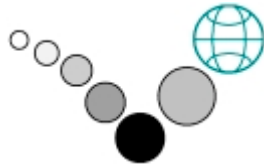


## ICA Commission on GI for Sustainability



<http://SusGIS.net>

### Report for period 2015-2019

The Commission has 22 members from 17 countries.

**The activities of the Commission in 2015 was to organize an annual conference InterCarto/InterGIS-21 «Sustainable Development of Territories: Cartography and GI Support»:  
November 12-13, 2015 - Krasnodar (Russia), November 14, 2015 - Sochi (Russia) and November 16-19, 2015 - Suva (Fiji).**

It was attended by 168 participants from Australia, Austria, Belgium, Germany, Greece, Finland, France, Lebanon, Kazakhstan, Republic of Korea, Russia and Uzbekistan. The number of papers presented during the conference amounted to 114. Official declared conference languages were Russian, English, French, Spanish, Chinese and Arabic. The articles presented in the Proceedings were in Russian (mainly), English, French and Chinese. English and Russian were used as official languages during the conference.

Participants from research and educational institutions were dominated. The age structure of the participants was balanced - besides 50-60-year-olds participants there was a significant number of 30-year and even more younger scholars. The wide range of issues relating to both traditional and innovative areas of modern cartography and geo-informatics, was presented at the conference. Both scientific and methodological innovations in Geoinformatics and Cartography were considered – in particular, geoportal technologies, mapping applications for mobile devices, methods for microscale mapping, laser scanning for precise modeling of natural objects, “futuristic” GIS-modelling of society within Sustainable Development context, cognitive graphics and semantic modelling. Also at the conference were widely and deeply presented methodical, research and theoretical aspects already developed areas of modern cartography and GIS technologies. Particularly noteworthy are the original results in the field of theoretical and methodological support of sustainable development, including research on remote sensing, environmental sustainability and environmental impact assessment, risk management and assessment of developmental potential of the territory. A variety of ways to use information for decision-making have been proposed. It is necessary to point out the obvious interest of many researchers in the social, economic and geographical issues in the context of a wide range of theoretical and applied problems (demography problems of formation of language, poverty, crime, terrorism, etc.) that can be solved by means of GIS technology. The conference helped to achieve the above and other relevant scientific theoretical, methodological and applied problems. Undeniable progress has shown in dealing

with the theoretical and technological problems related to using of geospatial information for decision-making. The new generation of map applications for mobile devices is reached; new concepts of its utilizing have been proposed.

**InterCarto/InterGIS-22** « GI support of sustainable development of territories in conditions of global climate change»: August, 31-September, 14, 2016.

It was attended by 153 participants from Australia, Austria, Check Republic, Germany, Greece, Finland, Indonesia, Kazakistan, New Zealand, Russia, South Africa, USA. The number of papers presented during the conference amounted to 82.

The conference outcomes are summarized as follows:

- GIS and cartographic support for the environmental, economic and social dimensions of sustainable development
- Ensuring sustainable development of “cities of science” (Naukograds) and priority development areas
- Mobile geographic information systems
- Virtual geographical environment
- New technologies of spatial-temporal visualization
- Geoinformatics and public participation in the protection of environment and risk management
- Spatial data infrastructure
- Standards, interoperability and open access
- Geoinformation assistance for preservation of cultural and natural heritage
- Geoinformation assistance of climate researches
- Ecological and sustainable tourism
- Urban ecology and planning
- Problems of education

Seminars and Round Tables

- Pan-Eurasian Experiment Program (PEEX) and Sustainable Development
- Sustainable development of Russian “cities of science” (Naukograds)

Information about the conference in Russian - <https://youtu.be/fcZJ43DsVjM?t=2m40s>

**InterCarto/InterGIS-23** « GI support of sustainable development of territories in conditions of global climate change»: August, 31-September, 14, 2017.

It was attended by 153 participants from Australia, Austria, Check Republic, Germany, Greece, Finland, Indonesia, Kazakstan, New Zealand, Russia, South Africa, USA. The number of papers presented during the conference amounted to 82.

The conference outcomes are summarized as follows:

- GIS and cartographic support for the environmental, economic and social dimensions of sustainable development
- Ensuring sustainable development of “cities of science” (Naukograds) and priority development areas
- Mobile geographic information systems
- Virtual geographical environment
- New technologies of spatial-temporal visualization
- Geoinformatics and public participation in the protection of environment and risk management
- Spatial data infrastructure
- Standards, interoperability and open access
- Geoinformation assistance for preservation of cultural and natural heritage
- Geoinformation assistance of climate researches
- Ecological and sustainable tourism
- Urban ecology and planning
- Problems of education

Seminars and Round Tables

- Pan-Eurasian Experiment Program (PEEX) and Sustainable Development
- Sustainable development of Russian “cities of science” (Naukograds)

Information about the conference in Russian - <https://youtu.be/fcZJ43DsVjM?t=2m40s>

Next conference will be held in Yuzhno-Sakhalinsk, Russia (June 26-28, 2017), Seoul, Republic of Korea, (July 1, 2017).

**InterCarto/InterGIS-24 « GI support of sustainable development of territories»:**  
July, 19 – August 1, 2018.

The conference was attended by 68 participants from Russia, who made 54 presentations. Among 41 presentations planned for Bonn's part of the conference [http://www.susgis.net/InterCarto24\\_2018/](http://www.susgis.net/InterCarto24_2018/) , there are Daniel M. Lopez L. and Arsitides Saavedra G. (Mexico), Rachida Houssa, Hassan Rhinane, Karim Hilmi and Mehdi Maanan (Morocco), Mirko Hauswirth, Matthias Bluhm and Judith Stagl (Germany), Tengiz Gordeziani, Tedo Gorgodze and Sergo Kvizhinadze (Georgia), Andreas Fritsch and Stefanie Betz (Germany), Horst Kremers (Germany), Andreea Calugaru, Alexandru Vasile, Diana Cosmoiu and Andreea Danciu (Romania), Zurab Laoshvili (Georgia), Xiaobin Hua, Ralf Ohlemüller and Pascal Sirguy (New Zealand), Fabio Cian, Carlo Giupponi and Mattia Marconcini (Italy), Andrea Baraldi, Dirk Tiede, Martin Sudmanns and Stefan Lang (Italy, Austria), Peter Fischer (Germany), Milan Konecny (Czech Republic), Thomas Esch, Felix Bachofer, Hubert Asamer, Jakub Balhar, Martin Boettcher, Enguerran Boissier, Andreas Hirner, Emmanuel Mathot, Mattia Marconcini, Annekatrin Metz-Marconcini, Hans Permana, Tomas Soukup, Soner Ureyen and Vaclav Svaton (Germany), Mario Hernandez (Mexico), Manik Lama (Nepal), Kwangseob Kim and Kiwon Lee (South Korea).

The conference outcomes are summarized as follows:

- Digital Earth and ensuring environmental, economic and social aspects of sustainable development of territories;
- Digital Earth and geography of the world economy, including digital economy;
- Geoinformatics and the mapping in the field of environmental protection and ensuring environmental safety;
- GI and cartographic support of preservation of cultural heritage and tourism,
- Remote methods of research of the Earth;
- Virtual geographical environments and the concept of Digital Earth,
- Education for sustainable development and the concept of Digital Earth.

Panel Discussion on cooperation of ICA GI & SD Commission with Digital Earth and another sisters international organizations was held on July 26 in Bonn:

*Daniel M. Lopez L. (CentroGeo, Mexico)*

*Horst Kremers (CODATA-Germany, Berlin)*

*Mario Hernandez (International Society for Digital Earth)*

*Vladimir S. Tikunov (ICA GI & SD Commission, Moscow)*

*Moderated by Mattia Marconcini (Germany)*

**InterCarto/InterGIS-25** « GI support of sustainable development of territories was held in Murmansk , Russia (January 30 - February 2, 2019) and will be in Tokyo (July 20, 2019) in cooperation with ICC.

2015

**Organization of schools of young scientists (Educational and Training Workshops for students and young scientists).**

Previously, these schools were carried out in Sevastopol (Ukraine), Istanbul (Turkey), Urumqi (China, 5 times), during a cruise on the Volga River (Perm, Kazan, Saratov, Astrakhan, Volgograd, Samara), as well as in Barnaul (2 times). The last schools were held on 23 June - 2 July 2015 in the Skopje (FYR Macedonia), Pristina (Kosovo), Tirana (Albania) and Thessaloniki (Greece). Trainings were conducted in Cyril and Methodius University (Skopje, Macedonia), in University of Prishtina (Kosovo), Faculty of Engineering of University of Tirana and Polytechnic University of Tirana (Albania), as well as in the School of Spatial Planning and Development, Aristotle University of Thessaloniki (Greece).

In order to attract leading experts scientific communities of Southern Balkans, previously had little involvement in ICA activities, were encouraged to participate in activities, scientific research and projects. Great assistance in the organization of the school made a member of our commission Bashkim Idrizi (Macedonia).

Also from November 10 to 14, 2015 the school "GI support of sustainable development of territories in conditions of global climate change" was held in Krasnodar. The school was attended by over 100 participants.

2016

Next Workshop was held in July 2014 in the city of Kigali (Rwanda) - trainees from 10 different government organizations and higher education institutions. Such as Ministry of Education of Rwanda, Rwanda Natural Resources, total 53 trainees attended and got certificates. The last year schools was held in June-July 2015 in FYR Macedonia, Kosovo, Albania and Greece and in November 2015 in Krasnodar (Russia). The schools in 2016 was held in April in St.-Peterburg and Novosibirsk (Russia). At the end of 2017 short school held in Perm and Kudymkar.

**Geographical Information Science in environmental management and planning**

conference as part of 5-th International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE) was organized in Mykonos Island, Greece, from June 14 to 18, 2015 (Organizer - member of our commission N.Karanikolas)

There are activities continued in 2015

- 1) establishing links with other international sister organizations - CODATA, IGU, Digital Earth, IEAS, that, in particular, was manifest in participation in the next conference

InterCarto-22 (It will be held in 2 cities - Protvino, Russia and Melbourne, Australia).

- 2) preparing the book GI for Sustainability
- 3) long-term projects:
  - “Digital Great Altai”- a GIS support for ecosystem sustainability in Great Altay Ecoregion
  - Collected existed GIS data about the region
  - Digitized paper maps for GIS database.
  - Investigated all neighbor countries spatial data sharing policy, special focused on topographic maps and thematic maps control policy (classifying policy)
- 4) Mapping Sustainability Goals (2 posters – Health and Cities will be prepared by members of our commission)

## 2. **Workshop on Service-Oriented Mapping**

The Commission cooperated with the ICA Commission on Map Production and Geoinformation Management in a workshop on Service Oriented Mapping held on June 13th 2016 at the HassoPlattner Institute at the University of Potsdam (Germany), see <http://mapproduction.icaci.org/>

3. **RIMMA2016** – Risk Information Management, Models and Applications  
The commission is continuous partner in the RIMMA series of international interdisciplinary workshops.

The 2016 event was mainly characterized by the demands that the UN Framework for Risk Reduction 2015-2030 – UN SENDAI Framework – formulates for adequate science, technology, data and cartography/geoinformation research and development.

The RIMMA workshop series is a close cooperation with CODATA-Germany, the German National Committee for the ICSU Committee on Data for Science and Technology.

Furthermore, these activities of the commission are not only relevant to topics in UN ISDR but also for UN SDGs (Sustainable Development Goals) and UN Habitat lines of action.

Summary of cartographic and geoinformation aspects from RIMMA2016 presentations and plenary discussions:

1. Natural, Technical, Chemical Risks From Local To International Level
2. Risk Databases, Risk Information Interoperability, Standards Development
3. Disaster Management And Emergency Preparedness, Prevention, Alert, Response And Mitigation
4. Health and Biological Risks Issues for Humans, and The Environment
5. Urban Neighborhood Risk Information And Mapping
6. Risk Information Processes Modelling And Applications, Services And Service Composition

7. Collection, Documentation, Archiving, And Open Access to Risk and Disaster Information (including issues of completeness, missing data etc.)
8. Risk Communication (decisionmaking, actors, public awareness etc.)
9. Social Media, Volunteered Information
10. User-Group Specific Risk Management Issues
11. Metadata, Semantic Networks, Semiotic Networks
12. Thresholds
13. Data Quality
14. Scalability
15. Big Data / Data Streams Analysis
16. Risk And Multi-Risk Cartographic / Visualization Issues
17. Cross-Organization Information Management
18. Complexity Management Issues

5. **A book on GI for Sustainability**- 3 chapters of the book are written by experts from Russia .

- Commission meeting in conjunction with ICC2019.
- Eurasian Journal of Digital Earth will be published and members of our commission were invited to submit their papers in this journal.

See <http://InterCarto24.net>

The commission publishes its organizational details and calls for events participation on its homepage <http://SusGIS.net>

Contact

Chair V.S. Tikunov  
Vice Chair H. Kremers

tikunov@geogr.msu.su  
office@Horst-Kremers.de