

InterCarto Conferences.

Hundreds of conferences more or less closely connected with cartography and GIS are being conducted annually around the world. In Russia and the republics of the former Soviet Union, such events were rare, and international meetings had not been held at all till May 23-25, 1994, when the first international conference InterCarto took place. These conferences took place at the following locations:

InterCarto 1	Moscow (Russia), May 23 – 25, 1994;
InterCarto 2	Irkutsk (Russia), June 26 – 29, 1996;
InterCarto 3	Novosibirsk (Russia), January 27 – 31, 1997;
InterCarto 4	Barnaul (Russia), July 1 – 4, 1998;
InterCarto 5	Yakutsk (Russia), June 17 – 19, 1999;
InterCarto 6	Apatity, Murmansk Province (Russia), August 22 – 24, 2000;
InterCarto 7	Petropavlovsk-Kamchatsky (Russia), July 30 – August 1, 2001;
InterCarto 8	Helsinki (Finland), St.-Petersburg (Russia), May 28 – June 1, 2002;
InterCarto 9	Novorossiysk (Russia), Sevastopol (Ukraine), June 25 – 29, 2003;
InterCarto/InterGIS 10	Vladivostok (Russia), Changchun (China), July 12 – 19, 2004;
InterCarto/InterGIS 11	Stavropol-Dombai (Russia), Budapest (Hungary), September 25 – October 3, 2005;
InterCarto/InterGIS 12	Kaliningrad (Russia), Berlin (Germany), August 25 – 31, 2006;
InterCarto/InterGIS 13	Khanty-Mansiysk (Russia), Yellowknife (Canada), August 12 – 24, 2007;
InterCarto/InterGIS 14	Saratov (Russia), Urumqi (China), June 24 – July 1, 2008;
InterCarto/InterGIS 15	Perm (Russia), Ghent (Belgium), June 26 – July 6, 2009;
InterCarto/InterGIS 16	Rostov-on-Don (Russia), Salzburg (Austria), July 3 – 8, 2010.

The InterCarto conferences are thematically organized to target one of the most pressing problems of modern geography – creation and use of geographic information systems (GISs) as

effective tools for achieving sustainable development of territories. Wide use of information technology by all countries has been encouraged in the *Agenda for the XXI Century (Agenda 21)* adopted by the UN Conference on Environment and Development in Rio-de-Janeiro (Brazil, 1992) and reinforced at the UN World Summit on Sustainable Development in Johannesburg, 2002. In the *Russian National Report* and the materials of the conference in Rio 10 *Information Supplement*, development of GISs has been declared one of the most relevant directions of work. The InterCarto program is supported by the International Cartographic Association (ICA) that encompasses 83 countries. The InterCarto conferences invite presentations from the most known participants - scientists and experts in the field of geo-informatics and sustainable development. Committee sessions of a number of international organizations, exhibitions, and seminars are conducted within the framework of the conferences.

Over the years, from 1984 to 2009, 1872 participants from 51 countries¹ and 156 cities, who made 1494 reports, attended the conferences. There were 1508 participants from Russian 49 regions making 1340 presentations. The conferences hosted 31 different sections, most popular of which were *Environmental GIS-Projects: Development and Experience* (386 attendees, 204 presentations), *Sustainable Development and Innovative Projects* (349 attendees, 210 presentations), *GIS: the Theory and Methodology* (312 attendees, 217 presentations), *Projects for Russia and Regions* (185 attendees, 90 presentations), and *GIS-Technologies and Digital Mapping* (99 attendees, 51 presentations).

In this paper, I would like to share the highlights of the InterCarto conferences. The theme of the first conference, which was held under the auspices of the ICA and the International Geographical Union's Commission on GIS and was organized by the Faculty of Geography of Moscow State University in collaboration with GIS World Inc., was *GIS for Environmental Studies and Mapping*. More than 100 participants from ten countries including two former republics of the USSR (Georgia and Estonia) took part in this event. The most representative

¹ including Australia, Austria, Belarus, Belgium, Bulgaria, Canada, China, Croatia, Czech Republic, Egypt, Estonia, Fiji, Finland, France, Ghana, Georgia, Germany, Great Britain, Hungary, Iceland, India, Indonesia, Ireland, Israel, Japan, Kazakhstan, Kyrgystan, Lithuania, Malaysia, Moldova, Mongolia, Montenegro, the Netherlands, New Zealand, Nigeria, Norway, Poland, Romania, Russia, Serbia, Slovakia, South Africa, South Korea, Spain, Sweden, Switzerland, Ukraine, the USA, Uzbekistan, Vietnam, and Zaire.

delegations were from Russia and the USA. *GIS World Inc.* published the first proceedings of the conference². English has been the working language of the conference.

The former ICA President Joel L. Morrison (USA) greeted the meeting on behalf of the ICA. The meeting was also addressed by Nikolay D. Zhdanov, head of the Federal Geodesy and Cartography Survey (Russia), and by Nikolay S. Kasimov, dean of the Geographical Faculty, Moscow State University (Russia). The conference had seven sessions: *GIS Theory and Methodology*, *GIS Projects for Russia*, *Technological Aspects*, *GIS and Remote Sensing*, *GIS: Regional Aspects*, *Cartographic Education and Training*, and *GIS Applications*.

The conference discussed theoretical and methodological problems facing the field. In addition, a great deal of attention was given to both planned GIS projects (e.g., *Development of Fiber Loop Communication System in Russia* [Robert F. Austin, USA] and *Russia's Integration into GRID-UNEP System* [Nikolay G. Rybalskij and Olga A. Novoselova, Russia]) and completed projects (e.g., the Russian-French project implemented jointly *Russia and its Neighbors: The Russian-French Atlas of Problems and Risks in the Former USSR* [Vladimir A. Kolossov, Roger Brunet, and Denis Eckert]). Foreign participants were particularly interested in reports on Russian software, development and implementation of remote sensing methods in environmental studies and mapping, and individual efforts that target ecosystems pollution, especially the consequences of the Chernobyl disaster.

Numerous representatives of various organizations and firms (e.g., AM/FM International, Huber, Andrew Corporation, Leica, Spans, Ilwis, Trimble Navigation, and others) attended the conference. They participated in conference activities and took part in discussions of plans and conference subjects, but there were no exhibitions that are usually arranged at such conferences. Overall, review of the conference marked the high technical level of the presentations, up-to-date GIS technology, and diversity of its applications.

The InterCarto 3 conference emphasized sustainable development - one of the most critical challenges for the world. It was held in Novosibirsk on January 27-31, 1997. The conference attracted more than 200 participants including Michael Wood (UK), president of the ICA; Milan Konecny (Czech Republic), vice-president of the ICA; Ferjan Ormeling (The Netherlands), chairman of CET Commission of the ICA; and Walter H. Mayer (Austria),

² InterCarto: GIS for Environmental Studies and Mapping Conference Proceedings, 23-25 May 1994, Moscow, Russia, 1994, 144 p.

president of PROGIS. The technical program included many national and international presentations on a wide range of GIS fields. Indeed, my appreciation of the magnitude of GIS-related activities in Novosibirsk and the eastern part of Russia in general has increased considerably during that time. Many participants enjoyed this winter event in Siberia, which was expressed in the speech by the ICA President Michael Wood at the closing ceremony, "It has been a very special pleasure for me to attend this meeting of InterCarto 3, the very first of its kind in Novosibirsk, and in my opinion it has, overall, been a great success. I believe that people will look back on that meeting as an important landmark in the journey to a future of greater cooperation and involvement between Russia, Europe, and other regions of the World." After the conference, he shared these positive impressions with his ICA colleagues and published a report on that meeting in the issue of the ICA Newsletter that followed. He also complemented all persons who made the conference possible referring to the directors, receptionists, interpreters, and caterers of the fine foods offered during the breaks and after the presentations. His last words to the participants and organizers were, "Congratulations Novosibirsk, job well done!"

The technical tours were complete and were positively received, judging by the enthusiasm of both demonstrators and the excursion participants. These tours were a revelation for the overseas delegates, in particular, when they saw some of the excellent research and production work conducted there. The exhibition and the tours were the highlights of the conference. The tours have convinced the participants of the vitality of GIS research and its application in Russia and especially in the Novosibirsk region, of which many in the West were totally unaware. Not only evidence of catching up with new technologies has been demonstrated, but also the enormous potential to take a lead in some fields has been shown. For example, the *Electronic Ecological Atlas of Kemerovo Oblast*, presented at the Institute of Computational Technologies, offered concepts and structures that could be adopted in other regions. We also saw the demonstration of competent programming implemented in locally produced software of exceptionally high standards.

However, there were two aspects of concern. The first concern was associated with the lack of papers on organizational aspects of GIS. In the West, major reasons for a complete or a partial failure of GIS projects (e.g., when they have to be expanded and integrated into activities of local authorities) are often not of a technical or an academic nature, but are usually of an organizational origin. The InterCarto 4 helped us to find out if these matters were properly

addressed. The second concern was related to a poor attendance by overseas delegates who missed so much by not being there. The conference was exceptionally well organized. The participants were able to enjoy Novosibirsk and its vicinities despite a totally unexpected heat wave that deprived them of a true Siberian adventure. The presentations were highly informative and followed by lively exchanges of views so typical to Russian scientific disputes. The environment (and especially in winter) was remarkably different and the contacts were much more friendly than many of the participants had experienced in their own, often stressed-out, societies. The participants were truly pleased to see that technological advances in Siberia were still accompanied by the old virtues of kindness and generosity.

The third event I would like to cover in this presentation is the conference held in Perm (Russian component) and Gent (Belgium component). The Russian part of the conference took place from June 26 through July 2, 2009, at Perm State University (Perm, Russia). One hundred sixty participants attended the conference; they came from various regions of Russia and several foreign countries. The program included plenary and thematic sections, seminars, and round tables. Different problems that face modern geography were covered in the following sections: *Geo-Information Support of Sustainable Development of Territories (Theory, Geopolitical Processes, and Territorial Management)* (co-chairmen V.S. Tikunov and A.M. Korobejnikov), *Infrastructure of Spatial Data* (S.A. Miller and A.V. Koshkarev), *Remote Sensing of the Earth* (N.A. Kalinin), *Geo-Information Support for Solution of Water-Ecological, Geomorphological, Geological, and Geophysical Problems* (I.N. Rotanova and E.B. Soboleva), *Ecologic and Geo-Information Aspects in Sustainable Development* (S.A. Buzmakov), *Sustainable Development and Tourism* (A.I. Zyrjanov), and *GIS-FORMATION for Sustainable Development* (S.V. Pjankov). Several seminars and round-table discussions were devoted to *GIS and Business* (S.A. Miller), *Infrastructure of the Spatial Data in Hydrological Researches* (A.V. Koshkarev and I.N. Rotanova), and *Historical Geo-Informatics* (V.N. Vladimirov and S.I. Kornienko). There were also presentations on mobile GIS, remote sensing techniques for analyzing land use, vegetation, and sustainable development, GIS-education for sustainable development, etc.

Printed proceedings (three-volumes) of the conference were available to the conference participants at the beginning of the event. The attendees were also able to obtain a DVD with a unique collection of Russian materials presented at all previous InterCarto conferences since 1994. At the plenary session, the participants were welcomed by I.N. Shubin, head of the city of

Perm, M. N. Shejfel, adviser of the Chairman of Perm Krai Government, and Professor V.V. Malanin, president of Perm State University.

The materials of the conference can be found on the Perm State University website (<http://www.gis.psu.ru/InterCarto/resolution>).

The Belgian component of the conference took place July 3-6, 2009. Fifty participants, many of whom travelled from Russia, attended the meeting. The sections covered GIS applications in different fields, such as environmental protection and ecological studies, road system economics and navigation, space monitoring and mapping, dynamics of land use, prevention of consequences of natural catastrophes, demography, remote training, and development of spatial data infrastructure and its components. Twenty five presentations were delivered during seven conference sections that have illustrated the process of fundamental changes in methods and tools of modern cartography, for example, the process of continuous migration of geo-informatics from GIS paradigm to SDI environment.

After the opening speech by F. De Mayer, the main organizer of the conference in Ghent, two plenary presentations were made: the first presentation dealt with the use of geo-information technologies in studies of global demographic processes (V.S. Tikunov) and the second presentation was on the history of "neocartography", entitled "From Maps of Ortelij to Service Openstreetmap.org» (F. Ormeling). The presentation by V.S. Tikunov emphasized the importance of maps, mathematical-cartographical modeling, and GIS tools for studying demographic processes. The presentation was illustrated with a series of animated anamorphosis maps of global basic changes of the demographic situation in the world. This participant also talked about essential changes in the epoch of modern cartography that have occurred recently. F. Ormeling discussed theoretic works in the field of cartographic communications and works by A. Kolachny who contributed much to the field. A. Kolachny had anticipated use of information technologies in cartography. He had foreseen the first computer maps, geo-information technologies, modern cartographic web applications, LBS-services in smart phones and communicators, and cartographic devices in automobile navigators, i.e., geo-information management processes that were so uncontrollable in the age of ancient science.

The last InterCarto-InterGIS 16 conference was held in Rostov-on-Don (Russia) on July 3-4, 2010, and in Salzburg (Austria) on July 6-8, 2010. The materials of this conference are posted on the websites <http://www.isep.sfedu.ru>, www.ssc-ras.ru, <http://InterCarto16.net>, and

www.intercartogis.org. The thematic sections of the conference included: *GIS Support of Sustainable Development of Territories (Theory, Geopolitical Processes, and Territorial Management)*, *Remote Sensing and Sustainable Development of Territories*, *Mobile GIS, GIS and Business*, *Sustainable Development and Tourism (Problems and Perspectives)*, *Spatial Data Infrastructure*, and *GIS-Education for Sustainable Development*.

The conference presentations covered theoretical and methodological problems of cartography and temporal-spatial geo-information modeling. Conference topics also included geo-information support for promoting sustainable development of Russian and other territories, experiences of GIS use in addressing ecological problems, and infrastructure of spatial data. Several presentations addressed methods of cartographic and geo-informational modeling, problems and prospects of sustainable tourism development, and medical-geographical aspects of sustainable development. Participants also discussed outcomes of research on near-border cooperation, education in general, and education that specifically targets sustainable development. The conference participants stressed the fact that development and use of GIS technologies, GIS-based projects, and cartographic forecast modeling are being increasingly incorporated in land use planning and management, environmental management, and education. They further stressed that these projects have important scientific and practical significance.

The next annual conference will take place in December 2011. The Russian component of the conference will be held in Altay Krai followed by another meeting on Bali (Indonesia).

<http://conf.nsc.ru/intercarto17>

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