

## International Cartographic Association

## Commission on GeoVisualization

## http://geoanalytics.net/ica

The Commission on GeoVisualization of the International Cartographic Association (ICA) was established in 2007 by Gennady Andrienko (Fraunhofer Institute IAIS) and Jason Dykes (City University London) to continue the work of the highly successful Commission on Visualization and Virtual Environments, which was key in establishing the emergent discipline of 'Geovisualization' since 1995.

The main focus for the period 2007-2015 was on the use of interactive maps and cartographic techniques to support interactive visual analysis of complex, voluminous and heterogeneous information involving measurements made in space and time.

Nowadays interactive maps are being widely used for research, education and information consumption through a range of accessible media and technologies in a variety of disciplines and applications scenarios on all sorts of computers in all sorts of places. In this broad and evolving context there is a clear need for the cartographic community to contribute to and learn from the development and use of interactive maps and cartographic techniques that are designed specifically for visual analysis. These interactive maps are being used as flexible spatial interfaces and are being applied to data sets that were either unavailable in 1995 or that could not be visualized through existing technologies and techniques. They are being applied to data sets that are massive, collected in real time by advanced sensors, and not necessarily spatial. They are used increasingly in GIScience and beyond for knowledge building and theory generation, decision support, disaster management, information communication, education and learning.

Some facts about the commission

About 100 members, 200 maillist subscribers (no SPAM!);

• Web site with 25,000+ hits;

• During the eight-year period, the commission has organized workshops on a regular basis as a focus and forum for research activity in which possibilities for geovisualization are explored and knowledge about geovisualization is established. Most of the workshops have been attached to major conferences (e.g. ICC, GIScience, AGILE), whilst several others have been organized as a successful stand-alone conference at HafenCity Universität Hamburg. Jochen Schiewe and his team at the g2Lab have established the GeoViz conference series as an innovative, original and inspiring forum for presenting and discussing new ideas in geovisualization. The workshops have resulted in 11 special issues of established journals::

- "GeoVisual Analytics: Interactivity, Dynamics, and Scale" (CaGIS 2015 in preparation)
- "GeoViz: interactive maps that help people think" (IJGIS 2014)
- "Geospatial Visual Analytics: Time to Focus on Time" (Information Visualization 2014)
- "GeoViz Linking Geovisualization with Spatial Analysis and Modelling" (Cartographica 2011)
- "Challenging Problems in Geovisual Analytics" (JVLC 2011)
- "Geospatial Visual Analytics: Focus on Time" (IJGIS 2010)
- "Geospatial Visual Analytics: Focus on Time" (JLBS 2010)
- "GeoVisualization and the Digital City" (CEUS 2010)
- "GeoSpatial Visual Analytics" (CaGIS 2009)
- "Geovisualization of Dynamics, Movement and Change" (Information Visualization 2008)
- "Geovisual Analytics for Spatial Decision Support" (IJGIS 2007)
- Close cooperation with other ICA Commissions, joint meetings and special issues;
- Active presence at IEEE VisWeek, GIScience, AGILE, ACM SIGSPATIAL, a number of best paper / best poster awards;
- Tutorials at conferences and summer schools, teaching material at Web site.

Four research roadmap papers: ijgis07, ivs08, ijgis10, jvlc11









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An important achievement of the commission is the cross-fertilization of geovisualization research activity in broader disciplines within computer science, including information visualization, data mining, and the important developing area of visual analytics. Commission members aim to contribute cartographic knowledge to these disciplines and learn from and take advantage of the knowledge and techniques that they offer. One particular focus has been the influential IEEE VIS conference series (rated A+ by CORE) and associated journal IEEE Transactions in Visualization and Computer Graphics (A). These high-ranking computer science conferences have seen a wide range of papers and presentations from commission members and cartographers more widely since 2007. Cartographic ideas are informing and influenced by visualization – for instance Dykes el al. (2010) used the cartographic back-catalogue to create prototypes and establish guidelines for legends in visualization, whilst Jenny (2012) developed adaptive composite map projections and an interactive interface through which these can be explored.





Prof. Dr. Gennady Andrienko gennady.andrienko@iais.fraunhofer.de gennady.andrienko.1@city.ac.uk