



Bulgarian Cartographic Association



International Cartographic Association



**University of Architecture,
Civil Engineering and Geodesy**

4TH INTERNATIONAL CONFERENCE ON CARTOGRAPHY AND GIS

**June, 18-22, 2012
Albena, Bulgaria**

**UNDER THE PATRONAGE OF MS. KRISTALINA GEORGIEVA,
MEMBER OF THE EUROPEAN COMMISSION**

FINAL PROGRAMME

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Sunday, June 17, 2012

Arriving in Varna and transport transfer
Varna-Albena

Dobrotitsa Hotel, Albena
2:00 p.m. – 7:00 p.m. Registration

Monday, June 18, 2012

Dobrotitsa Hotel, Albena
08:30 a.m. Registration

9:00 a.m. Sponsor speech 1

Chair: **Temenoujka Bandrova, Bulgaria**

1	Andrei Zheleznyakov	Experience in the Implementation of Mapping Projects	PANORAMA, Russia
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June 18 9:30 a.m. – 11:00 a.m. Plenary Session 1 **GIS Technologies and Related Disciplines (continued in PS2)**

2	Simon Vrečar	EUROGI – Key Facilitator for Geographic Information in Europe	<i>EUROGI</i>
3	János Mészáros, Mátyás Gede	Using Free On-line Tools for Archiving Old Relief Models	<i>Hungary</i>
4	Maksimiliana Emilova, Irina Salcheva, Elena Kotseva	Stages and Regulations of Creating a Digital Large-Scale Topographic Map in Scale 1:5000 and 1: 10000	<i>Bulgaria</i>
5	Yana Angelova	Use of the Products of KB "Panorama" for Developing Geoinformation Technologies in Bulgaria"Intelligence	<i>Bulgaria</i>
6	Rufino Pérez Gómez, Paula Rodrigo García and Víctor Manuel Catalán Díaz	Analyzing and Mapping Key Issues in Higher Education Systems with Geo-Information Related Technologies	<i>Spain</i>



11:00 a.m. – 11:30 a.m. Coffee Break

June 18 11:30 a.m. – 1:00 p.m. Plenary Session 2
GIS Technologies and Related Disciplines (continued in PS3)

Chairs: **Necla Ulugtekin, Turkey**

7	Otakar Čerba	Ontology of Cartographic Terminology	Czech Republic
8	Dragica Zivkovic, Mila Pavlovic, Aleksandar Valjarevic	GIS Technology Role in Development and Integration of Serbia	Serbia
9	Asparuh Kamburov	Wartk - Advanced GNSS Method for Precise GIS, Cadaster and Utility Data Collection	Bulgaria
10	Dalibor Bartoněk Jiří Bureš	Expert GIS for Locating of Archaeological Sites	Czech Republic
11	David Wortley	Immersive Technologies and GIS	United Kingdom



1:00 p.m. – 2:30 p.m. Lunch time

June 18 2:30 p.m. – 4:00 p.m. Plenary Session 3
GIS Technologies and Related Disciplines

Chairs: **Rufino Pérez, Spain**

12	Jiří Bureš , Dalibor Bartoněk	Application of GIS in Civil Engineering	Czech Republic
13	Maider Laka-Iñurrategi , Julen Garcia, Kevin Alonso, Marco Quartulli	Augmenting Live Aerial Video Images with GIS Information to Enhance Decision Making Process During Emergencies	Spain
14	Ferim Gashi , Idriz Shala	Creation of the Spatial Usage Map With the Square Method	Albania / Kosovo
15	Otakar Čerba , Karel Charvát, Karel Janečka, Karel Jedlička, Jan Ježek, Tomáš Mildorf	The Overview of Spatial Data Harmonization Approaches and Tools	Czech Republic
16	Bashkim Idrizi , Subija Izeirovski, Kujtim Xhilia	Development of Spatial Data Infrastructures in Macedonia	FYROM



4:00 p.m. – 4:30 p.m. Coffee Break

Conference hall
4:30 p.m. OPENING CEREMONY of the 4th Conference on
Cartography and GIS

Greetings:

- **Prof. Dr. Krasimir Petrov**, Rector of the University of Architecture, Civil Engineering and Geodesy
- **Prof. Dr. Milan Konecny**, President International Organizing Committee
- **Prof. Georg Gartner**, ICA President
- **H.E. Mr. Pavel Vacek**, Ambassador of the Czech Republic in Bulgaria
- **Mr. Angel Yanakiev**, Manager, Chamber of Graduated Surveyors
- Greetings by sponsors
- Greetings by Members of National and Region Government



Greetings to all participants by Children folklore group from Balchik city

June 18 5:30 p.m.-6:30 p.m. Keynote speech 1
and Sponsor Speech 2

Chair: **Miljenko Lapaine**, *Croatia*

17	Georg Gartner	Modern Cartography and the Role of the International Cartographic Association	ICA President
18	Paul Hardy	Multi-scale cartography: maps, tools and models	ESRI Europe



6:45 p.m. Welcome Reception, sponsored
by ESRI and KB Panorama

Tuesday, JUNE 19, 2012

June 19 9:00 a.m. – 10:30 a.m. Plenary Session 4 **Cartography and GIS in Education (continued in PS5)**

Chair: **Ibrahim Oztug Bildirici, Turkey**

19	Otakar Čerba , Karel Charvát, Karel Jedlička, Jakub Cerba	Lifelong Learning of Geomatics And Geoinformatics	Czech Republic
20	Karel Janecka , Andris Dzerve, Karel Charvat, Raitis Berzins	The SDI-EDU Platform as a Way of the Modern GIS Vocational Education	Czech Republic
21	Georgios Achilleos	Allocating the DEM Elevation Error into Its Components: the Contribution of Digitizing and Interpolation to the Total Error	Greece
22	Katarzyna Bogacz	Children's Spatial Representations of Lyon and Cracow	France
23	Ilkay Bugdayci, Ibrahim Oztug Bildirici , Necla Ulugtekin	Learning Scale Factor: A Case Study with the Help of the 6th Grade Pupils in Konya/Turkey	Turkey



10:30 a.m. – 11:00 a.m. Coffee Break

June 19 11:00 a.m. – 12:00 p.m. Plenary Session 5
Cartography and GIS in Education

Chair: **Jose Jesus Reyes Nunez**, Hungary

24	Eszter Simonné-Dombóvári, José Jesús Reyes Nunez , Georg Gartner, Manuela Schmidt, Anita Rohonczy	Chernoff Faces as an Alternative Method of Representation in Schools: Austrian-Hungarian Survey	Hungary / Austria
25	Bashkim Idrizi	Cartographic Education within the Surveying Department in Prishtina	FYROM
26	Tamara Vereshchaka, Gleb Kachaev , Nataliya Bilibina	The Use of Topographic Maps in Course of Ecological Mapping Studies	Russia
27	Tilahun Erduno	The Idea of GIS Based School Atlases for Regional States of Ethiopia	Ethiopia
28	Hilda Kramáreková , Alena Dubcova	School Cartography in the Slovak Republic After 1993	Slovakia



12:00 p.m. – 1:30 p.m. Lunch time

June 19 1:30 p.m. - 2:00 p.m. **Sponsor speech 3**

Chair: **Milan Konecny**, *Czech Republic*

29	Claudio Mingrino	Managing Risk from Landslides to Tunneling: High-Precision Environmental and Infrastructure Monitoring	INTERGRAPH
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June 19 2:00 p.m. – 3:30 p.m. **SEMINAR WITH EU COOPERATION ON EARLY WARNING AND DISASTER / CRISES MANAGEMENT – PART 1a**

Organized by Masaryk University, Brno, Czech Republic

*UNDER THE AUSPICES OF THE AMBASSADOR OF THE CZECH REPUBLIC
Pavel Vacek*

Chair: **Milan Konecny**, *Czech Republic*

*European Concepts for Crises Management (CM) and Early Warning (EW)
Visualization of Geodata and Geoinformation in CM and EW
GIS in Early Warning and Crises Management
User Needs and Context Mapping*

29	Milan Konecny	Early Warning and Crisis Management Geographic Information Research Agenda	Czech Republic
30	Sisi Zlatanova , U. Isikdag, J.Stoter	Standards for Exchange and Storage of 3D Information: Challenges and Opportunities for Emergency Response	The Netherlands
31	Wojciech Gawrecki	Looking into the Present and Future of GIS in Emergency	ESRI USA

		Management	
32	Jiri Hiess	SDI development in Crisis Management Consequences	Czech Republic
33	Vanda Turczi, Pierre Philippe, Robin Durant	Testing the Implementation of the Flood Directive on the Middle Loire and Cher Rivers in France	France



3:30 p.m. – 4:00 p.m. Coffee Break

June 19 4:00 p.m. – 5:30 p.m. SEMINAR WITH EU COOPERATION ON EARLY WARNING AND DISASTER / CRISES MANAGEMENT – PART 1b

Chairs: **Deren Li, China**

34	Pavel Špulák	Web Services and Information Support during Emergencies	Czech Republic
35	Huseyin Zahit Selvi, Ibrahim Oztug Bildirici , Georg Gartner	Landmark Orientation for Pedestrians: a Case Study at Selcuk University	Turkey / Austria
36	Josef Janosec	Changing Requirements for Visualization of the Security Reality	Czech Republic
37	Christophe Lienert	Environmental Monitoring and Early Warning - Towards a Real-Time GIS in Administration	Switzerland
38	Alexander P. Karpik, Vladimir A. Seredovich, Eduard L. Kim, Alexey V. Dubrovskiy	The Analysis of Natural and Technogenic Features of Hazardous Zones (as an Example of Seasonal Flooding in the Ob River Flood-Plain within Novosibirsk City)	Russia

June 19 5:30 p.m. – 6:30 p.m. Round Table

Chaired by Milan Konecny, Deren Li, and Sisi Zlatanova

**June 19 6:30 p.m.- 7:00 p.m. Meeting of Commission on
Cartography on Early Warning and Crises Management**

Chair: Milan Konecny



8:00 p.m. Gala Dinner

Wednesday, JUNE 20, 2012

June 20 9:00 a.m. – 9:30 a.m. Keynote Speech 2

Chair: **Philippe De Maeyer**, *Belgium*

39	Hui Lin	Virtual Geographic Environments: Feeling it in Person and Knowing it beyond Reality	Hong Kong
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June 20 9:30 a.m. – 11:00 a.m. Plenary Session 6
Cartographic Visualization (continued in PS7)

40	George Zhelezov	Ecosystem Services of Biosphere Reserve “Srebarna” – Spatial Characteristics and Dynamic	<i>Bulgaria</i>
41	Sinan Cetinkaya, Melih Basaraner	Obtaining Building Groups in Urban Blocks by Employing Different Clustering Methods	<i>Turkey</i>
42	Kremena Boyanova, Temenoujka Bandrova	3D Mapping for Needs of Architecture	<i>Bulgaria</i>
43	Aydin Ustun, I. Oztug Bildirici	Geographic Information System for Konya Closed Basin Project	<i>Turkey</i>
44	László Zentai	The Evolution of Cartographic Visualization in the Digital Era	<i>Hungary</i>



11:00 a.m. – 11:30 a.m. Coffee Break

June 20 11:30 a.m. – 1:20 p.m. Plenary Session 7
Cartographic Visualization and Virtual Geographic Environment

Chairs: **László Zentai**, Hungary

45	George Zhelezov	Spatial Modeling and Reconstructions of Karaboaz Wetland System	Bulgaria
46	Monika Kopecká , Konštantín Rosina, Andrea Rabekova	Urban Sprawl Mapping Based on VHR Satellite Imagery	Slovakia
47	Miglena Kuzmanova	ArcGIS Leads GIS Trends	Bulgaria
48	Petr Kubiček , Čeněk Šašinka, Zdeněk Stachoň	Uncertainty Visualization Testing	Czech Republic
49	Maidor Laka-Iñurrategi , Julen García, Jesús María Perez, Aritz Legarretaetxebarria	GIS and GPS Based Photorealistic Real-Time Simulations for TV Production	Spain
50	Mohamed R. Bualhamam	Study on the Urban Space Expansion Based on GIS and RS Techniques	UAE



1:20 p.m. – 2:30 p.m. Lunch time

June 20 **2:30 p.m. – 5:40 p.m. SEMINAR WITH EU
COOPERATION ON EARLY WARNING AND DISASTER /
CRISES MANAGEMENT – PART 2**

*UNDER THE AUSPICES OF THE AMBASSADOR OF THE CZECH
REPUBLIC PAVEL VACEK*

Chair: **Yaolin Liu**, *China* and **Sisi Zlatanova**, *Netherlands*

*From Discovery to Full Interoperability in CM and EW
SDI and CM: INSPIRE Influence
"Speaking the Same Language - Semantic Aspects
of CM"
Sensor Mapping for EW and CM
Discussions*

51	Tomas Reznik	Advanced methods of cell-phone localisation for crisis and emergency management applications	JRC, Italy
52	Martina Triplat Horvat , Miljenko Lapaine	INSPIRE and Protected Sites – an Overview and Recommendations	Croatia
53	Yoanna Milanova , Monika Rusnakova	Students' Understanding of Early Warning and Disaster Management	Bulgaria / Czech Republic
54	ZHU Yi , ZHANG Fu-Hao, SUN Li-Jian, GAO Shan	Construction of the Public Emergency Service Geographic Information Platform	China
55	S. Kemeç, S. Duzgun, Sisi Zlatanova	A New LoD Definition Hierarchy for 3D City Models Used for Natural Disaster Risk Communication Tool	Turkey / The Netherlands



4:00 p.m. – 4:30 p.m. Coffee Break

56	Darka Mioc, Francois Anton, Kaiser Moreri, Jairo Nkhwanan	Visualization of the Impact of the Catastrophic Flooding Events	<i>Denmark / Canada</i>
57	Robert Cihal	Level Crossings Register as Part of the Integrated Rescue System in Czech Republic	<i>Czech Republic</i>
58	Nadka Stoimenova	Flood Risk Mapping in West Aegean Sea River Basin	<i>Bulgaria</i>
60	Snezhanka Balabanova	Creating Flood Hazard Maps as Base for Evaluating Flood Risk	<i>Bulgaria</i>

June 20 5:40 p.m. – 6:40 p.m. Meeting of Commission on
Cartography and Children

Chairs: **José Jesús Reyes**, Hungary

THURSDAY, JUNE 21, 2012

June 21 9:00 a.m. Keynote speech 3

Chair: **Petar Penev**, *Bulgaria*

62	Deren Li	Conceptualizing the Chinese National Disaster	China
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June 21 9:30 a.m. –11:20 p.m. **Plenary Session 8**
Map Design and Production

63	Tanya Slavova	Modern Methods and Devices for Mapping Underground Galleries and Natural Caves	<i>Bulgaria</i>
64	Ana Kuvezdic Divjak	Map of the ICA National Members	<i>Croatia</i>
65	Andreea Anghel, Silvia Ustea, Lucian Zavate	Digital Atlas of Romania	<i>Romania</i>
66	Rasha Deeb , Kristien Ooms, Philippe De Maeyer	Label Size Design, Aesthetics and Efficiency	<i>Belgium</i>
67	Melih Basaraner	An Investigation of Semantic, Geometric and Graphic Heterogeneities of Building and Facility Objects in a Multi-Resolution Spatial Database	<i>Turkey</i>
68	Ahmet Ozgur Dogru , Necla Ulugtekin, Seval Alkoy	Map Design for Communicating the Epidemiological Information	<i>Turkey</i>



11:20 a.m. – 11:50 a.m. **Coffee Break**

June 21 11:50 a.m. – 1:20 p.m. Plenary Session 9
GIS for City Traffic and GPS Technologies

Chair: **Georgios Achilleos**, *Greece*

69	Sorin Avram	Impact of Urban Planning upon Urban Road Traffic within Craiova City (Romania)	Romania
70	Saad Alsharrah , David Bruce	Modelling Noise from Traffic using SoundPLAN with GIS integration for the city of Adelaide	Australia
71	Petar T. Penev	The Statement and the Possibilities for Environmental Mapping in Republic of Bulgaria	Bulgaria
72	Karel Jedlička , Václav Čada, Jana Hejdová	Verification of the Possibility of Obtaining Two Independent Positioning from a Single GNSS Measurement	Czech Republic
73	Baraklianos Ioannis, Basbas Socrates, Karanikolas Nikolas , Vagiona Dimitra, Spyridonidou Alexia	GIS and Management of Road Accident Data. A Case Study in the City of Veria, Greece	Greece



1:20 p.m. – 2:30 p.m. Lunch time

June 21 2:30 p.m. – 3:40 p.m. Plenary Session 10
Remote Sensing Technologies (continued in PS11)

Chair: **Georgi Zhelezov, Bulgaria**

74	Paulo Márcio Leal de Menezes	Evaluation of High Resolution Images Applied to Urban Cadastral Maps Updating	Brazil
75	János Mészáros	He Building and Using Aspects of an Unmanned Aerial Surveying Vehicle	Hungary
77	Emilia Tcherkezova, Rumiana Vatseva	Urban Areas Automatic Classification Using Remote Sensing Data and Open Source Software: Sofia Case Study, Bulgaria	Bulgaria
78	M. Keskin , Ahmet Ozgur Dogru	An Evaluation for The Use of Remote Sensing Data in Map Production	Turkey



3:40 p.m. – 4:10 p.m. Coffee Break

June 21 4:10 p.m. – 5:00 p.m. Plenary Session 11
Remote Sensing Technologies

Chair: **Rumyana Vatsева, Bulgaria**

79	Lucie Kupkova, Marketa Potuckova, Michaela Buricova, Zuzana Lhotakova, Veronika Kopackova, Jana Albrechtova	GIS in Urban Planning Education: Support for Integrated Approaches to Sustainable Urban Development	Czech Republic
80	Rumiana Vatsева	Urban Landscape Change Analysis of Burgas Coastal Zone In 1990 - 2006 Using Satellite Imagery Bulgaria	Bulgaria
82	Vasile Craciunescu, Gheorghe Stancalie, Eugenia Roumenina, Valentin Kazandjiev, Georgi Jeleu, Lachezar Filchev, Elena Savin, Simona Catana	Interactive WEB-Mapping System for Satellite Based Agricultural Applications in Bulgaria and Romania	Romania / Bulgaria
83	Nenad Tesla, Vladimir Milenkovic, Dejan Jeremic, Sasa Lazic	Condition, Activities, Services of the Control Center of a National Network of GNSS Stations of Republic of Serbia Agros - Activegeodetic Reference Base Serbia	Serbia

5:00 p.m. – 6:00 p.m. Meeting of Commission on Map Projections
Chair: **Miljenko Lapaine, Croatia**

Friday, JUNE 22, 2012

June 22 9:30 a.m. Keynote Speech 4

Chair: Paulo Márcio Leal de Menezes, Brazil

84	Victor P. Savinykh	Development of the Dynamic Mapping Methods of the Northern Territories Based on Satellite Images	Russia
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June 22 10:00 a.m. – 11:10 a.m. Plenary Session 12
Internet Cartography and Digital Atlases

85	S. Eka Wati, Turmudi, Y. D. Sigit Purnomo , A. Rahman, D.A. Susanto	Tactile Atlas, One of Important Tools to Support Spatial Knowledge of Blind People	Indonesia
86	E. Lynn Usery	The WEB Mercator Projection: The Legacy Continues into the Electronic Age	USA
87	Andrius Balciunas	Internet Maps Quality Measurement Framework Based On Qualimetric Research Method	Lithuania
89	Yaolin Liu	Simulation of Rural Settlements to Town Land Conversion Based on Multi-Agent Systems and Cellular Automata	China



11:10 a.m. – 11:40 a.m. Coffee Break

June 22 11:40 a.m. – 12:10 p.m.
Book Presentation

Chair: **E. LYNN USERY, USA**

90	David Wortley	GADGETS TO GOD Reflections on our Changing Relationship with Technology	<i>United Kingdom</i>
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12:15 p.m. Closing ceremony



12:30 p.m. – 2:00 p.m. Lunch time

Excursions

Saturday, JUNE 23, 2010

Excursions

POSTERS

Monday, June 18, 2012

3:30 p.m. – 5:00 p.m. Plenary Session 1 (posters)

91	Emilia Chorbadzhiyska	Mapping Landscapes of the Strandja Nature Park	Bulgaria
92	Otakar Čerba, Karel Charvát	The Questions of Integration of Free Datasets	Czech Republic
93	Vladimir Markovic, Uglješa Stankov, Michal Klaučo, Daniela Arsenović	Human Impacts on the Land Cover through Landscape Metrics in Nature Park "Šargan - Mokra Gora" in Serbia	Serbia
94	Yoana Stoyanova	Assessment of Land Cover and Land Use Change in Bansko Municipality (Bulgaria) for the Period 1990 – 2006 Based on Satellite Images	Bulgaria
95	Evgeni Baltakov	GIS Based Mapping and Analysis of Brestnitsa Karst Geosystem Structure in Bulgaria	Bulgaria

Tuesday, June 19, 2012

3:30 p.m. – 5:00 p.m. Plenary Session 2 (posters)

96	Pal Nikolli, Ferim GASHI	Relationship between Cartography and GIS	Albania
97	Biljana Ajtarska, Verica Mukanova, Tatjana Lazoroska	Small Scale Map Production Using the Basic GIS Base in a Scale of 1:25000	FYRO Macedonia
98	S. Eka Wati, Turmudi, Y. D. Sigit Purnomo, A. Rahman, D.A. Susanto	Tactile Atlas, One of Important Tools to Support Spatial Knowledge of Blind People	Indonesia
99	Uglješa Stankov, Michal Klaučo, Vladimir Marković, Daniela Arsenović, Vanja Dragičević	Using GIS to Assess Tourism Impact on Land-Use Changes	Serbia
100	Antoniya Tsarnelova, Stefan Georgiev, Maksimiliana Emilova	A System for Prevention and Early Warning of Fires Outside Urbanized Areas	Bulgaria