

ICA Commissions 2019-2023
Terms of references

Commssion name	Chair nominated	ToR
Art and Cartography	Taien Ng-Chan (CAN)	<ul style="list-style-type: none"> o Advance the field of artistic and experimental cartographies, including but not limited to such subfields as narrative cartography, cinematic cartography, sensory and phenomenological approaches to mapping, locative media, performative and performance-based cartographies, and media archaeological and other research-creation or practice-led processes. o Facilitate, through workshops and special events, interdisciplinary collaborations and exchanges of ideas and practices amongst diverse practitioners and theorists to promote the development of hybrid cartographic practices, from arts and digital humanities to social and geo-sciences. o Produce new forms of knowledge on mapping, space and place theory, location and spatial studies, as well as new cartographic expressions. o Promote creative research and scholarly publication on art and cartography in all of its aspects, to both an academic audience (special issues of journals and edited collections) and to the general public (websites, screenings, exhibitions). o Explore alternative avenues of publication as research-creation documentations and experimentations. o Hold bi-annual meetings, in conjunction with the International Cartographic Conference. o Abide by the ICA directory, which includes outreach to developing countries when requested and possible, coordination with other ICA commissions or other international organizations when possible and advantageous, and to support equity-seeking groups to take active roles in professional activities.
Atlases	René Sieber (SUI)	<ul style="list-style-type: none"> o Promote and support the design, production and use of all kind of printed and digital atlases (e.g. national, regional, city, educational, topographic and thematic atlases). o Renew the concept of atlas: Analyse the structure of existing products systematically; revise atlas taxonomy. o Conduct workshops to discuss and solve relevant issues and new approaches in atlas cartography. o Generate publications that represent historic, recent and potential atlas issues. o Develop easy-to-use frameworks to create atlases and to find atlas source data. o Elaborate and maintain an electronic inventory of national atlases containing the main characteristics of these map works as well as relevant links. o Maintain a commission website aiming to provide for information exchange between CoA members and disseminating information on CoA activities to a wider public.
Cartographic Heritage into the Digital	Mátyás Gede (HUN)	<ul style="list-style-type: none"> o Promote research and development on the field of cartographic heritage, more specifically on: <ul style="list-style-type: none"> - objects – old maps, charts, globes, relief models, bird's eye views, etc. - digitisation – 2d, 3d; hardware, software, issues, solutions - georeferencing – georeferencing methods, tools, recognising map projections - archiving – how to store; metadata - extracting content – possibility of automatic content extraction (vectorisation) - providing cartographic heritage on-line - analysing old maps in the terms of... <ul style="list-style-type: none"> ▪ geometry: accuracy analysis, projection recognition ▪ map symbols: how symbols depend on age, place, author etc. ▪ content: spatial/spatio-temporal analysis of map content o Partnership with MAGIC (Map and Geoinformation Curators Group) o Promote intra- and interdisciplinary co-operation <ul style="list-style-type: none"> - annual conferences on Cartographic Heritage - thematic workshops, joint projects and workshops with other commissions, societies - connecting existing on-line collections, creating meta-search pages - interdisciplinary research – cartography and various fields of geo- and biosciences (e.g. landuse/landscape/habitat change analysis based on old maps) and especially digital humanities (history, archaeology, linguistics, literature), o Popularisation – tools, websites, campaigns to popularise cartographic heritage o Tutorials – examples of good practice of all above o Documentation of commission work <ul style="list-style-type: none"> - abstract database of all cartoheritage conference/journal papers
Cartography and Children	Carla Cristina Reinaldo Gimenes de Sena (BRA)	<ul style="list-style-type: none"> o Disseminating the outcomes of research into map use by children and young people. Deliverable: an enhanced set of online bibliography and web links on cartography and children including the popularization in social networks of activities developed by the commission developing stronger links between the ICA and relevant international and regional organizations related to Cartography and Children. Deliverable: following the contacts with the Commission for Geography Education of the International Geographical Union and other international/regional organizations. o Stimulating a debate on the different aspects of cartography for children in interest of collecting and publishing (in digital or/and printed format) the research results. Deliverable: organizing and representing the commission in events and publications related to this theme. o Following the promotion of the use of web-based cartographic solutions for the geovisualization of data in School Cartography, including the use of GIS software in schools. Deliverable: organizing and representing the commission in events and publications related to this theme. o Providing support to the ICA Executive in relation to the rules, judging and other tasks related to the Barbara Petchenik Children's World Map Competition, including the popularization of the Barbara Petchenik Competition in social networks. Deliverable: appropriate support as required.
Cartography in Early Warning and Crisis Management	Liu Jiping (CHN)	<ul style="list-style-type: none"> o Disseminate information on Cartography in EW and CM to the ICA member nations through publications, joint meetings, seminars and websites. For publications act according our publication policy. o Continue the implementation of the ICA Third World Policy by providing experts for workshops in developing countries when requested o Coordinate our activities with other ICA Commissions, whenever possible. o Coordinate activities with Commissions of other international organizations if this is in the interest of the aims and objectives of ICA. o Encourage and support under-represented groups to take an active role in professional activities and/or associations at national and international level. o Initiate development of concepts, models and standard for geographic information services and mapping in early warning, damage assessment, monitoring and resilience. o Promote the development of disaster risk reduction plans for pre-, during and post-disaster situations and enhance support for early warning systems, emergency events mitigation and decision making. o Integrate fundamental geographic information with thematic data for disaster detection, early warning, monitoring, damage assessment and response.

		<ul style="list-style-type: none"> o Produce Geo-information product pattern of vulnerability and hazard zone maps for different type of disasters. o Conduct geospatial big data analysis, social computing, social awareness computation approaches and technologies for disaster risk reduction.
Cognitive Issues in Geographic Information Visualization	Amy Griffin (AUS)	<ul style="list-style-type: none"> o Promote the awareness of cognitive issues in cartography, developing human-centred cartographic theory and practice based on sound empirical findings on the use of cartographic displays for spatiotemporal inference and decision-making. o Define short and medium term research goals that fall within the scope of commission-led research agenda that was published in late 2017, and that address key issues associated with building a sound theoretical base to support the construction and use of cognitively adequate and perceptually salient visual displays of geographic information. o Explore opportunities to engage with standards organisations (e.g., Open Geospatial Commission) to use knowledge from our Commission to positively influence and contribute to standards related to maps and decision making. o Encourage interdisciplinary and international collaboration with cognate disciplines and relevant stakeholders, including other ICA commissions and working groups. o Actively seek to encourage more participation in the Commission from researchers in the African and Asia-Pacific regions, which are currently underrepresented among our membership. We will commit to trying to host at least one event in the African region during the term. We also seek, insofar as possible, to also open participation through electronic means, in workshops by using technologies such as Zoom to livecast and record events to improve access for those who cannot physically travel.
Education and Training	Tao Wang (CHN)	<ul style="list-style-type: none"> o Organize and deliver workshops and sessions in ICCs (and online, eLearning alternatives), possibly in conjunction with other ICA Commissions, with committees on education of sister societies and other international bodies in UN-GGIM Geospatial Societies, to incorporate latest research findings into teaching and learning materials, introducing, in particular, knowledge transfer to developing member nations of ICA, and further to promote CET as an academic research community of cartographic and geospatial teaching. o Organize training and capacity building seminars and summer schools, particularly engaging early career faculty members, with an emphasis on learning from those ICA member nations which have been successful in expanding cartographic and geospatial education into various application scenarios and motivate international collaboration among higher learning institutions. o Compile an inventory of open courses (notably those delivered online, commercially presented, or professional development courses) in topics of cartography, geographic information science & technology and applications, which can further confirm the scope of cartographic and geospatial education in a multi-disciplinary context. o Maintain a website for commission's news update, a membership database and teaching materials of cartographic and geospatial education, including bibliography, free geospatial datasets, software tools and case studies, which can be used or adapted by cartographic, geospatial and geographic educators at different levels. o Support the ICA efforts of developing a Body of Knowledge (BoK) for cartography, which could be used for developing contemporary educational programmes and encouraging the creation of specific cartographic modules with valid and viable learning outcomes. o Organize a special issue of a specific academic journal or edited book to publish best practices and findings of cartographic and geospatial education research.
Generalisation and Multiple Representations	Guillaume Touya (FRA)	<ul style="list-style-type: none"> o Foster a community for geospatial analysis, modeling, and data analytics research, with strong links to the use of maps and visualization techniques <ul style="list-style-type: none"> • develop a medium-term research agenda for the commission, which will serve as the guiding basis for commission events • organize academic events for community members to share ideas and research findings o Develop and maintain connections and joint efforts with other ICA commissions as well as other related GIScience and geographic academic organizations <ul style="list-style-type: none"> • organize special sessions and workshops at ICC as well as other GIScience or geography conferences, in accordance with the research agenda • collaborate with commissions within ICA or other academic associations to organize joint workshops on topics of shared interest o Encourage concerted efforts on new research topics related to the research agenda themes; o Publish research findings in the community through various outlets including special issues of academic journals and books.
Geospatial Analysis and Modeling	Xiaobai Angela Yao (USA)	<ul style="list-style-type: none"> o Foster a community for geospatial analysis, modeling, and data analytics research, with strong links to geovisualization and location-based big data <ul style="list-style-type: none"> • develop a medium-term research agenda for the commission, which will serve as the guiding basis for commission events • organize academic events for community members to share ideas and research findings. o Develop and maintain connections and joint efforts with other ICA commissions as well as other related GIScience and geographic academic organizations <ul style="list-style-type: none"> • organize special sessions and workshops at ICC as well as other GIScience or geography conferences, in accordance with the research agenda • collaborate with commissions within ICA or other academic associations to organize joint workshops on topics of shared interest o Encourage concerted efforts on new research topics related to the research agenda themes; o Publish research findings in the community through various outlets including special issues of academic journals and books.
Geospatial Semantics	Dalia Varanka (USA)	<ul style="list-style-type: none"> o Developing and maintaining a membership list, and a commission website for information dissemination and exchange, and organizing scholarly events. o Research the following areas: <ul style="list-style-type: none"> • The interfaces between natural language processing, cartography, and geographical information systems (GIS) • Ontology design through knowledge graphs and query-based analysis • Spatial semantic data infrastructures • Institutional aspects of semantics and ontology • Creating, finding, and communicating meaning • Linked open data and controlled vocabularies • Reasoning and inference axioms o Facilitate science and humanities community interactions to connect semantic and ontological research in academic, government, and professional areas. The influence of institutions and their cultures on ontology and semantics is a particular area of interest. One or two central projects are proposed to provide a focus for collaborative work: a workshop with resulting edited publications, such as articles, journal special issues, and book publications (e.g. in The International Journal of Cartography or Springer's GIScience series); and education or resource building technology to advance geospatial semantics and ontology practices. The Chair and co-chair plan to organize conference sessions at ICC 2020 and 2022 and host or collaborate with conference-connected workshops. An off-site workshop of geographical proximity for its members will be organized. The commission will offer support to conferences and workshops where it is invited to do so. o Using the ICA Research Agenda as a broad framework, the commission will support approaches that address the complexity of growing online data repositories through ontological analysis and automated knowledge extraction of geographic information. Aspects of various ICA themes, such as generalization, visualization, society, history, and theory are areas that support strong collaboration with other commissions and working groups and groups outside the ICA. Among these are coordination with IGU Commission on Geographic Information Science, University Consortium for Geographic Information Science (UCGIS), or other institutions represented or contacted by Commission members. o Organize conference sessions at ICC 2021 in the Florence ICC and subsequent ICC and GA meeting in 2023 and host a conference-connected workshop in 2020 and 2022. The commission will offer support to conferences and workshops where it is invited to do so. o Create publications, such as articles, journal special issues, and book publications (e.g. in ICA's Publication Series).

the History of Cartography	Imre Josef Demhardt (USA)	<ul style="list-style-type: none"> ○ Promote research and scholarly publication on the history of cartography in all of its aspects but with special consideration to the 19th and 20th centuries and the impact of technological innovations. ○ Examine the changing role of maps worldwide as cartographical (as opposed to historical) documents in history. ○ Hold annual meetings, alternatingly as Workshops in conjunction with the International Cartographic Conference and as International Symposia. ○ Promote the spirit of co-operation both within ICA (sister commissions and working groups) and beyond to related societies and institutions. ○ Maintain a website to facilitate contact between researchers in the field and make source material and literature available to the community and the general public alike.
Location Based Services	Hoasheng Huang (CHN)	<ul style="list-style-type: none"> ○ Promote research on Location based Services (LBS) in all its interdisciplinary aspects. ○ Maintain the commission website (http://lbs.icaci.org/) and update it regularly to allow commission members to exchange information, as well as to disseminate information on activities in this field to a wider public. ○ Maintain the commission E-Mail list for the exchange of activities, knowledge, news, and information on LBS. ○ Update the LBS Research Agenda (https://lbs.icaci.org/research-agenda/) to reflect the new challenges brought by the new technological development, scientific advancement and societal changes. ○ Organise ICC sessions, workshops and international conferences on LBS for colleagues from various disciplines to meet, and share research findings, ideas, and plans on how LBS can and could be improved and on how it will influence both science and society. ○ Publish reports, books and special issues on LBS with scientific journals. ○ Encourage interdisciplinary and international collaboration with cognate disciplines and relevant stakeholders, including other ICA commissions and working groups, and other allied research communities (e.g., ISPRS, FIG, IAG), mainly through joint meetings, seminars, and publications.
Map Design	Ian Muehlenhaus (USA)	<ul style="list-style-type: none"> ○ Build usable media products that help ICA better brand itself as an authority on spatial visualization in the GIS industry, including: <ul style="list-style-type: none"> ● A short series of ICA-branded web video workshops helping people working in geospatial sectors design effective maps (these would be software agnostic, using both open-source and proprietary software). ● Expand the MapCarte initiative even further, creating an accompanying podcast series (that's right, a podcast!) interviewing professional cartographers about their own tips, tricks, and thoughts on effective, applied map design. ● Continue creating online workshops, providing talks, and writing blog pieces. ○ Prepare a Special Issue of a cartography journal to explore contemporary map design (e.g., augmented reality maps, mapping location within VR, game mapping, etc.). ○ Collaborate with colleagues in other ICA Commissions as appropriate. ○ Help organize sessions at the ICA in 2021 and 2023. ○ Maintain and enhance the website with new content and contributions.
Map Production and Geoinformation Management	Peter Schmitz (RSA)	<ul style="list-style-type: none"> ○ Enhance the study on map production- and process management, geoinformation logistics and geo-business; ○ Research on the impact of modern communication methods on map production, business models, change management and design thinking; ○ Research the impact of Service Oriented Architectures and future technologies on Map-Production, Publishing and Archiving. ○ Research the methods of Service-Oriented Mapping maturity evaluation and SOMAP management. ○ Evaluating the impact of digitalisation with its characteristics of sharing, reuse and transparency on map production. ○ Collect requirements and document procedures of collaborative map production. ○ Considering the geospatial semantic web for map production. ○ Encourage international collaboration on the study of map production and geoinformation management with particular emphasis on bridging research, government and commercial sectors. ○ Participate and contribute to activities of other relevant ICA interest groups (e.g. relevant ICA Commissions, National Mapping Organisations, NGO's, Enterprises, URISA). ○ Publications in and support of the International Journal of Cartography.
Map Projections	Lynn Usery (USA)	<ul style="list-style-type: none"> ○ Prepare an Operational Plan, to accomplish the objectives of the Terms of Reference approved by the General Assembly. Set achievable targets for the Commission for a four-year period. Enhance and maintain the Commission web site. ○ Promote and foster research on map projections, coordinate systems, transformations and conversions, and disseminate the outcomes. Specifically, encourage research, development, and use of correct and possibly adaptable map projections for Web implementations and applications. Expected result: an enhanced set of online bibliographic tools and web links on map projections, coordinate systems, transformations and conversions ○ Continue the study of terminology on map projections and preparation of the multilingual dictionary for this area of cartography. Expected result: the dictionary on map projections, coordinate systems, transformations and conversions. ○ Develop semantic representation of Map Projection knowledge including the developed terminology and dictionary on map projections, coordinate systems, transformations and conversions and make available through the ICA Map Projections Commission website and the ICA Cartography Body of Knowledge (CartoBoK). ○ Promote the proper use of map projections at all levels of education. Expected result: publications with recommended approaches to map projections for specific uses. ○ Organize sessions, workshops, and meetings at least once a year to stimulate a debate on all aspects of map projections with the aim of collecting and publishing the research results. ○ Provide consultative support in relation to map projections. This will be activated through the Commission Website and the map projection semantic links. ○ Link all known map projection websites into the Commission site and provide a Commission assessment of the use and value of each site. Assemble links and guides for map projection selection including existing web tools such as map projection decision support systems. Provide single stop from which users can determine the appropriate map projection to use for a specific application. ○ Develop new map projections that adapt to the changing mapping requirements of location-based services and web mapping.
Maps and Graphics for Blind and Partially Sighted People	Waldirene Ribeiro (BRA)	<ul style="list-style-type: none"> ○ Disseminate information about Cartography Accessible to Disabled People to the ICA member nations through publications, joint meetings, seminars and websites; Deliverable: Maintain the digital newsletter of the Commission at a frequency of at least twice a year; Representing the commission in events and publications related to this theme; Maintain, expand and improve the content on web site for news updates and share of information. ○ Coordinate activities with Commissions of other international organizations in accordance with the interest of the aims and objectives of ICA. Deliverable: Developing stronger links between the ICA and relevant international and regional organizations related to Cartography Accessible to Disabled People. ○ Coordinate activities with other ICA Commissions, for the purpose of sharing experiences, adding to, adapting and building up the potential of geo-cartographic knowledge in the various forms of multi-sensory expression; Deliverable: To develop joint activities with the Commission on Cartography and Children. ○ Continue the implementation of the ICA Third World Policy by providing experts for workshops in developing countries when requested about Cartography Accessible to Disabled People; Deliverable: To promote and deliver workshops (including eLearning alternatives), disseminating knowledge related to this theme.

		<ul style="list-style-type: none"> o Encourage and support under-represented groups to take an active role in professional activities and/or associations at national and international level. <p>Deliverable: Representing the commission in associations at national and international level related to this theme.</p>
Maps and the Internet	Otakar Čerba (CZE)	<ul style="list-style-type: none"> o Detect and integrate new trends related to the interconnection of cartography and the Internet such 3D cartography, semantic issues in cartography and spatial data, participatory mapping and co-creation approach in cartography, new education methods related to the Internet, Big data, Linked Open Data or Internet of Things. o Define short and medium term research goals that address significant challenges associated with maps and the Internet – for example, new Internet mapping technologies, multinational and multicultural perspectives of Internet maps or Service-Oriented Mapping. o Support education activities related to maps on the Internet. o Publish the documents relevant for the commission domain with scientific journals (Open Access journals are preferred) and appropriate Internet channels, including the official website of the commission and social media. o Organise (or co-organise) ICC sessions, workshops, hackathons, mapathons and international conferences to meet, interact and exchange knowledge, experience and ideas (in several cases, the events can be transformed into the virtual space to arrange a higher number of participants). o Actively promote activities of the commission and ICA in general to eliminate the most critical problem of the Commission on Maps and the Internet, which consists of a low number of active people involved in its activities. o Foster cooperation with other ICA commissions (for example Commission on Education and Training, Commission on Cartographic Heritage into the Digital, Commission on Location Based Services, Commission on Open Source Geospatial Technologies, Commission on Ubiquitous Mapping or Commission on Use, User and Usability Issues) to support „cross-commissions“ research and sharing information.
Marine Cartography	Ron Furness (AUS)	<ul style="list-style-type: none"> o Disseminate information on Marine Cartography as the ICA Expert Marine Cartography Focus Group to ICA members and to other affiliated organisations, covering research on cartography relating to the visualisation and management of ocean data. o Promote the establishment of a global network for marine cartographers using media to facilitate the strengthening of the access of interested communities to marine cartographic knowledge. o When practicable, foster and support local meetings for workshops on Marine Cartography and assist in engaging appropriate recognised experts. o Liaise and coordinate with other relevant ICA Commissions and Working Groups. o Liaise and coordinate with relevant groups from other organisations and associations (e.g. IHO, FIG, IGU...). o Provide appropriate qualified members representing ICA membership on the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC). o Encourage and promote policies of equal opportunity wherever possible within the Marine Cartography profession.
Mountain Cartography	Dušan Petrovič (SLO)	<ul style="list-style-type: none"> o Define the topics of Mountain Cartography and promote the methods and knowledge of mountain cartography among scientists and professionals in cartography and related fields. o Provide an updated, attractive web-portal with information about Commission activities, links to other events, theme-specific knowledge, related web-sites and bibliographic information. o Discuss different issues about mountain cartography and map related representations in large scale topographic mapping, as similarity and differences in symbolization and map design, technological issues, maps use, connections to Location-based Services (LBS). o Continue the well-established workshop series. o Promote publication activities (proceedings, web-proceedings, journal articles and special issues) and common research/activities.
Open Source Geospatial Technologies	Silvana Philippi Camboim (BRA)	<ul style="list-style-type: none"> o Maintain the website for the exchange of knowledge, news and information on open source geospatial technologies. o Maintain the e-mail list. o Keep an active role in GeoforAll initiative and in relation with OSGeo, OpenStreetMap Foundation and other open source/open data organizations. o Organize sessions on Open Source GIS at future ICA conferences. o Participate in / contribute to other workshops / seminars organized by representatives of other disciplines or by other ICA Commissions / Working Groups.
Planetary Cartography	Andrea Naß (GER)	<ul style="list-style-type: none"> o Promotion of a digital spatial data infrastructure to grant access to (already published) digital planetary maps and make them usable. For this purpose existing catalogues and databanks (like the USGS planetary map catalogue, the International catalogue of international planetary maps 1600-2018, and others) and, as much as possible, the experience of Earth-based developments shall be used. o Update, development and provision of resources (tutorials/documentations, cartographic symbols, data models) for the creation of digital maps in the planetary sciences (with a focus on geological and geomorphological maps). o Concept and implementation of a global web-based vector map of Mars and Moon that shall facilitate the exchange and visualisation of planetary contents of laymen and professionals alike. o Focus on the collaboration with other ICA commissions and other associations (e.g. ISPRS) to promote the exchange of content and of experiences. <p>Continuation of the ICA Commission Website.</p>
Sensor-driven mapping	Jonathan Li (CAN)	<ul style="list-style-type: none"> o Promote the original and practical research in use of image and range data acquired by various sensors for mapping with a focus on spatial big data handling, cartographic information extraction, 3D reconstruction of built environments, and integration of indoor mapping with BIM. o Network cartographers with the researchers and practitioners in the photogrammetry and remote sensing community, computer science community involved in sensor-driven mapping. o Develop closer links with ISRPS, IAG, FIG, IEEE-societies, and other ICA commissions with similar interests in sensor-driven mapping to organize ICA workshops or joint symposia during 2019-2023. o Publish special issues with the International Journal of Cartography and other related journals as well as books and reports. o Promote knowledge transfer at fundamental and advanced levels on sensor-driven mapping technology to natural and built environments, early warning and natural disaster mitigation. o Prepare promotional materials reflecting the commission's terms of reference and activities that can be used to support ICA's presence at international forums (e.g., World Map, Map Middle East, meetings of the Joint Board of Geospatial Information Societies (JB GIS), UN meetings, and other regional conferences).
SDI and Standards	Serena Coetzee (RSA)	<ul style="list-style-type: none"> o In collaboration with other ICA Commissions, explore research on the impact and use in SDIs of cartography, standards, spatial semantics, ontologies, volunteered geographic information (VGI), data quality and other technological developments that might become relevant in future, and identify the associated education needs. o In collaboration with other ICA Commissions, participate at the scientific level with other organizations active in SDI, standards and quality of geospatial data and services. o Develop reports, conference presentations and/or journal articles on our work and help to arrange workshops, conferences or other meetings on SDI and standards, and present tutorials at them. o Organize reporting sessions on the Commission's activities at the 2021 and 2023 International Cartographic Conferences. o Organize and hold full Commission meetings in 2020, 2021, 2022 and 2023, and mini-meetings of the Commission at suitable meetings and conferences. o Continue to serve as the liaison for the ICA to ISO/TC211, <i>Geographic Information/Geomatics</i>, to the Open Geospatial Consortium, and establish liaisons with other: SDI and standards organizations.
Topographic Mapping	Alexander Kent (GBR)	<ul style="list-style-type: none"> o Establish and develop a research agenda for topographic mapping in association with partners in academia and in industry (national mapping organizations and commercial producers of topographic maps). o Work in partnership with other ICA Commissions to organise and participate in joint events with the aim of advancing and disseminating knowledge regarding topographic mapping past, present and future. o Create, develop and maintain the Commission website to incorporate news items relating to topographic mapping. o Enable and facilitate research generation and staff exchange between producers of topographic mapping. o Develop an online portal to allow easy access to information about producers of topographic mapping worldwide.

		<ul style="list-style-type: none"> o • Organise sessions at the 2021 and 2023 ICCs that focus on presenting the latest research with regard to topographic mapping and pursue its publication and wider dissemination.
Toponymy (ICA-IGU joint commission)	Peter Jordan (AUT), Cosimo Palagiano (IGU)	<ul style="list-style-type: none"> o Act jointly with IGU fostering the geographic and cartographic research on all fields involving toponymy; o Disseminate the scientific knowledge on processing and use of toponyms within geography and cartography; o Verify the use of other sciences' toponymy concepts, such as anthropology, linguistics and others, in favour of cartography and geography; o Maintain contacts and scientific exchange with UNGEGN and ICOS, such as by organizing joint events; o Support and encourage the elaboration and publication of gazetteers, toponymic data files and toponymic reference systems (such as EuroGeoNames); o Organize regional joint IGU/ICA events (workshops, symposia and others) with IGU and ICA members; o Participate in IGU and ICA Regional, Thematic and Main Conferences; o Organize and maintain a website to facilitate contact between researchers in the field of toponymy and disseminate source material and literature available to the community and the general public alike; o Organize and publish books, chapters and encourage paper publishing in specialized journals and the International Journal of Cartography. o Establish a consortium of universities organizing training courses on toponymy. o Publish a study book on Critical Toponomastics. o Promote the representation of under-represented groups on the research agenda (e.g. female commemorative naming, indigenous names).
Ubiquitous Mapping	Yoshiki Wakabayashi (JPN)	<ul style="list-style-type: none"> o Organize international workshop or joint meeting on ubiquitous mapping with other ICA commissions at future ICA conferences and other regional conferences on Cartography and GIScience. o Publish special issues on the trends and technologies of ubiquitous mapping in international journals of cartography and other related disciplines as well as books and reports. o Evaluate the theory and application of ICT-based technologies for context-aware mapping: e.g., AI, Robotics, Autonomous Cars, and location-based games. o Evaluate the theory and application of crowdsourced geospatial information and collaborative mapping: e.g., OpenStreetMap, crisis mapping. o Examine the positive/negative effects of Ubiquitous Mapping on human society: e.g., spatial literacy, navigation skills, digital divide and privacy issues. o Place the notion of Ubiquitous Mapping in domain of Theoretical Cartography.
User Experience	Robert Roth (USA)	<ul style="list-style-type: none"> o Website: Maintain and expand the ICA Commission website on user experience (UX) issues: https://use.icaci.org/. Usability is identified as one of the 10 main research themes in the ICA agenda, and UX design encapsulates issues related to map use, maps users, and map usability. Map UX design herein is defined as the set of workflows, methods, and techniques needed for a successful user outcome with a map or interactive mapping system, as well as a productive and satisfying user process while arriving at this outcome. o Bibliography: Maintain an online bibliographic database on user studies and UX design research in Cartography and related fields. The bibliography includes references on the following topics: map-based user interfaces (UI) and user experience (UX) design; user-centered design and usability engineering, as applied to map design and development; studies of user abilities and differences therein; use case studies with print, web-based, and mobile maps; methods and techniques for evaluating products; the use of emerging mapping technologies. o Student Services: Hold listening sessions to involve young (PhD) researchers and researchers from different cultural environments in all UX Commission activities in order to promote scientific research and support them in their activities. o Educational Workshops: Organize training workshops for students and non-specialists on map-based user studies and UX design. The resulting educational materials will be made available on the commission's website. o Scholarly Workshops: Jointly organize with other ICA Commissions pre-conference workshops in disciplines adjacent to Cartography (e.g., GIScience, Information Visualization, Human-Computer Interaction) aimed at research and design innovations. o ICA Sessions: Organize special sessions on map-based user studies and UX design at future ICA conferences as well as other regional cartography conferences. Original scientific contributions will be gathered and organized through the UX Commission website. o UX Research Agenda: Jointly organize with other ICA Commissions research agenda papers and/or special issues on topics intersecting with user studies and UX design. Planned topics include mobile map UX and reproducibility in cartography, although topics will evolve through the workshop process. o User Studies Handbook: Jointly organize with other ICA Commissions a workshop to produce a handbook on user methods for cartography. The handbook will support an audience of both students and practitioners, treating user methods for basic science and user-centered design. The handbook will discuss best practices for a range of UX methods, breaking down method alternatives by participants, materials, procedures, and analyses.
Visual Analytics	Anthony C. Robinson (USA), Arzu Çöltekin (SUI)	<ul style="list-style-type: none"> o The Commission on Visual Analytics will: <ul style="list-style-type: none"> • Promote and advance visual analytics in cartography, which is the science of analytical reasoning as supported by interactive visual interfaces to spatio-temporal data. • Develop science, technology, and design approaches to address major challenges associated with geographic information analysis and synthesis that enable users to solve key societal and environmental problems. • Foster interdisciplinary and international collaboration between potential users of geospatial visual analytics and researchers, as well as between allied research communities in other disciplines and other ICA Commissions. o The Commission will achieve this vision by: <ul style="list-style-type: none"> • Actively disseminating technical and methodological advances in cartographic visual analytics through workshops, seminars, edited special issues of journals, and peer-reviewed publications - with linkages to other ICA Commissions and allied organizations in other fields. • Conducting annual meetings, workshops, or tutorials to develop research in key thematic areas, partnering with international conferences and other ICA commissions to expand our reach beyond traditional venues and audiences and to diversify who engages with visual analytics in the ICA. • Recruiting and retaining a co-chair and bolstering the core membership to help guide Commission activities and foster collaboration within and outside of the ICA. • Maintaining a dedicated web presence and engaging with members via social media to highlight Commission activities and promote participation beyond attendance at in-person meetings through new forms of distance collaboration.