



# Erasmus+

## Cooperation for innovation and the exchange of good practices sub-programme

### TECHNICAL REPORT form

Programme	Erasmus+
Sub-Programme	Cooperation for innovation and the exchange of good practices
Action	Capacity Building in higher education
Sub-Action	Joint Projects
Call for Proposal	EAC-A04-2015
Project number	574150-EPP-1-2016-1-HR-EPPKA2-CBHE-JP
Agreement/decision number	20162531
Project Title	Western Balkans Academic Education Evolution and Professional's Sustainable Training for Spatial Data Infrastructures
Language used to complete the form	

# Contractual Data

## Dates and Beneficiaries

### Dates

Project Start: 15/10/2016	Project End: 14/10/2019
Activities Start:	Activities End:
Project Duration(months): 36	

### Beneficiary Data

Role	PIC	Name	Country
Co-Beneficiary / Partner	934191578	UNIVERSITETI UKSHIN HOTI	Kosovo
Co-Beneficiary / Partner	949168960	UNIVERSITETI NDERKOMBETAR PER BIZNES DHE TEKNOLOGJI UBT SHPK	Kosovo
Co-Beneficiary / Partner	999836328	JAVNA USTANOVA UNIVERZITET CRNE GORE PODGORICA	Montenegro
Co-Beneficiary / Partner	998833833	UNIVERZITET U NOVOM SADU	Serbia
Co-Beneficiary / Partner	999641843	UNIVERZITET U BEOGRADU	Serbia
Co-Beneficiary / Partner	999588493	SS. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE	Former Yugoslav Republic Of Macedonia (FYROM)
Co-Beneficiary / Partner	999991334	KATHOLIEKE UNIVERSITEIT LEUVEN	Belgium
Co-Beneficiary / Partner	972910486	UNIVERSITETI BUJQESOR I TIRANES	Albania
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Co-Beneficiary / Partner	995549995	UNIVERZITET U SARAJEVU	Bosnia and Herzegovina
Co-Beneficiary / Partner	994087817	UNIVERSITY OF MOSTAR	Bosnia and Herzegovina
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# Project Summary and Horizontal Issues

## Project Description

English - 1	<p>The BESTSDI project aims in a first line to provide curricula to support development in the field of Spatial Data Infrastructure (SDI) by improving and modernizing higher educational system since SDI are at the heart of technological developments that has a huge impact on the way our societies evolve. It will provide students going to the labour market with new knowledge and skills that are necessary to implement EU Directives and policies (EU INSPIRE, EU Common Agriculture Policy, EU Water Framework Directive or Open Data Strategy, etc.). Additionally, project intends to develop capacities at partner universities for stronger inclusion of academic institutions in development of national SDI's in the region, and inclusion in European educational and SDI area. Further, developed curricula will also be used for development of long-life learning program on SDI for existing professionals providing also to them necessary knowledge and skills about SDI for their needs in professional activities.</p> <p>Reason for dealing with SDI lies in the fact that SDI is a framework to share and re-use spatial data amongst public authorities, private sector and citizens. SDI's are based on a series of agreements on technology standards, institutional settings and policies to unlock geospatial resources for a wide range of applications: e.g. environmental monitoring, transportation planning, health care, urban planning, etc. Since they are based on complex and permanently evolving technologies, and require innovative organisational, legal and institutional settings, the academic education related to SDI is challenging. No single university can provide education covering the complete geospatial field, so joint efforts are necessary. Especially since many of the societal challenges are cross-border and cross-policy phenomena. Further, SDI in synergy with Earth observation (EO) systems and Global Navigation Satellite Systems (GNSS) creates, together with information technology, creates platform for development of new, fast growing, business branch of geoinformatics.</p> <p>BESTSDI is based on the results of the EU IPA2010 project "INSPIRATION – Spatial Data Infrastructure in the Western Balkans" (2012-2013) and the project "Infrastructure for Spatial Information in the region of Western Balkan" (IMPULS), being under execution. BESTSDI refines and extends the IMPULS approach in three ways:</p> <ol style="list-style-type: none"><li>1) A successful SDI requires an active participation by all national and local governments within a country, its private sector and citizens. This active participation is impossible without appropriate SDI knowledge and skills. Thus, education on SDI must be properly introduced in higher education study programs for future professionals and life-long learning courses for present professionals.</li><li>2) An SDI comes to life, if published geospatial data is widely being (re-)used. BESTSDI covers both spatial data provision as well as its (re-)usage. Data (re-)usage scenarios cover requirements arising in the regional priority domains agriculture, forestry and fisheries.</li><li>3) All BESTSDI partner countries are either candidate or potential candidate countries of joining the European Union and have the obligation to implement EU Directives and policies.</li></ol> <p>BESTSDI project is realised by the consortium consisting out of 16 partners (total of 22 faculties), 3 associated partners (National Mapping and Cadastre Agencies from the region) and two subcontractors. Project coordinator is University of Zagreb (Faculty of Geodesy). Project work is organized in 6 work packages:</p> <ul style="list-style-type: none"><li>-WP1 – Preparation,</li><li>-WP2A – Development of Curriculum,</li><li>-WP2B – Implementation of Curriculum,</li><li>-WP3 – Quality Plan,</li><li>-WP4 – Dissemination &amp; Exploitation and</li><li>-WP5 – Management.</li></ul> <p>Inside each work package 3 to 5 tasks are defined and task groups established (in total 25 tasks/task groups). Project regular activities are quarterly workshops organized each time by another partner.</p>
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## Horizontal Issues

## Previous recommendations/follow-up

During the first half of the project lifetime, National Erasmus Offices (NEO's) have conducted five monitoring missions:

- NEO Serbia visiting University of Belgrade Faculty of Forestry on 22/05/2017 (also attending partners from University of Novi Sad),
- NEO Albania visiting Agricultural University of Tirana, Faculty of Biotechnology and Food on 07/03/2017,
- NEO Montenegro visiting University of Montenegro, Biotechnological Faculty on 30/05/2017,
- NEO Kosovo visiting University for Business and Technology in Pristina on 11/11/2017 and
- NEO Kosovo visiting University of Ukshin Hoti in Prizren on 15/12/2017.

Feedback on NEO Serbia findings is following:

- Quality control mechanisms have been put in place (with delay),
- Plan for Dissemination and Exploitation of Results has been developed and different target groups addressed in respect to dissemination of project results,
- Work on study program, LLL courses, learning outcomes is progressing and visible, and will be materialized in Y3 of project lifetime,
- Project results are distributed to all partners, made visible on project web-page and Moodle platform.

Feedback on NEO Albania findings is following:

- The problems with financial management have been solved at the Albanian partners side,
- The tendering procedure has been conducted separately by the partners. The differences (regarding the level of existing equipment) among them are huge, and therefore purchased equipment differs a lot. For justification of separate procurement procedure each partner had to justify the procurement procedure. But at the same time, all partners which could have integrated procurement of equipment for BESTSDI project with University/Faculty procurement of IT equipment achieving higher cost-efficiency.

Feedback on NEO Montenegro findings is following:

- Ministry of Sustainable Development and Tourism has been invited to workshop in Nikšić and put on list for receiving BESTSDI Info and BESTSDI Newsletter.

Feedback on NEO Kosovo findings for UBT is following:

- Project office made visit to UBT on 28/02/2018 and discussed findings of NEO Kosovo.
- Cooperation between UBT and University of Ukshin Hoti in Prizren has been considered, and UBT expressed willingness to support Prizren.
- Special effort has been made by Project office and event hosts from Bosnia and Herzegovina considering visa issues. Unfortunately, with modest success.

Feedback on NEO Kosovo findings for University of Ukshin Hoti in Prizren is following:

- Project office made visit to University of Ukshin Hoti in Prizren on 27/02/2018 and discussed findings of NEO Kosovo.
- We meet with vice-rector, dean of the faculty and three members of project team.
- Situation at University of Ukshin Hoti in Prizren has been scanned to detail.
- Project management problems have been identified and measures for their removal agreed (new project manager has been appointed).
- Greater involvement of local staff from Prizren has been agreed. Project office intensified in following months communication with all project team members what has given result.
- Procurement of equipment has been executed successfully, and engagement of team members has improved.
- Due to the level of present IT equipment at the University of Ukshin Hoti in Prizren, which we could see during our visit to Prizren, their need are really basic, and BESTSDI equipment will be used not only for SDI lab, but for number of other courses.

## Transversal issues

Development of Spatial Data Infrastructure (SDI) curriculum in frame of BESTSDI project results not only in implementation of SDI courses in study programs of partner universities, but affects also related parts of curriculum covering GIS, geoinformatics, geodesy in general and number of applied course which rely on spatial data. Due to the interdisciplinary character of SDI, which is not related to specific profession, but to subject of interest of many professions (spatial data) implementation of SDI content (study programme/courses/ lectures in existing courses) will certainly have influence on content and form of related courses. The new competences and skills necessary for new business branch – geoinformatics are creating situation in which linking SDI with Global navigation satellite systems (GNSS) and Earth observation from space (EO) will, together with knowledge on IT becomes basis for new geoinformatic professionals. BESTSDI project is contributing to this development.

Special richness of the BESTSDI project lies in the variety of study programmes (geodesy and geoinformatics, agriculture, forestry, civil engineering, architecture, mining and geology, geography, IT and computation, environmental engineering). Further enrichment of general knowledge for all partners will result from the exchange of information on different educational systems, teaching approaches and methodology of teaching between partners teaching study programmes for different profession.

Beside development and implementation of SDI curriculum on partner institutions, one of the goals of the BESTSDI project is to establish new level of communication and cooperation among main groups of SDI stakeholders (governmental bodies, private sector, educational institutions). In Western Balkan region establishment of SDI has been understood as a task of governmental bodies, and they did it mainly independently from two other stakeholder groups. BESTSDI project is making effort to change this situation. Therefore, national project partners coordination has been established and National coordinator appointed, with the goal to organize drafting of Annual national SDI report. This has been done for Y1 of the project lifetime for Albania, Bosnia and Herzegovina, Kosovo, Montenegro and Serbia, being first such effort in the region. Those reports should present view on SDI development in respective countries from the angle of educational institutions and emphasises need for cooperation among the partners. Further, through the involvement of National mapping and cadastre authorities (NMCA) from FRYOM, Republika Srpska in BiH and Federation of BiH in BiH, as well as through communication of project results and events to other NMCA's in the region results are already visible in new level of cooperation in FRYOM and Republika Srpska in BiH. Finally, development of vocational education training program (long-life learning (LLL) courses) will represent innovation in practice in partner countries, since partner institutions do not perform any kind of LLL courses. BESTSDI developed LLL courses on SDI will therefore not only provide recent necessary knowledge and skills to professionals, but they will also build stronger links between next two groups of SDI stakeholders, private sector and educational institutions.

#### **Involvement of people with fewer opportunities**

BESTSDI project does not have any direct topic or content related to people with fewer opportunities. This issue is rather part of the policy of the partner universities. Nevertheless, in frame of the LLL courses which will be organized by partner countries partner in Y3 of project lifetime, option will be offered in announcements for courses, that participation of persons with fewer opportunities is supported and welcomed.

# Award Criteria

## Typology

### Horizontal priorities

Fostering the assessment of transversal skills	<input checked="" type="checkbox"/>
Promoting the take-up of practical entrepreneurial experiences in education, training and youth work	<input type="checkbox"/>
Promoting the professional development of staff and youth workers in ICT methodologies	<input type="checkbox"/>
Supporting the production and adoption of Open Educational Resources in diverse European languages	<input checked="" type="checkbox"/>
Facilitating the validation of non-formal and informal learning and its permeability with formal education pathways	<input type="checkbox"/>

### Linkages

School education	<input type="checkbox"/>
Higher education	<input checked="" type="checkbox"/>
Adult education	<input type="checkbox"/>
Vocational training	<input checked="" type="checkbox"/>
Youth sector	<input type="checkbox"/>
Cross-sector	<input type="checkbox"/>

### If cross sector is selected

School education	<input type="checkbox"/>
Higher education	<input type="checkbox"/>
Adult education	<input type="checkbox"/>
Vocational training	<input type="checkbox"/>
Youth sector	<input type="checkbox"/>



## CBHE Aims

Support the modernisation, accessibility and internationalisation of the higher education field in the eligible Partner Countries.	<input checked="" type="checkbox"/>
Support eligible Partner Countries to address the challenges facing their higher education institutions and systems, including those of quality, relevance, equity of access, planning, delivery, management, governance.	<input type="checkbox"/>
Promote people to people contacts, intercultural awareness and understanding.	<input type="checkbox"/>
Promote voluntary convergence with EU developments in higher education.	<input type="checkbox"/>
Contribute to the cooperation between the EU and the eligible Partner Countries (and amongst the eligible Partner Countries).	<input checked="" type="checkbox"/>

## CBHE Objectives

Improve the quality of higher education and enhance its relevance for the labour market and society.	<input checked="" type="checkbox"/>
Improve the level of competences and skills in HEIs by developing new and innovative education programmes.	<input checked="" type="checkbox"/>
Enhance the management, governance and innovation capacities, as well as the internationalisation of HEIs.	<input checked="" type="checkbox"/>
Increase the capacities of national authorities to modernise their higher education systems, by supporting to the definition, implementation and monitoring of reform policies.	<input type="checkbox"/>
Foster regional integration and cooperation across different regions of the world through joint initiatives, sharing of good practices and cooperation	<input type="checkbox"/>

## Specific activities

Curriculum development	<input checked="" type="checkbox"/>
Modernisation of governance, management and functioning of HEIs	<input type="checkbox"/>
Strengthening of relations between HEIs and the wider economic and social environment	<input checked="" type="checkbox"/>

## Regions involved

Region 1 - Western Balkans	<input checked="" type="checkbox"/>
Region 2 - Eastern Partnership Countries	<input type="checkbox"/>

Region 3 - South Mediterranean Countries	<input type="checkbox"/>
Region 4 - Russian Federation	<input type="checkbox"/>
Region 6 - Asia	<input type="checkbox"/>
Region 7 - Central Asia	<input type="checkbox"/>
Region 8 - Latin America	<input type="checkbox"/>
Region 9 – Iran, Iraq, Yemen	<input type="checkbox"/>
Region 10 - South Africa	<input type="checkbox"/>
Region 11 - ACP	<input type="checkbox"/>
Cross-regional	<input type="checkbox"/>
Regional	<input type="checkbox"/>
National	<input type="checkbox"/>

**Special mobility strand**

The project contains a Special Mobility Strand	<input type="checkbox"/>
The project does not contains a Special Mobility Strand	<input checked="" type="checkbox"/>

**Involvement of people with fewer opportunities**

YES/NO	<input type="checkbox"/>
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**Assessment Criteria**

**Relevance of the project**

<p>Relevances to the objectives</p>          
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Relevancy of objectives of the BESTSDI project set in the Project description has grown in past two years due to the fact that technologies and programs which rely on Spatial Data Infrastructure (SDI) like Earth observation (EO) and Global Navigation Satellite Systems (GNSS) are major investment areas in EU resulting in fact that geoinformatics is one of the fastest growing business branches. In this context results achieved till now on BESTSDI project are confirming relevancy of the project. Knowledge about SDI has been spread among wide variety profile of faculties/study programs (professions) which had very limited knowledge on SDI before involved in BESTSDI project. New knowledge resulted also in new perspectives regarding relevancy and usage of spatial data for professionals they are educating. This is supporting the wider objectives of the BESTSDI project: improving the quality of higher education in Geographical Science and Technology field, SDI and geodesy, enhancing its relevance for the labour market and society and improving the level of competences and skills in HEI's by developing new and innovative education programmes within the field of SDI, being fully compliant with the priorities of the Capacity Building projects within the Erasmus+ program.

Beside the main specific project objective: to develop, test and adapt new curricula, courses, learning material and tools within the field of SDI providing to undergraduate and graduate students new perspective on spatial data, their relevance, interdisciplinarity and relations to other modern technologies and developments, project was in its first half of the lifetime successful in dissemination of the project experiences and results having goal to create additional value and multiply the impact of the results. In first 18 project months there was 77 dissemination activities (scientific papers written, presentations on conferences held, promotions on events like science festivals organized, press conferences organized, promotion of established SDI labs held, etc.), showing that project was successful in achieving this objective.

Activities related to the third objective, establishing the necessary foundation for the participation of partner universities in the academic SDI arena, have started recently and gave first results. Participation in EU initiatives (like Copernicus Relay and Copernicus Academy) were promoted through the project and first results have been achieved (one partner become Copernicus Academy member).

Further, participation of universities in national SDI arena has also been promoted and activities in this direction undertaken. First (ever) Annual National SDI Reports created by academic society have been produced for Y1 of projects lifetime and distributed to other national stakeholders in partner countries. This activity will be repeated for Y2 and Y3 of the project lifetime what should result with greater involvement of academic institutions in national SDI arena, but also faster and better development of national SDI's in partner countries.

### **EU Education, Cooperation & Development policies**

BESTSDI project is promoting values of EU education in several aspects. First of all, it is excellence in the field of Spatial Data Infrastructure (SDI). Second is implementing Bologna system in developed SDI curriculum (defining content, outcomes, ECTS points, etc.). Third aspect is promoting interdisciplinarity, what has special relevance for SDI, since SDI does not "belong" to one professions, quite opposite, many professions rely on SDI. This is the reason why in BESTSDI are partner universities, respectively their faculties or study programs educating diverse profiles of academic citizens (geodesy and geoinformatics, civil engineering, architecture, geology and mining, agriculture, forestry, environmental engineering, IT and computing, geography, technical sciences).

Project is also promoting other EU activities and main programs. Estimating situation in the region and in accordance to the dynamics of the project, at the workshop in Banja Luka (23-25/04/2018), EU Copernicus program has been presented and especially Copernicus Academy and Copernicus Relay initiatives with the call to partners for participation. There was no representative in Copernicus Academy and Copernicus Relay from Western Balkan countries. Our call has already resulted with University of Novi, Faculty of Technical Sciences becoming member of Copernicus Academy.

Further call has been made to partners to follow example of program countries partners in cooperation on projects. Program partners KU Leuven, Hochschule Bochum, University of Zagreb and Novogit are participating on another Erasmus+ Ka2 SSA project (EO4GEO) and they applied on Erasmus+ Ka2 CBHE call 2017 with project proposal (SEED4NA). Cooperation has been offered to all other partners on the project, and support offered in preparation of project proposals.

Cooperation has also been established with other projects in the region which field of action is SDI or related topics. Together with IMPULS project (SDI project involving National mapping and cadastre agencies in Western Balkan region, financed by Swedish International Development Agency and executed by Lantmäteriet) joint workshop has been organized in Banja Luka (23-25/04/2018) where goals and results of IMPULS and BESTSDI projects have been presented and points of common interest discussed. Regular communication has also been established with Erasmus+ Ka2 CBHE project GEOWEB (project coordinator: KTH from Sweden)

In the BESTSDI project we see the curricula development only as a first step. The aim is also to establish procedures for future collaboration in this evolving field, where research, development and innovation will target the regional societal needs. Fostering SDI education among partners covering wide profile of disciplines is additional impulse to development of national SDI's but also implementation of INSPRE Directive, development of European SDI and implementation of numerous EU directives.

## **Quality of the project implementation**

### **Description of the implemented activities**

During the first half of the project lifetime all foreseen workshops have been successfully conducted:

- Kick-off meeting in Zagreb, Croatia, 14-16/11/2016, 44 participants;
- Q21 workshop in Subotica, Serbia, 13-15/03/2017, 36 participants;
- Q22 workshop in Skopje, FRYOM, 27-29/03/2017, 23 participants;
- Q3 Summer school in Split, Croatia, 03-07/07/2017, 36 participants;
- Q4 workshop in Nikšić, Montenegro, 14-15/09/2017, 43 participants;
- Q5 workshop in Mostar, Bosnia and Herzegovina, 06-08/11/2017, 47 participants;
- Q6 joint IMPULS-BESTSDI workshop in Banja Luka, Bosnia and Herzegovina, 23-25/04/2018, 63 participants.

Project execution has been organized in work packages and task groups supported by Project office. Task groups work was conducted on workshops and via conference calls or e-mails. Task groups have delivered in first half of project lifetime all planned documents. Some deliveries have been delayed, but those delays did not affect execution of the project. Following deliverables have been delivered:

- D1.1 Current curriculum status report
- D1.2 Surrent learning material status report
- D1.3 Requirement analysis report
- D1.4 Project curriuclum specification
- D1.5 Project curriculum adaptation specification
- D3.1-1 Quality Assurance Plan
- D3.1-2 Evaluation Plan
- D3.2-1 Project Evaluation Report 1
- D3.3-1 Monitoring project success indicators – Month 6
- D3.3-2 Monitoring project success indicators – Month 12
- D3.3-3 Monitoring project success indicators – Month 15
- D3.3-4 Monitoring project success indicators – Month 18
- D4.1 Communication Plan
- D4.4 Development Plan for Dissemination and Exploitation of Results
- D5.1-1 Kick-off meeting decisions
- D5.1-2 Project Management Plan
- D5.2-1 Project Status Report 1
- D5.2-2 Project Status Report 2
- D5.2-3 Project Status Report 3
- D5.5.1-1 BESTSDI National SDI Report - Albania
- D5.5.1-2 BESTSDI National SDI Report – Bosnia and Herzegovina
- D5.5.1-3 BESTSDI National SDI Report - Kosovo
- D5.5.1-4 BESTSDI National SDI Report - Montenegro
- D5.5.1-5 BESTSDI National SDI Report – Serbia

-Minutes of all workshops

-Minutes of PMB, PSC and PAC meetings

Three Project Management Board (PMB) meetings, one Project Steering Committee (PSC) meeting and one Project Advisory Committee (PAC) meeting took place. PMB and PAC meetings have been conducted as planned, while PSC meetings have been found as duplication of management, and by decision of PMB cancelled as such!

Further, project has established several communication channels: project web-page [www.beststdi.eu](http://www.beststdi.eu); project places on Facebook, Twiter and Researchgate. Project is publishing internal e-newsletter BESTSDI Info. Till now 12 issues have been released and distributed on 200 e-mail addresses. Project is publishing external e-newsletter BESTSDI Newsletter. Till now 1 issue has been released and distributed on 2.700 e-mail addresses.

For promotion purposes, project logo, ppt-template and document templates have been developed. Also 9000 leaflets have been published in Albanian, Bosnian, Croatian, English, Macedonian and Serbian/Montenegrinian language and distributed among the partners. In addition 60 posters have been also printed.

Members of the project consortia have participated on number of conferences, science festivals and other events on which they have presented BESTSDI project in various presentations. Project office has registered 77 papers, presentations and promotions till now. Also, as a cooperation genetared in frame of BESTSDI project authors Slobodanka Ključanin, Vesna Poslončec-Petrić and Željko Bačić wrote and published book „Osnove infrastrukture prostornih podataka“ (Basis of spatial data infrastructure).

## Quality assurance

For the purpose of the Quality Assurance of the BESTSDI project two documents, deliverables, have been created in in frame of Task 3.1 Development of Quality Assurance Plan:

- D3.1-1 Quality Assurance Plan (QAP) and
- D 3.1-2 Evaluation Plan (EP).

Delivered documents are platform for work of Task 3.2 Evaluation of Project progress and results and Task 3.3 Monitoring of project success indicators.

In respect to Quality Assurance in QAP based on foreseen results, result indicators and quality indicators as well as risks are defined for all work packages and tasks. Defined results indicators, which are applied in Task 3.3, include easy understandable names, result type, and result due date. Completion of result is expressed in percentages per quarter. Quality indicators, which are applied in Task 3.2, provide for list of indicators objectively measurable quality criteria (indicator definition and art of indicator measurement). Regarding risks, for each task one or more risks have been predefined in project description, and now in QAP table described specified (defined: risk opening date, risk manager and risk type). Created tables are platform for quarterly reporting on project quality assurance consisting of two mentioned indicators (execution of results and risk assessment). Till now, four Monitoring project success indicator Reports have been submitted:

- 1st report (Deliverable D3.3.1) for period Q1 and Q2 (15/10/2016 – 14/04/2017),
- 2nd report (Deliverable D3.3.2) for period Q3 and Q4 (15/04/2017 – 14/10/2017),
- 3rd report (Deliverable D3.3.3) for period Q5 (15/10/2018 – 14/01/2018) and
- 4th report (Deliverable D3.3.4) for period Q6 (15/01/2018 – 14/04/2018).

Mentioned reports have been presented to the Project Management Board (PMB) on its 2nd meeting on 22/02/2018 and 3rd meeting on 24/04/2018, where they were discussed and measures undertaken for recognized risks (as visible in Minutes of PMB meetings).

Considering evaluation of deliverables, Task group 3.2 submitted draft report on internal evaluation of project products, deliverables, in April 2018 and those results were presented at the PMB meeting held during the joint IMPULS-BESTSDI workshop in Banja Luka (23-25/04/2018). Further, externally subcontracted evaluator, NOVOGIT, has also submitted his first evaluation report in accordance to contract, and this report has also been presented and discussed in Banja Luka. The third hand of evaluation, external evaluation by Project Advisory Committee is in progress. While internal evaluation is showing general satisfaction with the deliverables (average note 4,8, on the scale 0-5), external evaluator (NOVOGIT) was bit more critical (average note 3,9) giving also several recommendations. On the PMB meeting in Banja Luka, ad hoc task group has been established to evaluate those recommendations and propose necessary improvements.

## Visibility

From the very beginning of the BESTSDI great attention has been given to the visibility of the project and project activities. Visibility activities of the BESTSDI are based on Communication Plan (Task 4.1 Communication plan development) and Plan for Dissemination and Exploitation of Results (Task 4.4 Dissemination of Project results). Communication Plan defines tools and procedures, providing also visual identity elements (logo, shape of documents, ppt-template, etc.), while Plan for Dissemination and Exploitation of Results is focused on dissemination and exploitation activities (production of materials, participation on events, publishing papers, disseminating information by partners, etc.). From the very beginning of the project (Communication plan not been developed at that time) communication tools have been established for Kick-off meeting:

- BESTSDI web page ([www.beststdi.eu](http://www.beststdi.eu)),
- Facebook (<https://www.facebook.com/beststdi/>)
- Twitter ([https://twitter.com/BESTSDI\\_Project](https://twitter.com/BESTSDI_Project))
- Instagram (<https://www.instagram.com/beststdiproject/>)

Those tools are intensively used for communication and visibility. "Official" information about the Project are published on our web page. Statistics shows that in past 18 months BESTSDI web page was approached 7.200 times. All news is regularly published on social networks. BESTSDI project Facebook presently has 208 followers.

Considering visibility, following activities have been conducted:

On-line communication and visibility:

- external (project website: [www.beststdi.eu](http://www.beststdi.eu) and social media
- internal: working platform Moodle (<http://science.geof.unizg.hr/moodle/>)

Press and media:

- Press releases (for each event press release has been prepared)
- Press conferences (have been organized during workshops in Skopje, Nikšić and Mostar).

Audio-visual material, photography and other productions

- Several video-materials from events have been made accessible on social networks and YouTube,
- Photograph's from event are regularly published on social networks and exchanged via working platform.

Communication and visibility in printed materials

-Newsletters:

oBESTSDI Newsletter: newsletter for external communication, sent on 2700 e-mail addresses ([www.beststdi.eu/wp-content/uploads/2017/08/BESTSDI-newsletter\\_No.01.pdf](http://www.beststdi.eu/wp-content/uploads/2017/08/BESTSDI-newsletter_No.01.pdf))

oBESTSDI Info: newsletter for internal communication, sent to all participants in project and all NEO's in Region 1

-Leaflets and Poster (printed 9000 prints in 6 languages (Albanian, Bosnian, Croatian, English, Macedonian, Serbian).

-Banners.

Reporting on communication and visibility: for Visibility of reports, all reports are available on: <http://beststdi.eu/deliverables/>.

To promote project, achieving visibility of project in professional and scientific society and raise awareness, project partners promoted BESTSDI on 12 events:

- IMPULS workshop, 18-20/10/2016; Dures, Albania
- Workshop by Croatian Agency for Mobility and EU Programmes, 21/10/2016; Zagreb, Croatia
- 12th conference Cartography and Geoinformation, 17/11/2016; Zagreb, Croatia
- 8th NSDI & INSPIRE day, 25/11/2016; Zagreb, Croatia
- 12th Conference on Contemporary Theory and Practice in Construction, 7-8/12/2016; Banja Luka, BiH
- Festival of Science 2017, April 24-29/04/2017; Zagreb, Croatia
- IMPULS Workshop, Banja Luka, 27-28/04/2017, Banja Luka, BiH
- 10th Regional Conference on Cadastre and Spatial Data Infrastructure, 8-9/06/2017, Skopje, Macedonia
- GEOWEB workshop, 11-16/09/2017, Ponferrada, Spain
- 9th NSDI days in Croatia, 1/12/2017, Zagreb, Croatia
- Days of Vocational Teachers 2018, Agency for Vocational Education and Education of Adult, 26-28/03/2018, Opatija, Croatia
- Festival of Science 2018, 16-21/04/2017; Zagreb, Croatia

## Equipment

Eleven partners for Partner countries are entitled to purchase equipment to support introduction of courses on their HEI's. For this purpose, in Project Budget 282.500 EUR are foreseen. Following two procurements have been completely finalized (procured, installed and payed out) till the mid-term:

- P13 UCG, finalized October 2107, computer and add.lab equipment;
- P12 UNITZ, finalized April 2018, computer and add. lab equipment.

Total expenditure of those two partners counts 52.402,00 EUR. (UCG: 25.992 + 8.950 = 34.942 EUR; UNTZ: 17.460 EUR; Total = 52.402 EUR) Following equipment has been installed:

P13 UCG: Working stations (26 pcs), Monitors 22" (26 pcs), Laptop (3 pcs), Server (1 piece), Smart board (1 piece), Projector (1 piece), Rack cabinet (1 piece), Wireless Access Point (1 piece), GNSS receiver Trimble Geo7x (1 piece).

All UCG equipment in Podgorica and Nikšić has been properly marked with EU Erasmus+ stickers.

P12 UNITZ: Personal computers (12 pcs), Monitors (12 pcs), server (1 piece), monitor (1 piece), projector (1 piece), laptops (3 pieces)

Stickers have been sent to UNITZ for labelling in April 2018.

Further 6 partners have conducted procurement procedure and they are in the phase of installation of equipment:

- P15 UNS, finalized procurement March 2018,
- P6 PU Tirana, finalized procurement April 2018,
- P12 UBT Pristina, finalized procurement, April 2018,
- P10 UNSA FCE, finalized procurement, April 2018,
- P16 UNIPZ, finalized greatest part of procurement, April 2018,
- P08 UNIBL, finalized procurement, April 2018.

Total value of expenditure for those 6 partners counts 172.500 EUR (allocated funds).

In the sequel is given a planned purchase of equipment by above stated Partners according to the submitted 'Letters of Justification':

-UNS FTS: Desktop comp. (14 pcs), Monitors (14 pcs), Monitors 24" (2 pcs), SSD (12 pcs), Hot Swap Hard Drive (1 piece), RDIMM memory (2 pcs), server (1 piece), laptops (2 pcs), drone (1 piece), googles (1 piece) 3D googles (16 pcs),

-UNS FCE: Desktop comp. (16 pcs), Monitors (16 pcs), Hot Swar Hard Drive (1 piece), RDIMM memory (1 piece), laptops (2 pcs), projectors (2 pcs)

-PUT FCE: Desktop comp. (12 pcs), Monitors (12 pcs), printer (1 piece), Laptops (2 pcs), projectors (2 pcs), projector ceiling mounts (2 pcs)

-PUT FGM: Desktop comp. (5 pcs), Monitors (5 pcs), Laptops (6 pcs), GNSS receivers (2 pcs)

-UBT: Desktop comp. (10 pcs), map scanner (1 piece), GNSS receiver (2 pcs), drone (1 piece), GIS Software (15-20 licenses)

-UNSA FCE: Desktop comp. (10 pcs), Monitors (10 pcs), drone (1 piece), total station (1 piece)

-UNSA FAFS: Desktop comp. (9 pcs), Monitors (9 pcs), server (1 piece), external storage compatible with server (1 piece), laptops (3 pcs), GNSS receiver with GIS app (2 pcs), projector (1 piece)

-UNIPZ: Desktop comp. (24 pcs), Monitors (24 pcs), laptops (2 pcs), tablet (1 piece)

-UNIBL: Desktop comp. (8 pcs), Monitors (8 pcs), server (1 piece), SSD for server (1 piece), SSD for desktop comp. (8 pcs), printer (1 piece), laptops (2 pcs), projector (1 piece), drone (1 piece)

Following equipment has been purchased (taking into consideration P13 UCG and P12 UNTZ): 36 Desktop comp. with monitors, 6 laptops, 2 servers, 2 projectors, 1 rack cabinet, 1 Wireless Access Point, 1 smart board, 1 GNSS receiver.

Some of partners used procurement procedures to purchase additional equipment, or greater quantity, so that their total purchase amounts are higher than available funding, what they have covered from their own funding. Remaining partners (P07 AU Tirana and P14 UNIBG) are in tendering procedure which should finish before summer and equipment should be installed prior start of courses execution (start of academic year 20

## The project includes activities relating to curriculum development

Yes

### **HIGHER EDUCATION: Promoting internationalisation, recognition and mobility, supporting changes in line with Bologna principles and tools.**

BESTSDI project includes partners from 10 countries what is already good precondition for international approach among the partners. Using this fact and having in mind that Spatial Data Infrastructure (SDI) has no borders and national limitations, project was, from the very beginning, figured in a manner to promote internationalisation. Through the work in task groups consisting out of several partners each, joint work on the workshops and permanent communication via e-mails initial reserves have been removed and cooperation among the partners become more intensive.

The second stage has been established by the exchange of information about the events organized by consortia partners and participation of other partners on those events. For example, professors and PhD students from Polytechnic University of Tirana and University of Split attended 1st International Doctoral Seminar in field of Geodesy, Geoinformatics and Geospace organized by University of Zagreb and Catholic University of Leuven in 2017. Similar to this, University of Novi Sad and University of Zagreb become co-organizers of XIII. STEPGRAD conference organized by University of Banja Luka, etc. This is followed also by exchange of teachers, what is also promoted by BESTSDI project.

Third stage has been presently, during the workshop in Banja Luka on 23-25/04/2018, launched promoting international initiatives of EU, like participation in Copernicus program, especially Copernicus Relay and Copernicus Academy initiatives. This call has already resulted with one partner becoming Copernicus Academy member (University of Novi Sad, Faculty of Technical Sciences). Internationalisation call in Banja Luka included also information about opportunities to participate in European associations, like EuroSDR and similar ones, and call for joint preparation and submission of project proposals on Erasmus+ Ka2 CBHE 2018 call. Program partners offered support and readiness to work together with partner countries partners on new projects.

Final, fourth, stage of internationalisation will be realized in second half of the projects lifetime and should circumvent all cooperation and internationalisation efforts through preparation and signing of cooperation agreement among the partners for the time after BESTSDI project.

Mentioned cooperation agreement should also promote recognition of diplomas and support mobility of teachers and students, especially PhD ones, since half of the partner universities do not have PhD studies, and therefore can't fully implement their capacities. In frame of the BESTSDI project, there have already been hold talks about launching joint diploma study programmes (Pristina and Zagreb), or to provide teachers for new study programmes (Mostar, Sarajevo, Zagreb) and provide support in establishment of PhD study (Skopje and Zagreb).

Finally, the specified SDI curriculum is structured and developed on the principles of the Bologna system, regarding content, outcomes, course structure and designation of ECTS points. Building on the fact that all partners have already implemented Bologna system in their study programmes, preparing SDI curriculum in mentioned way did not face obstacles and is therefore easy to be introduced. Furthermore, since part of the partners will introduce SDI content in to existing courses, newly developed content in frame of SDI curriculum has been described, explained, outcomes defined and ECTS points designated on sub-course level.

### New/updated courses

Specific objective of BESTSDI is to develop appropriate curricula, courses and their content for academic institutions, as well as for vocational LLL training initiatives. This includes the development of:

- SDI compulsory course for undergraduate study programs in geodesy;
- SDI modules for graduate study programs in geodesy and geoinformatics;
- SDI user course components (not necessary full courses) for undergraduate study programs;
- SDI elective courses for graduate study program of partner faculties (SDI users);

The building blocks have been designed on the basis of 'logic' steps in the SDI learning process. Based on these assumptions the curriculum is set-up as a series of building blocks, initial as well as specialized ones. Some of those building blocks are 'required', others are rather 'optional', depending on the focus and interest of the faculty (e.g. more interested on data use versus more technology oriented), while the remaining ones are 'nice-to-have'.

Building blocks for new SDI courses developed in frame of BESTSDI are:

#### "SDI concepts and principles"

Topics covered: spatial data; data and service sharing; barriers to access and use, sharing and (re-)use of data; SDI objectives; SDI components; SDI standards; SDI examples; History of SDI and SDI typologies.

Value: 0,5 ECTS

#### "SDI at work"

Topics covered: Publish-Search/Find-Bind paradigm, Geoportals and Open Data Portals, Metadata, Catalogues and Catalogue Services, Metadata Standards and Metadata Elements, Discovery and Evaluation of metadata (fit-for-use concept).

Value: 1 ECTS

#### "SDI data modelling and data harmonization"

Topics covered: spatial data; data models and data specifications; data harmonization and data interoperability; data transformation; standards for data modelling (ISO 19100 series); conceptual modelling languages; data exchange formats.

Value: 3 ECTS

#### "SDI access mechanisms"

Topics covered: WWW; Service Oriented Architecture (SOA); URI's, URL's and URN's; Servers and services; Data delivery through services; Standard interfaces: OGC Web Services; Service Capabilities and Operations; Service chaining and orchestration; SOAP and REST (full) Services.

Value: 3 ECTS

#### "SDI assessment and quality issues"

Topics covered: QA; Quality Control Process; QA of metadata, data and services; Quality and Experience of a Service; Conformity and compliance; testing and validation; SDI assessments and benchmarking; impact assessment (value, C/B) and performance measurement.

Value: 1,5 ECTS

#### "Non-technological developments"

Topics covered: Governance and e-Government; Institutional aspects; IPR and open licensing; PSI and re-use of data; open data; privacy, data protection and GDPR; citizens' science and crowdsourcing

Value: 1 ECTS

#### "Technological trends"

Topics covered: Semantic Web and Linked & Open Data; Geospatial Data on the Web; 3D/4D and Augmented Reality; Indoor mapping and BIM; UAV's; Big data and cloud computing; Secure access mechanisms.

Value: 2 ECTS

#### "SDI for thematic applications" (consists of different blocks, one for each thematic field)

Topics covered: Relevant European legislation for the thematic field; specific thematic SDI initiatives; thematic data models and standards; specific metadata implementations; particular data harmonization efforts; existing platforms and tools for the thematic community

Value: 2 ECTS

#### "SDI application development"

Topics covered: Requirements analysis in GI; methods for process description and GI; design of (web) applications and programming methods; user interfaces and usability; API's.

Value: 2 ECTS

Development of courses itself is presently underway and will be finished before Q7 Summer School (June 26-30/2018)

No

### Teaching / Training Activities

Yes

**Mobility for Teaching, Training and/or project research activities**

Since the BESTSDI project focus is on introduction of SDI curriculum in to the study programmes of partner universities and long-life learning programmes, training of teachers, HEI students and professionals is in the centre of project activities. Logically, project started with training of teachers. Two trainings (Summer School's) are foreseen to be conducted at the University in Split, faculty for civil engineering, architecture and geodesy. First Summer School was organized from 03–07 July 2017, gathering 36 participants, out of which 26 from partner countries. Due to the fact, that most of the representatives from partner countries had modest knowledge about SDI, focus of this first Summer School was more on education about SDI and less on teaching techniques and methodology, given by participants from program countries.

Second Summer School in Split will happen from 26-30 June 2018. We expect 40 participants, out of which 30 from partner countries. Opposite to first Summer School, focus of this one will be on the developed SDI curriculum, how should it be lectured and what teaching techniques and methodology could be used. Summer School is organized in manner that most of the presentations will be prepared (with the support from designated teachers from program countries) and given by participants from partner countries. In the preparation phase for this Summer School special effort was made by Project office to highlight to partners necessity to send those members of project team which will lecture SDI courses to students in Y3 of project lifetime.

Training, better to say courses, will be given to HEI students at partner universities in Y3 of project lifetime. Each partner country university must conduct at least one course with SDI content, either fully new course, or introducing SDI content in existing course. This means that at least in 15 courses parts of developed SDI curriculum will be lectured to the students. In accordance to the survey conducted by Task groups 2.5 Localisation of curriculum and 2.6 Implementation of curriculum partner universities partners will introduce in 12 existing courses new SDI content, 6 new courses, 1 new module and 1 new study program.

Regarding long-life learning SDI program which is developed in frame of BESTSDI project, each partner country partner has obligation to conduct 3 courses in Y3 of project lifetime. Using content from developed SDI curriculum, partners will organize and conduct one basic, one advanced and one applied course for professionals. Based on experience from Croatia (where LLL programs are well developed in frame of chamber system), on minimum of 45 courses which will be organized, expected minimal number of participants is 450.

In relation to mobility of teachers, during Y3 of project lifetime, Project office and program partners will provide support to partner country partners in execution of courses to HEI students and professionals. For this purpose, 8 travels are foreseen for Y3 of project lifetime. In parallel talks are ongoing between partners from partner countries to support each other (for example Pristina and Prizren, Sarajevo and Mostar, ect.). Project office is also making effort to establish other channels which will enable mobility of teachers between partners as this exists among program partners (Erasmus+, Academic mobility, Bilateral agreements, ect.)

No

## Quality of cooperation

### Project management

According to Project description and plans made, at the Kick-off meeting Project office and Project bodies have been established. Project office consists of five members of Project coordinator partner (UNIZG Faculty of Geodesy). Project office is fully functional and performs its duties continuously, managing the Project and supporting partners. Project office is communication directly with partners on weekly routine exchanging information, giving instructions and advices to the partners.

While in the first period, till April 2017, focus of management was on legal issues (Partnership Agreements) and establishment of project and financial management on the partner level, in the remaining period focus was on execution of the Project and work in Work packages and tasks. Change in project focus has also influenced changes in project management and issues handled by Project office.

On the partner level, key persons are project partner manager and contact person. Regarding managerial issues they are partner contact and counterpart to Project coordinator and Project office. All appointed partner project managers are executing their task. There was only one change of project partner manager, at UNIPZ (result of NEO Kosovo findings and Project office visit to Prizren).

On the request of the partners, special meetings or visits to partners have been organized. For example, Project office visited:

- P8 UNIBL on 27/09/2017, discussing project and financial management, preparation for Joint IMPULSE-BESTSDI workshop in Banja Luka and inclusion SDI curriculum in other partner study programs,
- P09 UNIMO on 28/09/2017, discussing project and financial management.
- P1 UNIZG GTF Varaždin on 05/10/2017, discussing project and financial management issues,
- P05 UNIST on several occasions discussing project and financial management issues and summer school Split organization and execution,
- P16 UNIPZ on 27/02/2018, discussing findings of NEO Kosovo, project team capacity, involvement of teachers from Prizren and further steps,
- P12 UBT on 28/02/2018, discussing plans for launching new study programme, procurement, cooperation among partners and coming workshop in Pristine,
- P04 UKIM on 28/02/2018, discussing execution of tasks led by UKIM.

Further, several partners visited Project offices:

- P1 UNIZG GTF Varaždin on 28/07/2017, came to instruction seminar on project management and partner team organization,
- P12 UBT Pristine on 16/11/2017 – discussing plans for launching new study program on geoinformatics including SDI curriculum,
- P15 UNS FCE Subotica on 12/10/2017 – discussing reorganization of partner project team and project management.

At the Kick-off meeting Project Bodies have been established: Project Management Board, Project Steering Committee and Project Advisory Committee. Further, Work Package Leaders and Deputy leaders have been appointed (for all 6 WP), as well as Task Group Leaders and Deputy leaders (for all 25 TG). At the same event 6 Task Groups have been established (T1.1, T1.2, T1.3, T2.4, T5.1 and T5.2). Remaining 19 Task Groups have been established in time when they had to start work. Till Mid-term review time, all Task Groups are established, while at the same time 7 Task Groups finished their task completely and their work has been closed by the PMB decision.

### Involvement of partners and stakeholders



BESTSDI consortium consists out of 16 partners, 5 coming from program countries and 11 from partner countries. Each partner has defined his project manager and established project team. Project teams execute tasks in frame of given roles and general management and financial management functions.

During first half of project life-time there was stronger involvement of program country partners (Belgium, Germany, Croatia, FRYOM), bringing project on the track and providing initial results of early starting task groups. Stepwise, more and more task groups are now led by partners from partner countries (Albania, BIH, Kosovo, Montenegro, Serbia) and this will continue towards end of the project. The engagement of partner countries partners was of course not identical, what is visible also from achieved results, like status of procurement, timely responses on surveys and speed in replying on other requests from Project office of task group leaders. In principle all partners managed to fulfil their tasks. Those who had greater problems, got extra support from Project office, even to the level of Project office visit (P16 UNIPZ, P8 UNIMO and P1 UNIZG GTF), see Project management field. Those interventions helped to remove obstacles which were present in partners functioning. Beside fulfilling their roles inside activities on the Project number of partners took also active role in promotion of the Project and SDI externally on events, conferences, via institution web-pages, Facebook, etc.

Associated partners (Federal Geodetic Authority of Federation of Bosnia and Herzegovina, Geodetic Authority of Republika Srpska and Agency for Real-Estate Cadastre of Macedonia, Statens Kartverk of Norway and Lantmäteriet of Sweden) are members of Project Advisory Committee and participated at the first PAC meeting at the workshop in Mostar (8/11/2017). They accepted their role and work presently active on evaluation of first package of deliverables foreseen to be externally evaluated by PAC. Beside those five NMCA's, project is also informing about its progress other authorities in partner countries (Albania, Montenegro, Kosovo and Serbia).

In frame of task 1.3 Requirement analysis, survey has been conducted among the stakeholders, on which occasion 919 stakeholders have been identified and approached with the survey. Total participation of stakeholders was 186 who responded on survey (27%). The response rate varies between 5% - 55%. For a web-survey we find this response rate satisfactory.

In frame of task 5.3 National stakeholder coordination, National coordinators from partner countries in coordination with their partner universities have prepared BESTSDI National SDI Reports for 2017. The intention of those documents is to provide view from academic institutions on development of National SDI in partner countries, present activities of partners in frame of BESTSDI project and offer cooperation to other major stakeholder groups (NSDI bodies, government authorities, business sector). The documents have been disseminated during March 2018 to list of stakeholders in each country and feedback has been asked for. At the coming joint IMPULSE-BESTSDI workshop in Banja Luka (23-25/04) representatives of National Mapping and Cadastre Authorities will take participation and round tables on cooperation will be discussed.

### Management of the grant

In accordance to Grant Agreement for BESTSDI project grant in size of 978.166,66 Euro has been approved. Project started on October 15th, 2016 and in foreseen time of six months all Partnership Agreements have been signed and submitted to project officer. EACEA transferred first pre-financing allocation to University of Zagreb on November 16th, 2016. In accordance to dynamic of signature of Partnership agreements first pre-financing amount has been transferred to partner universities on three occasions (on February 23rd, 2017 for 8 partners, on May 5th, 2017 for 5 partners and on June 2nd, 2017 for last three partners\*).

\* Last (late) transfer was due to the problem partners had with opening special bank account in accordance to their national procedures.

Following the transfer of money, Project office released instructions in accordance to Guidelines about reporting of use of granted funds. First instruction was related to use of money based on unit costs and necessity that this transfer is visible. A model of two account positions (places of expenditure) one for incoming grant amount and another to which spent amounts will be transferred and used has been proposed to partners. Second instruction was related (and repeated several times) to personal forms for use of grant (staff declaration, travel cost, time sheet), how and when to fill them, and how to denote them. Third instruction was related to annual financial planning. We introduce Project Partner Annual Plan where partners should plan their expenditures.

Model of quarterly submission of forms have been introduced. Partners should quarterly send to Project office mentioned forms. They are checked and approved (or sent back for correction) by Project office. When approved partners submit to Project office signed forms. This model functions in practice, with some problems in timing.

Namely, during first year of project lifetime project partners faced two problems. There was problem in communication between University financial department and Faculties (since in most cases Faculties in region are legal entities), and then also between Faculties and project teams. Second problem we faced was that partners needed more time than anticipated to adopt rules of planning and reporting. Project office communicated intensively with partners those issues and even visited them (Varaždin in July 2017, Banja Luka and Mostar in September 2017). Those situations have been solved one by one partner till end of 2017.

Therefore, reporting was delayed, and Project office undertook action to sort this out. During Q5 financial statement was updated and since then we are following expenditures on quarterly level.

Considering procurement, due to the fact that we have recognized great differences in the level of equipment on partner faculties, individual (per University) procurement has been implemented. To achieve best value for money, partners had to justify and explain the procurement. Half of partners combined BESTSDI IT procurement with the overall University/Faculty IT procurement (greater volume of procurement contributed to reduction of prices). This approach enabled some partners to annex procurement in volume (again justifying it and approved by Project office) or increase non-IT part of procurement.

Considering submitted Financial statement, co-financing costs for organization of events has been included. Workload which has been accomplished and not charged is not presented in submitted FS.

## IMPACT AND SUSTAINABILITY

### Awareness raising, dissemination, sustainability and exploitation of the project results

Awareness raising (AR) in frame of BESTSDI project was focused in three directions: internally, towards academic society outside the consortia and towards other SDI stakeholders.

Internal AR came out as necessity after the Kick-off meeting and survey which has been conducted in frame of Task 1.1 – Current curriculum status, showing that number of project partners, especially those of non-geodetic and non-geoinformatic profession, are not sufficiently familiar with the SDI concept and their relevancy in study programme in GIS and geoinformatic field they are implementing. Therefore, Kick-off meeting in Zagreb, workshops in Subotica and Skopje, and finally first Summer School in Split had designated time for AR on SDI among project partners and necessary expansion of knowledge on this subject. This relates especially on first Summer School during which 6 out of 16 sessions were devoted to awareness and knowledge raising among the participants. Those efforts gave results what we can see in the work of other task groups, especially those dealing with SDI curriculum (T1.4 Specification of Project Curriculum, T1.5 Curriculum Adaptation Specifications and T2.1 Development of Project Curriculum) where partners are actively contributing in work of those tasks (requires awareness and knowledge).

Second focus direction is directed towards academic society outside the consortia. The idea from the very beginning of the project is to spread knowledge and developed results (SDI curricula) beyond the limits of the project consortia partners. This, in first line relates to number of partners being faculties/universities with number of other study programmes, promoting implementation of SDI curricula also in those programmes. Project office used conducted meetings to discuss this issue with rectors, vice-rectors and deans in Varaždin, Banja Luka, Mostar, Prizren, Pristina, Split, Skopje and Subotica. Further, information on SDI and BESTSDI project have been disseminated by mean of BESTSDI Info (internal newsletter distributed on 150 e-mail's – 12 issues released) and BESTSDI Newsletter (external newsletter distributed on 2.700 e-mail's – 1 issue released) contributing to AR about SDI and BESTSDI project. For AR among the academic society also presence on the conferences presenting papers linked to BESTSDI project has been intensively used. BESTSDI and SDI itself were promoted, contributing to awareness raising, on 12 conferences, workshops and events (listed in Visibility field).

Finally, AR was directed also to all SDI stakeholders. For this purpose, a data base of stakeholders in the region has been established and used for task 1.3 Requirement analysis. This occasion has been used as first contact between BESTSDI project and SDI stakeholders in the region and information about project has been disseminated. Further, BESTSDI Newsletter has been disseminated among those stakeholders. Among the stakeholders, special attention has been made on NSDI bodies, governmental organizations responsible for SDI and IMPULS project members. To address this group of (key) stakeholder's task 5.3 National Stakeholder Coordination has been foreseen and task group erected with the task in an innovative way to establish coordination of NSDI stakeholders in partner countries. For this purpose, appointed National coordinators and country project partners have produced Annual National SDI Report for year 2017. This is for the first time, that one subject outside formal national SDI bodies has created National SDI Report in the region. Those 5 documents (for Albania, BiH, Kosovo, Montenegro and Serbia) have been distributed to mentioned key stakeholders with the request for feedback.

## Statistics and Indicators

### Type of equipment:

- books and pedagogic material
- audio-visual equipment
- Computers and software
- lab material
- Other

### For Curriculum Development projects

- Yes

Courses updated  
(/developed/accredited) in line  
with Bologna principles.

to a very high extent

Number of new/updated courses  
DEVELOPED

9

Number of new/updated courses  
RECOGNISED/ACCREDITED

0

Number of new/updated courses  
IMPLEMENTED/DELIVERED

0

**Level of new/updated courses:**

- Short cycle
- 1st Cycle (e.g. Bachelor)
- 2nd Cycle (e.g. Master)
- 3rd Cycle (e.g. Doctoral)
- Vocational Education and Training

**Type of recognition:**

- HEI Degree
- National degree
- Multiple Degree
- Joint Degree

Volume (in ECTS) of new/updated courses

46

**The new study programme includes:**

- Placements/internships for students
- Career orientation service
- Career development measures

Number of learners / trainees enrolled (per intake / course delivery)

**Type of skills/competence developed:**

- Transversal/behavioural skills
- Technical /academic /scientific / research skills
- Linguistic competences

% of the new curriculum taught in foreign language of the the total of new curriculum developed by the

0

project

### For Training/Mobility Activities

Number of partner country "HEIs' students" trained

0

Number of partner country "HEIs' academic staff" trained

26

Number of partner country "HEIs' administrative staff" trained

0

Number of partner country "non-HEI individuals" trained (priv. sector, NGOs, civil servants, etc.)

0

### IMPACT AND SUSTAINABILITY

#### Impact at individual level

Extent of attention given to vulnerable groups

not applicable

Number of direct beneficiaries in the Partner country(ies) per year: academic staff from HEIs

26

Number of direct beneficiaries in the PCs (/year): administrative staff from HEIs

0

Number of direct beneficiaries in the PCs (/year): HE students

0

Number of direct beneficiaries in the PCs (/year): non HE individuals

0

#### Impact at institutional level

Extent of impact at institutional level: for instance new courses / strategies (policies, regulations) / services (units, centres )

to a high extent

Potential of planned project measures to contribute to new national cooperation activities in the Partner countries HEIs as a result of the project (Memorandum of Understanding /research projects / joint publications /participation in networks or associations etc.)

to a high extent

Potential of project to contribute to new international cooperation activities in the Partner countries HEIs as a result of the project (international agreements / Memorandum of Understanding /

to a very high extent

research projects / joint publications / participation in networks or associations, etc.)

### Impact on the HE Sector

Potential of project to contribute to new (/updated) national or regional policies / laws / regulations in HE

to a high extent

Potential of project to contribute to the establishment (/ further development) of external bodies (/associations /agencies)

to a small extent

Potential of project to contribute to improve the excellence / competitiveness / attractiveness of the Higher Education institutions

to a high extent

Innovative character of the planned results (i.e. the courses developed; the new tools, services, procedures delivered; the strategies implemented for reaching the target groups; etc.)

to a high extent

### Impact on the society as a whole

Potential of the project to pay particular attention to least developed countries

to a high extent

Potential of the project to engage Partner Countries HEIs in new means of cooperation with employers and other stakeholders (e.g. NGOs, associations, etc.)

to a very high extent

Measures contributing to improving lifelong learning approaches in the Partner Country HEIs

to a very high extent

### Sustainability

Institutional support for Partner Country HEIs to sustain project results

to a high extent

Measures to collect Sources of financial (/logistic) support for sustaining the project results from:

- Partner HEIs
- Public authorities in Partner countries
- NGOs

- Private sector
- European Union
- Other

## QUALITY OF PARTNERSHIP & COOPERATION

Involvement of students in the project implementation

not applicable

Involvement of non-educational stakeholders in the project implementation

to a high extent

## RELEVANCE in relation to project objectives

To what extent the project contributes to the policy objectives of the Partner Countries

to a high extent

## Project potential to promote EU's horizontal policies

- Agriculture, fisheries and foods
- Business
- Climate action
- Cross-cutting policies
- Culture, education and youth
- Economy, finance and tax
- Employment and social rights
- Energy and natural resources
- Environment, consumers and health
- External relations and foreign affairs
- Justice, home affairs and citizens' rights
- Regions and local development
- Science and technology

Transport and travel

## Meetings, Training and Mobilities

### Meetings, Trainings and Mobilities

#### Estimated dates of consortium meetings until the end of the projects

Venue country	Venue city	Date of Meeting
Bosnia and Herzegovina	Banja Luka	23/04/2018
Albania	Tirana	10/09/2018
Kosovo	Pristine	25/11/2018
Serbia	Novi Sad	17/03/2019
Montenegro	Podgorica	23/06/2019
Bosnia and Herzegovina	Sarajevo	06/10/2019

#### Training and Mobilities

Event	Purpose	Type of participants	Gender	Number	Country of Origin	Country of destination	Duration (in weeks)	%compared to objectives
Summer School	Training	Academic staff – teaching	Number Male	5	Croatia	Croatia	1	100
Summer School split	Training	Academic staff – teaching	Number Female	3	Croatia	Croatia	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	2	Belgium	Belgium	1	100
Summer School Split	Training	Academic staff – teaching	Number Female	1	Deutschland	Deutschland	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	1	Deutschland	Deutschland	1	100
Summer School Split	Training	Academic staff – teaching	Number Female	1	Albania	Albania	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	5	Albania	Albania	1	100
Summer School Split	Training	Academic staff – teaching	Number Female	4	Bosnia and Herzegovina	Bosnia and Herzegovina	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	5	Bosnia and Herzegovina	Bosnia and Herzegovina	1	100
Summer School Split	Training	Academic staff – administrative	Number Male	4	Montenegro	Montenegro	1	100

Summer School Split	Training	Academic staff – teaching	Number Female	2	Serbia	Serbia	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	3	Serbia	Serbia	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	2	Former Yugoslav Republic of Macedonia (FYROM)	Former Yugoslav Republic of Macedonia (FYROM)	1	100
Summer School Split	Training	Academic staff – teaching	Number Male	2	Kosovo	Kosovo	1	100

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## Attachments

Type of File	Name of the File
Budget Table	18_06_16 BESTSDI_Partner_financial_statement-2.xlsm
Declaration of Honour	Declaration of Honour.pdf
Table of achieved results	Table of achieved results.pdf
Dissemination/Exploitation Plan	Dissemination and Exploitation Plan.pdf
Quality Assurance Plan	Quality Assurance Plan.pdf
Report Special Mobility Strand	
Request for Payment	MTR-Payment request with Statement on the use of previous pre-financing instalment.pdf