International Cartographic Association
Association Cartographique Internationale

Commission Report to the ICA Executive Committee

Commission: **Map generalisation and multiple representation**
Date of Report: **12/07/2023**
Period of Report: **08/2019 - 08/2023**
Name of reporter: **Guillaume Touya**

Commission/Working Group highlights (e.g. conferences, publications, products & services, awards, etc. and outcomes for the EC to take note)

- The 23rd ICA Workshop on Map Generalisation and Multiple Representation should have been organized in Delft, the Netherlands in November, in conjunction with the NCG Symposium. But due to the COVID-19 pandemics, the event was fully online with live presentations (not recorded videos). It took place on November 5-6. The website of the workshop is online (https://varioscale.bk.tudelft.nl/events/icagen2020/) and contains the papers and the recordings of the live presentations.
- The 24th ICA Workshop on Map Generalisation and Multiple Representation took place in Florence and online on 13th of December, 2021, in hybrid mode (https://generalisation.icaci.org/prevevents/workshop2021.html).
- The 25th workshop was organized in hybrid in June 2023, prior to the AGILE conference, in Delft, the Netherlands (https://generalisation.icaci.org/prevevents/workshop2023.html). There were 20 participants on site and 20 online, with very fruitful discussions.
- A special issue of the Journal of Geovisualization and Spatial Analysis was published in 2022 with extensions of papers selected from the 2020 online workshop, and also other papers specifically submitted to the special issue.

Notable cross-disciplinary events (e.g. with other ICA Commissions/WGs, regional and international communities)

- The commission contributed to the organization of the 1st CartoAI workshop at GIScience 2023 in Leeds, September 12 (https://cartoai.github.io/giscience2023/). The workshop aims at gathering map generalization, computational cartography, and GeoAI communities, to discuss common issues and techniques.
- The special issue of CaGIS on "machine learning in cartography" aims to bring closer the communities on machine learning and cartography (https://bit.ly/327XmC2). It is guest edited by G. Touya, L. Harrie, and R. Oucheikh. 15 abstracts were submitted at the first step, and 13 groups of authors were invited to submit a full manuscript to the journal. Finally, 9 papers should be published by the end of the year.
- A survey on generalization rules in tactile maps was conducted by Jakub Wabiński (Military University of Technology, Warsaw, Poland) with the help of the commissions on Map generalisation and multiple representation and on Maps and Graphics for Blind and Partially Sighted People. A paper was published (https://doi.org/10.1080/00087041.2022.2097760).

Educational highlights (e.g. degree programs, MOOCs, lifelong learning courses)
- We started a series of Python notebooks to generalize maps with open libraries including libraries developed and promoted by commission members. Such notebooks can be used as tutorials for researchers, but can also be reused to teach practical map generalization. We plan to develop much more of these notebooks in the future.

Any other sharable experiences
- The commission now promotes open benchmarks for map generalization (https://generalisation.icaci.org/benchmarks.html). Benchmarks are open datasets, deposited in this case on Zenodo.org, with specific generalization goals, which can be used to compare different generalization methods on the same data.
- Creation of a shared Zotero library to help newcomers to quickly grasp the vast literature in the domain. This shared library is accessible via the commission website.

Upcoming events and planned actions
- The CartoAI workshop will take place in September 2023.
- Working group on open source libraries for map generalization: following discussions at the 2023 workshop, we plan to create a working group with the commission members interested in a shared development of open Python libraries for map generalization and multi-scale cartography.
- Plans for a workshop with the commission on cognitive issues in geographic information visualisation