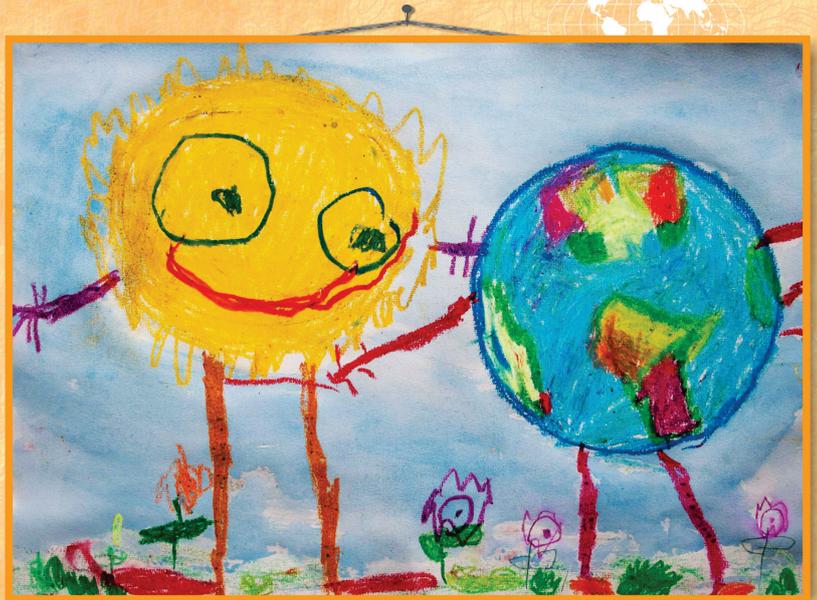
Preslava Ivanova | 8 | *The World is in Our Hands* | Art School Zhivopis: Kazanlak | Bulgaria

Urteja Kardašiute | 4 | *Friends* | Lopšelis-darželis 'Bangele: Šiauliai | Lithuania

CREATIVITY AWARD

Kenya Kesuma Dewi | 5 | *Crafting Our Dreams on the Land of Indonesia* | Tk Al Falah: Kediri | Indonesia

Alicia Fleming | 5 | *My Happy World* | - : Eastgardens, New South Wales | Australia



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