



FROM THE BESTSDI NEWSLETTER TEAM



Dear colleagues

We present a new issue of the magazine "BESTSDI Newsletter". We are still gathered around the idea to disseminate project information and communicate results with a broad audience. This magazine provides information about our activities, events, results and activities tied to a project undertaken by project partners. It will be released within the frame of Dissemination and Exploitation Work Package and Task Group Communication prepared by the Editorial board.

The main events covered by this issue are the 8th and 9th BESTSDI Workshops in Tirana and Prishtina. With special attention, we also present the 8th BESTSDI Mini Workshop held in Zagreb.

From our great partners we got interesting presentations of their universities and faculties for our regular rubric "Partner Presentations". Presentations come from Tuzla and Sarajevo.

As before, in the section "Related Events and Conferences", we provide information about a lot of events that have disseminated more information about the BESTSDI project. Our colleagues presented this project on all important meetings related to Spatial Data Infrastructure, as well as in certain magazines, throughout partner countries.

We thank all authors for their excellent articles and, at the same time, we invite other colleagues to join us and be the part of the Newsletter in all subsequent issues.

The best regards!

Slavko Vasiljević,

Faculty of Architecture, Civil Engineering and Geodesy,

University of Banja Luka

Editor-in-chief



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More information at: www.beststdi.eu.



Project Body Meetings

4th Project Management Board meeting in Tirana



The most relevant topic on PMB agenda was analysis of EACEA received comments and recommendations on Mid-term report and preparation of respond. The discussion has focused on actions which have to be undertaken so that project reaches set wider and specific objectives and successfully comes to end. The establishment of Ad-hoc task group which should assure compliance with project objectives has been elaborated and composition of sub-groups has been discussed. Another important point of discussion were comments and initiatives given by Project Advisory Committee. PMB accepted initiative that project runs in cooperation with EuroSDR Europe-wide survey on needs and expectations of business and governmental sector (stakeholders) from academic sector in development of SDI.

During Q8 workshop in Tirana, 4th Project Management Board meeting has been held. The meeting was attended by 12 out of 16 members of PMB and colleagues reporting about specific issues. At the meeting findings from first Project Advisory Committee evaluation and 5th project monitoring and risk evaluation report have been presented, several deliverables adopted and coming activities reviewed.



Željko Bačić

5th Project Management Board meeting in Prishtina



During Q9 workshop in Prishtina, 5th Project Management Board meeting has been held. The meeting was attended by 12 out of 16 members of PMB and colleagues reporting about specific issues. Focus of this PMB meeting was about achieving wider and specific outcomes of our project. Ad-hoc task group, which has been established at the workshop in Tirana, activities have been reviewed and further actions agreed. Same goes for research analysis about business – academia relations and looking for ways how to improve them, which will be conducted during year 2019 together with EuroSDR. It will create additional work but expected results should substantially contribute to achievement of project outcomes.

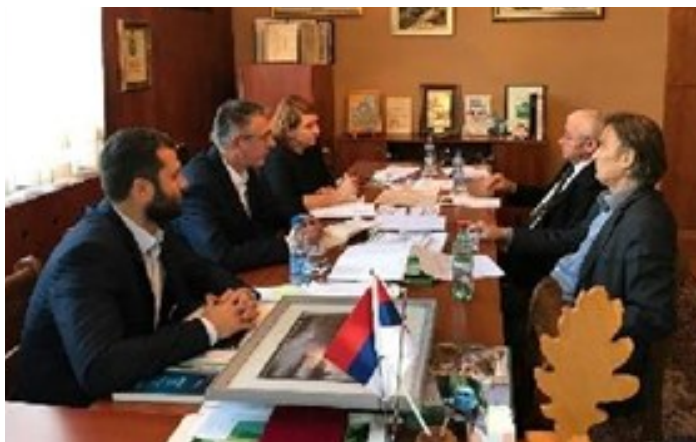


New round of project evaluations (for year 2) has been discussed and time table has been defined with the goal to finish both internal and external evaluation report by end of 2018. PMB has also adopted six deliverables and five event minutes, closed four tasks and defined line of action till Q10 workshop in April 2019. It has also been agreed to hold 6th PMB meeting via conference call at the end of January/beginning of February 2019.

Željko Bačić



Project office visit to partners at Faculty of Forestry in Belgrade



On November 8th, 2018 Project office representatives Prof. Željko Bačić and assist. prof. Vesna Poslončec-Petrić visited partners at Faculty of Forestry, University of Belgrade.

Project office team met first with Faculty of Forestry project team Prof. Milorad Janić, Mr. Dragomir Grujović and Aleksandar Anđelković discussing project execution issues, especially financial management and delayed procurement of equipment. This meeting was introduction for meeting with Faculty Vice-Dean for Science and International Cooperation Prof. Mirjana Šijačić-Nikolić. At the meeting status of BESTSDI project has been reviewed and open issues discussed. Need for preparation of premises for SDI-lab have been presented and agreement achieved how this will be handled on the Faculty.

Next meeting was held on University of Belgrade Faculty of Civil Engineering. Project office team and Prof. Milorad Janić informed colleagues from the Faculty of Civil Engineering lead by Prof. Ivan R. Aleksić and Prof. Branko Božić about BESTSDI activities and proposed collaboration on new project which we intend to submit for Erasmus+ call 2019. It followed with fruitful discussion and conclusion on mutual willingness to participate in new project proposal.



Last meeting was held at the Rectorate of University of Belgrade with Prof. Nenad Zrnić, Vice-Rector for International Cooperation and Mrs. Tamara Rokvić from University International Relations Office.



Project office representatives, Prof. Milorad Janić and Mr. Dragomir Grujović presented status of BESTSDI project and issues which are asking for additional engagement of all parties (financial management and procurement of equipment). Full agreement has been achieved on steps which have to be undertaken to remove present obstacles in financial management and finalize procurement.

Željko Bačić, Vesna Poslončec-Petrić



Project office visit to partners at Faculty of Mining, Geology and Civil Engineering in Tuzla



On November 7th, 2018 Project office representatives Prof. Željko Bačić and Assist. Prof. Vesna Poslončec-Petrić visited partners at Faculty of Mining, Geology and Civil Engineering, University of Tuzla.

First meeting was held with the Rector of the University in Tuzla, Prof. Nermina Hadžigrahić and project team from Faculty of Mine, Geology and Civil Engineering lead by Dean Prof. Kemal Gutić, prof. Indira Sijerčić and Prof. Mirza Ponjavić. Project office expressed satisfaction with the contribution of the University of Tuzla team and presented activities in Y3 of project lifetime.

Proposal of future projects has been presented and discussed with the emphasis on strategic goals and needs of University of Tuzla and Faculty of Mine, Geology and Civil Engineering in particular.



Visit followed with sightseeing of established SDI-Lab for which equipment has been purchased through the BESTSDI project. The sightseeing was also used for further discussion about the activities on the BESTSDI project and new project proposals.

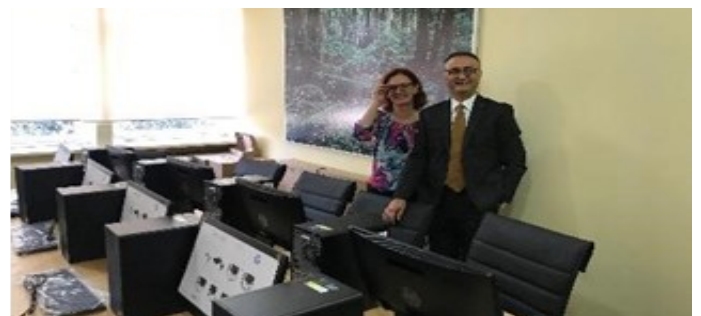
Željko Bačić, Vesna Poslončec-Petrić

Project office visit to Project partners in Tirana

On October 4th and 5th, 2018, Project office representatives Ass. prof. Vesna Poslončec-Petrić and Zvonimir Nevistić visited project partners in Tirana and met in several meetings with prof. Bilbil Nurçe at Faculty of Civil Engineering, Polytechnic University of Tirana, dean prof. Leonidha Peri, prof. Spiro Grazhdani and prof. Ilirjan Myteberi at Agricultural University of Tirana and with prof. Edmond Hoxha from Faculty of Geology and Mining, Polytechnic University of Tirana. All three meetings had same agenda, and the focus of all of them was the installation of new equipment and the opening of SDI laboratories. At Faculty of Civil Engineering PO visited current computing room and also a lecture room where a new SDI laboratory will be established. All equipment was purchased, and it will be installed until the beginning of the new academic year. At Agricultural University ICT equipment which was planned to be obtain is already temporarily installed in room next to Dean's office and resettlement in the SDI laboratory is in progress. The GNSS equipment procurement must be repeated.

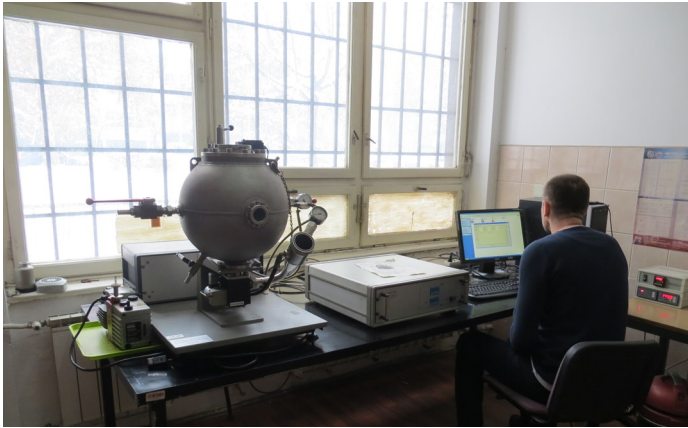
At Faculty of Geology and Mining ICT equipment has been purchased and it will be installed in short period. Other topics that have been discussed are related to Implementation of SDI curriculum. All three faculties have added certain SDI topics in the courses (some of them are new courses) and their implementation starts from this academic year. Also, financial documents were discussed with each partner, as well as co-operation and ideas for some future projects that all partners of the meeting are interested in.

Zvonimir Nevistić, Vesna Poslončec-Petrić



Partner presentations

University of Tuzla - Faculty of mining, geology and civil engineering



Faculty of Mining, Geology and Civil Engineering is a higher educational institution within the University of Tuzla. The Faculty organizes and conducts academic studies while engaging in the scientific work in the domain of engineering sciences including the scientific fields of mining, geological engineering, civil engineering and safety studies.

The Faculty was founded in October 1960 as Faculty of Mining in Tuzla, as a part of University of Sarajevo. During six decades of work, the Faculty beside educational, grew into scientific institution that achieved numerous significant domestic, European and international projects that contributed to the development of Bosnia and Herzegovina economy, mining, geological and civil engineering profession and science.

The Department of Applied Geology has been founded during academic year 1973/74 and Faculty of Mining grew into the Faculty of Mining and Geology. Department was founded during period when geological science reached an enviable level and when the geologists in former country achieved great results. At that time, with the affirmation of geological science in the Tuzla basin, modern mining has been affirmed in Bosnia and Herzegovina.



The Faculty of Mining and Geology became a member of the University of Tuzla with its foundation in 1976. In 1977, the Faculty became one of the three basic organizations of joint work of the Institute of Mining and Geology and Faculty, within the complex organization named Tito's Coal Mines - Tuzla. An educational-scientific process was carried out at the Faculty, and at the Institute for Mining Research, teachers and associates, through joint teams, was engaged in scientific research. This model did not give the expected results, and in January 1990, the Faculty was constituted as an independent organization within the University of Tuzla.

Department for Civil Engineering was founded in the academic year 1998/99 and the Faculty got its name today. Department of Bore-hole Exploitation of Mineral Resources was founded in the academic year 2000/01, while Safety Studies were established in the academic year 2004/05, and today's scientific and teaching activity of the Faculty is organized through five study departments and 15 scientific fields.

After signing the Bologna Declaration and General higher education reforms in B&H, classes at the Faculty were organised at the first cycle of studies since academic year 2003/04 and at the second cycle of studies since the academic year 2012/13 on all study programs. The third cycle of studies started from this academic year on three study programs.

At the Faculty (July, 2018) 3899 diplomas has been obtained: 2702 graduated engineers and 609 bachelors of engineers, 12 specialists, 351 masters of science and 77 MSc, and 148 doctors of science. Our three professors have been elected as full members of the Academy of Sciences and Arts of Bosnia and Herzegovina: two in the field of Geology, and one in the field of Mining.

Rejhana Dervišević



University of Sarajevo - Faculty of Civil Engineering

The Technical Faculty in Sarajevo was established in 1949 and had two departments; one for civil engineering and the other for architecture. In 1961, the Technical Faculty in Sarajevo was reorganized and new four faculties were established, those being Faculty of Civil Engineering, Faculty of Architecture, Faculty of Electrical Engineering and Faculty of Mechanical Engineering. The Faculty of Civil Engineering in Sarajevo is the oldest and the largest institution of higher education in this field in Bosnia and Herzegovina.

The Faculty of Civil Engineering delivers education at an undergraduate, graduate and postgraduate level in all civil engineering branches. Bachelor study program is organized in four modules: Constructions, Hydraulic and environmental engineering, Traffic Infrastructure and Geodesy. Master study is similarly organized with the same study modules.

The Faculty of Civil Engineering actively participates in the development of the civil engineering profession and implementation of new technologies. It has been continually developing and implementing numerous programs all with the goal to have highly educated and creative professionals capable of conducting managerial and leadership roles in their professional careers.

The Faculty started with post-graduate studies already in the academic year 1963/64. Until the present day, the Faculty has granted 71 students with a degree of Master of Science and it has awarded more than 50 students with a degree of Doctor of Science. The Faculty has taken the year of 1949 as its founding year and celebrates the Day of the Faculty on December 8.

Almost 5,000 students have obtained their engineering degrees from this institution. They all have become highly esteemed engineers, respected throughout Bosnia and Herzegovina and abroad. Many of them have attained international reputation either by their involvement in significant construction works or by their contribution to science. There has been always a high demand for this profession and until now, unemployment has never been registered.

Education and research activities are organized into 4 departments (by scientific fields):

- Department for Materials and Structures
- Department for Hydrotechnics and Environmental Engineering
- Department for Roads and Transportation Engineering
- Department for Geodesy and Geoinformatics

There are also five Institutes, that are engaged in/ carrying out research and consulting services, which are connected to the departments:

- Institute for Materials and Structures,
- Institute for Hydrotechnics and Environmental Engineering,
- Institute for Transportation Infrastructure,
- Institute for Geodesy and Geoinformatics, and
- Institute for Geotechnics and Geology.

The scientific research and expertise work of the institutes is conducted through preparing research projects and topics, designing, preparation and revision of investment and technical documentation; preparation of studies, expertise, laboratory and field testing. In addition to formal education advancement, the institutes perform services that are vital for the development of Bosnia and Herzegovina. Our clients are ministries of transportation and communication, spatial planning, environment, water, industry, local government in municipalities, public and private companies, etc.

Suada Džebo



Project Events and Conferences

8th BESTSDI project workshop in Tirana



From 10th-12th September 2018, in Tirana was held 7th Erasmus + Ka2 CBHE BESTSDI workshop organized by Faculty of Civil Engineering and Faculty of Geology and Mining from Polytechnic University of Tirana and Faculty of Forest Science from Agricultural University of Tirana. The workshop was attended by 40 participants who examined the Spatial Data Infrastructure curriculum developed under the project and it's implementation at partner Faculties during the academic year 2018/2019. Also, the continuation of cooperation after project completion was discussed considering the consortium agreement and project proposals for the new project period.

In addition to the workshop, a meeting of the Project Management Board was held in Tirana, which discussed progress of the project, management and financial issues as well as immediate tasks. A meeting of the Project Advisory Board was also held, with the presence of representatives from Real Estate Cadaster Agency from Macedonia, Republic Srpska Geodetic Administration and Federal Geodetic Administration of the Federation of Bosnia and Herzegovina from Bosnia and Herzegovina, Statens Kartverk from Norway and Lantmäteriet from Sweden. On the meeting, results of the project report evaluation were presented and specific and wider project results that are to be achieved were perceived.

Željko Bačić, Vesna Poslončec-Petrić



8th BESTSDI mini workshop in Zagreb

Since four partners from Bosnia and Herzegovina (University of Banja Luka, University of Mostar, Faculty of Civil Engineering University of Sarajevo, and University of Tuzla, did not attend Q8 BESTSDI workshop in Tirana, and due to the importance of the topics presented and discussed at the Tirana workshop, Project office has decided to organize mini workshop in Zagreb to which partners absent in Tirana were invited.

We used occasion that 10th NSDI and INSPIRE Day and 14th International conference on Geoinformation and Cartography was organized in Zagreb 27th-29th September 2018, bringing also to Zagreb representatives from KU Leuven and University of Split; Faculty of Civil Engineering, Architecture and Geodesy.

Main topics of this workshop was to inform participants about the discussions and decisions made at the Q8 workshop in Tirana, in particular about:

- project execution: procurement, reporting, financial, management, dissemination,
- curricula implementation and LLL courses,
- quality assurance,
- new project proposals and
- preparations for the next workshop in Pristina.

Vesna Poslončec-Petrić



9th BESTSDI workshop in Prishtina

9th BESTSDI workshop has been held on November 26th-28th, 2018 at University for Business and Technology, Central Building, Lagjia Kalabria, Prishtina, Kosovo.

The official opening of the works of this workshop was done at 13:00h, by prof. Edmond Hajrizi, president of UBT-Higher Education Institution. In his speech, prof. Hajrizi welcomed and thanked all the participants in this workshop. Professor. Hajrizi made a brief presentation on the development and progress achieved by UBT in providing conditions for professional education of new generations at national and wider level. He stressed that UBT is now a top-level leader in the country and region, offering high and standardized levels of education, research and scientific innovations. Also prof. Hajrizi expressed gratitude to the University leaders, project leaders and to all partners, stressing that this is one of the best models of how to coordinate and cooperate in the advancement of knowledge, science, innovation, etc. Prof. Edmond Hajrizi said that the project and its implementation is of multidimensional benefit and its visibility is now present in the development of UBT. At the conclusion of his speech prof. Hajrizi emphasized once again that UBT is one of the beneficiaries of this project and will remain very committed to all stages of development and implementation of this project, and ensures that in the future will be dedicated in cooperation, application and implement them in similar projects with the sole purpose of advancing higher education in the country, region and beyond, emphasizing and congratulating that the workshop works go well and be productive.

In his speech, Chief of Kosovo Cadastral Agency, Mr. Avni Ahmeti emphasized that KCA is closely following the developments related to the National Spatial Data Infrastructure (NSDI and SDI), as this is the legal mandate and responsibility of AKM. Mr. Ahmeti emphasized that KCA so far in the framework of its own developments and support from European Union funds has achieved progress in the collection, system, processing, analysis, and management of many spatial data which are now more visible in the geo-portal created by the KCA. At the end of his speech, Mr. Ahmeti expressed his commitment and offered cooperation for all institutions, especially for higher education institutions, to develop projects aimed at building new cadres that will cover the field of geo-information etc, in Kosovo. Also, at the close of his speech he thanked and wished much success once again for the workshop to be successful.



Main topics of this workshop were activities Implementation of curriculum (TG 2.6) Running the courses to students (TG 2.7), Evaluation of implementation (Task group 2.8), LLL courses (TG 4.2), Exploitation (TG 4.5) and Ad-hoc Task 3.2 Quality Assurance.

Second workshops day, after working session, was the grand opening of the SDI and GIS laboratory in UBT which was a progress and visibility achieved through this project.

The third session was held on a tour visit to the UBT campus. In this case, all participants in the workshop came close to getting acquainted with the progress achieved by UBT for quality education and education in many study programs. At the campus the participants visited the library which is considered one of the richest books in the country and region, then all the laboratories visited and eventually visited a UBT University Polyclinic. Participants express their appreciation for UBT's achievements in advancing higher education in Kosovo by comparing it with the many universities in European Union countries.

After the camp site visit, as planned on the agenda all the participants of the workshop travelled to Prizren for a visit to "Ukshin Hoti" University. There participants were met by the dean prof. Samedin Krrabay, and staff members Ercan Canhasi, Zirije Hasani and Jasmin Jusufi. For the workshop participants at this university there was a presentation given by E. Canhasi that concerned the achievements of the SDI at this University and the benefits that University has had throughout this period of implementation of the project. After the presentation, questions and comments the workshop closed its second day of the works.

*Naim Preniqi,
Željko Bačić & Vesna Poslončec-Petrić*



Related Events and Conferences

Book review – Basics of Spatial Data Infrastructure

The book *Osnove Infrastrukture prostornih podataka* (Basics of Spatial Data Infrastructure) is a result of joint effort by authors Slobodanka Ključanin from University of Sarajevo, Faculty of Civil Engineering and Vesna Poslončec-Petrić and Željko Bačić from University of Zagreb, Faculty of Geodesy. The book is published in Croatian in 2018 by Dobra knjiga, Sarajevo, as paperback B5 format with 166 pages, 35 figures in colour and 5 tables.

The content of book is divided in 6 main chapters, glossary of 114 terms, 76 references and 53 Internet resources. Chapters are:

1. Introduction to spatial data infrastructure,
2. Spatial data quality,
3. Technologies for access and distribution of spatial data,
4. National spatial data infrastructure,
5. Conforming NSDIs to INSPIRE and
6. Strategy, business model and examples.

Every chapter and subchapter of this textbook starts with motivation questions that introduces reader what is expected to be found in chapter and with expected outcome after reading.

First chapter gives the rationale and background of spatial data infrastructures, also introducing basic concepts that underlay this infrastructure such as spatial data itself, need and obstacles to interoperability and data exchange. Special subchapter is devoted to basic information on European INSPIRE directive, its political and institutional frame and its geoportals.

Second chapter deals with elements of spatial data quality. After brief introduction to geodetic datums, coordinate reference systems and map projections it gives explanation of seven elements of spatial data quality: lineage, geometrical accuracy, attribute accuracy, completeness, logical consistency, semantic accuracy and time information. This subchapter ends with explanation of assessment matrix for spatial data quality.

Third chapter is devoted to technologies. It starts with introduction of spatial databases and its models such as relational, object-oriented, object-relational and semi-structured models. Components (hardware and software) to achieve interoperability follows, and chapter continues with explanation of spatial data network services, namely Web Map Service, Web Feature Service and Web Coverage Services. Access and distribution of spatial data is topic of next subchapter and this chapter ends with introduction to XML and GML.

Fourth chapter is concerned with legal, organizational and institutional aspect of national spatial data infrastructures (NSDI). Typical organizational and institutional setting on national level that consists of NSDI council, working groups, subjects and coordination body of NSDI, is presented. Last part of chapter discusses technological and financial aspects of NSDI.

Fifth chapter deals with processes and components that are required for NSDIs to become conform with INSPIRE directive. It starts with detailed overview and actions that are connected with metadata creation and updating. Issues that arise when it is necessary to ensure data dissemination and sharing, i.e. data harmonization is explained. Final part introduces functions of SDI geoportals.

Sixth, and final chapter is devoted to sustainability of SDIs. Need for strategic approach on all levels (regional, national, local) is stressed. After it, there are 8 examples of business models of SDIs covering world and not only EU and these are: Sweden, Norway, Indonesia, India, Croatia, Macedonia, Slovenia and Great Britain. Final subchapter of this textbook gives examples of spatial data search and view, spatial data analysis and spatial data maintenance.



This textbook is first such textbook in Croatian that gives in one place most relevant elements of SDIs and can serve as textbook for classroom or as self-learning material. The matter is presented in simple and understandable way, avoiding presentation of technological details. That makes this textbook readable and understandable to wide range of professionals and students of different disciplines that are involved in SDI creation, implementation or use. This also ensures that presented matter will not need updates that are related to technological developments.

Congratulations to the authors for making this textbook come to light, with wish that it will find its readers but also that authors will work on its updates in the future.

Dražen Tutić



Ist Day of Spatial Data Infrastructure of Federation of Bosnia and Herzegovina

1st Day of Spatial Data Infrastructure of Federation Bosnia and Herzegovina was held in Mostar on September 6th, 2018. and gathered experts from the field of establishment and implementation of the INSPIRE directive in the EU and in the region, employees of the Federal Administration for Geodetic and Property Legal Affairs and entities of the Spatial Data Infrastructure (SDI) of the Federation of B&H. The SDI Day was opened by the Director of the Federal Administration for Geodetic and Property Legal Affairs and Chair of the Spatial Data Infrastructure Council of the Federation of B&H, Mr. Željko Obradović, highlighting the importance of cooperation between institutions and sharing spatial data.

With presentation Erasmus + BESTSDI project – modernization and standardization lecture of SDI in the region, Prof. Željko Bačić, PhD, presented the BESTSDI project and the activities which are currently being carried out in the framework of the Lifelong Learning Program for the project partners establishment, emphasizing the need to adapt the existing formal and informal education of persons who will be active participants in the SDI.

Slobodanka Ključanin, Željko Bačić, Vesna Poslončec - Petrić



1st Western Balkan Conference on GIS, Mine Surveying, Geodesy and Geomatics

The 1st Western Balkan Conference on GIS, Mine Surveying, Geodesy and Geomatics was held in Tirana (Albania) on 3rd and 4th October 2018. The conference has gathered many researchers, experts, scientists, professors and other people and institutions from the region and Europe for the purpose of discussing and presenting works and innovative research applications for the thematic scientific areas of GIS, remote sensing, geodesy, cartography,



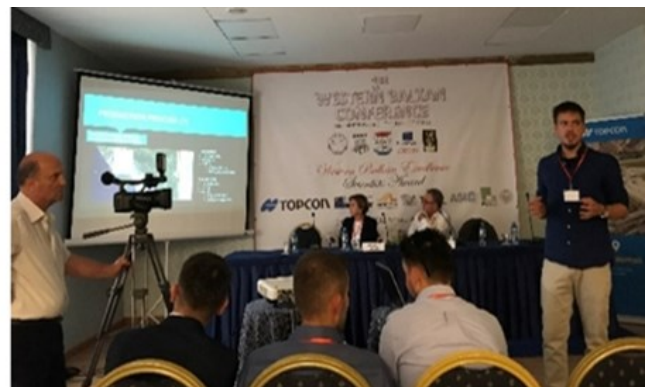
mining, geology and others. The conference was organized by the Faculty of Geology and Mining of the Polytechnic University of Tirana in cooperation with other national institutions and private companies.

Within the 1st Western Balkan Conference on GIS, Mine Surveying, Geodesy and Geomatics also was held Erasmus+ CBHE Modernising geodesy education in Western Balkan with focus on competences and learning outcomes ([GEOWEB](#)) final workshop.

From the Faculty of Geodesy in Zagreb, the conference was attended by: Zvonimir Nevistić, mag. who presented the paper entitled Wildfire mapping with Sentinel – 2 satellite mission data (author: Nevistić, Z, Radanović, M .; Bačić, Ž .; Župan, R.) and doc. dr. sc. Vesna Poslončec-Petrić with the paper Influence of modern spatial data concepts and data collection technologies on economic development (authors: Bačić, Ž .; Poslončec-Petrić, V.).

More about the conference is available at: <https://edinkus.wixsite.com/wbconference2018/about-conference>.

Vesna Poslončec - Petrić



14th International Conference “Geoinformation and Cartography” in Zagreb

By organizing the 14th International Conference on Geoinformation and Cartography the Croatian Cartographic Society and the Faculty of Geodesy of the University of Zagreb contributed to the development of spatial data infrastructure, geoinformatics, cartography, geodesy, geography and associated fields.

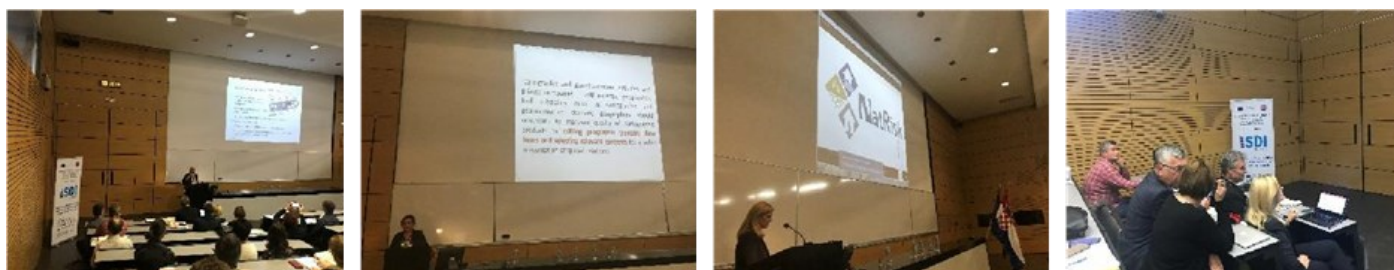
Challenges of curriculum development for SDI, implementation of SDI in study programs and results achieved in this field were some of this year's main topics at the conference on Geoinformation and Cartography. Special thematic session dedicated to ERASMUS+ project BESTSDI and SDI education was held at the conference.

The presentations on this thematic session were:

1. Željko Bačić: Geoinformatics Development Perspectives – Challenges for Academic Society
2. Vesna Poslončec Petrić: BESTSDI Project SDI Curriculum Implementation on Academic Institutions in the Region
3. Dražen Tutić: SDI in Life-long Learning Educational Courses in the Region
4. Slobodanka Ključanin: Introducing New Content to Geodesy Courses at the Faculty of Civil Engineering in Sarajevo
5. Snježana Musa, Dario Šakić: Geoinformatics – A New Study on the University of Mostar as a Platform for Researching Spatial Data Infrastructures
6. Emina Hadžić, Milan Gocić, Slobodanka Ključanin: NatRisk and Spatial Data Infrastructure

This successful conference organized together with SDI Day 2018 Croatia gathered participants involved in many disciplines related to spatial data. It is example of good collaboration and it was a great opportunity to present results and challenges in the field of SDI education that were created and identified during BESTSDI project.

Dražen Tutić

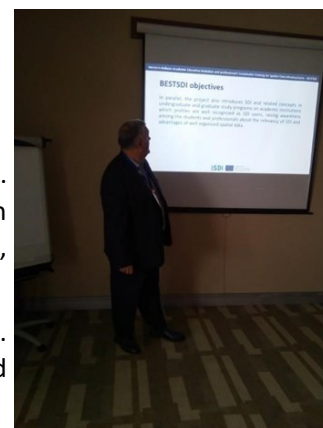


BESTSDI Project presented on the International Conference Green Room Sessions in Podgorica

International Conference Green Room Sessions was held on the 01st-02nd of November 2018. in Podgorica, Montenegro. Conference goals were international scientific discussion on agriculture in general as well as agriculture in conjunction with economics and ecology, technology, rural development, environment and forestry.

Abstract entitled Spatial Data Infrastructure in Green Education by the author team: M. Knežević, M. Čurović, G. Barović, D. Vujačić, V. Poslončec-Petrić and Ž. Bačić is published within the Book of abstracts of the Conference.

It was presented that recognizing global relevance of spatial data and SDI, BESTSDI project consortium gathered faculties providing study programs in geodesy, geoinformatics, geology, geography, mining, civil engineering, agriculture and forestry. At the University of Montenegro Biotechnical Faculty in Podgorica and Faculty of Philosophy in Nikšić several courses have been modernized with SDI curricula content. Beside the new knowledges and skills introduction of SDI in study programs should improve understanding between professions and support interdisciplinarity. General information about BESTSDI project, its goals and expected results as well as information about implemented SDI courses are presented by Mirko Knežević.



Mirko Knežević & Milić Čurović

BESTSDI project presented on FIG 3 Workshop in Naples

Prof. Ulrike Klein and Prof. Dražen Tutić presented BESTSDI project at International Federation of Surveyors (FIG) Commission 3 Workshop and Annual Meeting “Spatial Information in the Era of Data Science: Challenges and Practical Solutions”, December 3rd-6th, 2018, Naples, Italy. The presentation titled “Wishes and Realities in SDI Education – a Practical Example from the Western Balkans” focused on the requirements and development of educational materials that were done in the first two years of BESTSDI project.

Ulrike Klein



Bodrum Conference in Turkey

From 09th to 12th October 2018, the 4th International Conference on Natural and Engineering Sciences (ICNES) was held in Bodrum – Turkey (<http://icnes.gen.tr>), organized by Nobel Science and Geo-SEE Institute. Spatial Data Infrastructure was in a focus of conference, while the key note speech given by invited speaker Bashkim Idrizi was “Necessity of SDI in natural and engineering sciences”.

Within the conference, member of project consortium from Kosovo prof. dr. Bashkim Idrizi performed a presentation on BESTSDI project entitled “Towards development of SDI curriculum – BESTSDI project”, prepared with prof. dr. Zeljko Bacic and prof. dr. Vesna Poslončec-Petrić, in which information for project objectives, activities, consortium and expected outcomes have been given.

Bashkim Idrizi



Copernicus Academy & Relay General Assembly in Brussels



In organization of Copernicus Support Office and European Commission bodies in Brussels at the Brussel Docks Copernicus Ecosystem Workshop and Copernicus Academy and Relay General Assembly have been organized from 9th – 11th October 2018. The Copernicus Ecosystem Workshop has been held on 9th and 10th of October and gathered some 300 participants which had opportunity to hear information about the Copernicus program status, development of services and data availability as well as about plans for coming period. Numerous projects and application examples have also been presented. This Workshop has been followed by Copernicus Academy & Relay General Assembly bringing together representatives of Copernicus

Academy and Copernicus Relay institutions from around the world. Results of Academy and Relay partners have been presented, European Commission policy on further uptake of Copernicus data and services as well as new opportunities, actions and projects for Academy and Relay partners have been presented. BESTSDI project was presented at this event with three representatives of Copernicus Academy society, Danny Vandenbroucke (KU Leuven), Miro Govedarica (Uni Novi Sad) and Željko Bačić (Uni Zagreb). The growing number of activities around the Copernicus program including also Copernicus Academy and Copernicus Relay partners is clear indicator that BESTSDI partner institutions should look to become Copernicus Academy representatives of their countries.

Željko Bačić

New studies with SDI subject

As part of the Erasmus + NatRisk project "Development of master curricula for natural disaster risk management in the Western Balkan countries (NatRisk, 573806-EPP-1-2016-RS-EPPK2-CBHE-JP), the University of Sarajevo is 2018/19 launched a 1-year Master's Degree "Natural Disaster Protection".

Within the study, spatial databases are studied through several courses. The 24 candidates were enrolled. Equipment installed at the University of Tuzla; Erasmus+ stickers were applied on the equipment showing that the equipment has been purchased within the project supported by the EU.



Emina Hadžić Drežnjak

Courses	% of the SDI representation
Natural disasters and catastrophes	20%
Managing risks from natural disasters	20%
Spatial Planning in the Function of Disaster Risk Reduction	20%
Protection and rescue system in natural disasters	N/A
Water protection and sustainable development	10%
Spatial Databases and IPPs	100%
Geoinformation and communication technologies for risk management of natural catastrophes	60%

Opening of a computer classroom at the Faculty of Civil Engineering in Sarajevo

Through implementation of the Erasmus + BESTSDI project, the Faculty of Civil Engineering Sarajevo installed a new computer classroom with ten computers worth 19,400 KM, and a total station and dron worth 29,000 KM.

The computer classroom was officially opened on 09.10.2018. together with students and professors of the Faculty of Civil Engineering.

„Given that GIS is necessary tool in all areas of designing, planning, management and analysis, the equipment is intended for all students of the Faculty of Civil Engineering that are having subjects of spatial data infrastructure“. – said doc. dr Suada Džebo Project Leader.



The opening was attended by the Vice-Dean of the Faculty of Civil Engineering in Sarajevo doc.dr. Mirza Pozder who emphasized that the equipment obtained through the project implementation will create an active and creative learning environment and will be of great help in the teaching process and student education. The new classroom is another step forward in terms of modernizing teaching and meeting international standards in the field of higher education – said doc.dr. Mirza Pozder.



By installing the equipment the Faculty of Civil Engineering created prerequisites for strengthening the role and significance of introducing concepts of spatial data infrastructure, extending curriculum in this area, and launching new research projects.

Suada Džebo



Procurement finalized at Faculty of Civil Engineering in Tirana

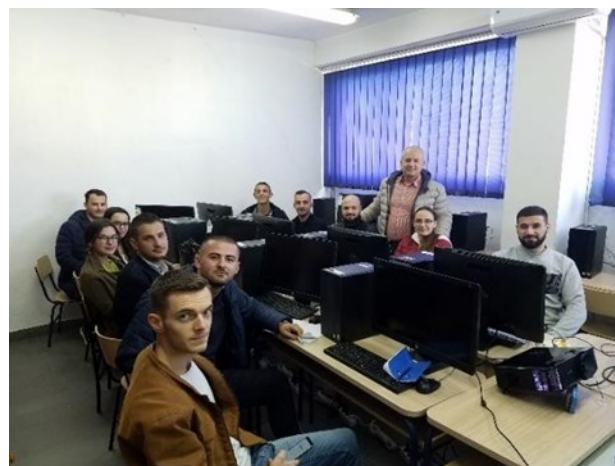
In the framework of Erasmus+ BESTSDI project, Department of Geodesy FCE UPT has planned to complete a computer classroom with 12 Desktop Computers, 1 Printer, 2 Laptops and 2 Full HD projectors dedicated to the education of new Engineers of Geodesy, the development and implementation of SDI related courses in Bachelor and Master of Science in Geodesy levels, as well to develop a photogrammetric laboratory, whereas,

Department of Mineral resources FGM UPT has planned 3 Desktop Computers, (5 + 1) Laptops and 2 GNSS receivers. Based on recommendations given by Task Group 2.3, Department of Geodesy FCE UPT asked for Desktops and Laptops with specifications as follow:

- *Desktop processors:* 7-th Gen, Intel Core i7 Quad core processor min 8M, OS Windows 10 Pro 64-bit, RAM: minimum 16 GB DDR4 memory; Video Graphics: Dedicated NVIDIA Graphic Card GDDR5 4GB at least 960; Hard Drive: 1TB 7200 RPM SATA; Monitor: minimum 24" FHD IPS WLED (1920 x 1080) IPS display;
- *Laptops:* OS Win 10 Pro 64; Processors: 7th Gen Intel® Core™ i7 U; Intel® HD Graphics 620 & NVIDIA Graphic Card GDDR5 4GB; 15.6" UHD IPS UWVA anti-glare WLED (1920 x 1080); 16 GB DDR4-2133 SDRAM; Hard drive: 512 GB PCIe® NVMe™ M.2 SSD.



The Procurement Unit/Sector of UPT Rectory has announced the tendering letters and Invitation to tender (ITT) based on the list of equipment required and the corresponding technical specification. The allocated fund for equipment purchased under BESTSDI project for Department of Geodesy FCE UPT was 22,500 EUR, while for Department of Mineral Resources FGM UPT was 17,500 EUR. Since the amount for public procurement as UPT was less than 40 000 EUR, the tender announced and carried out in accordance with Guidelines for the Use of the Grant – For grants awarded in 2016 under Call EAC/A04/2015 and VAT exemption procedure has been applied. The tender has been announced on the UPT web site and the procedure and legal deadline for public procurement



has been opened for 10 days. Once the tender was collected and evaluated, a winner was chosen, and the Purchase contract was signed. UPT Rectory made the payment partly (for lack of funds) by contract, where FCE has spent 22,220 EUR and FGM 8500 EUR. The purchased equipment was delivered to addresses according contract. According to the “3.2.6.1 Equipment” section of the Guidelines (pg. 25-27), all equipment is registered/recorded in the Department of Geodesy FCE UPT Inventory, as well as in the Department of Mineral Resources FGM UPT.

The new FCE SDI laboratory is established one week after beginning of new academic year which has started at 15 Oct 2018. After equipment installed, the stickers are stuck. FGM has renovated the existing laboratory with purchased equipment.

The Procurement Unit of UPT Rectory will announce the tendering letters and Invitation to tender for GNSS equipment required within December 2018. The remained fund foreseen for GNSS equipment purchased under BESTSDI project for Department of Mineral Resources FGM UPT is 9,000 EUR. The tender should announce and carried out in accordance with Guidelines for the Use of the Grant – For grants awarded in 2016 under Call EAC/A04/2015 and VAT exemption procedure will be applied. The tender announcement will be made on the UPT web site and the purchased equipment will be delivered to addresses within December 2018. Later, the equipment will registered/recorded in the Department of Mineral Resources FGM UPT Inventory and the stickers will stuck.

Bilbil Nurçe

SDI Days 2018 in Zagreb

SDI days 2018 were held on September 27th, 2018 at the Faculty of Geodesy of the University of Zagreb organized by the State Geodetic Administration, the Croatian Cartographic Society and the Faculty of Geodesy.

This year’s 10th jubilee SDI Days gathered 250 participants, and the conference consisted of two parts. In the first part, after welcoming speeches, two invited lectures were held (Prof. V. Cetl, JRC: INSPIRE current status and future activities and P. Kane, EuroSDR: EuroSDR in a nutshell) and a round table on “NSDI; can we do better?”



The second part of the conference was marked by seven presentations from which we highlight the presentation of the Erasmus + BESTSDI project. In the presentation Communication and Education – Essential aspects of SDI building – experiences of the BESTSDI project (authors: Prof. Ž. Bačić, PhD., J. Crompvoets, PhD., V. Poslončec Petrić, PhD) Željko Bačić, PhD. emphasized that building a fully functional NSDI implies active participation in building and using SDI capabilities by all NSDI stakeholders such as state and public administration bodies, business entities and academic-educational communities, all for the benefit of all user. He also presented the results of the requirements analysis that confirmed the need for the development and introduction of standardized study contents (curricula) from the SDI for the wide variety of study programs, as well as the need for new and much wider forms of communication to IPP stakeholders.



Beside the hosts, Faculty of Geodesy, Zagreb University, on the SDI Days 2018 also participated project partners from: Catholic University of Leuven, Faculty of civil engineering, architecture and geodesy University of Split, Faculty of Architecture, Civil Engineering and Geodesy University of Banja Luka, Faculty of Science and Education University of Mostar, Faculty of Civil Engineering University of Sarajevo and Faculty of Mining, Geology and Civil Engineering University of Tuzla and BESTSDI Associated Partners: Republic Administration for Geodetic and Property Affairs of Republic Srpska and Federal Administration for Geodetic and Property Affairs of Federation of Bosnia and Herzegovina.

Željko Bačić, Vesna Poslončec—Petrić



Impressum

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