

Bulgarian Cartographic Association - Mission and Strategic Development

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SUMMARY

Bulgarian Cartographic Association (BCA) was established on 8th of April, 2011 by forty Bulgarian cartographers and specialist. The main tasks of the Association are: to consolidate and legitimize its members to the public, to participate in and organize national and international events and conferences; to organize a network of institutions to take joint decisions on the development of cartography in Bulgaria; to represent the Bulgarian cartographic society to the international organizations.

The paper describes research and educational projects developed at the Association together with the Laboratory on Cartography at University of Architecture, Civil Engineering and Geodesy, Sofia. The book "Thematic Cartography for the Society", published by Springer is one the best results achieved by the Association. Other important educational results are the organization of several educational courses like a training school entitled: 3D Urban Visualisation. Open Web Technologies. In the end future strategic developments of the Bulgarian cartography are described.

АБСТРАКТ

Българската картографска асоциация (БКА) е създадена на 8 април 2011 г. от четиридесет български картографи и специалисти. Основните задачи на асоциацията са: да консолидира и да легитимира своите членове пред обществеността, да участва и да организира национални и международни прояви и конференции; да организира мрежа от институции, които да предприемат общи решения, относно развитието на картографията в България; да представлява Българското картографско общество в международните организации.

Докладът описва изследователски и образователни проекти, разработени от Асоциацията, заедно с Лабораторията по картография в Университета по архитектура, строителство и геодезия. Книгата "Тематична картография за обществото", публикувана от Шпрингер е един от най-добрите резултати, постигнати от Асоциацията. Други важни образователни резултати са организирането на няколко образователни курсове като школа за обучение на тема: 3D градска визуализация. Отворени уеб технологии. В края са описани бъдещи стратегически разработки на българската картографията.

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1. INTRODUCTION

Eighty national members from all over the world are members of International Cartographic Association (ICA), www.icaci.org. The members are usually the cartographic societies, established as bodies in every country. Several countries have not independent cartographic societies. Cartographers are a part of societies including geodesists, photogrammetrists, surveyors and other closely oriented specialists. The situation was similar in former socialistic countries but after 1989 many of them established their own cartographic societies. The same fact happened in Bulgaria. Bulgarian Cartographic Association (BCA) was chosen for national representative of Bulgaria in the International Cartographic Association in Paris, July 2011 and replaced the Union on Surveyors and Land Managers in Bulgaria (Fig.1).



Fig.1. BCA becomes a national member in ICA, Paris, 2011

2. ESTABLISHMENT

Bulgarian Cartographic Association (BCA) was established on 8th of April, 2011 by forty Bulgarian cartographers and specialist connected to cartography field. They met in Sofia for establishment of BCA. The main tasks of the Association are:

- To consolidate and legitimize its members to the public, state and municipal administration and institutions;
- To represent and protect the interests of its members to the public administration and provide support for its activities;
- To offer motivated and reasoned opinions about changes in legislation on cartographic activities;
- To collect and disseminate information on the development of cartographic activities in Bulgaria;

- To promote and disseminate information on international cartographic activities;
- To assist in further training and to stimulate young cartographers;
- To participate in and organize national and international events and conferences;
- To organize a network of institutions to take joint decisions on the development of cartography in Bulgaria;
- To represent the Bulgarian cartographic society to the international organizations.

The establishment of BCA is approved by Bulgarian law-court and strongly supported by the National Agency for Geodesy, Cartography and Cadastre, Association for Geospatial Information in South-East Europe, many private GIS and cartographic companies, different institutions of Bulgarian Academy of Science and several Universities.

Our members are mapping companies, publishers, academics, researchers, map curators, individual cartographers, GIS specialists, geographers and ordinary members of the public with an interest in maps.

The executive board consists 7 members: Dr. Angelov, A.- manager of Geodetect Ltd.; Prof. Bandrova, T. – president BCA, head of Laboratory of Cartography, University of Architecture, Civil Engineering and Geodesy (UACEG); Col. Gladkov, G. – vice-president BCA, General Director, Military Geographic Service of Bulgarian Army; Ms. Karadjova, E. – General Manager ESRI-Bulgaria, Dr. Silviya Marinova– Secretary BCA, KartGeo Ltd.; Prof. Penev, P., UACEG; Prof. Vatsева, R.– vice-president BCA, National Institute of Geophysics, Geodesy and Geography, Bulgarian Academy of Science (Bandrova T. and Marinova S., 2011). All information about the Association can be seen in web page and Facebook (see Fig. 2).

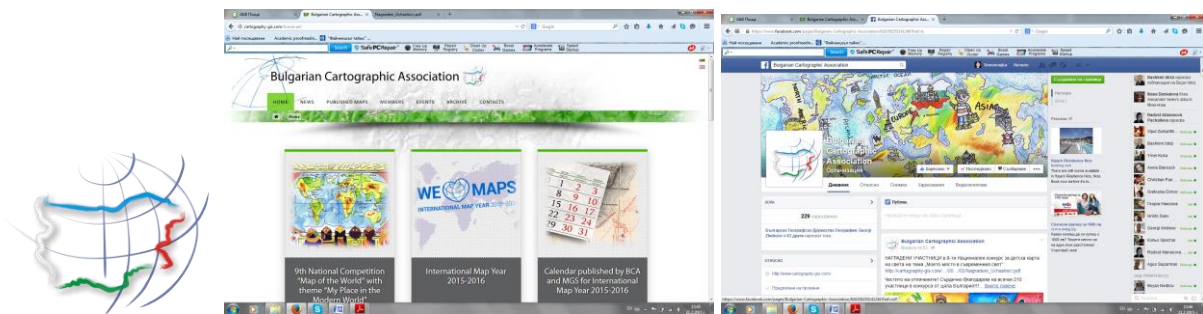


Fig.2. Logo, URL: www.cartography-gis.com and Facebook of BCA,

3. CONFERENCES

3.1 4th and 5th International Conferences on Cartography and GIS in Bulgaria

The 5th edition of the International Conference on Cartography and GIS (ICC&GIS) was organized in Riviera, June 2014 and the previous 4th one took place Albena, June, 2012. The conferences are organized by BCA and UACEG, Sofia. The organizers' aim is to collect knowledge and information about the latest achievements of cartography combined with GIS in the region of the Balkan Peninsula, Europe by adding also global aspects. Another goal is to discover and offer decisions for satisfaction of the ever increasing demands for analyses and visualization of geo-spatial data in the area of science, economy, management, ecology, and crises situations in our modern times at a national, regional and global scale.

The main topics of the conferences are:

- GIS Technologies and Related Disciplines;
- Cartography and GIS in Education;
- Internet Cartography and Digital Atlases;
- Map Design and Production;
- Cartographic Visualization;
- Virtual Geographic Environment;
- GIS for City Traffic;
- GPS Technologies;
- Remote Sensing Technologies.

In these years, marked by social and natural crises, these topics allow us to outline the hunger of our users for cartography achievements. They also show the need of businessmen, government representatives and scientists for real time cartographic representations and better SDI, GPS and GIS solutions. To deliver them, we need support of domain specialists in different branches of the Earth sciences.

During the conferences, different ICA commissions have their annual meetings:

- Cartography and Children,
- Cartography on Early Warning and Crises Management, and
- Map Projection.

Two-day Seminar with EU Cooperation on Early Warning and Disaster / Crises Management is organized by Prof. Dr. Milan Konecny, Chair of Commission on Cartography on Early Warning and Crises Management and ICA President (former) under the auspices of the Czech ambassador to Bulgaria His Excellency Mr. Pavel Vacek and with co-organizer Masaryk University, Brno, Czech Republic.

The conferences are supported by different ministries and government institutions that expect significant results to be achieved and many new projects to be started during the event. As EU member since 2007 and NATO member since 2004, Bulgaria welcomes all ideas for collaboration in the field of Earth sciences. An example for such cooperation is the above-

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mentioned Seminar that has acquired EU dimension built around the Bulgarian and Czech combined efforts. Among the members of the Local Organizing Committee, numerous universities that specialize in the field of Cartography and GIS can be distinguished. The organizers are proud to announce that the following leader companies in geoinformatics and cartography domains participate as sponsors of the event: ESRI, KB Panorama, Intergraph, Bulgarian Geoinformation Company, Chamber of Graduated Surveyors, DataMap-Europe.



Fig.3. Group photo of participants at 5th International Conference on Cartography and GIS, Riviera, Varna, Bulgaria

During the 5th Conference 170 scientists from 42 countries (Albania, Algeria, Armenia, Australia, Austria, Belgium, Brazil, China, Croatia, Czech Republic, Denmark, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran, Israel, Italy, Kosovo, FYRoMacedonia, Malaysia, Mexico, Netherlands, Nigeria, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Spain, Sudan, Switzerland, Turkey, Ukraine, United Arab Emirates, USA, Bulgaria) participated (see Fig. 3).

The 5th Conference was accompanied by exhibitions. All participants and other guests of the hotel complex were enjoyed them. There was a very beautiful exhibition "Discovering Black Sea (II - XIX centuries)", implemented by the Sofia University, Primorsko Municipality, "Primorsko Club" Ltd., International Trade and Cultural Center GEOPAN – Burgas and others and project author Dr. Stefan Peykov. There was great interest to children retrospective exhibition map of the world, part of the national competition "Map of the world Barbara Petchenik." Military geographic service showed the latest published topographic maps of the Bulgarian territories. See more in Bandrova T., 2014a,b.

3.2 26th International Cartographic Conference, Dresden, Germany, 2013

From 25th to 30th August in Dresden city, Germany, near the banks of river Elbe, the 26th International Cartographic Conference took place with over 1,400 participants from 81 countries. 800 papers and posters were presented in five consecutive days on 8 parallel sessions.

The traditional cartographic exhibition of more than 500 maps, atlases, globes and digital products from 35 countries was held. Bulgaria was represented by "GIS-Sofia" Ltd., "Datamap" Ltd., "KartGeo" Ltd., Cartographic studio "DavGEO", "KartProekt" Ltd., and "Geopan" Ltd. Bulgarian representatives at the conference took part in spoken and poster sessions, in chairing sessions, in a meeting of national representatives in the ICA with the Executive Committee, in meetings of the ICA commissions and in the jury for children map competition.

3.3 25th International Cartographic Conference, Paris, France, 2011

During the 25th International Cartographic Conference in Paris, France, Silviya Marinova, Ph.D Student, received a travel award for best report as a young scientist. The costs of her participation in the conference were covered by the International Cartographic Association (ICA).

Cartographic Studio "DavGeo" with a map of Sunny Beach was awarded first prize in the category "Maps for tourism, orienteering and parks" in the International Cartographic Exhibition at the 25th International Cartographic Conference in Paris, France (see Fig. 4).



Fig.4. Bulgarian participation and an award in Map Exhibition, Paris, 2011

4. PROJECTS

4.1 “Thematic Cartography for the Society” and Conference Proceedings

From 2006, every two years, Bulgarian cartographic society has a chance to meet colleagues from all over the world at home and make publications using the best papers from International conferences on Cartography and GIS, organized in Bulgaria.

On 26 September 2014 in Laboratory on Cartography “Prof. Benjamin Cohen” a celebration for newly published book „Thematic Cartography for the Society” by Springer was held (Kotseva V., 2014) (see Fig.5).

The book contains 357 pages and has 131 illustrations. It was published in printed version with hardcover and as an e-Book. It is available in springer.com/shop

Proceedings are available in printed or e-versions in http://cartography-gis.com/archive_en/ and from last two conferences are indexed in ISI Web of Science database maintained by Thomson Reuters and Scopus.

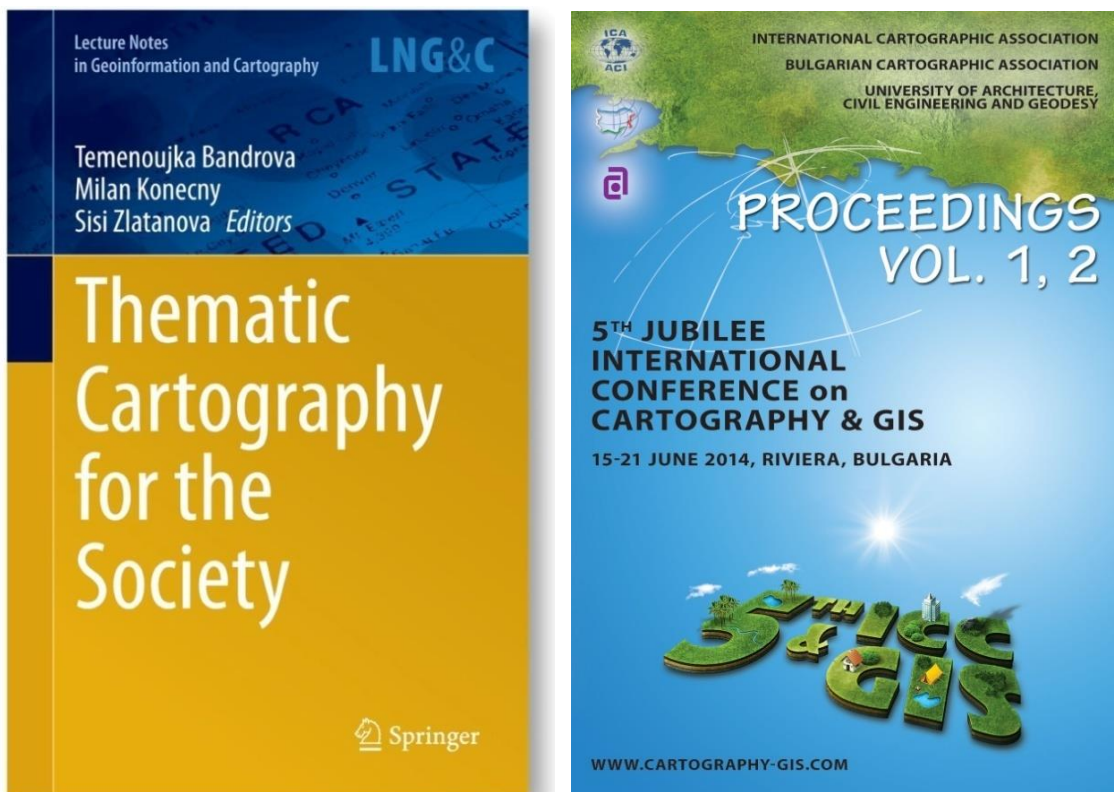


Fig.5. Book and Proceeding from 5th ICC&GIS (BandrovaT. et al., 2014)

4.2 New map of Strandja mountain

In implementation of the cross-border project „Strandja/Yildiz the Mountain is without Fires“ it has been designed and constructed a map in scale 1: 100 000 of over 13 100 km² forest area covering the area of the state border between the Republic of Bulgaria and the Republic of Turkey along 182 km.

The map depicts the relief, the hydrography, the settlements, the road network and the administrative boundaries of the territory of both countries. Its specific content indicates the boundaries of the Bulgarian and the Turkish forestry enterprises, the classes of fire hazard of the forest areas within the scope of the project, the specialized services and the constructed fire fighting infrastructure, the protected areas and the objects that attract a lot of visitors including migrants which increase the fire hazard in Srandja (ECOPAN, 2014).

5. EDUCATION

BCA supports educational courses organized in cooperation of GI companies or colleagues from ICA and as well as of Erasmus teachers exchange frame. Other support is directed to PhD students in cartographic field. As it was mentioned in point 3.3., in 2011, one of our PhD students received ICA travel award for her paper, presented in ICC, Paris.

5.1 Educational courses

5.1.1 Bulgarian Cartographic Association: co-organizer of the training school on 3D Urban Visualisation. Open Web Technologies

In 2012, on the occasion of the 70th anniversary of the University of Architecture, Civil Engineering and Geodesy, University of Technology, Delft, the Netherlands, Bulgarian Cartographic Association and Laboratory on Cartography, organized a training school entitled: 3D Urban Visualisation. Open Web Technologies. The course lasted 40 hours and the keynote speaker was Assoc. Prof. Dr. Sisi Zlatanova, TU Delft (see Fig.6).



Fig.6. Discussion during the Course with lecturer Sisi Zlatanova

In this course Open Web Technologies have been presented to the students. They used City GML and gathered data for building of the University by evacuation plans and simple measurements. The constructed model was represented in LoD4. More information about technologies and software can be found in many of Zlatanova publications, for example (Zlatanova S et al, 2008). Students have been divided into groups by 3-4 people and worked together in different steps of model creation. Last group was responsible for visualisation.

5.1.2 GIS Panorama course

A course on GIS Panorama was held in Laboratory on Cartography, University of Architecture, Civil Engineering and Geodesy. Teachers and PhD students participated. The course tutors were Yana Angelova and Angel Angelov from Geodetect Ltd. The software was given free for educational needs to the Laboratory on Cartography, UACEG. More about the software can be found in Belenkov and Angelova, 2012.

5.1.3 Intergraph Geomedia Course at Laboratory on Cartography, UACEG

The course was organized by Bulgarian Cartographic Association, TechnoLogica and Hexagon on 15 – 16 December, 2014 at the Laboratory on Cartography, UACEG. The theme

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was “Analysis and processing of satellite images using Intergraph Geomedia software for cartographic purposes”

The lecturer was Vladimir Filipov from TechnoLogica GIS department and the participants were students of Specialization of Cartography and young teachers.

BCA prepares certificates for all participants and lecturers of the organized courses.

5.2 PhD theses

There are several PhD students that studying cartography and master students in cartography is growing up every year. In the moment there are 26 students like Cartography specialization, coming from Geodesy field.

PhD students have modern topics on which they are doing their researches:

Denitsa Savova develops a PhD theses on the theme “Cartographic Modelling of Natural Disasters - modelling of forest fire phenomena”, Imer Kuka from Kosovo – “GPS and GIS techniques in cartographic analysis and applications”, Nadka Stoimenova – “Thematic mapping and visualization of climate changes”. All they and others are still in the process of researches and their defences will be happened next years.

Educational and scientific degree Doctor in Cartography was awarded to Silvia Marinova, General Secretary of Bulgarian Cartographic Association in January, 2015. Her topic was “Thematic Mapping and Visualization for Early Warning and Crises Management”.

6. PROMOTION OF CARTOGRAPHY

6.1 Bulgaria became a member of Group on Earth Observations (GEO)

Bulgaria was officially accepted as a member of GEO during the XI Plenary Session held in Geneva, Switzerland (<http://earthobservations.org/members.php>). For this positive result, scientists from BCA, UACEG and AGCC (Agency of Geodesy, Cartography and Cadastre) worked and prepared the documents necessary for Bulgarian and GEO administrations.

A statement by the Republic of Bulgaria at Eleventh Plenary Session of GEO in Geneva, Switzerland, was presented by Assoc. Prof. Lyubka Pashova and Valentin Yovev.

6.2 Young Scientist Award

BCA created the Young Scientist Award for the best paper, presented by young scientist during the 5th International Conference on Cartography and GIS. An independent jury (Dr. Lyubka Pashova, Bulgaria; Dr. Rufino Perez, Spain and Dr. Radosław Dukaczewski, Poland) made very precise estimation of full papers and presentations of 29 young scientists and PhD students from all over the world. The winners were announced – two PhD students: Naiara

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Aginako and Kremena Boyanova. This competition will be organized also for the future ICC&GIS conferences.

6.3 8th and 9th National Competitions for children world map “My place in today’s world”

An exhibition of 103 and respectively 210 children’s drawings – maps of the world was held at the University of Architecture, Civil Engineering and Geodesy in 2013 and 2015. The drawings participate in the 8th and 9th National Competition for children’s world map “My place in today’s world“, organized by the Bulgarian Cartographic Association. The winners were rewarded in a special ceremony with cocktail and tricks show.

The competition is very popular in Bulgaria. Very often the regional schools organize their own competitions and later they send to National one the best drawings. BCA contributed to the International events with a poster (sponsored by ICA) for Barbara Petchenic Competition. The children drawings used for Poster design were scanned by Jeet Atwal, Canada. The poster designer is Aneliya Yotova, former BPC participant from Bulgaria (see Fig.7).



Fig.7. Poster and awarded children, participated in Barbara Petchenic Competition, 2015

6.4 Naming the Laboratory of Cartography to Prof. Dr. Benjamin Cohen – honourable Bulgarian scientist and professor of cartography (1930 – 2003)

The memory of Professor Benjamin Cohen was honoured by Geodesy Faculty members (University of Architecture, Civil Engineering and Geodesy, Bulgaria) and representatives of the Bulgarian cartographic community. Special memorial plaque was presented in the Department of Photogrammetry and Cartography, UACEG, Sofia. The tribute to Professor Cohen was supported by a presentation of his life story and work achievements. Many members of the cartography and geodesy communities shared their memories and expressed gratitude to the remarkable scientist. Professor’s Cohen family attended the event and invited the guests on a memorial cocktail.

6.5 Calendar published by BCA and MGS for International Map Year 2015-2016

During the International Map Year 2015-2016 year each member of Bulgarian Cartographic Association receives as a gift a badge of belonging and a calendar – a special edition of the BCA and Military Geographic Service (MGS). The calendar is designed for 2015 and 2016 and contains 12 colourful children’s drawings participating in the national competition “Map of the World” and 12 unique maps of ancient Bulgarian territories supplied by MGS.

The calendar is designed by Stefan Bonchev, engineer at Laboratory of Cartography, UACEG and a member of BCA. It is published by BCA and printed by Military Geographic Service in Troyan city, Bulgaria (Fig.8).



Fig.8. Bulgarian Calendar published by BCA and MGS for International Map Year 2015-2016

6.6 Awards of Merit to the Bulgarian Cartographic Association

By the decision of the Executive Board of BCA Prof. Milan Konecny, Czech Republic and Prof. Miljenko Lapaine, Croatia were awarded by special bronze statuettes for their contribution to the creation and development of BCA and cartography in Bulgaria. They helped a lot during the establishment of the organization with their personal and organizational experience and ideas for promotion of cartography on national level.

6.7 Award for Successful Evacuation

At the end of the gala dinner of the 5th ICC&GIS, June, 2014, an unexpected natural disaster happened, which forcing all involved in the gala dinner the overnight and almost all day in this place. 19.06.2014 was a black day for Varna and Bulgaria. Big floods after a big storm

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and heavy rains led to the elevation of the level of the Batovska River by 5 meters. The Big wave and unceasing rain didn't allow us to go back to the hotel. The roads were destroyed. Nearly 100 people without life-saving medicines and necessary belongings for asthmatics, allergy and adult participants were isolated in this area. We had to save the insufficient food available to the restaurant. It was a crisis situation in practice in line with ongoing Seminar at the Conference. After repeated attempts to find a way to resolve the situation and to evacuate participants, Bulgarian army did this that nobody else could do. Two military helicopters came to the rescue people in this bad situation. We express extreme gratitude for this assistance to participants in the conference: Colonels Gladkov, Danchev and Markov from the Military Geographic Service and the Minister of Defense Mr. Angel Naydenov. The crews of both helicopters will be awarded by the Bulgarian Cartographic Association with certificates.

BCA President Prof. Bandrova and BCA Vice-president Col. Gladkov presented awards to the crew members of the helicopters from Krumovo military airbase. 92 participants in the 5th International Conference on Cartography and GIS were successfully evacuated after spending a night in a flooded area near to Varna, Bulgaria.

6.8 Laboratory of Cartography, UACEG on YouTube

YouTube channel of Laboratory of Cartography, UACEG was created in help of education on cartography (<https://www.youtube.com/user/CartographyLab>). The students are encouraged to create video-presentation on cartographical topics: Modern cartography, How to read and make orientation on topographic maps, Development of Cartography and others. The aim for students is to learn how to make a video and represent their work and on the other side the same videos can be used by younger students or students in schools, learning Geography. Video materials connected to the activities of BCA can be also found in the same channel.

6.9 GIS day Anniversary

Bulgaria celebrates the anniversary of GIS Day every last 16 years. Organizers of the event are ESRI Bulgaria with the cooperation of GIS Varna, Bulgarian Geoinformation Company and GIS-Sofia (www.gisday.com). BCA is also one of supportive organizations. During this day, map exhibitions are very often organized. Members of BCA are usually members of jury for estimations of the best maps in different categories.

7. FUTURE ACTIVITIES AND CONCLUSIONS

7.1 Advertisement of International Map Year

During the meeting of members of BCA, ideas about advertisement of International Map Year (IMY) were discussed. One of them was to mention IMY with the logo in every cartographic product published in 2015-2016. The ICA approved the idea with some special conditions like the publisher to be a member of BCA and others.

Other idea was for publishing of special thematic issue of a postage stamp. BCA send a request to responsible institutions. Ministry of Transport, Information Technology and Communications has a decision to make an issue of a postage stamp dedicated to the International Map Year 2015-2016 next year.

7.2 Standards for Bulgarian Cartography

By the suggestion of Assoc. Professor George Zhelezov from Bulgarian Academy of Science, the 5th ICC&GIS adopted a Declaration on the integration of professional qualifications and experience to prepare the project for development of international cartographic standards to support initiatives INSPIRE, OGC and ISO management of spatial information.

In one of the main statements of declaration is declared the following: “We suppose that it will be a “long running” process, involving many different specialists. We hope that we will attract also other specialists for common cooperation. We have ten years of experience from integrated work in the conferences from Borovets (2006) to Riviera (2014). Our real forces are based on the good coordination and participation of a wide spectrum of specialists and enthusiasts who share similar interests in the cartography and GIS generally, and especially in the early warning and crises management”.

Other important topic is connected to the developing of “Strategy to development of geodesy and cartography in Bulgaria”. The project was organized by the National Agency for Geodesy, Cartography and Cadastre. BCA members participated in developing cartographical concepts.

One of the main tasks of BCA is to help the development of Bulgarian cartography as support of its members. Because of this a Declaration of Bulgarian Cartographic Association on copyright compliance for cartographic works was accepted. There is mentioned that “BCA will defend members’ rights - legal entities and individuals in violation of their copyrights to the various private, state and international institutions. Bulgarian Cartographic Association is ready to offer experts in every case occurred.”

Another important activity is preparation of an opinion on the Bulgarian Cartographic Association on the draft Regulation on large scale topographic map (LSTM). In the text it is mentioned that “in the drafting of regulation for LSTM is not accepted approach for discussion in the professional community. A broad professional discussion would lead to clear the controversial texts. Our belief is that the LSTM should be linked to GIS and Bulgaria must comply with the requirements of the European directive INSPIRE. The idea is that LSTM should be made in a single coordinate system.”

We need standardization not only in LSTM but in different kinds of cartographic products. Our aim is step by step to achieve better products to our so large spectre users.

REFERENCES

- Bandrova T., Marinova S. (2011) Report on Bulgarian Cartographic Association 2007-2011, Paris, ICC, pp.97, http://icaci.org/files/documents/national_reports/2007-2011/Bulgaria.pdf, available 08. 02. 2015
- Bandrova, T., Konecny, M., Zlatanova, S. (Eds.) (2014) Thematic Cartography for the Society ISBN 978-3-319-08180-9, Series: Lecture Notes in Geoinformation and Cartography, XV, 357 p. 131 illus. ISSN 1863-2246 ISSN 1863-2351 (electronic) ISBN 978-3-319-08179-3 ISBN 978-3-319-08180-9 (eBook) DOI 10.1007/978-3-319-08180-9 Springer Cham Heidelberg New York Dordrecht London
- Bandrova T., (2014a) Vth International Conference on Cartography and GIS, Bulgarian Cartographic Association, Sofia, Bulgaria, <http://www.cartography-gis.com/docsbca/> (available on 21.02. 2015).
- Bandrova T., (2014b) Bulgarian Cartographic Association hosts 5th Jubilee International Conference, Geomedia, No 5, 2014, pp. 22-25.
- Belenkov O., Angelova Y. (2012) Technology for Publishing of Spatial Data in Geoportals. Geomedia, Bulgaria, <http://www.geomedia.bg> (available on 21.02. 2015)
- ECOPAN (2014) Strategy to prevent and combat forest fires in Bourgas Region, Republic of Bulgaria and Kirklareli Region, Republic of Turkey, pp.144
- Kotseva V. (2014) Bulgarian Editors of Springer Cartographic Publication, Geomedia, Vol 6, pp. 57-58, Sofia, Bulgaria, ISSN: 1313-3365
- Zlatanova S, Itard L, van Dorst M (2008) User Requirements for Virtual Environments Used to Model Buildings at the Urban Scale. IBPSA-NVL 2008 Event, Eindhoven, Nederland – Paper ID:19.

BIOGRAPHICAL NOTES



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