

president's corner



Dear Colleagues

During recent months, we have experienced variable shifts in the ways that the pandemic has affected our lives. It feels like a roller-coaster of impacts, teasing us with hopes of joy,

exciting us with new turns, scaring us with regressive dips of the unknown, and throwing us side-to-side in waiting for the ride to be done. The 30th International Cartographic Conference (ICC) in Florence, Italy was the ICA's opportunity to put a stake in the ground to move forward beyond the many restrictions of the pandemic and to enjoy ways to safely convene among friends and colleagues. The ICA and organizers of the ICC 2021 stood as leaders

of the world in advancing cartography and GIScience at a time when maps, mapping, and geospatial information have shown their value and critical relevance to leaders, decision-makers, health care providers and the general public.

During the opening ceremony at the ICC 2021, the President of the International Science Council, Peter Gluckman, spoke about the need for actionable science for which cartographers and geospatial information scientists are so well positioned. With so many resolvable problems that we face today, beginning with challenges to the health of the planet we occupy, having each of us ask ourselves a simple question like *"what have I achieved today that makes a difference?"* is a simple but enormously important gesture that advances our work, even in miniscule ways. It is about connecting the

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Streets of Florence during ICC 2021: Cathedral of Santa Maria del Fiore with Christmas tree | Photography Kenneth Field

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ica awards 2021

The International Cartographic Association (ICA) has instituted a number of awards for outstanding contribution to the ICA and to cartography worldwide. At the 30th International Cartographic Conference (ICC) in Florence, Italy, the following awards were presented:

- The Carl Mannerfelt Gold Medal to Prof **Ulrich Freitag** (Germany) and Prof **Alan M. MacEachren** (USA)
- The ICA Honorary Fellowship to Prof **Georg Gartner** (Austria), Prof **Lysandros Tsoulos** (Greece) and Prof **Vladimir S. Tikunov** (Russia)
- Diploma for Outstanding Services to ICA to **Margherita Azzari** (Italy), **Gilberto Fumarola** (Italy), **Manuela Schmidt** (Austria) and **Paola Zamperlin** (Italy).

The Carl Mannerfelt Gold Medals were awarded during the ICC's Opening Ceremony on Tuesday, 14 December 2021, while the ICA Honorary Fellowships and Diplomas for Outstanding Services to ICA were presented at the conference's Closing Ceremony on Saturday, 18 December 2021.



Citation for Professor Ulrich Freitag

Ulrich Freitag, born in 1931, is a trained engineering-cartographer and an insightful cartographic theorist. He has supported countless cartographers and served cartography-related institutions as lecturer, supervisor, mentor, advisor and collaborator. Most recently, he took part in an interview about the development of world cartography with a young masters student born in the 1990s.

Freitag completed his studies in geography at the Humboldt University in Berlin in 1950s. He then became research assistant of geography at Technische Universität Dresden. He received his doctorate in 1960s for a thesis on traffic maps at the Geographical Institute of the Justus Liebig University in Giessen. He became Full Professor at the Department of

Cartography, Free University Berlin in 1970s where he served until his retirement in 1999.

In his original work *Die Zeitalter und Epochen der Kartengeschichte* (1972), Freitag analyzed the progress of cartography through its history and addressed the nature of cartography as a communication science, but equivalent to language and text. In another original work *Die Entwicklung der*

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In my last editorial I touched upon the different modes in which cartographic events around the world have been run over the last couple of years and pondered on the evolution of approaches adopted by their organisers, from in-person to virtual and eventually to hybrid. With the pandemic still holding its grip and affecting our everyday lives, the ICC 2021 Local Organising Committee wisely decided to run the ICA's flagship event in a hybrid mode. With New Zealand, alongside other countries, being in a lockdown, I was grateful for the opportunity to join the action in Florence remotely, thanks to our Italian colleagues and technology. For me it was the first time I have participated in an event of that calibre needing just a trusty laptop and a pair of headphones. Without waiting for the first session of the conference proper, I joined a couple of pre-conference workshops. It was simply great to experience presentations highlighting the latest and greatest in web and ubiquitous mapping, followed by an equally exciting workshop on map design with special focus on atlases. With a one day gap, I joined the ICC 2021 oral sessions immersing myself in a stream of ever changing presentations, reports, visuals and... accents. From maps as exhibition space, through 3D reconstruction of pre-WW2 Warsaw, to empirical studies of choropleth maps – the breadth and scope of our discipline is phenomenal! Despite this hype, there was something missing... I was missing interactivity, the chance to ask a question, congratulate on an inspiring presentation, share a coffee with a fellow cartographer. I realised that indeed there is no substitute for the 'human touch' facilitated by in-person meetings, but at the same time remained indebted to Paola Zamperlin and her team for the opportunity of joining remotely without which I would not be able to participate in ICC 2021 at all.

ICC 2021 features strongly in this issue, including a report on recipients of ICA awards. We are also furnished with further details about the upcoming ICC 2023 in Cape Town. Thank you for your support.

Igor Drecki | Editor ICA News | ICA ■

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

President: **Tim Trainor** | *United States of America*

Secretary General & Treasurer: **Thomas Schulz** | *Switzerland*

Editor ICA News: **Igor Drecki** | *National Library of New Zealand* | *New Zealand*

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president's corner cont...

dots. Small gestures become bigger achievements that ultimately contribute to actionable science and all of it makes a difference.

During this last period, the single greatest achievement of the ICA was the convening of the ICC 2021 held in Florence, Italy from December 14-18. It was our first experience offering a hybrid event so that our colleagues had a choice of how to participate from near and far, either in-person or via a remote connection. The pandemic was the clear decider for most who were with us remotely caused by imposed travel restrictions or by health concerns, particularly as the new variant Omicron had just come on to the scene. In my remarks at the Opening Ceremony, I recognized the bravery of our Italian hosts – from the dedication and tenacity of the ICC 2021 Local Organizing Committee (LOC) to the beneficial support from the leaders of the city of Florence, the university, and the regional and national government. Together, all of us contributed to a highly successful event that is highlighted in this issue of the *ICA News*.

Global events, such as the pandemic, have exposed limitations and deficiencies in how the ICA as an international society operates. The statutes, by-laws and operating procedures have proven to be inflexible at a time when flexibility is critically needed. The effects of the pandemic have been far-reaching to the ICA and other international professional organizations. This topic has been discussed among the societies and was a topic of interest during a side event of the Geospatial Societies Thematic Group at the 11th Session of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) in August 2021. Other constraints will be outlined to the members of the ICA and will be topics for discussion and action at the next General Assembly in Cape Town.

The ICA Executive Committee (EC) has been active and attentive to the needs of the organization. We met four times in the last year. Two meetings were in person – a site visit in Florence in preparation for the 30th ICC and during the ICC itself in December 2021. While virtual meetings provide a means for the continuation of the organization, there is no substitute for meeting in person. So much more is achieved and the camaraderie of the current EC has been such a joyful and productive experience. Other virtual meetings span 2-days of topics. Some highlights from the EC meetings include detailed updates from the Secretary General Thomas Schulz and me on plans for the 30th ICC. We met with the Local Organizing Committee on a regular basis (every 2-3 weeks) to address the many plans and logistics required for such an international event. The EC met in Florence in early September 2021 to discuss ICA matters and to conduct a site visit in preparation for the 30th ICC. Site visits are special events for the EC; it gives each member an opportunity to hear and observe what we will experience at the conference

venue and during the various components of the program. The site visit also allows the EC to engage with the LOC on planning details and any issues that are of concern either to the LOC or the EC so that we can work collaboratively to ensure a positive experience during the conference.

The Executive Committee approved the recommendations from the ICA Committee for Selection of Award Recipients. Two colleagues Professor Ulrich Freitag and Professor Alan MacEachren were awarded the Carl Mannerfelt Gold Medal for significant contributions of an original nature to the field of cartography. The last time this award was bestowed was in 2013. The ICA Honorary Fellowship Award was conferred on Georg Gartner, Lysandros Tsoulos, and Vladimir Tikunov. Congratulations to all of the award recipients!

Some highlights from the work of the Executive Committee include how we maximize the value of the recent ICA publication in collaboration with the UN on *Mapping for a Sustainable World*. We are discussing and planning promotion of the book as well as bolstering existing work and developing new program areas that use the value initiated by the book's content and its potential for future programs. The EC also reviewed and updated some of the criteria and accompanying documents for bidding to host an ICC as well as criteria for regional cartographic conferences. We also sought ways for Commissions and Working Groups to regularly and consistently report out to the EC on how they are progressing towards their terms-of-reference. The Executive Committee also worked diligently in reviewing the applications for ICA Scholarships and making the necessary recommendations for the scholarship awards.

In the most recent Executive Committee meeting, there were four areas that I asked the Committee to consider. The first was a review of the hybrid experience from the ICC 2021. Secondly, a look forward to many ICA events in 2022, with an emphasis on returning to in-person experiences. Thirdly, strategies for encouraging Commissions and Working Groups in meeting their terms-of-reference. Lastly, ways of strengthening the ICA's relationship with the UN-GGIM, including how the ICA can better use its expertise within the Geospatial Societies thematic group, contributing to the Sustainable Development Goals (SDG) Data Alliance in building and strengthening national Integrated Geospatial Information Frameworks while improving efforts at attaining the SDGs, and contributing to the second UN World Geospatial Information Congress in Hyderabad, India in October 2022. The ICA serves as a member of the International Advisory Committee for this event.

Since the last *ICA News*, I have communicated in several outlets on various topics beginning with President's Blogs on the ICA website leading up to and summarizing the ICC 2021 to share information in a timely way. There

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were many, many virtual meetings where the ICA was present and participated in constructive ways. Lastly, several articles were published in *ArcNews* under the ICA banner and by our Vice Presidents in *GIM International* on a variety of topics related to cartography, GIScience, and the society.

Even with the constraints of the pandemic, the Secretary General and Treasurer, Thomas Schulz and I participated in the UN World Data Forum in October 2021 in Bern, Switzerland, where we promoted the recent publication *Mapping for a Sustainable World*. The Immediate Past President Menno-Jan Kraak and I participated in the Geospatial World Forum in Amsterdam in a session promoting the same publication. In 2022, many events are planned beginning with a joint Commission Meeting in Madrid, Spain where the next ICA Executive Committee meeting will be held.

There are so many opportunities for ICA to make a difference. The EC is encouraging Commissions and Working Groups to use a variety to techniques and methods in advancing

their work, particularly with remote technologies. To add to that, an excellent webinar presentation was organized to share and promote *Mapping for a Sustainable World*. The webinar was well organized and informative about the cartographic applications, challenges, and practices in achieving its success while also highlighting the realities in collaborating with an international institution that is guided by strict international policies, complex data, and its own international cartographic perspectives. The webinar is available from icaci.org/ica-webinars/.

Publications have been active with a continued increase in readership and referenced works of the published articles in the *International Journal of Cartography*. Two journal issues were devoted to an impressive array of papers from the ICC 2021, one of which was published prior to the conference. Other papers are included as part of the Advances, Proceedings, or Abstracts links on the ICA webpage.

Tim Trainor | President | ICA ■

ica awards 2021 cont...

Theorie der Kartographie (1980), he tried to integrate the practice of cartography with theories of science, proving that cartography has developed as a valid scientific discipline. Freitag is an excellent scholar with a holistic and in-depth view of cartographic concepts, cartosemiotics, atlas cartography and their interdisciplinary implementations. No wonder that his work has been among the most cited in cartographic textbooks and dissertations for decades.

Freitag's cartographic career was marked by numerous international research stays in far-flung parts of the world, such as Australia, Asia and Africa. Two of the appointments are particularly noteworthy; one in Nigeria, where he served as map designer and lecturer at the University of Ife for two years in the 1960s, and the other as a visiting professor at Chulalongkorn University in Bangkok and as an expert at the Royal Thai Survey Department for four years in the 1970s.

As Vice President of the German Cartographic Society (1979-1987), Freitag led German delegations to four ICA conferences – in Tokyo (1980), Warsaw (1982), Perth (1984), and Morelia (1987). As President of the German Cartographic Society (1987-1995), he led the annual German Cartographers' Days before and after the reunification of West and East Germany. For one of those events, he enlisted his former student – Princess Sirindhorn of Thailand – to give a speech in German. Freitag also designed the Mercator Medal for the German Cartographic Society, which was internationalized by awarding it to the French cartographer Jacques Bertin. Freitag's ingenious ability to combine science and society has significantly shaped the cartographic community in Germany. The successful organization of the 16th International Cartographic Conference in Cologne in 1993 is another example of his influential leadership.

During the Cold War, it was politically not easy for Freitag, as a West Berliner, to take a leading role in the ICA on behalf of German cartography. However, this did not prevent him from being an inclusive scientist, chairing the ICA Commission on Census Cartography (1980-1984) and the ICA Working Group on Concepts and Methodology in Cartography (1984-1987).

It is a great honour for the ICA to award Ulrich Freitag with his well-deserved Carl Mannerfelt Gold Medal.

Liqiu Meng | ICA Vice President | Germany ■

Citation for Professor Alan M. MacEachren

Dr Alan M. MacEachren is a Professor Emeritus of Geography and Information Science & Technology at the Pennsylvania State University. Dr. MacEachren was the founding director of the Penn State GeoVISTA Center, one of the premier research and design laboratories in cartography, geovisualization, and GIScience in the United States of America. Alan is an internationally recognized leader in these areas, pioneering methods to interact and collaborate in real-time exploratory analyses and visualizations of geographic data sets.

ica news 25 years ago...

The establishment of the International Steering Committee for Global Mapping reported below heralded a significant contribution of the ICA to this initiative. The Global Mapping Project was an international collaborative undertaking that was designed to develop geographic datasets according to global standards through voluntary participation of the national mapping organisations of each participating country.

The news item below is a testimony to ICA's involvement in these developments from day one. Upon the passing away of the first Chair Dr John E. Estes in March 2001, the Committee elected Dr D. R. Fraser Taylor, former ICA President (1987-1995), as its new Chair from September 2002.

Professor Taylor led on the Committee until July 2013 focusing on the promotion of data development and facilitation of future initiatives for the Global Mapping Project.

In August 2016, the resolution was passed to terminate the Committee in March 2017 and transfer the data to the United Nations. At its conclusion, the number of participating countries and regions in the Global Mapping Project reached 122, representing $\frac{2}{3}$ of Earth's land area. Interestingly, the data was passed to the United Nations Geospatial Information Section, the ICA's affiliate member, and is available from: globalmaps.github.io.

Igor Drecki | Editor ICA News | ICA ■

ICA News, No 27, Winter 1996

News from the Executive Committee

International Workshop on Global Mapping

Vice-President Tositomo Kanakubo represented ICA at the Second International Workshop on Global Mapping in Tsukuba, Japan, 13-14 February 1996. An International Steering Committee for Global Mapping has been established, chaired by Dr John Estes, Director of the Remote Sensing Research Unit of the University of California. The objective of the Committee is to help national mapping organizations across the world to coordinate their efforts in developing the Global Map as their contribution to resolving global environmental problems; it will be accomplished through exchange of views at regular meetings, necessary surveys and studies, and publication of results. Tositomo Kanakubo has been nominated as adviser to the Committee.

Jean-Philippe Grelot, September 1996
[ICA Secretary General, 1991-1999]

ica executive committee

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ica news contributions

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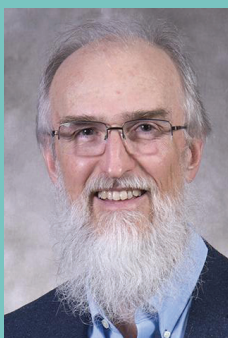
Submission Deadlines

15 May for **June** editions

15 November for **December** editions

ica awards 2021

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Citation for Professor Alan M. MacEachren cont...

His early research in geographic representation and geovisualization coincided with the rise of visualization in the scientific community. Since the 1980s, he has helped guide the national and international development of geographic visualization within cartography and GIScience to its current form of geovisual analytics, defined as the science of analytical reasoning facilitated by interactive geovisual interfaces. MacEachren's book *How Maps Work*, published in 1995, established a new cognitive-semiotic basis for geographic visualization in cartography, providing a guiding theoretical foundation for cartography, at the same time the discipline and profession were transitioning to interactive, online, and mobile media. His theoretical contributions to cartography remain central

to contemporary scholarship in our discipline, and *How Maps Works* ranks among the most cited cartographic research texts to-date. MacEachren was elected as a Fellow of the American Association for Advancement of Science (AAAS) in 2013, among the highest distinctions for a research scientist from any discipline made in the United States.

MacEachren's contributions to the ICA span more than a quarter century. In 1993, under his leadership, a visualization subgroup within the ICA Commission on Map and Spatial Data Use was formed. In 1995, a proposal for forming the ICA Commission on Visualization was ratified, and MacEachren became its Chair. In 1999, the Commission was renamed to ICA Commission on Visualization & Virtual Environments, which he co-chaired with Menno-Jan Kraak from 1995 to 2005. He has participated in nearly every International Cartographic Conference since 1989, and supported his students to attend ICA events. Many of his former graduates are now chairs and members of ICA Commissions.

The intellectual output from Alan MacEachren's participation in the work of ICA commissions is immense. Alan was able to bring together a range of international scholars and students to set the agenda for geovisualization and geovisual analytics. In the edited volume *Visualization in Modern Cartography* (1994) the Cartography Cube was introduced as an organizing framework of newly possible map uses in a digital environment. In 2001, in a special issue of *Cartography and Geographic Information Science (CaGIS)* on the Research Agenda in Geovisualization, possibilities for cartographic research in the 21st century were set out. Finally, Alan MacEachren co-edited the volume *Exploring Geovisualization* in 2005, organizing 78 international scholars to address for the first time many of the research gaps identified in the 2001 *CaGIS* special issue. The impact of MacEachren's team building efforts through these collaborative projects on the ICA community and cartography broadly cannot be overstated.

Dr MacEachren received the ICA Honorary Fellowship in 2005, but the scope and impact of his scientific contributions brings the ICA to award him the Carl Mannerfelt Gold Medal.

Menno-Jan Kraak | ICA Past President | *Netherlands* ■



Citation for Professor Georg Gartner

Georg Gartner, born in 1966, received doctor of science degree in 1995 and joined the Vienna University of Technology (TU Wien) in 2001. As Professor of Cartography and Geo-Mediatechniques since 2004, he leads the Research Group of Cartography at TU Wien.

His main research interests focus on the role of modern cartography and the application of interactivity in this domain. In 2002, he initiated a series of international conferences on location-based services (LBS). Since then, these conferences travel around the world and attract scholars, researchers, digital industry and commercial sector, as well as students of different backgrounds whose work either focuses on or is related to LBS.

One of the outcomes from these meetings was the establishment of the ICA Commission on Location Based Services in 2015. Since then, the Commission has been very active in promoting the role of cartography and GIScience in the current mobile information era.

Gartner has been an excellent educator and mentor. He is a co-founder of the International Master of Science Programme in cartography jointly run by four European universities, including TU Wien. This initiative has been very successful and has trained many excellent young cartographers and GI scientists from around the world. He has also supervised many PhD students who significantly benefitted from his supportive, open-minded, high-quality and insightful supervision style.

Gartner has been an active contributor to the work of ICA since the 1990s. He served as a Vice Chair of the ICA Commission on Maps and the Internet (1999-2007), ICA Vice President (2007-2011), then ICA President (2011-2015), and most recently as ICA Past President (2015-2019). During his presidency, the ICA achieved full membership in the International Science Council and he ably and enthusiastically established cartography as an important contemporary subject.

Since 2006, Gartner serves as editor of the Springer Verlag's *Lecture Notes on Geoinformation and Cartography* book series, which publishes research produced by many ICA Commissions. From 2019,

ica awards 2021 cont...

he is Chair of the ICA Publications Committee. He continues to promote the significance and relevance of cartography in both scientific community and the society.

Given his significant contribution to cartography and the ICA community, the ICA is honoured to present Professor Georg Gartner with its Honorary Fellowship.

Thomas Schulz | ICA Secretary General and Treasurer | *Switzerland* ■



Citation for Professor Vladimir Sergeevich Tikunov

Since 1993, Professor Vladimir Sergeevich Tikunov is Honorary Professor of Geography and head of the Laboratory of Integrated Mapping of the Geographical Faculty of the Lomonosov Moscow State University. He is a member of the Russian Academy of Natural Sciences and the International Eurasian Academy of Sciences, as well as a member of editorial boards of 16 scientific journals. His main scientific contributions are related to the development of the theory of geoinformatics; creation of a new scientific direction – mathematical-cartographic modelling; modelling and visualization of geosystems, including non-Euclidean metric; and development of a system of indices and indicators for integrated geographic characteristics of the development of territories. He authored over 800 papers and

edited a large number of atlases, including the National Atlas of Russia.

Tikunov made an important contribution to the development of cartographic education in Russia and neighbouring countries. He developed training courses in geoinformatics and mathematical-cartographic modelling, which are part of current curricula at many universities, and from 1980 onwards wrote several textbooks like *Mathematical modelling in Geography*, *Modelling in the socio-economic cartography* (where the methods for modelling the thematic content of socio-economic maps were proposed for the first time), followed by *Modelling in Cartography*, *Visualization in noneuclidean metrics* and *Anamorphoses*. He is especially known world-wide for his work on anamorphic maps. To familiarize Russian scientists with modern foreign achievements, he translated many articles and books into Russian. He is the organiser of the well-appreciated InterCarto-InterGIS Conference series (with its 27th edition held in 2021). Initially these conferences brought together researchers from Russia, Western Europe and the East, but this has since been extended to cover researchers and practitioners from all over the world. In these conferences he is always trying to establish connections with ICA and to integrate ICA as a partner.

Tikunov's first contacts with the ICA date back to 1976 when he helped to organise the 8th International Cartographic Conference (ICC) in Moscow. In 1996, he became a member of the ICA Commission on Education and Training and consequently its Chair in the 1999-2003 term. In 2003 Tikunov was elected ICA Vice President for one term, during which he played an important role as liaison between the Executive Committee and the Russian organizing committee for the 23rd ICC in Moscow. Between 2007-2011 he was Chair of the ICA Working Group on GIS and Sustainable Development, and during the next two terms (2011-2019) he chaired the ICA Commission on Geographic Information for Sustainability.

In 2015 Tikunov was awarded the Diploma for Outstanding Services to ICA, but that award did not sufficiently recognise his many and ongoing contributions to cartographic community. This is why the ICA would like to award Vladimir Sergeevich Tikunov its Honorary Fellowship "in recognition of his border-crossing contribution to cartography throughout his career".

Liqiu Meng | ICA Vice President | *Germany* ■



Citation for Professor Lysandros Tsoulos

Professor Emeritus Lysandros Tsoulos graduated from the University of Thessaloniki in 1972. He received an MSc in Digital Mapping and a Dr Eng from the National Technical University of Athens in 1989. His dissertation, entitled *The Electronic Chart and its Use in Navigation* contributed to the standardization of the content and functionality of electronic charts on board the ships. He worked for the Hellenic Navy Hydrographic Service for 16 years as director of the Directorate of Cartography and the Computing Center and directed the Geomatics Center in the National Technical University of Athens, where he was professor of cartography until his retirement. He has over 120 publications in national and international journals and conference proceedings and two books on Digital Mapping

and Geographical Information Systems and also participated in a number of national and European scientific projects. He is a member of numerous National and International Scientific Committees and was President of the Hellenic Cartographic Society (2008-2016). His contributions to the National Technical University of Athens continue to this day. Since 2009, he is Affiliate Professor at the Center for Coastal and Ocean Mapping, University of New Hampshire, United States of America.



EuroCarto 2022

eurocarto2022.org/

The European Cartographic Conference EuroCarto 2022 will be held on 19-21 September 2022 at TU Wien in Vienna, Austria. The conference is co-organized by TU Wien, the International Cartographic Association (ICA), and the German (DGfK), Austrian (ÖKK), Swiss (SGK), and British (BCS) Cartographic Societies. It aims to bring together cartographers and those working in related disciplines to offer a platform for discussion, exchange and stimulation of research and joined projects.

The conference builds upon the successful EuroCarto 2015 (cartography.tuwien.ac.at/eurocarto/) and EuroCarto 2020 (eurocarto2020.org/home/) and takes the ICA initiative on fostering regional cartographic conferences on board.

Several accompanying workshops, commission meetings and social events in Vienna will be offered! The Executive Committee of the ICA and the ICA Commission Chairs plan on having their regular meetings during the conference. The co-organizer, the Deutsche Gesellschaft für Kartographie, will issue its Ravenstein-Award during the conference.

If you are interested in participating or contributing to EuroCarto 2022, please visit our conference website.

We look forward to welcoming you to the beautiful city of Vienna and celebrating Cartography!

Important Dates

- Deadline for submissions: 30.04.2022
- Notification of acceptance: 30.05.2022
- Deadline for Early-Bird-Fees: 31.05.2022

Georg Gartner, Andrea Binn, Olesia Ignateva, Wangshu Wang and Florian Ledermann | EuroCarto 2022 Local Organising Committee | *Austria* ■

EuroCarto 2022



VIENNA, 19 - 21 SEPTEMBER 2022

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manuela schmidt



I was only 18 when I finished my vocational training as a media designer. I knew that I wanted to learn more, so I browsed through the big study guide for Germany and

found a programme in *Cartography and Geo Media Techniques* at the University of Applied Sciences in Munich. Media Techniques caught my attention, but it was Cartography I fell in love with.

In my third year of studies, I did an internship at the University of Nebraska in Omaha. Web mapping was then a new thing, and I created illustrations for Michael Peterson's book on the topic. I moved to Vienna to write my diploma thesis in 2008, exactly the week the symposium on *Art & Cartography* took place. I was fascinated by the range of topics and captured by the friendliness of the international cartographic community. Soon after, I became (co-) webmaster of the ICA. I was delighted when my logo **WE ♥ MAPS** was accepted as official logo of the International Map Year 2015-2016.

After eight years at the Research Group Cartography, TU Wien, I started my own little business: cartographic and design services. I now work with the GIS team of the Austrian Railways. In addition, I teach *Project Map Creation* in the Cartography MSc programme, in which students create analogue maps. Working with these motivated students and helping them to develop and improve their cartographic skills is something that fills me with great joy and gratitude for my profession.

Manuela Schmidt | manuschmidt.com | Austria | hello@manuschmidt.com



ica awards 2021

cont...

Citation for Professor Lysandros Tsoulos cont...

ICA has the ambition, although not the means, to collaborate with large international organisations such as the International Federation of Surveyors (FIG) or the International Hydrographic Organisation (IHO) on the establishment of training standards for nautical cartographers. Like all ICA Commissions, the ICA Commission on Marine Cartography consists of volunteers and thanks to the voluntary input of Ron Furness (Australia) and Lysandros Tsoulos, ICA has been able to contribute to these developments on equal terms with IHO and FIG.

ICA recognises Tsoulos' distinguished professional achievements in cartographic teaching, his contribution to the development of nautical cartography research programmes, and his long association with and representation of the ICA, particularly his 20-year service on behalf of ICA on the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC). He was one of two persons that brought ICA closer to work with FIG and IHO and established our Association as a fully-fledged member of the IBSC. He has been the main expert contributor to the development of the Standards of Competence for Nautical Cartographers, known as IHO Publication S-8. Over the last 20 years he has attended and contributed to the meetings of the Board, served as its chairman and brought into fruition a number of initiatives that endure. In addition, Tsoulos has supported many International Cartographic Conferences by chairing sessions and contributing papers.

The ICA Honorary Fellowship is awarded to Professor Emeritus Lysandros Tsoulos for his long and consistent promotion and representation of ICA and its values through his membership on the IBSC. In particular, for his contributions to the development of standards of competence for nautical cartographers and his career contributions to cartography and his unwavering support of ICA.

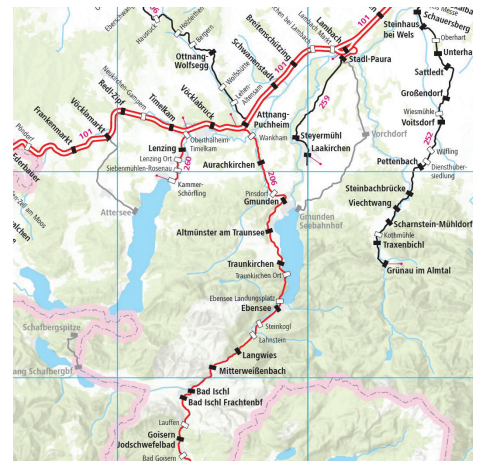
Andrés Arístegui | ICA Vice President | Spain

Awardees of Diploma for Outstanding Services to ICA

The Diploma for Outstanding Services to ICA is presented to individuals and organisations for their exemplary service to the International Cartographic Association. Here are the 2021 recipients:

- **Margherita Azzari** (Italy) – ICC 2021 Local Organising Committee
- **Gilberto Fumarola** (Italy) – ICC 2021 Local Organising Committee
- **Manuela Schmidt** (Austria) – ICA Webmaster (from 2008)
- **Paola Zamperlin** (Italy) – ICC 2021 Local Organising Committee

Samples of my design and cartographic work (clockwise from right): happy owners of the official **WE ♥ MAPS** t-shirts produced by the ICA for the International Map Year 2015-2016; part of the Austrian Railways ÖBB network map; cover design for the *Kartographische Nachrichten* journal showing subjective evaluations collected with the smartphone app EmoMap based on 833 sample points; a folder designed to provide an overview of the geodesy and geoinformation course offered by TU Wien (it doubles as an octahedron pseudoglobe, ready to be assembled!).



The 19th General Assembly of the International Cartographic Association (ICA) and the 31st International Cartographic Conference (ICC 2023) will be held in Cape Town, South Africa from the 13th to 18th August 2023. The event is being organised by the South African National Committee for ICA. The logo is indicative of the theme for the conference which is **Smart Cartography for Sustainable Development**. The colours covering the globe are representative of the 17 Sustainable Development Goals, all below Table Mountain, a natural wonder of the world. The world-class Cape Town International Convention Centre (CTICC), located in the beautiful coastal city of Cape Town has been selected as the main conference venue.

By 2023 we will be immersed in the 4IR (4th Industrial Revolution) with new ways in which to represent geospatial information, and new ways in

which humans interact with and use cartography and geospatial information. This has given rise to new cartography and geospatial information science and management. The topic of 'smart cartography' will be ready for discussion and debate. In 2023, the 2030 Agenda for Sustainable Development will be at the half-way stage. This will be an important topic for consideration by the international cartographic and geospatial information community at that time, particularly in an African city.

The conference website icc2023.org has been launched and will have regular updates on submissions, call for papers, map and children's map exhibitions and other technical events.

Janusha Singh | Marketing | ICC 2023 Local Organising Committee | South Africa ■

(clockwise from top left) Camps Bay, one of Cape Town's best beaches; colourful houses in Bo-Kaap; Cape Town International Convention Centre; cheetah, the fastest land animal; aerial view of Cape Town; one of the conference rooms | Photography courtesy of ICC 2023 LOC



reports ica commissions

Art and Cartography

artcarto.wordpress.com/

ICC 2021 Conference Highlights

The ICA Commission on Art & Cartography hosted an online, synchronous Pre-Conference Workshop entitled *Show & Tell: The Future of Art & Cartography* for the 30th International Cartographic Conference in Florence, on Monday, 13 December 2021 (or 14 December, depending on location). The 20 workshop participants saw twelve intriguing and thought-provoking presentations in Pecha-Kucha-like fashion, starting with (as Vice-Chair Sharon Hayashi put it) *"the more-than-human,*

moving from larger time spans towards the urban, morphing through software experiments before the ending on more directly political spatial battles." The presenters were Jörn Seemann, Joshua Singer, Taien Ng-Chan, Michael Trommer, Chelsea Nestel, Joanna Gardener, Kévin Pinvidic, Nick Lally, Sebastien Caquard, Elise Olmedo, Glenn Finley, and Sheila Nadimi. The event recording can be found on the Art & Cartography website.

The Commission members Joanna Gardener, Sharon Hayashi, Nick Lally and Taien Ng-Chan collectively juried the Creativity Award as part of the Barbara Petchenik Children's World Map Awards, organized by the ICA Commission on Cartography and Children. The winner was

Virtual Reality by Pijus Jokubaitis of Lithuania, in which the juxtaposition of the world map as digital numerals, rendered in a 'Matrix-like' style against a whimsical background of woods and unicorn, provided an especially creative statement about the online nature of the pandemic world today.

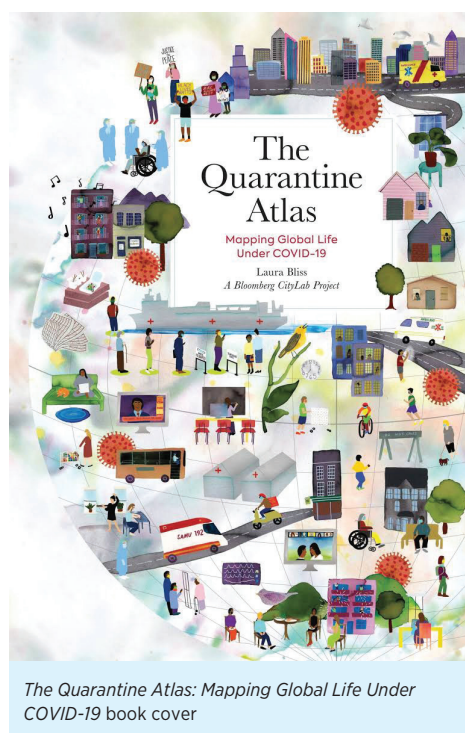
Although most Commission members were not able to travel to the 30th ICC in Florence due to the ongoing pandemic, York University graduate student Sandra Ignagni was able to attend and to represent the Commission as Chair of the two Art & Cartography panels that ran on 15 December 2021 with 6-7 presentations each. Sandra noted that the presentations went smoothly, and that there was a highly

> 08

proficient technical coordinator in the room who ran the WebEx and helped troubleshoot a few very minor technical difficulties. In the afternoon we held our Commission Business Meeting, which gave an opportunity to discuss a few ideas for the upcoming year. Thanks to everyone who participated!

New Publication

The Commission on Art & Cartography's online workshop from the summer of 2020, called *A Sense of Impending Doom: A Strata-Walk for Turbulent Times*, caught the eye of editor Laura Bliss at Bloomberg's CityLab. As a result, some of the maps from the *Impending Doom* workshop are featured in the upcoming book *The Quarantine Atlas: Mapping Global Life Under COVID-19*, along with an essay by Commission Chair Taien Ng-Chan about her own experiences dealing with the pandemic, the subsequent rise of anti-Asian hate, and the value found in mapping one's own room. The book is due out on April 5th, 2022 and can be found here: www.blackdogandleventhal.com/titles/laura-bliss/the-quarantine-atlas/9780762478132/.



The Quarantine Atlas: Mapping Global Life Under COVID-19 book cover

Future Plans

In the upcoming months, the Commission on Art & Cartography will be sending out a call for submissions to our upcoming special issue of the *International Journal of Cartography*.

Taien Ng-Chan | Chair | ICA Commission on Art and Cartography | Canada ■

Cartography in Early Warning and Crisis Management

plat.casm.ac.cn/ewcm/

Commission Workshop

On Monday, 13 December 2021, the ICA Commission on Cartography in Early Warning and Crisis Management (CEW&CM) organised a hybrid seminar *The Challenges of Disaster Risk Reduction Mapping in the Context of Big Data*. The seminar was held prior to the 2021 International Cartographic Conference in Florence, Italy, and gathered more than 30 national experts and scholars from China, Italy, Germany, Czech Republic, Switzerland and Japan.

In his talk *Earth observation and emergency management: current services and future perspectives*, Prof Piero Boccoardo (Politecnico di Torino, Italy) focused on the current emergency management services and future emergency management strategies. In terms of current emergency management services, he described application of Space and Major Disasters International Charter, and Copernicus Emergency Management Mapping Service (CEMS) Plan in the world's emergency management since their launch. He concluded with some specific examples and maps, and highlighted a number of important factors that need to be considered in terms of future emergency management strategies.

CEW&CM Chair, Prof Liu Jiping (Chinese Academy of Surveying and Mapping, China) delivered a talk *Integrated and comprehensive disaster Reduction Technology in the era of Big data*, focusing on application of geological disaster-oriented key technologies and emergency geographic information services, which include emergency geographic information resource management, GNSS high-precision dynamic monitoring, adaptive rapid mapping, geological disaster spatial analysis and risk warning, and geological disaster three-dimensional scene visualization. The opportunities, challenges and development trends faced by geological disaster geographic information services were then analysed and discussed.

CEW&CM Vice Chair, Prof Milan Konečný (Masaryk University, Czech Republic), delivered a report *New cartographic challenges for Disaster Risk Reduction realization*, in which he first introduced the 17 Sustainable Development Goals of the United Nations 2030 Agenda, including a report presented in Sendai, Japan, and covered other initiatives, such as the United Nations DRR Conference (2015-2030), the United Nations Global Geospatial Information Management Initiative (UN-GGIM) and the

Digital One Belt One Road Initiative (DBAR). He concluded with a comprehensive summary of these initiatives and highlighted the role of volunteer geographic information in emergency disaster reduction.

Secretary General of CODATA-Germany, Horst Kremers (Engineering Management and Information Sciences, Germany) delivered a report on *Cartography as a data science: the case of risk information management*, covering topics such as the current complex issues in risk management, cross-organizational risk information infrastructure, the future agenda for the generalization of big data and risk information, the challenges faced by applied informatics, recommendations on risk information governance, and the urgency of actions and priorities in the data revolution era.

Breaking the silos: the need for cooperation for improving multi-hazard warning services was the title of a presentation by CEW&CM Vice Chair, Dr Christophe Lienert (Federal Office for the Environment, Switzerland). The talk provided reasons for cooperation giving an example of the Swiss Natural Disaster Intervention Steering Committee (LAINAT) and its impact on Switzerland and internationally, and pointed out the need for further collaboration to improve disaster warning services.

Finally, the Commission's Prof Shen Jie (Nanjing Normal University, China) delivered a talk entitled *The framework of Scenario building of urban disaster management based on the integration of CIM and Big data*, focusing on the urban disaster management scenario construction framework based on the integration of CIM and big data. She highlighted several goals that need to be completed in the construction of urban disaster management scenarios, including the construction of ontology and knowledge graphs in the field of urban disaster emergency response, urban disaster emergency integration and mining based on a unified spatio-temporal information model, disaster emergency plan design based on multi-agent cognition, and construction, application, service, evaluation and optimization of urban disaster emergency scenarios including innovations in this research framework.

The seminar allowed international experts and scholars to share their experience and conduct in-depth academic exchanges. The participants learned about the international academic frontiers in disaster prevention and mitigation, cartography, and geographic information science. The latest scientific research results in the fields of source government resource integration, internet geographic information mining, and geospatial big data management have been fully covered in this pre-conference workshop.

Xianghong Cheliu | Secretary | ICA Commission on Cartography in Early Warning and Crisis Management | China ■

Cognitive Issues in Geographic Information Visualization

cogvis.icaci.org/

Commission Workshop

On Monday, 13 December 2021, the ICA Commission on Cognitive Issues in Geographic Information Visualization collaborated with several other commissions to hold two pre-ICC 2021 workshops. Each of the two half-day workshops was held in hybrid mode and had both on-site participants in Florence and remote participants.

The first workshop, a collaboration with the ICA Commissions on Spatial Data Infrastructure and Standards; Open Source Geospatial Technologies; and Geospatial Semantics, was entitled *Sharing Geospatial Knowledge*. In it, we discussed and extended prior work that our Commissions jointly undertook between late 2020 and 2021 and that examined different ways of sharing geospatial knowledge. The first project focused on sharing knowledge across languages and understanding what updates to cartographic multi-lingual dictionaries might be useful in an era of dynamic, computer-based cartography. The second main theme was sharing cartographic knowledge with software developers who might be building maps but are not expert cartographers. Two commission members presented on their experiences in such situations, and these presentations were followed by discussion.

The second half-day workshop, titled *Immersive Cartography / Cartography for Immersive Environments* was coorganized with the ICA Commission on User Experience. This workshop included four keynote presentations, from Alexander Klippel (Wageningen Univer-

sity), Arzu Çöltekin (FHNW University of Applied Sciences Northwestern Switzerland), Ioannis Giannopoulos (TU Vienna), and Čeněk Šašík (Masaryk University), as well as several technology demonstrations.

Cartographers who are interested in these topics, but who were unable to attend the workshops are welcome to contact the chairs of the respective commissions for more information.

Our Commission Business Meeting was held on the third day of the 2021 International Cartographic Conference – Thursday, 16 December 2021, at the University of Florence with visionary discussions about future activities.

Amy Griffin | Chair | ICA Commission on Cognitive Issues in Geographic Information Visualization | *Australia* ■

Education and Training

education.icaci.org/

Commission Workshop

As the number of COVID-19 cases going up and down, educators have been diverting to online teaching and learning over the last twenty months at a speed like never before. Cartography and geospatial information education is no exception. With the help of rapidly improving online meeting tools, some institutions have transferred teaching and learning onto digital platforms, though some have chosen other ways to continue sharing knowledge. Shifting from typical classroom lecturing and face-to-face meeting to online and hybrid learning poses challenges, but it also offers opportunities, which are transforming the traditional classroom teaching and learning mode in schools. In addition, open source education

resources including videos, text books and datasets are more resilient and sustainable for future education.

The ICA Commission on Education and Training organized an online workshop *Challenges and Opportunities of Cartography and GIS Education: in the Classroom and in the Cloud* on 28 October 2021. Sixteen talks presented by educators from eleven countries were scheduled into five thematic sessions:

- Sustainable Geospatial Education and Resources (moderated by Tao Wang)
- Theoretical Foundations for Teaching and Learning of Cartography (David Fairbairn)
- Course Design and Practices in Cartography and GIS Education (Georg Gartner)
- Resilient Curriculum for Cartography and GIS Education (László Zentai)
- Career Images Cartographers Draw (Terje Midtbø)

The last session included a panel discussion on academic career of cartographers following two invited talks by Georg Gartner and László Zentai who shared their professional experiences and suggestions with young scholars.

More than 150 registrants from over 30 countries and regions joined the workshop which lasted for about five hours. The presentations addressed a range of issues from basic theories of cartographic education, latest open source resources for online education, to practices and summaries of online teaching and learning. Speakers and audience's communication during the sessions ensured a balanced knowledge sharing and Q&A.

More details including the presentations and abstracts can be found at the workshop's website: education.icaci.org/pre-icc2021-cet-workshop/.

Tao Wang | Chair | ICA Commission on Education and Training | *China* ■

Generalisation and Multiple Representation

generalisation.icaci.org/

Commission Workshop

The 24th ICA Workshop on Map Generalisation and Multiple Representation has been held on Monday, 13 December 2021 in Florence, Italy and online, just before the 30th International Cartographic Conference. Around 15 people attended the workshop on site, with another ten participating remotely.

The program can be found on the workshops website: generalisation.icaci.org/prevents/workshop2021.html. The presentations were scheduled in the morning and a breakout discussion was held in the afternoon (the report from the discussion can also be found on the website).

Hana Švedová and Ondřej Kvarda presenting the collaborative immersive virtual environment (CIVE) at the *Immersive Cartography / Cartography for Immersive Environments* workshop | Photograph courtesy of Amy Griffin



The proceedings were published as Volume 4 of the *Abstracts of the ICA*, edited by the scientific committee of the workshop: Pia Bereuter, Azelle Courtial, Paulo Raposo, Nico Regnauld, Guillaume Touya and Xiang Zhang (www.abstr-int-cartogr-assoc.net/4/index.html).

This workshop was the occasion to address the issue of benchmarks for map generalisation. Pushed by the guidelines of open science, benchmarks are more and more developed in computer science to facilitate comparisons between methods. Map generalisation research would also greatly benefit from more systematic comparisons of the new algorithms.



An extract of the benchmarks for slope lines (Staneek et al., 2021) with the slopes to generalise in red, and the manually generalised reference slopes in green

The first benchmarks proposed during the workshop are highlighted on a dedicated webpage on the website of the Commission (generalisation.icaci.org/benchmarks.html). We hope that these benchmarks will be used in future papers and that other benchmarks will be proposed by the community.

Guillaume Touya, Pia Bereuter and Paulo Raposo | Chair / Vice Chairs | ICA Commission on Generalisation and Multiple Representation | France / Switzerland / Netherlands ■

Location Based Services

lbs.icaci.org/

LBS 2021 Conference

The 16th Conference on Location Based Services (LBS 2021) was successfully held online between 24-25 November 2021. The conference was organized by the ICA Commission on Location Based Services and hosted by Prof Anahid Basiri and her team at the University of Glasgow, United Kingdom.

This year LBS 2021 was again privileged to host more than 215 participants from all over the world, contributing to the conference with high-quality presentations and inspiring discussions.

The conference featured five keynote speakers who delivered the following talks:

- Michael Batty, University College London: *More Than One Digital Twin*
- Urška Demšar, University of St Andrews: *Studying migratory bird navigation with spatial data science*
- Matt Duckham, RMIT University: *LBS and Indigenous Data Sovereignty*
- Anita Graser, Austrian Institute of Technology: *Open LBS Research: Why (not)?*
- Ross Purves, University of Zurich: *Location, place and language*

On the second day, the conference featured a special session where the best paper award was presented to Jerome Dreyer, Sven Heitmann, Felix Erdmann, Gernot Bauer and Christian Kray from Germany for their full paper entitled *'Informed' consent in popular location based services and digital sovereignty*. The winner of the LBS 2021 best short paper award was *Would citizens contribute their personal location data to an open database? Preliminary results from a survey*, authored by Vilma Jokinen, Ville Mäkinen, Anna Brauer and Juha Oksanen from Finland.

The conference hosted a series of interesting oral presentations covering different aspects of LBS research, which were grouped into five oral sessions:

- Wayfinding and Navigation Systems
- Positioning
- Location tracking and systems
- Mobility and Activity Analytics
- Visualization, Perception and Analysis

Please check #LBS2021 on Twitter to get some impressions of the conference.

Special Issue

We are happy to announce that the special issue of *Computers, Environment and Urban Systems* journal on *Geospatial Big Data Analytics for Smart Cities* was published online in November 2021.

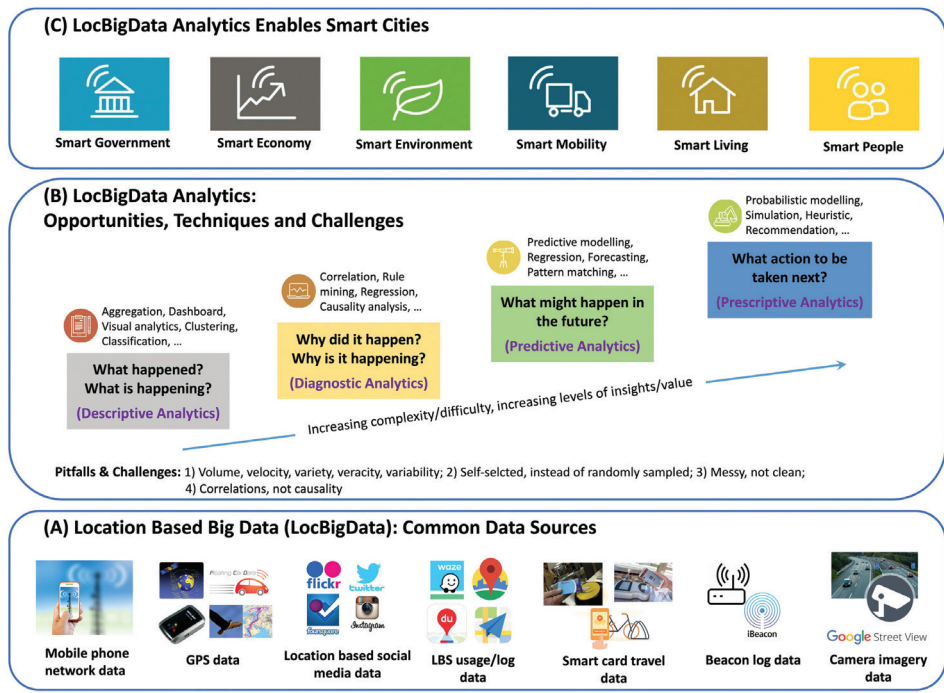
This special issue is an outcome of the International Symposium on Location-Based Big Data 2019 (LocBigData 2019) held in Tokyo, Japan, which offered a platform for researchers from various disciplines and perspectives to share ideas and research findings and to discuss the open and future research challenges in this emerging field. It consists of nine papers, which reflect the front-end snapshots of current research activities in this field, and illustrate how LocBigData analytics can help to achieve smart cities.

The paper on *Analytics of location-based big data for smart cities: Opportunities, challenges, and future directions* (doi.org/10.1016/j.compenvurbsys.2021.101712) provides a state-of-the-art review on LocBigData analytics and identifies a series of open and key research challenges that should be addressed to advance the emerging field of LocBigData analytics or urban analytics to enable smart and sustainable cities (see the Figure below for a visual summary).

International Symposium

The International Symposium on *Geospatial Approaches to Combating COVID-19*, which was jointly organized by the ICA Commission on Location Based Services and ICA Commission on Geospatial Analysis and Modeling, took

Location-based big data (LocBigData): common data source, opportunities, analytics techniques for enabling smart cities, and challenges | Image courtesy of Haosheng Huang



place in a hybrid mode online and on-site in Florence, Italy between 13-14 December 2021.

There is an inherent spatial dimension in the spread of infectious diseases. A large body of studies and practices have identified the importance of spatial thinking and the effectiveness of geospatial technologies in understanding COVID-19. It is critical to share research findings quickly, so as to maximize the use of them in the world's collective efforts. This symposium featured 34 oral presentations on COVID-19 research from the geospatial perspective.

For more details of the symposium, please visit gam.icaci.org/symposium2021/. Authors of selected abstracts have been invited to submit full papers for consideration to a post-event publication in a special issue of *Environment and Planning B: Urban Analytics and City Science: Urban Analytical Approaches to Combatting COVID-19*. The special issue will be published in 2022.

LBS 2022 Conference

The ICA Commission on Location Based Services, together with the Augsburg University, and TU Munich, are pleased to invite you to the 17th International Conference on Location Based Services which takes place in Munich, Germany, 12-14 September 2022.

This conference is addressed to researchers, industry/market operators and students of different backgrounds (scientific, engineering and humanistic) whose work is either focused on or affined to Location Based Services. The conference will provide a platform to bring together colleagues from various disciplines and practice where they can meet, interact and exchange knowledge, experience, plans and ideas on how LBS could be improved and how it might influence both science and society.

We want to encourage those working in and with current issues in LBS to share their developments, research and results. For more details about LBS 2022, please visit conferences.lfk.tum.de/lbs2022/.

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

Map Production and Geoinformation Management

mapproduction.icaci.org/

Commission Activities

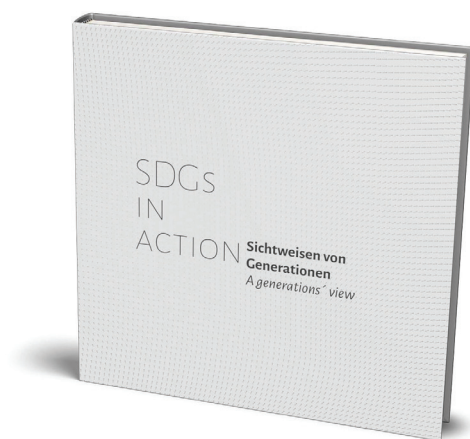
The work of the ICA Commission on Map Production and Geoinformation Management was still influenced by COVID-19 and all its restrictions. For this reason the Commission has launched an initiative to ascertain the impact of

COVID-19 pandemic on the map production and geoinformation activities in companies and mapping institutions. The questionnaires were developed in English, French, German, Portuguese and Spanish in order to collect profound experiences and working strategies to support all aspects of map production in restrictive pandemic circumstances. Responses came in from Belgium and South Africa. We are looking forward to solicit more responses and encourage readers to contact us for further experience interviews (mapproduction.icaci.org).

The 2021 International Cartographic Conference (ICC 2021) in Florence, Italy, provided an opportunity for our commission to meet on 16 December 2021 after the session T14-2. The meeting was held in hybrid mode, with Markus Jobst chairing the session in Florence and Peter Schmitz calling in from South Africa via a video call. The hybrid mode turned out to be a difficult setting for a business meeting. Personal conversations were intensified during the breaks and at social events: for this we would like to particularly highlight, and thank for, the reception of the Swiss Society of Cartography (kartografie.ch). The Commission was contacted after the ICC 2021 and informed about a workshop *Computational Approaches for Smart, Conscious Cities* to be held in Malaga in July 2022 at the International Conference on Computational Science and its Applications (ICCSA, iccsa.org).

Just in time for the ICC 2021, the Commission released a book atlas *SDGs in action – a generations' view* (sdggeneration.cartography.at), which was displayed as Austrian product at the atlas section of the International Cartographic Exhibition. Designed as an atlas, the maps, statements, and biographies of contributors illustrate the range of perspectives on the SDGs and their motivations for establishing a sustainable world. From our perspective the views on SDGs coming from various generations and expressed as maps are a valuable documentation of how we experience today's problems, how our measures develop and how we express the topics with maps. Additionally we evaluate this topic from our expert eyes of map production and geoinformation management: are there sufficient data, information, references with appropriate licences, formats and interfaces around to support our desire of geospatial expression?

Another trigger for this book atlas and its different approach has been this year's 50th anniversary of global goals: in June 1972 at the United Nations Conference on the Human Environment in Stockholm, the first measures for common goals were documented. Those goals from 1972 initiated a global perspective and assessment of the balance between environmental protection and human development. Maps have been key in this evolutionary documentation process.



Beyond this first book edition, we try to initiate an ongoing documentation of generations' views on the development of SDGs that may lead to further editions. A standardized interview procedure has been developed and we look forward to cooperate with you. Further schools and students of the international master of cartography program were motivated to participate in this initiative.

The printed bilingual book atlas, in German and English, measures 30 x 30 cm and is accompanied by a digital publication. You are invited to download your own digital copy at doi.org/10.5281/zenodo.5602021. Please send us an email for printed copies. Any support for this initiative is welcome.

Peter Schmitz and Markus Jobst | Chair / Vice Chair | ICA Commission on Map Production and Geoinformation Management | *South Africa / Austria* ■

Marine Cartography

marine.icaci.org/

ICC 2021 Conference Highlights

A highlight for international cartography during 2021 was the International Cartographic Conference (ICC 2021) held in December 2021 in Florence, Italy, as well as online.

Two sessions of the ICC 2021 were dedicated to Marine Cartography with six presentations in each. Most presentations were quite remarkable and showed the interest of the international cartographic community on issues in marine cartography.

The Marine Cartography sessions and the ICA Commission on Marine Cartography (CMC) business meeting were attended by the International Hydrographic Organization (IHO) Director Abri Kampfer and Assistant Director Leonel Manteigas. The IHO Director and Assistant Director met with the ICA President, the ICA Secretary General and the ICA Vice President Andrés Aristegui, with the presence of the CMC Vice Chair. This meeting was a unique opportunity to exchange ideas

towards the strengthening of cooperation between the ICA and the IHO. During the meeting it was decided that the ICA Vice President Andrés Aristegui will be invited to participate in a special gathering between the International Board on Standards of Competence (IBSC) for Hydrographic Surveyors and Nautical Cartographers and the Spanish Hydrographic Institute officers towards the identification of suitably qualified nautical cartographers to be considered as future members of the CMC and the IBSC.

The Commission's Vice Chair Lysandros Tsoulos participated in person in the ICC 2021. At the closing ceremony of the conference, he received the ICA Honorary Fellowship for his contribution to Cartography and his 20 years of work as an ICA representative to the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers, with Ron Furness, presently both the CMC and IBSC chair.

Cooperative Activities

The CMC Chair and Vice Chair participated in the inter-sessional meeting of the IBSC that took place in Lisbon, Portugal, in November 2021. During this meeting the IBSC members resolved issues concerning the recognition of educational programmes which had been given conditional recognition and revisited the document entitled *Guidelines for the Implementation of the Standards of Competence for Hydrographic Surveyors and Nautical Cartographers*.

The ICA representatives on the FIG/IHO/ICA IBSC have already commenced the review process of the educational programmes submitted for recognition at the IBSC45 meeting scheduled to take place in Cádiz, Spain from 28 March to 8 April 2022.

The CMC Vice Chair has continued his liaison with the IHO Nautical Chart Working Group, also further representing the ICA IBSC membership role.

The CMC Chair and Vice Chair contribute their experience and time as members of the IHO established project team advising the IHO on the development of its proposed IHO e-Learning Center.

It is common practice for the FIG/IHO/ICA IBSC to re-examine and revise its Standards and associated publications, where needed, at its annual meeting. This is scheduled to be carried out during the second week of the IBSC45 to be held in hybrid form online as well as being hosted by the Spanish Hydrographic Institute for those members able to travel in Cádiz, Spain.

Future Plans

The IBSC comprises, as has been previously reported, four members each from FIG and IHO, and two members representing the ICA. The IBSC has a decision on its books to extend the

ICA representation to four members, which reflects the increasing workload. Additionally, neither of the present ICA representatives will be available for many more years. Therefore, if ICA representation on the IBSC is to continue, it is essential that suitably qualified ICA representatives are identified while a transition period can be still effected during the membership of Ron and Lysandros. We have been actively seeking nautical cartographers working in the broader hydrographic industry, experienced with hydrographic surveying methodologies, unfortunately thus far without success, though there has been some recent interest that is being followed up. If you are interested and believe you could contribute, kindly notify the Chair by email at rfurness@ozemail.com.au.

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

Mountain Cartography

www.mountaincartography.org/

Commission Activities

The ICA Commission on Mountain Cartography has become known for our interesting and intensive workshops that take place every second year in different and diverse mountain regions around the world. Since our first gathering at Silvretta in the Austrian Alps in 1998, we have held workshops in the mountains of North America, Europe and New Zealand. For 2020, our 12th workshop was planned for April in the Colorado Rockies, USA, but due to the COVID-19 pandemic we have had to reschedule it for Northern Hemisphere spring 2023. By that date, five years will have elapsed since our previous workshop in Croatia, on the Dalmatian island of Hvar.

To fill this gap, we held a first virtual Commission meeting on 21 November 2020 with 36 participants from 15 countries and four continents. Furthermore, at the International Cartographic Conference in Florence in December 2021, two separate Mountain Cartography related sessions with 13 presentations were held, covering diverse topics and bringing new interesting insights related to research in our field. Unfortunately, due to travelling restrictions, in-person participation by commission members was rather limited. Despite this, we had our 21st Commission's business meeting on Friday, 17 December 2021.

Dušan Petrovič and Tom Patterson | Chair / Vice Chair | ICA Commission on Mountain Cartography | Slovenia / USA ■

Toponymy

www.igu-icatoponymy.org/

Upcoming Book

The ICA Commission on Toponymy is working on a new book *Minority place-name standardisation: a comparison of regulations and approaches in Europe*, edited by Peter Jordan.

The book attempts to compare such regulations in the countries of Europe with autochthonous linguistic minorities, taking into account ethnic and linguistic structures, historical and political developments, the political landscape, governance structures, and external relations. The book is also going to explain, to which extent these regulations satisfy linguistic minorities and help to facilitate the relations between majority and minority. Its publication is planned for the end of 2023.

Peter Jordan | Chair | Joint ICA/IGU Commission on Toponymy | Austria ■

Participants of 21st business meeting of the ICA Commission on Mountain Cartography held in Florence, Italy, in December 2021 | Photograph courtesy of Dušan Petrovič



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Participants of the 17th International Conference on Geoinformation and Cartography held in Zagreb, Croatia | Photograph courtesy of Miljenko Lapaine

17th International Conference on Geoinformation and Cartography

The 17th International Conference on Geoinformation and Cartography (17th ICGC) was organised by the Croatian Cartographic Society and the Faculty of Geodesy of the University of Zagreb, 23-25 September 2021. The conference was held under the auspices of the International Cartographic Association (ICA) and the University of Zagreb. By organising this conference, the Croatian Cartographic Society and the Faculty of Geodesy of the University of Zagreb wished to contribute to the development of geoinformatics, cartography, geodesy, geography and associated fields with a special emphasis on new achievements. A wide range of topics and renowned guest speakers guaranteed interesting lectures and a contemporary approach. Of particular note is the record number of people who registered to the conference – 389 in total!

The first invited speaker was Assoc Prof Tao Wang who spoke about the progress of cartographic education and shared his reflections on the subject. He made a bibliometric analysis of the international cartographic conferences over the last 20 years. The programme continued with six presentations, sponsor promotion, lunch, and three further talks on map projections. The programme continued the next day and started with a keynote by Prof Stephan Winter on progress in mobility research. The programme continued with seven presentations, followed by a video presentation marking the Day of the Faculty of Geodesy. After lunch, the conference continued with a series of presentations.

On 25 September 2021, the Croatian Cartographic Society organised a guided tour to Medvednica, introducing its basic geographical and geological characteristics and a presentation on GPS application in mountaineering and cartography.

All the materials from the 17th International Conference on Geoinformation and Cartography, including the Program and Abstracts, are available from www.kartografija.hr.

Miljenko Lapaine | Croatian Cartographic Society | Croatia ■

Geospatial Data for New Zealand

On Friday, 12 November 2021, the New Zealand Cartographic Society and the Alexander Turnbull Library organised the second State of New Zealand Cartography seminar at the National Library of New Zealand in Wellington devoted to *Geospatial Data for New Zealand*. The event consisted of 16 presentations, including two special presentations, a panel discussion and a summary.

The seminar was the continuation of the Society's initiative concerning organisation of events alternating with the National Cartographic Conferences GeoCart and thus providing additional networking opportunities for members and wider community to share, engage and exchange ideas. Inspired by similar events organised by the Society during the 1970s, 1980s and 1990s to discuss various developments relevant to cartography and GIScience, this seminar focused on current and recent activities in development, maintenance, application, curatorship, and preservation of geospatial data in New Zealand. The seminar

was attended by 69 participants representing producers of nationally significant datasets, academics, industry practitioners, and librarians.

The seminar programme covered three broad themes organised into sessions: Government; Environment; and Curatorship, Research and Professional Applications, followed by a concluding session. The Government session started with a featured presentation by Karl Majorhazi (Statistics New Zealand) who spoke about the increasing demand for high-resolution population data for spatial analysis and effective visualisation, and how COVID-19 has helped elevate the role of cartography and visualisation within the National Statistical Office. We were then treated to a visual tour covering the historic content and methods that have been used and evolved over the last 50 years, to capture and provide the data that has shaped New Zealand, and continues to do so today (Andrew Tyrrell, Land Information New Zealand (LINZ)), followed by an update on the National Elevation programme of work showing what has been undertaken, current progress and future direction (Emory Beck, LINZ). The first release of large-scale digital topographic maps of the Wellington region, based on terrain data from LiDAR surveys plus many emerging sources of high-quality digital mapping data was presented by John Gibson (Greater Wellington Regional Council), and Alan Kwok Lun Chenung (GEINT New Zealand) provided examples on how the Defence Force adopts open-source geospatial software and crowd-sourced data for day to day usage, and how they contribute back to the communities geospatial data-wise.

The Environment session provided an opportunity to report on the new Regional Bathymetry initiative (released exclusively online), and a collaboration with LINZ and GNS Science on the Seabed2030, a project between the Nippon Foundation and GEBCO (General Bathymetric Chart of the Oceans), which aims to create the complete map of the world ocean floor by 2030 (Arne Pallentin, National Institute of Water and Atmospheric Research). David Medyckyj-Scott (Landcare Research) described the lessons learned from running environmental data services and how the nature of geospatial data delivered through these online services is evolving, and discussed how 'last mile' delivery of environmental data to users is changing. Mark Rattenbury (GNS Science) talked about eight Nationally Significant Collections and Databases whose contents range from measured seismic waveforms to calculated earthquake epicentres, collected fossil occurrences to interpreted geological maps, and are complemented by the content of many other high-value geoscience datasets, and how this information helps to provide insights into geological processes and forms the basis of complex predictive models that quantify natural

hazard vulnerability, mineral resource potential, carbon cycle dynamics and geothermal productivity amongst others. The sub-Antarctic Auckland Islands pest eradication project was discussed by Matt Grose (Department of Conservation), where the accurate mapping helped to ensure its success and provided invaluable data to the National Eradication Team. The session's final presentation outlined progress in the early stages of a project concerning development of a GIS-based physical model of future flooding in South Dunedin that incorporates projected sea-level rise, terrain, groundwater and tidal components, including the use of fuzzy Analytical Hierarchy Processing (AHP) to combine expert-defined and weighted factors of vulnerability, hazard, exposure and resilience to calculate overall risk to property, and thereby the cost to property owners and the financial system (Antoni Moore, University of Otago).

In the Curatorship, Research and Professional Applications session we had Nicola Frea (Alexander Turnbull Library) talking about geospatial discoverability and access across the unpublished collections of the Library and discussing metadata supplied by the Library, innate metadata in born-digital and digitised surrogate material, and the constraints of presentation and downstream systems. David O'Sullivan (Victoria University of Wellington) described a prototype approach using R to weave together multiple attributes in maps, an idea that shows some promise although many challenges remain, particularly with respect to thematic mapping of regions with widely varying area sizes. An application of geographically weighted logistic regression (GWLR) modelling to formalise spatial associations with built environment, socio-economic and demographic factors across various urban

settings in the Otago region was reported on by Long Chen (University of Otago) in his research concerning Active Transport to School (ATS), an initiative for adolescents to reach their daily physical activity levels. The session concluded with a presentation by Suzanne Bergman (Kenex Ltd), who described a project that used spatial data modelling techniques to help identify the land blocks most suitable for a hop growing trial in the Waikato area, highlighting the benefits of freely available national data from Land Information New Zealand and Landcare Research.

The final session of the day included the second featured presentation, a panel discussion and a summary. Wendy Shaw (New Zealand Geographic Board) described a project to create two new maps: *Tangata Whenua Place Names – Te Ika-a-Māui (North Island)* and *Tangata Whenua Place Names – Te Waipounamu (South Island)*, which will provide an authoritative source of tangata whenua place names throughout New Zealand. The panel, consisting of Jessica Moran (Alexander Turnbull Library), Karl Majorhazi, Arne Pallentin and Wendy Shaw, and facilitated by David O'Sullivan, discussed the geospatial data life cycle, sharing their views on the subject and responding to questions and comments from the floor. The seminar was summarised by Antoni Moore, who shared the following observations: *"The state of data has not changed since we last met in 2019 [the first State of New Zealand Cartography seminar]. Data is still big, growing at an ever increasing rate, though for New Zealand it is great to see some of the directed data initiatives introduced then start to come to fruition. [...] There have been some clear ways forward shown here – let's do it!"*

The Society plans to publish Proceedings from this seminar in 2022 as the 6th volume in

the CartoPRESS Occasional Publications series (ISSN 2382-0381).

Igor Drecki | New Zealand Cartographic Society | New Zealand

Australian and New Zealand Map Society

Annual Meeting

The Australian & New Zealand Map Society's (ANZMapS) Annual General Meeting was held on 14 July 2021, online. Nominations were received for all positions and the new committee elected includes:

- President: Martin Woods, Director Curatorial and Collection Research, National Library of Australia
- Vice President: Michael Pearson, historical archaeologist and heritage planner, involved in polar research
- Business Manager: Andrew Eliason
- Secretary: Greg Lauer, Business Development Manager for East View Geospatial
- Editor of *The Globe*: Brendan Whyte, author and cartographer
- Ex-officio: Sarah Ryan, Senior Librarian Victorian and Australian Collections, State Library of Victoria, and Riaz Dean, author

Annual Program and Conference

The 2021 conference planned for Sydney was again deferred due to COVID-related travel restrictions, and was rescheduled to be held on 3 and 4 March 2022, at the State Library of New South Wales. The conference will be held in conjunction with the State Library's *Maps of the Pacific* exhibition.

Despite these limitations the Society maintained an active publications and webinar program, with thanks to the committee, Dr Brendan Whyte and Greg Lauer for facilitating these events.

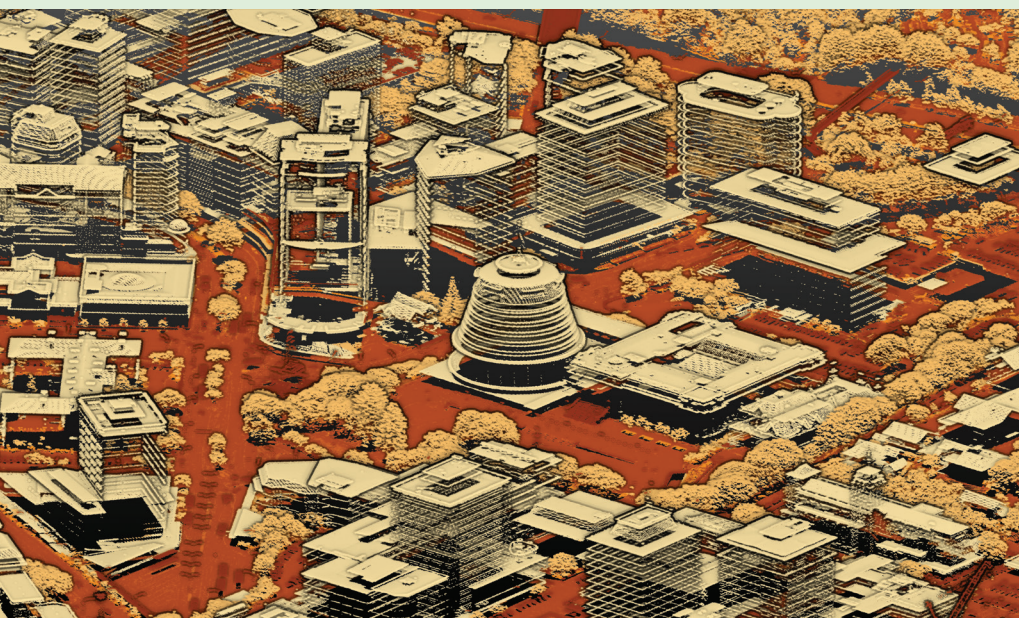
Webinars

ANZMapS hosted two webinars in the second half of 2021, in July and December. Presentations were recorded and made available via the Society's YouTube channel.

On 14 July, the Society hosted *National and State mapping in Australia and New Zealand*. Diverse approaches to generating and delivering mapping were explained by the participants: Karl Baker from Land Information New Zealand; Dmatar Butrovski, Geoscience Australia; and Jodie Cowie and Simon Haycock from the Queensland Department of Resources.

The December 1 webinar focused on the role of map curators in libraries and universities. *Curators in conversation* featured 6 map curator-librarians from a variety of

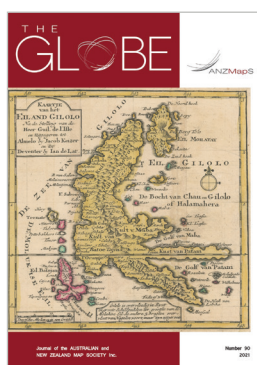
Point cloud of Wellington City LiDAR data captured during the 2019-2020 season | Image courtesy of Emory Beck



institutions on both sides of the Tasman, discussing the future of map collections and map expertise in libraries, what mapping is being collected, and how it will be made accessible in an increasingly digital library-scape.

The participants were: Igor Drecki, Curator Cartographic and Geospatial, National Library of New Zealand; Karen Craw, former curator of the Hocken Collections, Otago University; David Jones, Map Librarian at the University of Melbourne; Sarah Ryan, Senior Librarian Collection Curation & Engagement at State Library Victoria, Melbourne; Maggie Patton, Manager Research & Discovery, State Library of New South Wales; and Dr Martin Woods, National Library of Australia (convener).

The Globe



The second number for 2021 of the Society's journal *The Globe* was published in October. The focus for this issue was on historical mapping of the Pacific, following the recent *Pacific Mapping* online seminar.

Martin Woods | Australian and New Zealand Map Society | Australia ■

Cartographic activities at United Arab Emirates University

Between November and December 2021, Dr Naeema Al Hosani, Chair of Geography and Urban Sustainability Department, College of Humanities and Social Sciences at the United Arab Emirates University (UAU) was involved in the following meetings and activities:

- **8 November:** organized *Urban and Rural Development Symposium*, and invited guest speakers to deliver presentations related to urban, environment, GIS and mapping future.
- **17 November:** presented, together with her students, several papers on cartography and mapping at the *GeoHub GIS Day* held at Dubai Municipality.
- **28 November:** invited local cartographic and geographic community to attend her students' graduation capstone projects.
- **14-18 December:** delivered a presentation *Mapping Geo-Spatial Examination of Pre-and Post-Quarantine Nocturnal Illumination amidst the COVID 19 in the United Arab*



A presentation devoted to the UAE National Atlas, part of the collaboration between the Federal Geographic Information Center and the United Arab Emirates University | Photograph courtesy of Naeema Al Hosani

Emirates at the 30th International Cartographic Conference (ICC) in Florence, Italy, and participated in the ICA joint workshop *Cartography Connecting Schools*.

- **28 December:** collaborated with the Federal Geographic Information Center on the *UAE National Atlas Project*.

Naeema Al Hosani | United Arab Emirates University | United Arab Emirates ■

D. R. Fraser Taylor named to the Order of Canada



Recognized internationally as a leading figure in the field of cartography, D. R. Fraser Taylor has been named as an Officer of the Order of Canada in December 2021.

Taylor is the Carleton University Chancellor's

Distinguished Research Professor of International Affairs, Geography and Environmental Studies and the Director of the Geomatics and Cartographic Research Centre at Carleton University. He is a recipient of many awards, notably the Killam Prize for the Social Sciences – Canada's highest academic honour (2014), the Carl Mannerfelt Gold Award – the ICA's most prestigious acknowledgement and first presentation to a Canadian (2013), and the 3M/Royal Canadian Geographic Society Award for Environmental Innovation (2012).

A trailblazer in the use of the computer in cartography and in the creation of digital

atlases, Taylor introduced the concept of cybercartography. With a strong background in international development, Taylor supported the use of geographical information processing, cartography and cybercartography with local communities, governments and academic institutions across Canada as well as Africa, India, Denmark, Norway, China, Mexico and Brazil. He has also worked extensively with Indigenous communities in the creation of cybercartographic atlases dealing with traditional and local knowledge.

"Cybercartography is a concept I introduced in 1997," says Taylor. "It is a technique that uses all five senses. My basic argument is, if we, as human beings, experience our surroundings using sight, sound, taste, smell and touch, why can't we produce maps using all these senses? What we are now doing is creating a method, a framework, in which this information can sit."

In 2008, Taylor was elected a Fellow of the Royal Society of Canada. Active in geospatial information management research, Taylor is a member of the United Nations Expert Group on Global Geospatial Information Management. He was President of the International Cartographic Association for two four-year terms (1987-1995), President of the International Union for Surveys and Mapping, and Chair of the International Steering Committee for Global Mapping for a decade. He was Secretary Treasurer of the Canadian Association of African Studies for 15 years and received an Honorary Life Membership in the Association for his services to African scholarship.

In 1969, Taylor produced the world's first thematic computer atlas named *The Computer Atlas of Ottawa-Hull*. He has worked at Carleton University since July, 1966.

Ellen Tsaprailis | Abridged from an article by Ellen Tsaprailis, which appeared on the Carleton University Research website (research.carleton.ca/story/carletons-fraser-taylor-named-to-the-order-of-canada/) on 29 December 2021 | Canada ■



Approaching Italy over the Alps | Photography Kenneth Field

Flying again! Some personal reflections on ICC 2021

The vibe in Tokyo at the 29th International Cartographic Conference (ICC) in July 2019 was positive, and we all looked toward a bright future with a visit to Florence for the 30th ICC on the horizon. The booth of the Florence delegation in Tokyo was vibrant, and full of all of the reasons one might wish to visit the Tuscan capital. It wasn't a tough sell, and we ended the conference with the traditional handover to the next hosts of ICC. We went our separate ways knowing we'd meet again soon. Then the world stopped.

We adjusted to the new normal, put plans on hold, made our daily commute from our bedrooms to our home offices, and saw the opportunity to visit Florence and meet in person come and go. To be frank, this was of little significance given the shocking way in which COVID-19 ravaged families the world over. Life was on hold to some extent, and on a professional level, the value of meeting colleagues and sharing ideas and discussion became a gap in the annual cycle of our collective work.

But, slowly, and thanks to the science of vaccinations, as well as the many control measures governments and society put into place the world slowly opened up and the 30th ICC in Florence remained steadfast that the event would go ahead in December 2021. A hybrid event with opportunities to attend in person, or join remotely was available. I wanted to attend in person, having spent nearly 2 years talking to people through the interface of my computer. This didn't prove easy. I had a job to persuade my employer of the value of travelling and meeting in person over simply joining remotely. This is likely to be a persistent issue for many who rely on assistance for the costs involved with travel and accommodation, and

should be something organisers consider going forward. The benefits of making conferences available to remote attendees will inevitably have consequences for in-person attendance.

I had to ensure I complied with all sorts of vaccination and travel requirements. I packed many masks, test kits, and had to book 8 separate tests to comply with different travel mandates. I flew via the UK to see family for the first time, and landed in Italy to find my hotel had been closed due to a covid outbreak. I eventually found the replacement hotel and was jubilant at having negotiated all of the new requirements for travel. I'd never been to Florence before and it didn't disappoint. It was a wonderful setting for the conference. The very reason we meet at conferences is to discuss our work but the place is important. The bars, restaurants, cultural opportunities, site visits, and shared experiences of a new place provide the backdrop. It's a key aspect of a successful conference.

All of the usual ICC events took place from pre-conference Commission workshops, to the International Cartographic Exhibition, the Barbara Petchenik children's map competition, orienteering event, and of course the paper sessions themselves.

The opening ceremony was held in the splendour of The Salone Dei Cinquecento In Palazzo Vecchio. Some issues with the list of registrants and those who had registered were quickly overcome and we were treated to about 30 separate welcome introductions. Well, perhaps that's an exaggeration but it felt like it, at a time when everyone was looking around itching to just have a conversation with friends and colleagues they'd not seen for a while. For many of us we'd not seen a crowd of people of any form for that time – I guess there was some impatience. The string quartet was enjoyable and well suited to the venue. I, for one found myself looking at the incredible ceiling frescos recalling the assassin from Dan Brown's *Inferno* starring Tom Hanks falling to her death through the ceiling after being pushed in the attic. The

repairs were impressive. We were finally able to enjoy a conversation over a chilled Aperitivo and mingle.

The conference proper was full of some excellent talks. There were likely 300+ attendees in person which meant a smaller ICC than many previous ones but the benefit was fewer parallel sessions, and greater opportunities for attending what you wanted to see. There were inevitable technological hiccups particularly where session chairs and presenters were remote, or locating the correct pre-recorded material but the last two years has made us a little more accepting of the vagaries of technology. It's incredible how many conferences and organisations have pivoted to develop different modes of working and overall the paper sessions were well marshalled and the content as interesting as always.

The International Cartographic Exhibition was typically of a high quality, though being > 18

Arriving to find my hotel Globus closed due to coronavirus | Photography Kenneth Field





The Terrace of the Geographic Maps at the Uffizi Museum | Photography Kenneth Field

held in the Italian Geographic Military Institute it was a little unnerving having to hand over your passport to soldiers at the entry checkpoint. But they did have hand sanitizer too. There simply isn't any other opportunity to see maps from so many international mapping organisations in one place. It's my favourite part of ICC with the ability to explore different styles and solutions from so many different countries and individuals. There were some inevitable gaps this year which brought into focus the colleagues from some countries who simply were unable to travel due to their local restrictions. We missed colleagues from South Africa, Australia, and New Zealand to name a few.

The Barbara Petchenik children's map competition was as impressive as ever. There's a wonderful imagination on display in the maps produced by children, as well as beautiful artistry. If I had a criticism it'd be that we must put in some checks to ensure that the age of those that entered is somehow verified. Not for the first time I was looking at a few entries by young children that frankly, could never be drawn by a child of the alleged age. I'd also encourage future organisers to ensure the children's maps are more prominent. In Florence they were housed in a separate space, requiring a dedicated trip. The effort of these children need a far more prominent place.

I'd already left before the closing ceremony (and missed my new book winning an award!) but had seen and chatted to many good friends, and looked forward to further opportunities as we move towards the return of more

conferencing opportunities. I managed to get out and see some of Florence, and was delighted to find that The Terrace of the Geographic Maps reopened at the Uffizi after a 20-year closure to coincide with the ICC. The wall maps were truly spectacular.

So, we move on to Cape Town in South Africa in 2023 for the 31st ICC. My desire to reconnect with real human beings in person rather than via my computer means I'll do my best to attend. Hopefully by then the pandemic will be a memory and we'll have learnt to live with whatever travel requirements are in place to keep us as safe as possible.

Kenneth Field | British Cartographic Society | United Kingdom ■

ICC 2021 in a capsule

The 30th International Cartographic Conference (ICC) took place in mid-December in Florence, Italy. The hybrid event included 630 registrants from 53 countries, half of which enjoyed the in-person company of colleagues in a beautiful Renaissance setting. Participants experienced several wonderful historical locations for various facets of the program, all anchored to the main conference venue in the School of Humanities within the University of Florence. Virtual participants presented and actively engaged here during each session. While nestled between the beginning of the new Omicron virus variant and its rapid worldwide

spread after the conference, we were very fortunate to realize our goals and hopes for a highly successful hybrid experience.

Preconference Workshops

In advance of the ICC, sixteen ICA Commissions organized workshops for anyone interested in participating in different topics of interest. They were a glimpse into the diversity of topics included within the ICA's work that beckon those interested to learn and participate. Examples of themes offered included: cartography and geospatial education in the classroom and the cloud; geospatial approaches for combatting COVID-19; disaster risk reduction; map generalization and multiple representation; historical cartography; geospatial semantics and cartography; map design for atlases; and map use and immersive geographic environments. These events were hybrid which allowed remote presentations and participation. Observing a sample of these events leading up to the 30th ICC infused reassurance in the interesting, fun, and important work of the ICA.

Opening Ceremony

During the Opening Ceremony, Dr Peter Gluckman, President of the International Science Council, reminded cartographers of the importance of the integration of the physical, biological, environmental, social, (and economic) data sciences. Our discipline brings them together in so many ways. A caution was offered where science has never been contested as it has now and governments can only do their job better if science is used effectively. Science needs to be more impactful! Cartographers are aware of the multiplicity of challenges that exist. A new approach for actionable science is needed to meet the sustainability agenda. Cartography and the skills that cartographers bring are part of the necessary progress because we illustrate, show and make easy to comprehend the enormously complex world we live in and how we can find ways of dealing with so many problems.

Two outstanding cartographers were recognized for their significant contributions to the field of cartography during the Opening Ceremony in the Palazzo Vecchio: Professor Ulrich Freitag from Germany and Dr Alan MacEachren from the USA. They were acknowledged with the ICA's highest award, the Carl Mannerfelt Gold Medal (please read their citations on pages 1, 3 and 4). This prestigious recognition had not been awarded since 2013.

Conference Program

Gluckman's inspiring words during the Opening Ceremony were a fitting beginning to the rich scientific program offered during the 30th ICC. There were 448 oral presentations scheduled within 80 sessions interspersed with 2 keynotes and 4 special sessions dedicated to topics of



The ICC opening ceremony inside Palazzo Vecchio | Photography Kenneth Field

interest such as cartography in an age of digital transformation; lessons learned from geospatial data and dashboard visualizations supporting the pandemic; business innovation with urban data analytics based on earth observations and AI; cartography's contributions to the Sustainable Development Goals; and the importance of national mapping and geospatial agencies in contributing to global and national priorities.

Such an expansive array of topics motivates us to further explore a variety of offerings from the program. A sample of interests may include: storytelling in interactive atlases; climate and vine; the cartographic heritage of the University of Florence; hurricane and waste collection simulations; Leonardo's maps and their approach to art and science; a new tool to follow the changes of geographic names on globes; spatial thinking in cartography teaching for schoolchildren; mapping autistic wayfinding; visualization of LiDAR data; using cartographic and archival material to approach local history; mapping the surrounding environment by pupils; eye-tracking study; the sense of North; please help me – I am lost in Zoom; feature extraction; machine learning methods for automatic mapping; NSDI and IGIF; developing cartographic terminology in African languages; tactile cartographic variables; geocoding uncertainty; medieval maritime measurements; spatial context by emojis; traffic congestion using fuzzy logic; participatory mapping; sensor-based planetary cartography; cartographic communication for AI results; spatiotemporal patterns on data quality assessment; virtual geographic environments; military

mapping; and marine road network for ship passage. Electronic posters were also displayed during the conference.

The number of high-quality papers resulted in two special issues of the *International Journal of Cartography* (Vol. 7 Issue 3 and Vol. 8 Issue 1). The remaining papers and abstracts are available in one of three publications:

- Advances of the ICA (www.adv-cartogr-giscience-int-cartogr-assoc.net/3/)
- Proceedings of the ICA (www.proc-int-cartogr-assoc.net/4/)
- Abstracts of the ICA (www.abstr-int-cartogr-assoc.net/3/)

Awards

In any endeavor, it is important to celebrate achievements and recognize organizations and individuals that made those contributions. The International Cartographic Exhibition (ICE) is an opportunity for member nations and affiliate members of the ICA to exhibit their best cartographic works. The ICE was hosted by the Italian Geographic Military Institute. A panel of expert judges evaluates the entries and three levels of winners are determined. Additionally, the public viewing the ICE vote for their choice of best product which offers a separate award in each category.

The array of cartographic visualizations included 271 maps and charts, 33 atlases, 58 digital cartographic products and services, and a special category of 22 cartographic educational products. 26 additional entries were on display that represented other groupings of products. The hybrid design of the conference

included a virtual ICE for remote participants. A comprehensive 391-page catalogue that describes each submission with an accompanying graphic was prepared by the organisers as an electronic publication (icaci.org/files/documents/ICC_proceedings/ICC2021/ICC2021_MEC.pdf).

A highlight of each ICC is the Barbara Petchenik Children's World Map Competition. Entries included 178 drawings from 32 countries that were on display in Florence. The competition was divided into four age categories where 12 awards were conferred. In addition, there was an award for creativity and a public award. The theme of this year's competition was **A Map of My Future World**. As you look at the entries (observo360.com/icadrawingexhibition/), a child's perspective on their future world is on display for each of us to better understand their concerns and opportunities. You are encouraged to take a look; all entries can be temporarily viewed at vanderkrogt.net/petchenik/.

In a separate ceremony, the President and Secretary General presented scholarship diplomas to the many young researchers who were present during the ICC. With some participating remotely, 25 individuals were awarded ICA scholarships to the 30th ICC.

A Meeting Place

The ICC makes it possible for gathering and greeting so many colleagues. Coffee breaks in the halls of the university gave everyone an opportunity to collaborate and make new acquaintances and friends. The ICC also brings together members of the ICA and representatives from sister societies and organizations. Florence was no exception. Engagement with organizations and associations like the UN, the IHO, and the IMIA advanced our collaborations while we strengthened our commitment to members including Switzerland, Rosreestr, and Esri. The ICC provides the best meeting opportunities for the ICA Executive Committee and the Chairs of the Commissions and Working Groups, as well as social opportunities to spend time with former leaders of the ICA.

The splendor of Florence was there for all to see and experience. It may have been the best venue for an International Cartographic Conference, the seat of the Renaissance. While the scientific program advanced our interest and understanding in cartography and GIScience, the streets, buildings and art of Florence drew us in to the fabulous history and culture of times past. One of the many architectural highlights was the gala dinner held at the Palazzo Borghese.

Closing Ceremony

During the closing ceremony three ICA colleagues were awarded the ICA Honorary Fellowship Award that recognized Georg Gartner, Lysandros Tsoulos, and Vladimir

> 20

Tikunov for their special long-standing contributions to the ICA. Diplomas for outstanding service to the ICA were awarded to three ICC members of the Local Organizing Committee: Paola Zamperlin, Margherita Azzari, and Gilberto Fumarola. A Diploma was also awarded to Manuela Schmidt for her contributions in managing the ICA website. In addition, awards for exhibitions previously mentioned, as well as the orienteering competition were presented.

At the end of the ICC Closing Ceremony, the host of the next ICC presented an enticing welcome and encouraged all of us to make our way to Cape Town, South Africa in August 2023. The final action was the hand-over of the ICA flag from the Florence host to the next organizing country South Africa. We bid Florence a warm farewell with grateful thanks and look forward to our next ICC in Cape Town.

Timothy Trainor and **Thomas Schulz** | President / Secretary General and Treasurer | ICA ■

ICA Scholarships

At every International Cartographic Conference (ICC), the ICA supports early career scientists or professionals in cartography and GIScience through its scholarship programme. The ICA Scholarship awards are available to finance travel and participation in the event and to help advance careers in cartography and GIScience to the benefit of the ICA community.

ICA is proud to announce that we were able to support 25 scholarship applications received from young scientists from around the world to participate, either in person or remotely, in the ICC 2021 in Florence. For in-person participants, a small ceremony was organized, where ICA President Tim Trainor and Secretary General Thomas Schulz met with award recipients and handed them out their certificates. After the ceremony, a picture was taken with all participants on the roof of the conference building against the beautiful backdrop of our host-city Florence.

The ICA Executive Committee congratulates all the scholarship awardees and thanks them for their important contribution to the conference. We wish all participants every success in their future careers and hope that they will continue to enrich future ICC conferences with their contributions.

Listed below are recipients of the ICA Scholarships to participate in the ICC 2021, together with titles of their papers:

- Malak Alasli (Hungary): *Dual naming as a mechanism to recognize multiple identities: Casablanca or Ad-Dar Al-Bayda*
- Harrison Cole (USA): *Thematic tactile cartography: evaluating tactile mapping techniques for novel applications*

- Dávid Gerzsenyi (Hungary): *FRMOD, a Python tool for statistical landslide susceptibility assessment*
- Edina Hajdú (Hungary): *The digital cartographic reconstruction of the 1897 'Mátra Guide' (Hungary)*
- Jessica Kate Hepburn (United Kingdom): *How do decision makers interact with geospatial data? An eye tracking study*
- Julian Huiber (Austria): *A set of criteria for evaluating map application design in a mobile environment (co-authored with Marc Schulz)*
- Veronika Flóra Kiss (Hungary): *The sense of north*
- Jakub Koniček (Czech Republic): (1) *Mapping, synthesis and visualization of Czech dialects;* (2) *Approaches for infographics evaluation in maps*
- Ondřej Kvarda (Czech Republic): *Usability of Building Information Modeling (BIM) for generating Virtual Geographic Environments (VGES)*
- Nicholas Lally (USA): *Direct manipulations of cartographic space for expressive cartographies*
- Andong Ma (USA): *Computationally-efficient sequential feature extraction for single hyperspectral remote sensing image classification*
- Rebeca Merino del Río (Spain): *Historical cartography analysis for a design of cultural itineraries in the Lower Guadalquivir*
- Chelsea Nestel (USA): *Aesthetics in cartographic epistemology*
- Márton Pál (Hungary): (1) *Automatic vectorization of rectangular manmade objects: a case study applying OpenCV and GDAL on UAV imagery;* (2) *Where to hike? – mobile application for guiding tourists in the Bükkalja Region, Hungary;* (3) *Geodiversity mapping of the Bakony-Balaton UNESCO Global Geopark, Hungary*
- Lois Park (USA): *Reimagining measures of spatial access to health care in low- and middle-income countries: using road network analysis to validate self-reported perceptions of geospatial barriers*
- Lourdes Johanna Avelar Portillo (USA): *Measuring closest water, sanitation, and hygiene facilities in unhoused communities of Los Angeles, USA*
- Timothy Prestby (USA): *Characterizing storytelling in COVID-19 cartographic journalism*
- Marc Schulz (Austria): *A set of criteria for evaluating map application design in a mobile environment (co-authored with Julian Huiber)*
- Katarzyna Słomska-Przech (Poland): *Historical Atlas of Poland 2.0 – over 140 years of joint work of historians and cartographers*
- Niédja Sodré de Araújo (Brazil): *Perspectives about implementation of colour codes on maps accessible to blind people*
- Gene Trantham (USA): *Focus on orientation to represent terrain*

- Pavel Ugwitz (Czech Republic): *Building a virtual cartographic museum*
- Gergely Vassányi (Hungary): *Automatic vectorization of point symbols on archive maps using deep convolutional neural network*
- Yanan Wu (USA): *Where and why there: Location Analytics of Routine Occurrences (LARO) with a case study on traffic accidents*
- Lei Zou (USA): *Revealing the geographical disparities of global COVID-19 awareness and its health effects through social media*

Thomas Schulz | Secretary General and Treasurer | ICA ■

International Cartographic Exhibition

Every biennial International Cartographic Conference (ICC) features the International Map Exhibition where maps, charts and cartographic products originating from the ICA national and affiliate members are exhibited. An international jury selects the best entries in various categories.

Between 13–17 December 2021, a total of 410 cartographic items from 32 ICA members were on display at the Italian Geographic Military Institute in Florence. As usual, the exhibition was open to both, ICC 2021 delegates and the public, and received plenty of attention. All exhibits were grouped into seven categories:

- Maps on panels
- Charts on Panels
- Atlases
- Digital Products
- Digital Services
- Educational Cartographic Products
- Other Cartographic Products

The international jury selected 3 awards in each category except Digital Services, with 18 awards in total. The judges were:

- Margherita Azzari, Italy
- Thomas Schulz, Switzerland
- Mark Wigley, Switzerland
- José Jesús Reyes Nuñez, Hungary
- Nicola Gabellieri, Italy
- Andrés Aristegui, Spain

In addition, a popular vote was conducted online, which resulted in 8 additional awards across six categories. All map awards were presented at the Closing Ceremony on Saturday, 18 December in the beautiful Sala Pegaso in Palazzo Guadagni Strozzi Sacratí. The ICA warmly congratulates all winners and thanks them for their participation in these difficult times!

Thomas Schulz | Secretary General and Treasurer | ICA ■

International Cartographic Exhibition – Winners

MAPS ON PANELS

- 1st** La Réunion, IGN France
- 2nd** Regional (Autonomous) Map of the Canary Islands, IGN Spain
- 3rd** Central Tokyo: 10,000 Topographic Map «Central Tokyo» in commemoration of the enthronement of His Majesty the Emperor, Japan

Popular vote: The Topographic Plan of Aluniș Estate – property of the Bazau Diocese, Romania

CHARTS ON PANELS

- 1st** Aeronautical chart, Finland
- 2nd** Puerto de Santander 4011 INT 1852, Spain
- 3rd** Fox Islands Thorofare – Stand-in point to Birch Island, United States of America

Popular vote: (1) Approach to Cagliari, Italy; (2) Augusta Harbour, Italy; (3) Hand cut depth model of the Isle of Wight, United Kingdom

ATLASES

- 1st** The Atlas of Unusual Borders, United Kingdom
- 2nd** State of Israel – 70 years of Statistics, Historical Statistical Atlas 1948-2018, Israel
- 3rd** Atlas of the Invisible, United Kingdom

Popular vote: National Atlas of Hungary – Society, Hungary

DIGITAL PRODUCTS

- 1st** 3D Map Aosta, Italy
- 2nd** Southern Journey: The migrations of the American South, 1790-2020, United States of America
- 3rd** Edugeo – Module Minetest/Kidscode for education on natural risk, IGN France

Popular vote: Swisstopo Vector Tiles, Switzerland

EDUCATIONAL CARTOGRAPHIC PRODUCTS

- 1st** Thematic Mapping: 101 inspiring ways to visualize empirical data, Esri
- 2nd** GeoExplorer, IGN Spain
- 3rd** Magnetic Hand-painted Map of the Czech Republic, Czech Republic

Popular vote: Mini-map of the World 1:100 Mio., BKG Germany

OTHER CARTOGRAPHIC PRODUCTS

- 1st** Geographical atlas of Belarus for the blind and visually impaired, Poland
- 2nd** L'Histoire de la Belgique en 100 cartes anciennes, Belgium
- 3rd** The vividness of cartography – Andermatt and Matterhorn, Switzerland

ICC 2021 Orienteering Competition

Despite all the limitations brought by the pandemic to the organisation of the International Cartographic Conference (ICC) in Florence, the traditional orienteering event, the most “cartographic” sport out there, went ahead as planned. After all, orienteering is the safest (pandemic-wise) activity: it is staged entirely outdoors, where everyone performs alone and only occasionally meets other competitors on the course. Prior to the actual competition, we had a chance to test ourselves on Thursday night, 16 December 2021, searching for “Christmas lanterns” – control points along the narrow streets of the historic center of Florence.

Two days later, on Saturday morning, the real competition was held. The organizers, Pierluigi Cantini (ASD Firenze Orienteering), Andrea Favretto (University of Trieste), Giovanni Mauro (Vanvitelli University) and Camillo Berti (University of Florence), prepared the ICC orienteering course at Piazzale delle Cascine in a historic park located by the Arno River. A beautiful sunny morning, but with chilly temperatures, encouraged most participants to warm up prior to the event and run a few kilometres to the gathering place in front of the School of Agriculture. The organizers offered two course options: Beginner (B) and Advanced (A). But since the competitors included two former ICA presidents, two current vice presidents and a few commission chairs, who would declare themselves a beginner? Consequently, fourteen runners from eight countries competed on an interesting and fast 3.6 km long advanced course with 17 control points. The fastest did it in just over 15 minutes, and most in no more than half an hour.

The winners were:

Advance Course (men) – 3.6 km

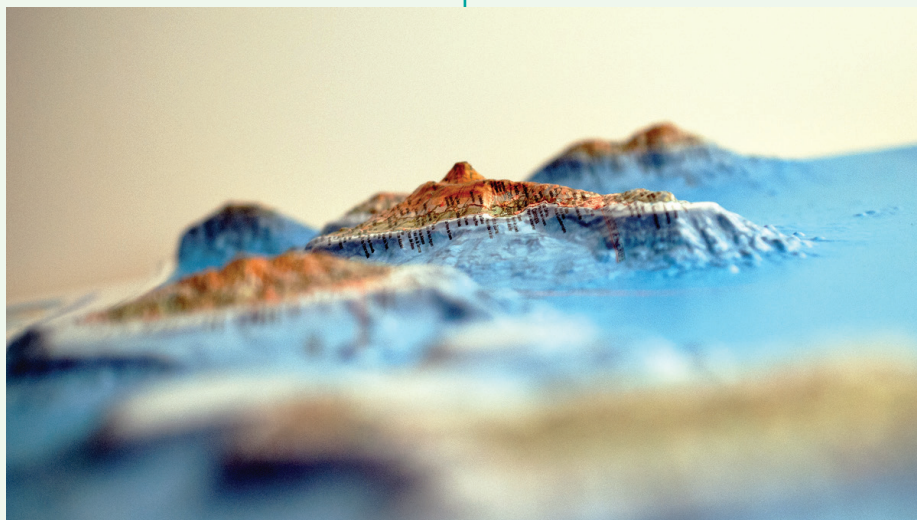
1. Dušan Petrovič | Slovenia | 16:28
2. Mátyás Gede | Hungary | 18:47
3. Maximilian Gartner | Austria | 19:24

Advance Course (women) – 3.6 km

1. Dojana Snopkova | Czech Republic | 23:32
2. Bigi Velia | Italy | 30:56

Thanks go to the organizers for a pleasant event. We hope to meet again and try our orienteering skills in quite different conditions in Cape Town in August 2023.

Dušan Petrovič | Participant of the ICC 2021 Orienteering Event | Slovenia ■



ICC 2021 – Facts and Figures^{1,2,3}

icc 2021 participants	630
in-person	309
remote	321
ica commission and working group pre-conference workshops	11
ica scholarships	25
meetings, panels and technical visit venues	17
ica commission and working group business meetings	7
technical visit venues	4
keynotes	2
panels	2
special sessions	2
exhibits at international cartographic exhibition	410
maps	240
charts	31
atlases	33
digital cartographic products	42
digital services	16
educational cartographic products	22
other cartographic products and globes	26
maps at children's map exhibition	178
less than 6 years old	13
6-8 years old	21
9-12 years old	74
13-15 years old	70

¹ Source: *ICC 2021 Final Report (presentation)*, ICC 2021 Local Organising Committee, 18 December 2021, Florence, Italy, and documentation provided by ICA Secretary General and Treasurer.

² Source: *Exhibition Catalogue*, 30th International Cartographic Conference, 13-17 December 2021, Tokyo, Japan.

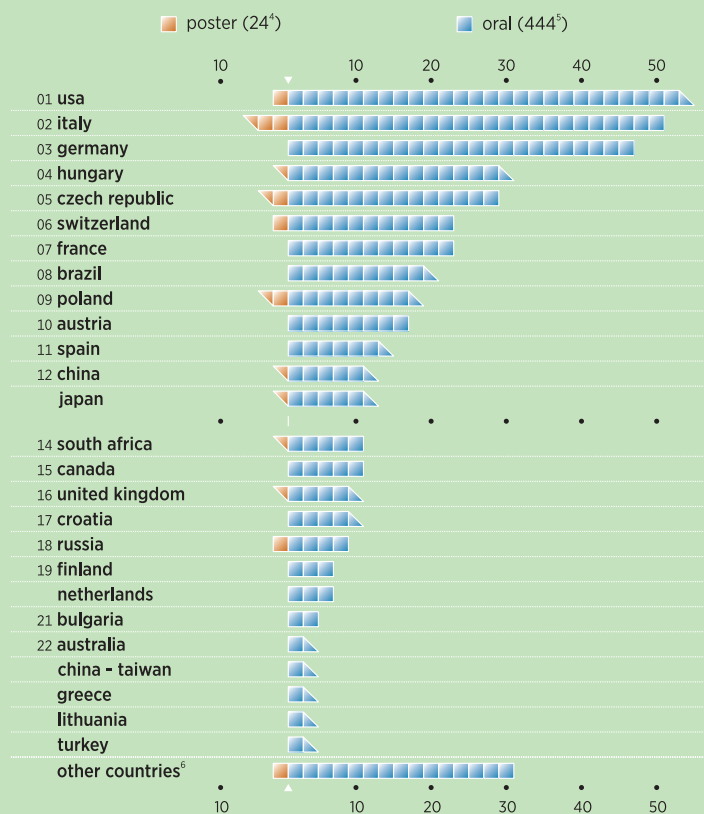
³ Source: *Program*, 30th International Cartographic Conference, 14-18 December 2021, Florence, Italy.

⁴ 34 poster presentations were actually scheduled in the ICC 2021 *Program*; 10 posters not reflected here were: 1 duplicate of an oral presentation included in the *Marine Cartography* (T17-1) session; and 9 omitted from the ICC 2021 publications^{3,7}.

⁵ 450 oral presentations were actually scheduled in the ICC 2019 *Program*; however, 2 presentations were listed twice within their respective thematic sessions (*Cartography in Digital Humanities* (T28-1 and T28-2) and *Augmented and Virtual Realities in Cartography* (T33-2 and T33-3)); 7 presentations were omitted from the ICC 2021 publications; and 3 presentations were omitted from the ICC 2021 *Programme*, but included in the ICC 2021 publications (*Abstracts of the ICA*) and subsequently added here^{3,7}.

⁶ Other countries include: Belgium, Chile, Israel, Nigeria, North Macedonia, Norway, Romania and Slovenia (2 oral / 0 poster presentations each); Egypt, Iceland, Luxembourg, Malaysia, Mexico, New Zealand, Serbia, Singapore, Slovakia, South Korea, Ukraine and

ICC 2021 – Origin of Presentations^{3,7}



Uzbekistan (1/0 each); Albania and United Arab Emirates (0/1 each); in addition, representatives of the United Nations authored 2 oral presentations.

⁷ *Journal: International Journal of Cartography*, Vol 7, Issue 3, 2021 (4 papers) and Vol 8, Issue 1, 2022 (10 papers); *ICA Series: Advances in Cartography and GIScience of the International Cartographic Association* (14 papers); *Proceedings of the International Cartographic Association* (113 papers / 4 posters); and *Abstracts of the International Cartographic Association* (303 papers / 20 posters).

⁸ Other contributions included 3 papers published in the *Abstracts of the ICA*, but omitted from the ICC 2021 *Programme*, hence not allocated to any of the conference themes.

⁹ Posters were listed in the ICC 2021 *Programme* without allocation to the conference themes.

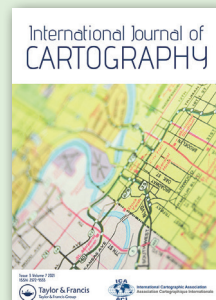
conference publications



Program, 30th International Cartographic Conference, 14-18 December 2021, Florence, Italy



Exhibition Catalogue, 30th International Cartographic Conference, 13-17 December 2021, Florence, Italy



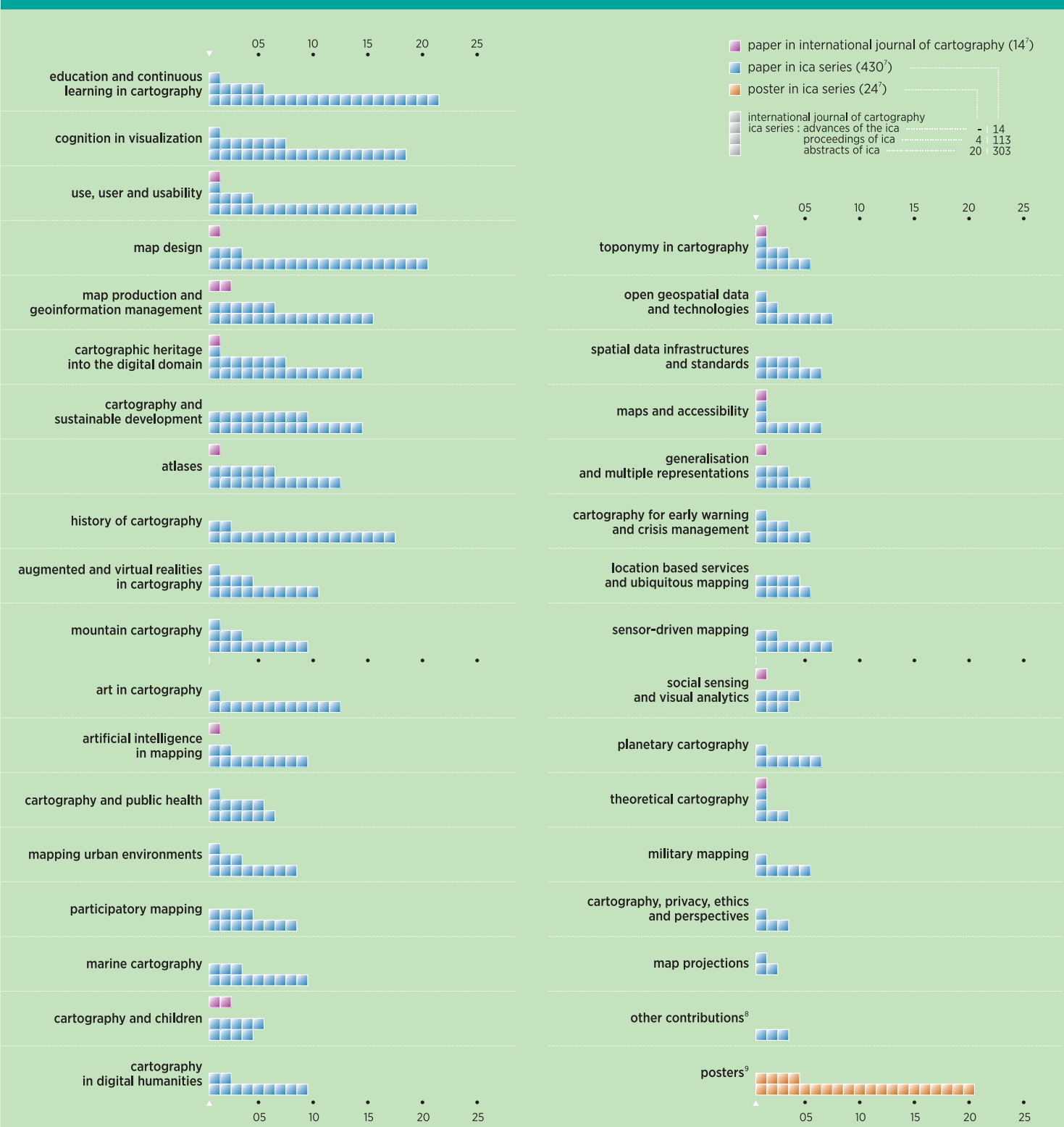
International Journal of Cartography, Vol 7, Issue 3, 2021, and Vol 8, Issue 1, 2022; Special Issues: International Cartographic Conference 2021, Florence, Italy

ICC 2021 Online Publications

The ICC 2021 conference publications are available online in three ICA series:

- *Advances in Cartography and GIScience of the ICA* (Vol 3): www.adv-cartogr-giscience-int-cartogr-assoc.net/3/index.html
- *Proceedings of the ICA* (Vol 4): www.proc-int-cartogr-assoc.net/4/index.html
- *Abstracts of the ICA* (Vol 3): www.abstr-int-cartogr-assoc.net/3/index.html

ICC 2021 – Papers by Theme^{3,7}



Children's Map Awards – Winners

UNDER 6 YEARS OLD

- 1st** Ivayla Lazarova | 5 | *My Favorite Planet* | Slaveyche kindergarten: Lesnovo | *Bulgaria* (BG-1)
- 2nd** Elzė Marija Jakubėnaitė | 4 | *We are one family* | Kindergarten Dobilas: Jonava | *Lithuania* (LT-1)
- 3rd** Lyyti Kalakoski | 5 | *Où vont le glaciers? (Where do the glaciers go?)* | –: Tampere | *Finland* (FI-3)

6–8 YEARS OLD

- 1st** Alfonsina Valdez Galli | 7 | *Friendly World* | –: Resistencia, Chaco Province | *Argentina* (AR-6)
- 2nd** Yang Se-Ha | 7 | *Countries in the World overcoming COVID-19 Together* | –: Gimpo | *South Korea* (KR-1)
- 3rd** Pavol Rybár | 8 | *The Most Important Game of Chess* | Základná umelecká škola Rajec: Rajec | *Slovakia* (SK-2)

9–12 YEARS OLD

- 1st** Matvei Pilko | 10 | *Stop the Pandemic: We love to travel, we love maps* | –: Israel (IL-1)
- 2nd** Magda Oswald | 12 | *The planet of the future* | –: Osijek | *Croatia* (HR-1)
- 3rd** Barnaby Blampied | 11 | *My future is in your hands: You choose* | Mahurangi College: Warkworth | *New Zealand* (NZ-4)

13–15 YEARS OLD

- 1st** Angela Waiman | 15 | *Holographic map of my future world* | SMA Penabur VI: West Jakarta | *Indonesia* (ID-5)
- 2nd** Elmira Sabanchieva | 13 | *The Fragile World* | –: Nalchik | *Russia* (RU-4)
- 3rd** Daniela N. Villacrés Ribadeneira | 14 | *In the same water* | Cardinal Spellman Girls' School: Quito | *Ecuador* (EC-3)

PUBLIC VOTE

Alfonsina Valdez Galli | 7 | *Friendly World* | –: Resistencia, Chaco Province | *Argentina* (AR-6)

CREATIVITY AWARD

Pijus Jokubaitis | 15 | *Virtual Reality* | Gargždai Children Art Studio: Gargždai | *Lithuania* (LT-5)

International Jury: José Jesús Reyes Nuñez (Hungary – Chair), Ana María Garra (Argentina), Temenoujka Bandrova (Bulgaria), Naeema Al Hosani (United Arab Emirates), Catherine Njore (Kenya), Pilar Sánchez-Ortiz Rodríguez (Spain), Dariusz Dukaczewski (Poland) and Riccardo Morri (Italy); substitute members: Carla Cristina Reinaldo Gimenes de Sena (Brazil) and Monika Kopecka (Slovakia).

Thanks: Peter van der Krogt (Netherlands – International Coordinator).

REPRODUCED ON THE BACK COVER

Panels displaying children's maps submitted to the 2021 Barbara Petchenik Children's World Map Awards at the International Cartographic Conference in Florence, Italy | *Photography Stephan Wondrak*



ICC 2021 in Pictures: Opening of the International Cartographic Exhibition; presentation of Carl ...>



...> Mannerfelt Gold Medal to Ulrich Freitag; gala dinner; orienteering event; Opening Ceremony; International Cartographic Exhibition; recipients of the 2021 ICA Scholarships; a paper session; Hungarian contingent at ICC 2021; passing of the ICA flag from Italy to South Africa | Photography Stephan Wondrak, László Zentai, Kenneth Field, Thomas Schulz



AutoCarto 2022

cartogis.org/autocarto/autocarto-2022/

AutoCarto 2022, the International Research Symposium to be held 2-4 November 2022 on the Esri campus in Redlands, California, is poised to reveal transformative thinking in cartography and geographic information science (GIScience). The symposium sets forth an agenda focused on the following theme: *Ethics in Mapping: Integrity, Inclusion, and Empathy*.

AutoCarto 2022 brings attention to ethical responsibilities we face in all aspects of our discipline, with conversations on the power of maps and the critical need for integrity and empathy in cartography and GIScience. Submissions on topics, especially those related to this year's theme, from all areas of cartographic and geographic information science are welcome. Categories include the following:

- Geoethics and Mapping
- Territorial Empathy
- The Power of Maps for Equity and Social Justice
- Geotracking and Social Responsibility
- The Potential of GeoAI for Good and Evil
- Storytelling for Empowerment and Action
- The Tension between Privacy and Social Responsibility

Since AutoCarto 2022 is an ICA Regional Cartographic Conference, representatives from the ICA, including President Tim Trainor and Secretary General Thomas Schulz, will be in attendance. Additionally, early career scholars can apply for ICA Scholarships to attend the symposium.

With its long history of bringing together researchers and practitioners from academia, industry, and government agencies to share scientific advancements and explore relevant new ideas, the AutoCarto symposium series continues to be standard-bearer of transformational research in cartography and GIScience.

AutoCarto first convened in 1974, about 15 years after the advent of automated cartography. At that time, automation in mapping was concerned with attaining speed and accuracy, lowering the cost of mapping, easing the

revision process, and facilitating data digitization. A review of past 13 AutoCarto symposia revealed the importance of these early gatherings. AutoCarto was the only event to bring together people working in automated cartography and, incidentally, the early development of geographic information system (GIS) technology. Surprisingly to some, the symposium series was laid to rest in 1997 because, as a previous symposium chair said, the organizers believed they had "solved the problem of automating cartography."

By the early 2000s, there were few opportunities for people working in automated cartography and the closely aligned, rapidly emerging field of geographic visualization to come together outside of the biennial International Cartographic Conference. Consequently, in 2005, the AutoCarto symposium was resurrected out of recognition that the gathering was still important to the scientists, academics, and practitioners who were evolving cartography and GIScience.

Since 2005, AutoCarto continues to bring people together from around the world to share their work with other professionals in cartography and GIScience. Prompted by the global pandemic, AutoCarto 2020 was provided in an open-access format online and free of cost for all. Now, in 2022, the advantages of virtual gatherings will be combined with those of in-person attendance, as the symposium will be offered in a hybrid format.

In a recent *Proceedings of the National Academy of Sciences of the United States (PNAS)* article, Michael Goodchild *et al.* note: "We are at unique moment where society and the planet are facing a vast canvas of challenges that require knowledge, truth, and action." And, as Alan MacEachren once said: "Cartography and GIScience can play a key role in the research and practice of representing our world in order to meet the needs of science and society."

But there is a tension between the challenges we face, the responsibilities we hold, and the opportunities we have for success. Geospatial information is central to decision-making by agencies and organizations as well as by individuals; maps have become ubiquitous, and tools for analyzing and representing spatial data are widely available. At the same time, we have seen ethical issues arise that relate to locational privacy, the power of maps for shaping public opinion and informing policy, opportunities for disinformation and misinformation through maps, and the abuse of data to fake reality or falsify locations. These issues lead to conversations in cartography and GIScience that must consider some mix of integrity, ethics, empathy, and equity, and consequently their advancements became the primary goal for AutoCarto 2022.

For updates, visit the AutoCarto website.

Aileen Buckley | Co-chair | AutoCarto 2022 Local Organizing Committee | **USA** ■

march 2022

30: UN Mappers Mapathon | **VIRTUAL** | unggim.academicnetwork.org/un-mappers-mapathon-invitation/

31-02 April: 10th Land Administration

Domain Model Workshop | Dubrovnik | *Croatia* | wiki.tudelft.nl/bin/view/Research/ISO19152/LADM2022Workshop

april

20-23: ICA Commission on Atlases and ICA/IGU Commission on Toponymy Joint Symposium (coorganised with the National Geographic Institute of Spain) | *Atlases in Time – National and Regional Issues* | Madrid | *Spain* | map-service.de/madrid2020/

june

06-11: ISPRS Congress 2022 | Nice | *France* | www.isprs2020-nice.com/

20-25: 8th International Conference on Cartography and GIS | Nessebar | *Bulgaria* | iccgis2020.cartography-gis.com/

august

24-26: GeoCart'2022 | Uncharted Frontiers: Cartographic Innovation and Discovery | Wellington | *New Zealand* | www.cartography.org.nz/geocart2022/

september

05-09: 15th Conference on Spatial Information Theory (COSIT) | Kobe | *Japan* | cosit2022.iniad.org/

12-14: 17th Symposium on Location Based Services (LBS2022) (coorganised with the ICA Commission on Location Based Services) | Munich | *Germany* | lbsconference.org/

14-15: British Cartographic Society Annual Conference 2022 | Design for movement | **VIRTUAL** | www.cartography.org.uk/annual-conference/

14-16: 18th International Conference on Geoinformation and Cartography | **HYBRID** | Selce | *Croatia* | www.kartografija.hr/

19-21: EuroCarto 2022 | Vienna | *Austria* | www.eurocarto2022.org/

22-24: 16th Conference on Digital Approaches to Cartographic Heritage (organised by the ICA Commission on Cartographic Heritage into the Digital) | Cluj-Napoca | *Romania* | cartography.web.auth.gr/ICA-Heritage/Cluj-Napoca2022/

november 2022

02-04: AutoCarto 2022 | **HYBRID** | Redlands, California | *USA* | cartogis.org/autocarto/

august 2023

13-18: 31st International Cartographic Conference and 19th General Assembly of the International Cartographic Association | Smart Cartography for Sustainable Development | Cape Town | *South Africa* | icc2023.org/

ica affiliate members

2011 Association of Polish Cartographers | *Poland* | www.polishcartography.pl
Attn: Assoc Prof Joanna Bac-Bronowicz | joanna.bac-bronowicz@pwr.wroc.pl

2019 Australian and New Zealand Map Society | *Australia / New Zealand* | www.anzmaps.org
Attn: Dr Martin Woods | mwoods@nla.gov.au

1999 Centro Argentino de Cartografía | *Argentina* | www.centroargentinodecartografia.org
54 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
71 Attn: Kent Lee | geospatial@eastview.com

2005 Eko-Graf Publishing House | *Poland* | www.ekograf.pl
Attn: Roman Janusiewicz | ekograf@ekograf.pl

2017 El Servicio Aerofotogrametrico del General Juan Soler Manfredini de la Fuerza Aerea de Chile (SAF) | *Chile* | www.saf.cl
Attn: Viviana Barrientos Lardonis | viviana.barrientos@saf.cl

2003 Esri | *United States of America* | www.esri.com
55 Attn: Mark Cygan | mcycgan@esri.com

1995 Geospatial Information Authority of Japan | *Japan* | www.gsi.go.jp
72 Attn: ISCGM Secretariat | gsi-intex@ml.mlit.go.jp

2007 German Federal Agency for Cartography and Geodesy | *Germany* | www.bkg.bund.de
64 Attn: Dr Paul Becker | vorzimmerpraesident@bkg.bund.de

2015 HERE Technologies | *Germany* | www.here.com

1995 Hexagon Geospatial | *United States of America* | www.hexagongeospatial.com

ICON Group | *Ireland* | www.icon.ie
Attn: Emmet McHugh | contact@icon.ie

2003 Indian National Cartographic Association (INCA) | *India* | www.incaindia.org
62 Attn: Col Sunil S Fatehpur | secretarygeneralinca935@gmail.com

1991 Institut Cartogràfic i Geològic de Catalunya (ICGC) | *Spain* | www.icgc.cat
58 Attn: Jaume Massó i Cartagena | direccio.icgc@icgc.cat

1991 Institut National de l'Information Géographique et Forestière (IGN) | *France* | www.ign.fr
51 Attn: Dr Sébastien Mustiere | sebastien.mustiere@ign.fr

Institution of Surveyors of Kenya | *Kenya* | www.isk.or.ke
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2007 Instituto Geográfico Nacional España | *Spain* | www.ign.es
Attn: Francisco Javier González Matesanz | fjgmatesanz@fomento.es

1995 – year of ratification by the ICA General Assembly
65 – affiliate member's profile published in *ICA News* (issue number)

2011 Land Information New Zealand | *New Zealand* | www.linz.govt.nz
60 Attn: Melissa West | mwest@linz.govt.nz

2017 Library and Archives Canada | *Canada* | www.bac-lac.gc.ca
Attn: Sebastien Daneau | sebastien.daneau@canada.ca

1995 Moscow State University of Geodesy and Cartography | *Russia* | www.miigaik.ru
52 Attn: Prof Vasily A. Malinnikov | lgm@miigaik.ru

1991 National Hydrographic Office | *India* | www.hydrobharat.nic.in
Attn: Vice Admiral Vinay Badhwar, NM | ia-inho@navy.gov.in

2011 National Land Survey of Finland | *Finland* | www.nls.fi
67 Attn: Heli Ursin | heli.ursin@nls.fi

2007 Ordnance Survey | *United Kingdom* | www.ordnancesurvey.co.uk
57 Attn: Paul Naylor | paul.naylor@ordnancesurvey.co.uk

2003 Regional Centre for Mapping of Resources for Development (RCMRD) | *Kenya* | www.rcmr.org
Attn: Dr Hussein O. Farah | rcmrdr@rcmr.org

2015 Surveying and Spatial Sciences Institute (SSSI) | *Australia* | www.sssi.org.au
Attn: Kerry Smyth | chair.sicc@sssi.org.au

2015 UNIGIS International Association | *Austria* | www.unigis.net
Attn: Prof Dr Josef Strobl | josef.strobl@sbg.ac.at

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/
Attn: Dr Naeema Alhosani | naeemam@uaeu.ac.ae

2011 United Nations Geospatial Information Section | *United Nations* | www.un.org/depts/cartographic/english/htmain.htm
Attn: Ayako Kagawa | kagawa@un.org

1991 United States Geological Survey | *United States of America* | cegis.usgs.gov
65 Attn: Dr E. Lynn Usery | usery@usgs.gov

2007 University of Architecture, Civil Engineering and Geodesy | *Bulgaria* | www.uacg.bg
74 Attn: Assoc Prof Petar Penev | ppenev@gmail.com

2019 University of Belgrade, Department of Geography | *Serbia* | www.gef.bg.ac.rs/en/
Attn: Dr Aleksandar Đorđević | adjordjevic@gef.bg.ac.rs

2017 University of Lay Adventists of Kigali | *Rwanda* | www.unilak.ac.rw
Attn: Dr Gabriel Habiyaemye | research@unilak.ac.rw

1995 University of Twente, Faculty of Geo-Information Science and Earth Observation (ITC) | *The Netherlands* | www.itc.nl
70 Attn: Prof Menno-Jan Kraak | m.j.kraak@utwente.nl

2015 Wuda Geoinformatics | *China* | www.geostar.com.cn
Attn: Song Aihong | songaihong@geostar.com.cn

children's map gallery 2021 winners



Daniela Naomi
Villacrés Ribadeneira |
14 | *In the same water*
| Cardinal Spellman
Girls' School: Quito |
Ecuador

Yang Se-Ha | 7 | *Countries in
theWorld overcoming COVID-19
Together* | -: Gimpo | South Korea

CREATIVITY AWARD

Barnaby Blampied | 11
| *My future is in your
hands: You choose!*
Mahurangi College:
Warkworth | New
Zealand

Pijus Jokubaitis | 15 | *It
Virtual Reality* | Gargždai
Children Art Studio:
Gargždai | Lithuania

Lyyti Kalakoski | 5 | *Où vont
le glaciers go? (Where do the
glaciers go?)* | -: Tampere |
Finland

