

ANNEX IV

Final Report on implementation of the project (FR)

Summary report for publication and

Financial Statement

T E M P U S I V

(Sixth Call for proposals EACEA no. 35/2012)

Joint Project / Structural Measure

544093 / 2013-5028

(Project No. / Agreement No.)

<u>FINAL REPORT</u>	<u>DEADLINE</u>
<ul style="list-style-type: none">• Final Report on implementation of the project (FR)• Summary report for publication• Financial statement including request for payment and the financial tables for each budget heading• an external audit report on the action's financial statements and underlying accounts	<u>Two months</u> after the end of the eligibility period

Structure of the Report

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One original (with copy of supporting documentation) and two copies (one of which with copy of supporting documentation) are to be sent by the deadline by registered mail (date as per postmark) to:

Education, Audiovisual and Culture Executive Agency (EACEA)
Erasmus+ : Higher Education - International Capacity Building (Unit A4)
Mr Ralf Rahders
Head of Unit
BOUR 02/17
1, Avenue du Bourget
BE-1049 Brussels

Please also send an electronic version to: eacea-tempus-project-management@ec.europa.eu when submitting the paper version of the Final Report.

We kindly ask you to enclose with your report, a sample of the most important promotion materials produced during your project (such as publications, brochures, leaflets, reports, etc.) which can provide clear evidence of the outcomes of your project.

DECLARATION

This declaration should be completed and signed by the following people:

1. the contact person at the co-ordinator (institution);
2. the person who is legally authorised to represent the co-ordinator (institution).

We, the undersigned, certify that we have submitted all the required documentation, including the documents listed in the checklist.

Furthermore, we certify that the information given in this final report and financial statement is correct to the best of our knowledge and complies with the requirements of the provisions of Article I.4 and II.23 (Annex VI) of the grant agreement.

We are aware that amendments to these documents will not be accepted after the date of submission.

Name of the co-ordinator (institution): Conference of the Universities of Serbia (CONUS)

Name of the contact person:

Srdjan Stanković

Function: Professor

Done at: Belgrade

Date: September 30th 2017

Signature:

Name of the legal representative:

Vladimir Bumbaširević

Function: Rector

Done at: Belgrade

Date: September 30th 2017

Signature:

Seal of the co-ordinator (institution):



FINAL REPORT ON IMPLEMENTATION OF THE PROJECT

PART I: ACTIVITIES CARRIED OUT

For each section indicated below, please provide a **short description** of the **activities carried out** since the submission of the Intermediate Report and describe the main changes that have occurred in the plans described in the Intermediate Report.

Development of programmes and courses

Please indicate which activities have been carried out for the development of the new teaching/training programme(s).

A detailed description of all the related activities is given in Part II and in the Table of achieved results.

The main emphasis is placed on Activity 4.4.. The following results have been obtained, i.e., the following Doctoral Schools have been founded:

1. Doctoral School of Mathematics. Universities of Belgrade, Novi Sad, Kragujevac, Nis and Novi Pazar, together with the Institute of Mathematics of the Serbian Academy of Sciences and Arts.

2. Doctoral School of Medicine. The envisaged Doctoral School will take care primarily of transversal skills, by organizing specific courses for all doctoral students at the Faculty of Medicine, University of Kragujevac, which contains many different Divisions (study programs).

3. Doctoral School of Technical Sciences. The Faculty of Technical Sciences at the University of Novi Sad made a decision at the highest hierarchical level level to organize a Doctoral School of Technical Sciences, comprising 16 study programs in different disciplines of Technology (Electrical, Mechanical, Civil Engineering, Architecture, Applied Mathematics, etc).

4. International Doctoral School of Megatrend University. University Megatrend (new name: John Neisbitt University) organized an International Doctoral School in all the fields covered by the existing Faculties. International partner on the basis of Joint Degrees have been selected to be University Primorska, Slovenia, and Bari University, Italy.

5. Doctoral Schools at the University of Belgrade. University of Belgrade has undertaken a multitude of measures oriented towards incorporating Doctoral Schools in its practice. Besides the introduction of Doctoral Schools in its Regulations for Doctoral Studies, University of Belgrade decided to merge all doctoral study programs at the University level and to organize a Doctoral School of Belgrade University. Following the adopted general line of thought, RODOS organized and funded a course of transferrable skills (TRAIN Program, spring 2016). Following one of the paradigms, a Doctoral School of Medicine will be established jointly with the Faculty of Dentistry and Faculty of Pharmacy. University of Belgrade will continue to organize a large number of Doctoral Schools in near future (guaranteeing high sustainability).

6. Doctoral School of Biology. This Doctoral School is centered around the Faculty of Biology at the University of Belgrade and the Institute of Molecular Genetics and Genetic Engineering, member of the University of Belgrade, as an example of a fruitful collaboration between Universities and Research Institutes. The School will primarily take care of the laboratory facilities and research, trying to put together Faculty and Institute staff and to improve supervision. The School will also take care of the organization of transversal skills needed for biologists.

7. Doctoral School of Arts. University of Arts in Belgrade, has an intention to implement a Doctoral School of Arts, in which the particular Faculties (Music, Painting, Applied Arts, Theatre) will formally continue functioning as before, but in which transversal skills would be taught within the School. In this sense, a doctoral training was organized by RODOS team April 25th, 2017 in cooperation with the Intellectual Property Office of the Republic of Serbia, Belgrade, devoted to diverse aspects of intellectual property in arts.

8. European Joint Doctoral Degree in Science and Technology for Cultural Heritage Preservation. The Institute of Physics, as a member of the University of Belgrade, conceived and organized a Doctoral School with the University La Sapienza, Italy, Politecnico do Milano, Italy, University of Avignon, France and University devoted to Science and Technology for Cultural Heritage Preservation. The students will get Multiple Doctoral Degree from the Universities consortium members.

9. Doctoral School as Initiative of an R&D Institute. Vlatacom Institute, Belgrade, decided to organize a Doctoral School in the area of Advanced Information and Communication Technology (Radar Systems, Electro-Optical Systems, Cryptology) using its own human and technical resources, in conjunction with Metropolitan University, which would cover aspects in its domain of competence.

It was decided at the PMB to add an additional value to the Project by organizing several courses related to transversal skills (research methodology, project management, composition of scientific papers, research ethics, etc.). These courses would be kept open for all doctoral students at a particular Universities. It is expected to achieve in such a way two main goals: 1) to get more experience in organization of short courses for doctoral students (similar to those organized in UGent); 2) to show in an evident way advantages provided by Doctoral Schools.

Restructuring: university management and governance

Please provide information on the activities carried out during this period relating to the introduction of institutional changes in the partner country beneficiaries (institutions) or at national level (capacity, management, governance, quality assurance, links with labour market, etc.).

A detailed description of all the related activities is given in Part II and in the Table of achieved results, as well as in the book "From Doctoral Studies to Doctoral Schools".

According to the Proposal, an important clearly sustainable outcome was the formulation of modified QA standards. In particular, changes were oriented towards:

- emphasis on learning outcomes
- emphasis on the research part of the studies
- better connection with the society
- improvement of the process of supervision
- emphasis on transferrable skills
- transparency and accountability
- better relation with students, especially within the process of supervision.

The final version of the new Standards for doctoral studies was discussed and adopted by the Commission for Accreditation and Quality Assurance (CAQA) and the CONUS. Based on this result, the National Council for Higher Education (NCHE) adopted the Standards on June 25th, 2016. In such a way, the proposed Standards have become an official by-law, as planned.

A separate activity has been devoted to the Standards for doctoral studies in Arts, having in mind specific aspects of this type of studies. After getting the approval of the University of Arts and CONUS, the new Standards were adopted on December 29th, 2015.

Mobility and training activities for staff and students

Please provide a description of the activities carried out in order to train staff and/or students from the partner country participating institutions along with an outline of the staff/student mobility scheme implemented in this period.

All the activities are enumerated in Part II and the Table of achieved results. As it can be seen, mobilities and training activities remained a very important part of the Project Activities from the beginning to the end of the eligibility period.

Equipment

Please provide an outline of the equipment purchased and explain how it has been used during the project lifetime and who has access to it.

After a detailed analysis of all aspects of providing administrative support to Doctoral Schools, the PMB found that the capacity of Serbian HEIs is such that formal opening of Doctoral School Offices is not necessary for efficient functioning of the new organizational structure. This is, obviously, also connected to the adopted general methodology oriented towards a large implementation front of diverse types of Doctoral Schools (much more than planned in the Proposal), as described in Activity 4.1. The PMB decided to make a general contribution to the organizational support of Doctoral Schools by:

- 1) widening IT capacity of selected HEIs (connected directly or indirectly with concrete case studies) by purchasing additional equipment (servers, laptops), with the aim to facilitate intensive R&D activities;
- 2) introducing and implementing university repositories for doctoral dissertations at UAB and UM (where such repositories did not exist before)
- 3) introducing and implementing a repository of doctoral dissertations at the state level (National Repository of Doctoral Dissertations in Serbia - NaRDuS), located at the MoESTD (see the book From Doctoral Studies to Doctoral Schools, Chapter VI).

NaRDuS (<http://nardus.mpn.gov.rs/>) is a common portal of PhD dissertations and thesis evaluation reports from all Serbian universities. It is based on the Law on Higher Education (Amendments, Sept. 2014).

From the point of view of direct impact on HE of Serbia, NaRDuS represents one of the major concrete achievements of RODOS, contributing in an essential way to sustainable restructuring of Doctoral Studies in Serbia.

From the TEMPUS grant Conference of the Universities of Serbia purchased software for the National Repository of the Doctoral Dissertations in Serbia; University of Novi Sad purchased servers, camcorder, licenses for Microsoft products, desktops, laptops and notebooks; University of Arts in Belgrade: software for portal University Repository of doctoral dissertations, server, desktops and laptops; University of Kragujevac: servers, desktops, laptops, UPSs, routers, printer, and projector; University of Niš: desktops, laptops, projectors, cameras, printers, access points, and flipcharts; State University of Novi Pazar: projectors, routers and desktops; Singidunum University: servers, desktops and laptops; Megatrend University: software for portal University Repository of doctoral dissertations, server and projectors; University of Belgrade: servers, desktops, laptops, licenses for Microsoft, Bitdefender and Adobe products, UPSs and routers; and Association of PhD students and young

researchers of Serbia: professional camera for recording and picturing events and meetings.

BU distributed the purchased equipment in the following way: 1) servers to Faculty of Biology, Faculty of Medicine, Faculty of Physical Chemistry, Faculty of Chemical Technology and Metallurgy, Faculty of Electrical Engineering and to Computer Center of University, and 2) laptops and all other equipment to Rectorate in order to allow access to the maximum number of PhD students and teachers engaged in the Doctoral Schools.

The integrated Universities (Novi Pazar, Singidunum, Megatrend) located of the purchased equipment in a centralized way under direct control of the respective rectorates.

Universities of Novi Sad, Nis and Kragujevac gave the purchased equipment at the disposal of the University Computer Centers, in order to allow access to the maximum number of PhD students and teachers engaged in the Doctoral Schools (having in mind the their desired inter-disciplinary nature, collaboration with R&D institutions and Industry).

Dissemination and sustainability

Please describe the actions that have been carried out to disseminate the results of the activities and in order to ensure the future sustainability of these results.

All the activities are enumerated in Part II and the Table of achieved results. As it can be seen, dissemination and sustainability remained in the focus of Project activities from the beginning to the end of the eligibility period.

The book "From Doctoral Studies to Doctoral Schools" provides a recapitulation of all the activities oriented towards dissemination and sustainability.

It is very important to emphasize that the Project team is very satisfied with the results of a permanent action oriented towards sustainability. The final Conference of the Project demonstrated vividly that the whole academic community of Serbia accepted the Project plans oriented towards restructuring of Doctoral Studies: many HEIs expressed their willingness to follow the positive examples of Doctoral Schools founded within the eligibility period and to organize their Schools adapted to their specific needs. It seems that the Project succeeded to influence the state of mind of the academic community in such a way that it has become open for the proposed changes.

PART II: PROJECT OUTCOMES AND IMPACT

By responding to the following questions, please provide an overview of the overall project achievements, demonstrating how the objective of the project has been met and the impact of the project outcomes.

Overall achievement level and impact

- Please indicate which national/regional priorities have been addressed by the project (as outlined in the Call for proposal and original application) and describe the main results achieved by the project in addressing these priorities.
- Has the project achieved its set objective and does it match the needs identified in the original application? If yes, could you please describe how? If not, could you explain the reasons why?
- Please describe any positive changes, as a result of the project, in terms of institution management, individual behaviour, teaching methodology, course content, teaching/learning processes and any benefits to managers, teaching staff, students and other target groups.
- Please describe the opportunities that are being created by the project beyond the specific objectives in particular in relation to graduate employability and/or increased cooperation between university(ies) and the non-academic sector.
- Please describe the impact of the project on the reform of higher education in the partner country(ies).
- Please describe the impact of the project on the economic and/or social reforms in the partner country(ies).

As stated in the Project Proposal, the main wider objective of RODOS consists of restructuring doctoral studies in RS in line with the Bologna Process and Salzburg Principles, being recognized as one of top priorities in the Strategy of the Development of Education in Serbia 2020, with the emphasis on quality of research and integrative processes involving universities, institutes, industry and civil sector, and resulting in Doctoral Schools. This objective emerges from the following considerations:

The inherited pre-Bologna system of individual doctorates is not capable of achieving the mission of doctoral studies "to ensure the primary role of science at universities, to develop and improve the overall research potential, to generate teaching staff for HEI's and highest professionals for industry and civil services, contributing in such a way to the creation of new knowledge, to faster technological development and the improvement of cultural and national identity" (Strategy of the Development of Education in Serbia, SDES, 2012, Part IV). However, the new system of doctoral studies has not been sufficiently developed yet. In 2010 Serbia had 680 doctoral students and 70 doctoral graduates per million inhabitants (much less than in EU) and only 47% of doctoral students take part in organized research projects. Doctoral studies in Serbia are fragmented; some study programs are based on a small number of qualified thesis supervisors. On the other hand, SDES 2012 proclaims the overall aim of achieving 200 doctoral students per million inhabitants in 2020, with 60% of students terminating successfully their studies; also,

10% of study programs should be joint programs between different universities, 20% being taught in English.

RODOS mobilized 19 partner organizations, 15 from Serbia and 4 from EU countries. All partners performed as planned in the Work Plan and contributed to the achievement of the given objectives. Noteworthy is the contribution from the National Councils for Higher Education (NCHE) and Science and Technological Development (NCSTD) of Serbia, the relevant student organization (Association of PhD students and young researchers of Serbia), which have contributed significantly in setting up the scene for student involvement, the Chamber of Commerce and Industry of Serbia, which provided an important support to the collaboration with industry, and the Serbian Academy of Sciences and Arts, whose role has been to give general lines of guidance and to evaluate the project results. The chosen EU partner organizations are very well known for their achievements in the domain of doctoral studies, especially from the point of view of introducing new structures (e.g., Doctoral Schools) or implementing joint degrees at the highest academic level.

The methodology of RODOS was based on the project decomposition into **three overlapping sub-projects or directions:**

- The first direction is dedicated to reconsideration of already existing standards and bylaws for doctoral studies and reformulation and adoption of new ones by the relevant bodies, including:
 - (a) QA standards,
 - (b) funding models for doctoral studies,
 - (c) more comprehensive definition of the status of doctoral students (student rights, obligations, choice of supervisors, health insurance),
 - (d) research policies in the light of doctoral studies,
 - (e) formulation of roadmaps for better cooperation with industry and civil sector,
 - (f) standards for joint doctoral degrees
 - (g) ensuring transparency of PhD dissertations by implementing a software dissertation repository.
- The second direction is related to the concept, structures and implementation of Doctoral Schools, with the aim to increase the international and social value of the doctorate from the perspective of potential researchers, as well as from the labour market point of view, to enhance the support provided to doctoral students in the course of their doctorate research and to strengthen quality culture in doctoral studies.
- The third direction is dedicated to the implementation of several models for Doctoral Schools and formulation of selected study programs embedded in these Doctoral Schools, including the accreditation of the Schools and programs, their implementation and enrolment of students.

Presentation of the obtained results will be done in accordance with the Project Work packages.

Within **DEV1 “Quality assurance and funding of doctoral studies”** all the planned activities were more than completely accomplished; moreover, a number of new aspects of the problems were covered by the obtained results..

All the activities within DEV1 were devoted to two main subjects:

A) QA standards for doctoral studies (Activities 1.1 – 1.3);

B) Funding of doctoral studies (Activities 1.4 and 1.5).

A) QA standards for doctoral studies. The overall impact of this subject is obvious for the whole HE reform in Serbia. The outcomes exceed quantitatively and qualitatively the requirements formulated in the Proposal. The related activities have been done in two major steps:

- Evaluation of the existing QA standards for doctoral studies both in EU and in Serbia;
- Formulation of new modified standards for doctoral studies in Serbia, overcoming the identified shortcomings and deficiencies.

The results related to the state of the art of QA related to doctoral studies have been published in the **books issued and printed by RODOS “Doctoral Studies in Serbia” and “From Doctoral Studies to Doctoral Schools”** and discussed at different events organized by RODOS. Attention was paid to:

- Evaluation and monitoring as tools for quality enhancement;
- Supervision, as an important issue within doctoral studies;
- Career development of doctoral students.
- Critical analysis of doctoral students in Serbia in the last five years,.

It is to be notified that the publication **“Doctoral Studies in Serbia”** has been based on the formulation of a special **questionnaire** addressed to all higher education institutions of Serbia in June 2014. The decision to do so was made at the **joint meeting of the National Council for Higher Education and the National Council for Science and Technological Development held on June 16th, 2014 in Belgrade**, devoted entirely to the project RODOS. The analysis performed, together with all the conclusions for further work, represents the first comprehensive insight into doctoral studies since 2005, i.e. since the introduction of the Bologna principles, surpassing both quantitatively and qualitatively the requirements coming out from the Project Proposal. Moreover, the obtained results have had a huge impact on the entire higher education scene in Serbia. The results have been presented in the whole Serbian press with a very high respect and positive opinion.

Within this activity, a conference entitled **“Doctoral Studies in Serbia”** was organized on December 4th 2014

in Belgrade, with more than 170 participants from all HEIs of Serbia.

According to the Proposal, an important clearly sustainable outcome was the formulation of modified QA standards. At the PMB meetings in Belgrade, April 3rd, 2014, at Crete, September 20th, 2014, and in Belgrade, December 16th, 2014, special working groups, including representatives of all partner institutions, were nominated. The preliminary version of the new Standards was issued at the meeting of the working group on May 15th, 2015.

The proposal reflects the main general aspects of QA for doctoral studies and the situation in Serbia presented in public at the Conference in Belgrade held on December 4th 2014. In particular, changes are oriented towards:

- emphasis on learning outcomes
- stronger emphasis on the research part of the studies
- better connection with the society
- improvement of the process of supervision
- stronger emphasis on transferrable skills
- transparency and accountability
- better relation with students, especially within the process of supervision.

The final version of the new Standards for doctoral studies was discussed and adopted by the Commission for Accreditation and Quality Assurance (CAQA) and the CONUS. Based on this result, the National Council for Higher Education (NCHE) adopted the Standards on June 25th, 2016. In such a way, the formulated Standards have become an official by-law, as planned. A separate activity has been devoted to the Standards for doctoral studies in Arts, having in mind specific aspects of this type of studies. After getting the approval of the University of Arts and CONUS, the new Standards were adopted at the same meeting of the NCHE.

B) Funding of Doctoral Studies is one of fundamental issues related to successful restructuring of Doctoral Studies in Serbia and introduction of Doctoral Schools. Activities related to this issue were performed in two stages:

- analysis of the existing approaches to the problem of funding doctoral studies
- proposal of new regulations opening up new possibilities for students and HEIs

An initial Working Group was appointed at the Project Management Board Meeting at Crete, September 20th 2014. This Working Group made a detailed analysis of the current status of funding doctoral studies in EU countries. Comparisons with the actual situation in Serbia were done selectively, after choosing the cases in which parallelisms with the situation in Serbia are practically feasible. The Working Group gave the first draft of new regulations at the PMB Meeting on December 16th 2014. It was decided to nominate a larger working group in which each university consortium member would be represented. The new Working Group continued the work presented the obtained results at the Project meeting at Ghent, March 27th, 2015 and at the Conference held at Novi Sad, April 3rd, 2015. The final version of the proposed new regulations was analyzed and adopted at the Working Group meeting held in Belgrade on May 15th, 2015, having in mind that MoESTD is in the course of organizing a call for the new project cycle (see the document at the Project Site).

The main idea of the proposed regulations is to open a new possibility for students to obtain co-funding of doctoral studies which would be an addition to the existing forms and completely in line with the adopted principles of placing more emphasis to the research part of the studies.

The proposed Regulations for funding doctoral studies were adopted by the Ministry of Education in 2015, and incorporated into the bylaws for funding research projects (call for new projects in 2016 - part for doctoral students). At the Project Site the text of new regulations is given, together with a separate act dealing with doctoral students.

An important prerequisite for both principal outcomes of DEV1 has been **training of the university staff in QA standards and funding regulations for doctoral studies in EU** (Activity 1.1). All Consortium members participated very intensively in the corresponding mobilities, presented in more detail below in the Table of achieved results. Large groups of participants from Serbian universities paid visits to the Universities of Ghent and Lisbon, as well as to BOKU in Vienna and Technical University of Crete, Chania. Intensive courses and workshops were organized, so that the corresponding outcome has been reached very successfully as expected, having in mind that EU partners were able to provide a very good insight into the corresponding topics.

Within DEV2 "Research Policy and Industry in Restructuring Doctoral Studies" attention was paid to the following two main topics:

A) research policy of Serbia in the light of doctoral studies (**Activities 2.1 and 2.2**) ;

B) role of industry in restructuring doctoral studies and definition of a **Roadmap** for further actions. (**Activities 2.3 and 2.4**)

A) One of the Project missions has been to clarify and redefine the role of doctoral studies in R&D processes in Serbia. According to the Project Work plan, **Activity 2.1** resulted into two main outcomes. First, in December 2014 the book "**Science in Serbia, 2010-2014**" was issued and printed within the framework of the Project. One paragraph, entitled "Students of Doctoral Studies" was devoted directly to the topics of Activity 2.1. A critical analysis has been presented, including the main statistical indicators for the given period of time. The book "**Science in Serbia in 2014**" printed by RODOS presents complementary results. The main contribution of RODOS in both books has been to clarify the role of doctoral studies, including the proposal of new measures that have to be undertaken in line

with RODOS goals (connection with Activity 1.2).

It is to be mentioned that one of the major problems for doctoral studies in Serbia is the lack of critical mass of researchers, including both students and staff members. It has been identified that one of the possible orientations arising as a response to these needs could be a more efficient engagement of researchers working in the Institutes (Serbia has 56 Institutes, among which 28 are categorized as scientific; 14 Institutes are members of the Universities of Belgrade and Novi Sad). Namely, often very qualified people from research and development Institutes have no possibility to be directly engaged in doctoral studies. The project team has been very active in proposing an amendment to the Law on Higher Education in order to legalize participation of researchers from the Institutes in teaching and supervision of the Doctoral theses. The National Assembly of the Republic of Serbia adopted such an amendment in September 2014. In such a way a door has been opened towards the introduction of Doctoral Schools. This result contributes to sustainability of the overall Project results.

Furthermore, the academic staff of RODOS in 2015 participated actively in the preparation of a Proposal for Amendments of the Law on Scientific Research Activity. Doctoral studies have been treated in two paragraphs of the document. These amendments to the Law on Scientific Research were accepted by the National Assembly on December 29th, 2015.

Activities encompassed analogous amendments to the **Strategy of Research and Development of Serbia**, according to the Work plan. A draft was formulated by a Working Group, and adopted at the meeting in Novi Sad on the May 6th, 2015. The text gives a vision of the overall development of doctoral studies, contributing to a faster technological development and improvement of culture and preservation of the national identity. The final text of the Strategy was adopted by the Government of the Republic of Serbia on March 3rd, 2016, including the text proposed directly by RODOS. The corresponding part in the Action Plan for realization of the Strategy was formulated by RODOS, and adopted by the Government of the Republic of Serbia at the same Session.

B) One of the main challenges of the whole Project has been to try to open a more intensive collaboration with industry, having in mind that, in general, the lack of such a collaboration represents one of the main strategic deficiencies of the whole HE system of Serbia. Obviously, the problem is especially acute in the case of doctoral studies. On the other hand, it is clear that fulfillment of the **third mission** of universities can be realized most efficiently exactly in the domain of doctoral studies, having in mind potential influence of the related outcomes to the society as a whole.

Activity 2.3 has been treated within the Project exactly according to the Proposal, bearing also in mind potential influence of its outcomes to the profile of Doctoral Schools. The Activity has been initiated as early as in June 2014 at several meetings organized in the Chamber of Commerce and Industry of Serbia. Project coordinator participated at a workshop on HE-Industry relationship held at the Chamber of Commerce and Industry in October 2015. At the PMB meeting held on December 4th, 2014 it was decided, after a comprehensive analysis of all the relevant aspects, to start the activity by launching a questionnaire addressed to all the members of the Chamber of Commerce of Serbia (more than 1000 addresses). The questionnaire contained the following chapters: 1) Current situation in the enterprise; 2) Desirable qualifications of PhD bearers; 3) Collaboration with HE and research institutions; 4) Opinion about doctoral studies in Serbia; 5) Trends of the development of industry of Serbia and potential influence of doctoral studies. Concrete questions were formulated in such a way as to draw relevant conclusions about further steps to be undertaken in the sense of developing new structures for doctoral studies. The obtained results were presented and discussed at an important Conference held at the large hall of the Chamber of Commerce on April 23rd, 2015. It was decided then to continue along the same line, and to organize additional similar meetings in Kragujevac, Niš and Novi Pazar.

Based on deliverables 2.1, 2.2 and 2.3, a strategy for HE, research institutions and industry was formulated to emphasize the role and quality enhancement of doctoral studies in the form of a Roadmap for collaboration doctoral studies - industry. The text of the Roadmap was prepared by a Working Group led by UNS, in collaboration with the Chamber of Commerce and all HEIs of Serbia. The final text was submitted to CONUS, discussed by all the member Universities, and adopted by CONUS at the meeting held on May 18th, 2017. The whole text of the Roadmap is presented at the Project Site in Serbian and English languages.

The Roadmap gives an important contribution to the establishment of the rules, procedures and mechanisms in which the wider community participates in a variety of activities related to doctoral studies. Possibilities for applied research are opened for HEIs and Industry, including joint planning of subjects, financial support and utilization of the research results in practice. The Roadmap contributes to the training of students of doctoral studies, to the continuation of their careers in other sectors, as well as to recognition of PhDs in the labor market.

DEV3 "Doctoral schools: concept, standards, organization" is, together with **DEV4**, explicitly or implicitly, in the focus of the whole Project.

According to the Work Plan, **Activity 3.1** was devoted to an analysis of the EU experiences in the domain of doctoral schools. A report for Activity 3.1 is given at the Project Site. It gives a detailed presentation of the achieved results. The existing EU experiences in the domain of doctoral schools and joint doctoral degrees were thoroughly analyzed and evaluated. The university staff from Serbia (academic and administrative) paid training visits to the EU partners. Attention was paid not only to the academic aspects, but also to the organizational and administrative aspects of doctoral schools, their accreditation, as well as accreditation and recognition of joint doctoral degrees.

The starting point of the analysis was based on a comprehensive overview of the experiences in the 3rd HE cycle of PhD programmes at the Serbian universities since its introduction (2006). An analysis of the doctoral study level in Serbia, performed within the RODOS Project, can be found in the books "Doctoral Studies in Serbia" and "From Doctoral Studies to Doctoral Schools".

The activities are illustrated by following events:

1. **Study visit to Technical University of Crete, September 2014** - PhD Studies /European Experiences Some Examples was the topic of a special session of all Serbian Consortium members with the TU Crete delegation.
2. **Study visit to BOKU, Vienna December, 2014.** A special session within the study visit agenda was devoted to the structure, programme and additional facilities offered by Doctoral Schools.
3. **TREND 2015 Conference, Zlatibor, February, 23-26, 2015.** RODOS team members presented new trends in organisation and quality assurance of doctoral studies in the EHEA,
4. **Study Visit to Ghent University, March 2015** The study visit was specially focused on the experiences of Ghent University Doctoral Schools,
5. **Visit to Lisbon University, Lisbon, May 2015.** Presentation covered important aspects of doctoral studies with emphasis on joint doctoral degrees
6. **Participation at the international conference on the Future of the doctorate, organised by European Commission and held in Riga on 28-29 May 2015,**
7. **Study visit to Technical University of Crete, September 2015** A round table was organized on Concepts of Doctoral Schools in Serbia
8. **Study visit to BOKU, Vienna December, 2015** Overview on Doctoral Studies in Austria was given, with focus on financing, scholarships, accreditation and organization of Doctoral Schools in Austria
9. **Visit to Lisbon University, Lisbon, May 2016** The Portuguese Quality Assurance Agency and the Portuguese Accreditation System were presented, as well as International Doctorate Networks and International Doctoral Schools organized by IST. A round table with the subject Accreditation standards for joint study programs was organized
10. **Study visit to Technical University of Crete, September 2016** Presentation of Doctoral Studies and Doctoral Schools in Greece was given. A Round table on Standards for Establishing of the Doctoral Schools was organized.
11. **TREND 2017 Conference, Zlatibor, February, 22-24, 2017.** The title of the Conference was "Higher Education and Science in Serbia". RODOS team members presented papers entitled SURVEY OF RESEARCH AND INNOVATION IN SERBIA 2011-2016, CONTRIBUTION OF DOCTORAL STUDIES and LAW AMENDMENTS AND NaRDuS - what changes have been brought during first two years? Conference was organised by University of Novi Sad. A special panel: Accreditation Standards for Establishing Doctoral Schools was organised on February 22nd.

Within **Activity 3.2**, a Conference on Doctoral Schools was organized in the large hall of the University of Novi Sad on April 3rd, 2015 (participation of more than 50 official representatives of all HE institutions of Serbia, including deans and vice-deans of the University of Novi Sad). A comprehensive overview of European experiences was presented using different characteristic examples (University of Ghent, BOKU, as partners in RODOS Project, University of Brussels, University of Luxemburg, University of Helsinki, University of Szeged, all HEI's in France and Estonia), emphasizing the overlapping areas of interest. A very intensive discussion resulted into important conclusions for further actions within RODOS.

Doctoral Schools have been explicitly introduced, as a result of an initiative of RODOS, in the Action Plans for the Strategy of Education of the Republic of Serbia adopted by the Government of the Republic of Serbia on January 31st, 2015. Without going here into details, the Action Plans define a roadmap for the introduction of Doctoral schools in Serbian HE, important for all activities within the Project .

Based on deliverables 3.1 and 3.2, new accreditation standards and bylaws for establishment of Doctoral Schools were discussed on many occasions. Their aim was to increase the international and social value of the doctorate, teaching and research quality culture and support to doctoral students in all respects (supervision, guidance, student rights, insurance). The main intention was to find the most efficient ways of introducing Doctoral Schools in Serbia, not requiring substantial changes of legal regulations, having in mind versatility of situations at different universities and momentum of the HE system, resisting to changes. One of very important conclusions for implementability of Doctoral Schools has been that no explicit changes of the Law on HE is required. General legal aspects of the problem of founding Doctoral Schools in Serbia have been covered by the Chapter VIII in the book "**From Doctoral Studies to Doctoral Schools**".

In this sense, the Regulations for doctoral studies at UB, adopted May 24th, 2016. on the initiative of RODOS, serves as a good example. The document allows different forms of founding Doctoral Schools in line with the main ideas of RODOS. This document has been adopted at the majority of Serbian Universities.

The Guidelines for establishing Doctoral Schools represent one of the important outcomes of the Project. They were proposed by a nominated Working Group at the round table discussion in Belgrade November 17th, 2016. Proposed by the CAQA, these Guidelines were discussed and adopted by the NCHE on May 22nd, 2017. The Guidelines represent an important document indicating possible ways of establishing Doctoral Schools at different levels and within different organizational structures. This is a comprehensive legal basis for all future actions in the

direction of establishing Doctoral Schools. They are given at the Project Site. In spite of the above facts, RODOS initiated also changes in the LHE, which are not necessary, but can be helpful for founding Doctoral Schools (text at the Project Site). The amendment was adopted by MoESTD during a very long procedure lasting several years; however, until now the text of the new LHE has not been adopted yet. The last stage of the process was in June 2017, when CONUS supported unanimously the amendment proposed by RODOS.

In order to fulfill all the requirements resulting from deliverables 3.3 and 4.1 and to organize the establishment of the adopted models for Doctoral Schools in an efficient way, task force from Serbia, including academic and management staff and administration, was trained in EU countries on Doctoral School organization and functioning within the following visits:

1. Visit to TUC, Chania, September 19-21, 2014. In a three day program staff from TUC gave an overview of the organization of doctoral studies with the emphasis on joint doctoral degrees

2. Visit to BOKU, Vienna, December 11-13, 2014. In a three day program, staff from BOKU gave a presentation of the University, its doctoral study programs, with a special emphasis on doctoral schools introduced in some fields.

3. Visit to UGent, Ghent, March 24-27, 2015. In a very comprehensive and organized way, staff from doctoral schools from Ghent University gave a presentation of Doctoral Schools organized at UGent

4. Visit to Lisbon University, Lisbon, May 26-28, 2015. Presentation covered important aspects of doctoral studies with emphasis on joint doctoral degrees

5. Study visit to Technical University of Crete, September 2015 Presentation of accreditation and organisation of Doctoral Studies and Doctoral Schools in Greece and TUC was given

6. Study visit to BOKU, Vienna December 16-18, 2015 Overview on accreditation and organization of Doctoral Schools in Austria and BOKU.

7. Visit to Lisbon University, Lisbon, May 25-27, 2016 The Overview on accreditation and organization of Doctoral Schools in Portugal and IST, including international Doctoral Schools.

A committee nominated by the PMB formulated the new accreditation standards for Joint Doctoral Degrees, according to the Proposal, on the basis of the LHE and the best EU practice, including both teaching and research parts of the studies. The final text is presented at the Project Site and in the book "**From Doctoral Studies to Doctoral Schools**", Chapter IX and the related Appendix. These standards were evaluated and adopted by the CAQA and CONUS. The proposal of new standards was addressed to the NCHE. After detailed considerations, the NCHE adopted the proposed standards March 27th, 2017, so that they became bylaws in the Republic of Serbia.

A Working Group nominated by the PMB was working, according to the modified Work Plan, on the formulation of the accreditation standards for establishing Doctoral Schools on the basis of the LHE and the best EU practice. Two round tables on standards for establishing Doctoral Schools were organized. The first draft of the Standards was prepared after the first round table (Crete 2016). After getting EU partners' feedback, the Working Group prepared the final version of the Standards. At the second round table organized in Belgrade November 17th, 2016 the final text was discussed and the preliminary version adopted. The text was formulated in accordance with the Serbian legal framework. The activity was successfully finalized after the adoption of the proposal by the CAQA, and, consecutively, by the NHCE. The NCHE adopted the integral text of all standards related to Doctoral Schools March 17th, 2017. It is important to mention that these standards became a part of the general Standards for self-evaluation of the Serbian HEIs (new Standard 15 - see the Project Site and the site of NCHE).

DEV4 "Establishment and implementation of Doctoral Schools with selected study programs" represents the final practical convergence point of all the Project activities.

Activity 4.1 has been conceived and formulated in the Proposal following from the *top-down* methodology, in which general aspects and rules are predefined, so that the implementation of study programs follows as a consequence. However, in spite of possible theoretical advantages of pursuing the top-down approach, the inverse *bottom-up* approach has been found to be more adequate, having in mind versatility of structures and ideas connected to the establishment of doctoral schools and different conditions for their implementation at different universities and within different fields. In this sense, **Activity 4.3 Formulation of Selected Study Programs for Doctoral Schools** appears to be a prerequisite for Activity 4.1. The PMB concluded several times at its meetings (December 16th, 2014, April 3rd, 2015) that these two activities have to be merged and to be considered as one unified general activity aimed at forming a number of diverse Doctoral Schools with selected study programs. Indeed, specific doctoral schools have to result from the context, (at least their first draft) and not vice versa (see the text within Activity 4.3 below). These considerations, essential for the Project, are presented in detail in both books (Doctoral Studies in Serbia, Chapter III and From Doctoral Studies to Doctoral Schools, Chapters VII and VIII) and discussed on numerous occasions (Joint session of the NCHE and NCSR in Belgrade on December 4th 2014, Conference on Doctoral Schools in Novi Sad on April 3rd, 2015, Round table in Belgrade on November 17th, 2016, Panel at the TREND Conference on Zlatibor on February 22nd, 2017 and Final Project Conference in Belgrade June 1st, 2017, and other project meetings - see the Project Site). In this sense, the Doctoral Schools will not be regulated obligatorily by accreditation standards - they can be also regulated in a more flexible way through internal University and/or Faculty regulations. This decision has been taken at the level of Project as a clear guideline for the future organization of Doctoral Schools.

Formally speaking, the outcome of the Activity 4.1 is given in the form of the Chapter VII of the book From Doctoral Studies to Doctoral Schools, entitled MODELS OF DOCTORAL SCHOOLS IN SERBIA. It should be emphasized that this chapter gives a broader approach to the subject, with respect to the plan given in the Proposal. This is essential for widespread applicability of the concept of Doctoral Schools, and, consequently, for sustainability of the Project.

In the sense of the explanations done within Activity 4.1, the following Doctoral Schools have been founded::

1. Doctoral School of Mathematics. Faculties of Mathematics of the Universities of Belgrade, Novi Sad, Kragujevac, Nis and Novi Pazar, together with the Institute of Mathematics of the Serbian Academy of Sciences and Arts, proposed a Doctoral School of mathematics, an elite organization offering a set of courses taught by the best teachers in Serbia, and organizing doctoral research projects supervised by the best researchers in particular domains. The School does not require any need for changing legal regulations. However, it requires accreditation, already done by CAQA..

2. Doctoral School of Medicine. The envisaged Doctoral School will take care primarily of transversal skills, by organizing specific courses for all doctoral students at the Faculty of Medicine, University of Kragujevac, which contains many different Divisions (study programs). It will also organize supervision in a more efficient way. Accreditation has been done by CAQA.

3. Doctoral School of Technical Sciences. The Faculty of Technical Sciences at the University of Novi Sad made a decision at the highest hierarchical level to organize a Doctoral School of Technical Sciences, comprising 16 study programs in different disciplines of Technology (Electrical, Mechanical, Civil Engineering, Architecture, Applied Mathematics, etc). The School follows structurally the model adopted by RODOS and presented in the book **From Doctoral Studies to Doctoral Schools**, covering transversal skills, supervision, multidisciplinary and carrier guidance.

4. International Doctoral School of Megatrend University. University Megatrend (new name: John Neisbitt University) organized an International Doctoral School in all the fields covered by the existing Faculties. International partner on the basis of Joint Degrees have been selected to be University Primorska, Slovenia, and Bari University, Italy. The model follows the concepts adopted in RODOS. The study programs have been accredited by CAQA.

5. Doctoral Schools at the University of Belgrade. University of Belgrade has undertaken a multitude of measures oriented towards incorporating Doctoral Schools in its practice. Besides the introduction of Doctoral Schools in its Regulations for Doctoral Studies, University of Belgrade decided to merge all doctoral study programs at the University level and to organize a Doctoral School of Belgrade University. During the Project lifetime, the study program of Bio Photonics has been accredited (at the expense of RODOS). Following the adopted general line of thought, RODOS organized and funded a course of transferrable skills (TRAIN Program). Following one of the paradigms, a Doctoral School of Medicine will be established jointly with the Faculty of Dentistry and Faculty of Pharmacy. University of Belgrade will continue to organize a large number of Doctoral Schools in near future (guaranteeing high sustainability).

6. Doctoral School of Biology. This Doctoral School will be centered around the Faculty of Biology at the University of Belgrade and the Institute of Molecular Genetics and Genetic Engineering, member of the University of Belgrade, as an example of a fruitful collaboration between Universities and Research Institutes. The School will primarily take care of the laboratory facilities and research, trying to put together Faculty and Institute staff and to improve supervision. The School will also take care of the organization of transversal skills needed for biologists.

7. Doctoral School of Arts. University of Arts in Belgrade, has an intention to implement a Doctoral School of Arts, in which the particular Faculties (Music, Painting, Applied Arts, Theatre) will formally continue functioning as before, but in which transversal skills would be taught within the School. In this sense, a doctoral training was organized by RODOS team April 25th, 2017 in cooperation with the Center for Intellectual Property, Belgrade, devoted to diverse aspects of intellectual property in arts. Further steps do not require accreditation - only decisions at the University level.

8. European Joint Doctoral Degree in Science and Technology for Cultural Heritage Preservation. The Institute of Physics, as a member of the University of Belgrade, conceived and organized a Doctoral School with the University La Sapienza, Italy, Politecnico do Milano, Italy, University of Avignon, France and University devoted to Science and Technology for Cultural Heritage Preservation. The students will get Multiple Doctoral Degree from the Universities consortium members. The Institute of Physics applied for funding this Project from EU funds.

9. Doctoral School as Initiative of an R&D Institute. Vlatacom Institute, Belgrade, decided to organize a Doctoral School in the area of Advanced Information and Communication Technology (Radar Systems, Electro-Optical Systems, Cryptology) using its own human and technical resources, in conjunction with Metropolitan University, which would cover aspects in its domain of competence. Documents are prepared; in near future decision will be made to initiate the accreditation step.

It was decided at the PMB to add an additional value to the Project (in particular, to the Activity 4.3) by organizing in Autumn 2015 short (two or three day) courses related to transversal skills (research methodology, project management, composition of scientific papers, research ethics, etc.). These courses were financed by the Project, and kept open for all doctoral students at particular Universities (a nucleus for the organization of these courses was made at the PMB meeting at Novi Sad on April 3rd, 2015). Organization of these courses started in

September 2015. The idea was to achieve in such a way two main goals: 1) to get more experience in organization of short courses for doctoral students (similar to those organized in UGent); 2) to show in an evident way advantages provided by Doctoral Schools.

After a detailed analysis of all aspects of providing administrative support to Doctoral Schools, the PMB found that the capacity of Serbian HEIs is such that formal opening of Doctoral School Offices is not necessary for efficient functioning of the new organizational structure. This is, obviously, also connected to the adopted general methodology oriented towards making a large implementation front of diverse types of Doctoral Schools (much more than planned in the Proposal), as described in Activity 4.1. The PMB decided to make a general contribution to the organizational support of Doctoral Schools by:

- 1) widening IT capacity of selected HEIs (connected directly or indirectly with concrete case studies) by purchasing additional equipment (servers, laptops), with the aim to facilitate intensive R&D activities;
- 2) introducing and implementing university repositories for doctoral dissertations at UAB and UM (where such repositories did not exist before)
- 3) introducing and implementing the repository of doctoral dissertations at the state level (National Repository of Doctoral Dissertations in Serbia - NaRDuS), located at the MoESTD (see the book From Doctoral Studies to Doctoral Schools, Chapter VI).

NaRDuS (<http://nardus.mpn.gov.rs/>) is a common portal of PhD dissertations and thesis evaluation reports from all Serbian universities. It is based on the Law on Higher Education (Amendments, Sept. 2014).

All universities are obliged to deposit basic information about each and every dissertation - together with the thesis evaluation report and dissertation itself - to NaRDuS within three months period starting from the date of PhD dissertation defense.

From the point of view of direct impact on HE of Serbia, NaRDuS represents one of the major concrete achievements of RODOS, contributing in an essential way to sustainable restructuring of Doctoral Studies in Serbia.

According to the results from deliverables 4.1 – 4.3, extreme efforts have been done in the direction of formal establishment and implementation of the founded Doctoral Schools. Having in mind the adopted methodology, a large number of Schools (much more than four, what was planned in the Proposal) of diverse kinds have been founded, each having its own specific properties. At the end of the Project eligibility period, we have the following situation:

- 1) **Doctoral School of Mathematics** accredited, students enrolled in 2016,
- 2) **Doctoral School of Medicine** accredited, students enrolled in 2017,
- 3) **Doctoral School of Technical Sciences** in the process of accreditation,
- 4) **Doctoral School of the Megatrend University** accredited, students enrolled in 2016,
- 5) Study programs on **Bio-photonics and Biomedical Engineering and Technology** (part of the University of Belgrade - interdisciplinary Doctoral School in the process of establishing) accredited (financially supported by RODOS) students enrolled in 2016,
- 6) **Doctoral School of Biology** accredited, students enrolled in 2015,
- 7) **Doctoral School of Arts** study programs accredited, student enrolment in doctoral training in 2017
- 8) **European Study Program in Science and Technology for Cultural Heritage Preservation**, submitted for EU funding,
- 9) **Doctoral School in ICT promoted by Vlatacom Institute**, currently under consideration by several HEIs.

It is of utmost importance that numerous HEIs expressed their willingness to organize and implement a Doctoral School.

The University of Ghent, as the Lead Partner for the **WP5 – Quality Plan**, prepared an outline of activities to be implemented as part of this package in the form of a **Quality Control and Monitoring Plan** (Project Site). Quality control and monitoring were achieved through a number of measures:

1. Procedures for self-evaluation will be established by CQCM.
2. Everyday monitoring of work plan realization
3. Internal evaluation (questionnaires)
4. External evaluation (expert).

The PMB decided to perform the global process self-evaluation two times, in order to achieve direct coordination and synchronization with the evaluation done by the external expert, having in mind that a combination of internal and external view on the project was expected to provide a useful input in the process of securing quality of the RODOS project. All quality control reports contained evaluation of the indicators specified in the LFM, as well as recommendations relevant for the accomplishment of the project objectives.

The first self evaluation assessment was performed on M18. The analyzed results were included in the Annual Reports of the CQCM. The questionnaires did not only ascertain satisfaction levels, but also served for wider research purposes, e.g. for measuring awareness of certain topics.

The second self evaluation assessment was performed on M36. It provided a summary of the results achieved in the Project, as well as an evaluation of the quality of these results.

The Committee for Quality Control and Monitoring (CQCM) was established at the project kick-off meeting; its

members were:

1. Dieter De Bruyn, University of Ghent,
2. Vassilis Moustakis, Technical University of Crete,
3. Srdjan Stankovic, Conference of the Universities of Serbia,
4. Verka Jovanovic, University Singidunum and
5. Slobodan Radicev, Association of PhD candidates and young researchers of Serbia

Members of the CQCM continuously performed monitoring of the work plan realization and shared information about the progress. They prepared an intermediate reports about internal quality control and monitoring of the intermediate project results to the PMB. The quality control entailed both the content of the project and publication and dissemination of the results of the project (Project Site).

The CQCM had seven meetings (see the Table of achieved results).

Prof. Petar Maric from Banja Luka University, Bosnia and Herzegovina, was elected as an internationally renowned expert to make an external assessment of the Project results.

The external expert evaluated the project for the first time in M18 and wrote a report that was made publically available on the Project Site. The evaluation methodology included an assessment not only of the timely execution of the activities, but also of the quality of the achieved outcomes and outputs, and the efficiency of the implementation of the project results. The report included comments about possible discrepancies between the planned and the accomplished activities and suggestions of how to achieve the planned goals. The first external evaluation was very important for the overall Project results, having in mind that the Project team acted strictly in line with the given suggestions.

The external expert evaluated the project for the second time in M40, making a final assessment of the project results. It is important that the final evaluation confirmed that the actions undertaken on the basis of the suggestions made in the first report were successful.

The study programs formulated for the selected Doctoral Schools were evaluated by the academic staff from the EU institutions. The PMB took all necessary measures oriented towards taking into account all the suggestions and ensuring quality of the study programs. The contact person of CSU had the duty to monitor all the performed actions.

The proposed study programs are discussed at the following round tables:

1. Crete, September 2nd, 2015, Round table: **Concept of the Doctoral School in Serbia**
2. Vienna, December 18th, 2015, Round table: **Models of Doctoral Schools in Serbia**
3. Lisbon May 27th, 2016 Round table: **Accreditation standards for joint study programs**
4. Crete September 8th, 2016 Round table: **Standards for Establishing of the Doctoral Schools.**

Suggestions of the EU partners were done directly to the partners proposing study programs, including specially organized study visits of EU experts paid to these partner institutions. The round table organized at Crete in 2016 was of great importance for the adoption of the final view on establishing Doctoral Schools in Serbia.

The main pillar and the lead partner for **WP6 Sustainability** was the National Council of Higher Education, together with the Commission for Accreditation and Quality Assurance and the National Council for Research and Technological Development.

Since the beginning of the project, there were two joint meetings of the National Council of Higher Education and the National Council for Research and Technological Development devoted to doctoral studies, and activities of RODOS in particular (June 16th 2014, December 4th, 2014)

- A Sustainability Plan has been drafted in order to identify and organise the activities to be performed during the Project life time in order to facilitate exploitation of the RODOS project's results after the end of the EU's financial assistance. Drafting of this Sustainability Plan and monitoring and further developing activities related to the exploitation of Project results is the responsibility of the RODOS Exploitation Working Group (NCHE (Chair), CONUS, MESTD, UBG and SASA).
- Regular meetings of the leading staff of Serbian Universities with the RODOS project team were organized, focusing on possible forms of Doctoral. This project is highly ranked in Serbia and has been recognized as a priority for improvement of Serbian higher education system.
- All formal aspects of sustainability oriented specific actions are covered below and in the Table of achieved results.
- All the essential aspects of Project sustainability re commented throughout all parts of this Report, having in mind its importance.

The **WP7 Dissemination** is very important for visibility of the project and involvement all interested groups (lead partner University of Arts). The main achievements related to the proposed deliverables are given below. The following measures were undertaken:

- Website and web portal created (Serbian and English version)
- Website and visual identity of the project created
- All related document proposals created
- Databases for web portal and web galleries created

- Dissemination and coordination events web galleries uploaded
- Email accounts created
- Regular website maintenance carried out (information and documents upload)
- Monitoring of dissemination activities carried out (dissemination questionnaire)
- Regular communication with project stakeholders (with main focus on student representatives) and public audiences

The lead partner of **WP8 Management of the project** was the coordinating institution CONUS. The main outcomes of this work package, which is very important for the whole project, are:

- Project Management Board was established at the kick off meeting with representatives from all partner Institutions. PMB has nineteen members delegated by all the participating institutions. During the Kick off Meeting, the Project Quality Control Committee and other Project bodies were established.
- PMB had 14 meetings (only one meeting per year was planned in the Work Plan), and within different work packages there were numerous coordination meetings. During the meetings all relevant issues are discussed.
- As a result of good communication and understanding among partners, all project activities have been performed timely and they have been completed according to the proposal of the project.

Details of the related activities are given below.

Obstacles and shortcomings

Please describe any obstacle and/or shortcoming experienced during the project lifetime and the measures taken by the project team to address them.

RODOS represents a challenge for HE and research community in Serbia. The ambitious main goal of the Project has been to restructure doctoral studies in Serbia in such a way as to achieve good harmonization between teaching and research, and to develop new forms adequate for better communications HE - industry, able to enhance the third mission of universities. The main obstacle (introduced in the LFM), has been "resistance to changes". Such a resistance has been identified at all levels, but particularly in the HEI's (or their departments having insufficient number of qualified supervisors, weak research and connections with industry RODOS staff realized that it was necessary to undertake much more intensive actions of explaining that the main mission of the Project was to OPEN NEW POSSIBILITIES, rather than to introduce any new regulation by force. Fortunately, the Final Conference of the Project has shown that these efforts were successful, and that RODOS succeeded to change the state of mind at the Serbian HEIs, in such a way that the main problem is actually how to handle numerous proposals for the introduction of Doctoral Schools.

Communications with MESTD, very important for the Project, was a problem in some situations. In fact, more active contribution of MESTD has been often restricted because of the lack of disposable experts. Successful installation of NaRDuS is the proof that the shortcomings in the relationship with MoESTD were successfully overcome.

One of the major problems in realization of this project is complicated requirements from the side of the EU in providing the equipment, which was supposed to have certification on the origin in Europe Only after long and exhausting consultations with Tempus office in Belgrade, with administrative staff at the University and many professionals, it was possible to find good solutions.

Curricular reform

- With regard to new/restructured programmes/courses, please indicate:
 - the level of the programme/course implemented (Bachelor, Master, Doctorate, continuing education, further education, upgrading, etc.); the type of course (mandatory course in a regular programme or an optional course); the language of the course;
 - whether the newly developed course is structured according to the three cycle system and using the ECTS;
 - whether a double, multiple or joint degree has been established;
 - whether recognition arrangements between higher education institutions in the EU and in the partner countries have been established;
 - the target group (students, university staff, managers of education systems, public civil servants, employees in private sector, etc.) and if relevant, the approximate number of students who already attended;
 - whether the programme/course was formally recognised, the level (institutional, national, etc.) and the form of recognition (certificate, diploma, degree);
 - the teaching material produced and the method (translated, adapted, developed by the beneficiaries, etc.);
 - whether teaching methods have been reviewed and are appropriate for the new/restructured programmes/courses;
 - whether assessment measures have been introduced for the new courses (by students for instance);

The whole Project has been dominantly aimed at different aspects of curricular reform. DEV1 and DEV2 have been oriented towards necessary prerequisites, while DEV3 and DEV4 have been concerned with specific doctoral

study programs. Presentation of legal regulations formulated in this direction and a list of Doctoral Schools organized and implemented within the Project are given above. Necessary explanations are also given.

Specific answers to the questions are the following:

- 1) Level: Doctorate; some courses are mandatory, some optional); language Serbian/English
- 2) Courses structured using ECTS
- 3) Joint degrees established when necessary
- 4) Recognition arrangements have not been made
- 5) The target groups are very variable
- 6) All the courses have been accredited
- 7) Teaching material was produced when necessary
- 8) Teaching methods have been reconsidered very thoroughly
- 9) Assessment has been made by students and external experts

Governance reform

Were changes at institutional level introduced (establishment of units, new faculties, international relations offices, etc.)? If so, what is the statute of the new unit(s) within the institution(s) concerned? What kind of financial support and staffing arrangements will be provided in the future? Did the project introduce any reforms in university governance (i.e. decision process, autonomy, accountability)? If yes, please describe these reforms and the institutional support given by academic and local authorities.

Were changes in the national higher education structure and system supported by the project (establishment of representative bodies, associations, agencies for quality assurance, development of roadmaps for national reforms, national certification and qualification systems, etc.)? If yes, please describe the project contribution to the reforms and the involvement and support given by local authorities.

The overall impact of the project at the system/institutional level has been twofold.

In accordance to the Work Plan, substantial changes in governance and management of the Serbian HEIs have been introduced:

- changes of LHE,
- changes of the Law on Research,
- changes of the Strategy of Research and its action plans,
- changes in the University and Faculty statutes and other bylaws,
- new accreditation standards and related instructions,
- new University and Faculty regulations (The details are given in detail in this Report).

More specifically, RODOS is concerned with introducing new structures for doctoral studies in the form of Doctoral Schools. From this point of view, the performed analyses were concerned with management and governance issues connected to the implementation of Doctoral Schools. Depending on specific form of Doctoral School, it is necessary to change different aspects of the actual system of governance and management. However, the intention has been to try to realize the main ideas of the Project at the level of minimal requirements for changes in the domain of governance and management, having in mind efficiency of implementation and sustainability issues.

All the above issues are covered in detail by the books "**Doctoral Studies in Serbia**" and "**From Doctoral Studies to Doctoral Schools**".

Links with society

Did the project help to strengthen the role of higher education institutions in society at large (contributing to the development of lifelong learning, addressing the knowledge triangle, establishing links with the labour market, etc.)? If yes, please describe how these links have been institutionalised.

One of the goals of the Project has been related to the third mission of HEIs, i.e. to the establishment of stronger links between the HEIs and the society at large. Three main points have to be pointed out here; two of them are formally related to DEV2, and the third to DEV3 and DEV4. The first point deals directly with the knowledge triangle: education, research, innovations, through Activities 2.1 and 2.2. Indeed, identification and regulation of connections between Doctoral Studies and Research are addressed directly to the knowledge triangle. The second point is connected to Activities 2.3 and 2.4: they are both concerned with connections HEIs - industry which represent an important element of the anchoring role of HEIs within the society. They also represent one of the pillars of Doctoral Schools introduced as a vehicle for transformation of doctoral studies in Serbia. The third point is related to one important consequence of the second one: adequate carrier guidance for doctoral students, contributing both to the individuals and the society at large.

Mobility and training activities for staff and students:

- Please describe how the mobility and training activities have contributed to the achievement of the project objectives.

- Please describe the selection criteria used for mobility and training and indicate how the home institutions evaluated and recognized this mobility or took it into consideration, once it had been carried out.
- In the framework of student mobility and with regard to the recognition of study periods abroad, have agreements been signed between the universities? Was the mobility part of a credit transfer system comparable to the ECTS system? Was it in the framework of a double, multiple or joint degree? If yes, please provide details. If it was not, please indicate on what basis the results achieved by the students were officially recognised?
- Please comment on the assessment of the students' performance by the hosting universities/enterprises and on how the students assessed their stay at the host institution.

As described above, there were four major events related to staff re-training:

1. **Study visit to Technical University of Crete, September 2014** - PhD Studies /European Experiences Some Examples was the topic of a special session of all Serbian Consortium members with the TU Crete delegation. .
2. **Study visit to BOKU, Vienna, December 2014.** A special session within the study visit agenda was devoted to the structure, programme and additional facilities offered by Doctoral Schools.
3. **Study Visit to Ghent University, March 2015.** The study visit was specially focused on the experiences of Ghent University Doctoral Schools,
4. **Study visit to Lisbon University, Lisbon, May 2015.** Presentation covered important aspects of doctoral studies with emphasis on joint doctoral degrees
5. **Study visit to Technical University of Crete, September 2015** A round table was organized on Concepts of Doctoral Schools in Serbia
6. **Study visit to BOKU, Vienna, December 2015** Overview on Doctoral Studies in Austria was given, with focus on financing, scholarships, accreditation and organization of Doctoral Schools in Austria
7. **Visit to Lisbon University, Lisbon, May 2016** The Portuguese Quality Assurance Agency and the Portuguese Accreditation System were presented, as well as International Doctorate Networks and International Doctoral Schools organized by IST. A round table with the subject Accreditation standards for joint study programs was organized
8. **Study visit to Technical University of Crete, September 2016** Presentation of Doctoral Studies and Doctoral Schools in Greece was given. A Round table on Standards for Establishing of the Doctoral Schools was organized.

Staff mobility are visits presented within Staff Retraining; they encompassed many staff members from partner institutions who used these opportunities for different particular contacts oriented towards implementation of the Project activities. At the same time, these visits were opportunities for organizing Project meeting and discussing important issues together with EU partners (the visits were concerned to Activities 1.1, 1.2, 3.1, 3.4 and 5.4)

There were, all in all, 385 mobilities of 94 different persons.

The number of mobilities and staff was planned according to needs to accomplish certain outcomes. Therefore, the following selection criteria were used for the different groups of people to participate in mobility:

- (1) Interest and willingness to participate in specific RODOS activities;
- (2) Professional background.

Besides, there were several staff mobilities with specific goals (visit of a Serbian delegation to UGent 2-4 July 2014 as a preparatory meeting for Quality Control and further retraining actions, a visit of the contact person from TUC to Belgrade for Quality Control issues, May 20-22 2015, a visit of the contact person from UGent to Belgrade, October 14th, 2014 for Quality Control issues and visit of the representatives from Megatrend University to BOKU for peer reviews of the study programs of the Megatrend Doctoral School, September 26-30 2016).

The realized trips were planned in detail and have had a very important role in the sense of realizing the Project goals and achieving an atmosphere of collaboration and mutual understanding.

Student representatives participated in the visits presented within Staff Retraining. Visits encompassed members of the Association of PhD students and young researchers of Serbia. One student's mobility was with specific goals – visit of a Serbian delegation to UGent 24-28 March 2015 as a meeting of the Quality Control Committee. Also student representatives participated in all management/coordination/ quality control meetings and had active role in decision making process in the Project. All in all, participation of student representatives in those visits were in line with organized management/coordination meetings and quality control activities taking place in European Union and Partner Countries participating in the project.

Equipment

- How has the equipment been used during the project lifetime and how has it contributed to the project outcomes?
- What are the future plans for the use, maintenance and insurance of all the equipment purchased in the framework of the project?

After a detailed analysis of all aspects of providing administrative support to Doctoral Schools, the PMB found that the capacity of Serbian HEIs is such that formal opening of Doctoral School Offices is not necessary for efficient functioning of the new organizational structure. This is, obviously, also connected to the adopted general methodology oriented towards forming a large implementation front of diverse types of Doctoral Schools (much

more than planned in the Proposal), as described in Activity 4.1.

The University of Belgrade conducted an official formal tendering procedure within the framework of the TEMPUS project RODOS through a Public Call for the purchase of equipment for all the eligible Serbian partners. Beneficiary institutions prepared detailed technical specifications for the needed equipment and software for building IT capacity of Serbian partners' institutions for Doctoral Studies and R&D in general. The call was entirely in accordance with the Note for TEMPUS IV beneficiaries obtained from Mr. Klaus Haupt on November 18th, 2014, in line with the principles of transparency, proportionality, equal treatment and non-discrimination. As required by the Note, we strictly respected the relevant national and EU regulations. According to the Serbian Public Procurement Law, we published the Call in the Official Gazette of the Republic of Serbia and at the official Web site of the University of Belgrade, and we received offers from six suppliers. The official Tendering Committee examined the offers and selected the best suppliers.

The intention of the Project Management Board to spend the money initially dedicated to different kinds of software (eDocument services software, software for eClassroom, Video link software, software for web portal) in a different way, better adapted to the general Project goals (having also in mind that the initially planned software had already been acquired by all the partners) was approved by the EACEA. The whole amount dedicated to software (30.245 euros) was used in the following way: 1) cca 15.000 euros for the central repository of doctoral dissertations (NaRDuS – National Repository of the Doctoral Dissertations in Serbia); 2) cca 10.000 euros for the repository software for two partners (Megatrend University and University of Arts in Belgrade) and 3) for the licenses for the operating systems and other system software installed in the computer systems for all partners.

It is our belief that the creation of the central repository for doctoral dissertations represents a very important contribution of RODOS to the development of doctoral studies in Serbia. The need for the central repository was formally introduced in the Amendments to the Law on Higher Education in September 2014. Besides intensive personal contacts, the Project received two times official letters from the Minister of Education, in which he described precisely the needs for the central repository and defined the related technical specifications (the National Tempus/Erasmus office was in the course of all events). It is obvious that the installation of the central repository represents a very valuable contribution to the Project sustainability and dissemination.

Two partners mentioned above were the only Consortium members not having local dissertation repositories at the University level. It is to be emphasized that the central repository is at the higher hierarchical level than the local ones; on the other hand, the central repository is accessible from the local repositories.

The Conference of the Universities of Serbia (CONUS) is the formal owner of the central repository and it is a part of the CONUS Inventory book. The University of Belgrade employees from the Belgrade University Computer Centre (RCUB) manage the repository installed at the RCUB servers, which were purchased in parallel, within the general call for RODOS tender for equipment. Rector of the University of Belgrade is the president of CONUS; at the moment, the University of Belgrade is in charge for all technical and administrative work for CONUS. The role of the Ministry of Education is to provide a legal basis for creation and utilization of the central thesis repository, having in mind that only the Ministry has the authority to require that all higher institution in Serbia participate in the central repository. Now, NaRDuS (<http://nardus.mpn.gov.rs/>) is a common portal of PhD dissertations and thesis evaluation reports from all Serbian universities. From the point of view of direct impact on HE of Serbia, NaRDuS represents one of the major concrete achievements of RODOS, contributing in an essential way to sustainable restructuring of Doctoral Studies in Serbia

Even though we completely respected the Note of November 18th, 2014 and all the relevant national and EU regulations, one of 27 lots had to be repeated, because the offered prices were over the amount planned for this lot. In line with this, after authorization by EACEA University of Novi Sad conducted the second official tendering procedure for that lot.

Through two public procurements University of Novi Sad purchased equipment software for total amount of cca 24.500 euros, University of Arts in Belgrade for 11.000 euros, University of Kragujevac for 15.000 euros, University of Niš for 25.000 euros, State University of Novi Pazar for 12.500 euros, Singidunum University for 15.500 euros, Megatrend University for 11.000 euros, University of Belgrade for 68.500 euros, Association of PhD students and young researchers of Serbia for 3.000 euros and Conference of the Universities of Serbia purchased software for the National Repository of the Doctoral Dissertations in Serbia for cca 15.500 euros. The total amount spent from TEMPUS grant on purchasing equipment is 201.000 euros. Also, beneficiaries co-financed the project activities with purchasing equipment in the amount of 5.000 euros.

Academic and administrative management of the project

- Could you please describe to what extent the institutions from the European Union and partner country(ies) participating in the project were involved and the support they provided, be it academic or administrative?
- Did you encounter any difficulties in the management of the project? If yes, please indicate the type of problems and the solutions identified to address them.

Academic coordination and administrative management were planned in details in the Project Proposal. All partners recognized that good management is a crucial prerequisite for the overall success of the project, timely performing of the activities, adequate financial flow and sustainability of the project results. CONUS was in charge

of academic coordination of the Project, of administrative management, as well as of financial management of the project. CONUS was also responsible for generating and sending the Intermediate and Final reports, based on reports from all partner institutions in the Project.

Project Management Board (PMB) was established at the Kick off meeting in Belgrade, March 3rd 2014, with representatives from all partner institutions. The participants felt that all the partners should have direct access to management, insight into all the activities in the project and full responsibilities for all the actions within the Project. The main role of the PMB was the project policy design and overall decision making, including directing and coordinating actions planned in the project. All decisions of the PMB were done by consensus.

The lead partners were responsible for the coordination of the activities related to the respective work packages and communication with partners within these packages. They were also responsible for writing regular reports for the coordination meetings and to the PMB that include activities planned and performed, outcomes achieved and possible suggestions for further activities. Project coordinator provided assistance to the lead partners and chair persons in all issues related to the implementation of the Project. Management and administration teams were responsible for day by day administration and assisted in provision of administrative and technical support, financial issues, communication, mailing and filing of documents. Representatives of the partner institutions were responsible for sending scanned documents to the coordinating institution, filing up and keeping the originals five years after the project duration.

The following meetings of the PMB were held:

1. Belgrade, Kick off Meeting, March 3rd, 2014
2. Belgrade, June 19th, 2014
3. Chania, Crete, September 20th, 2014
4. Belgrade, December 16th, 2014
5. Novi Sad, April 3rd, 2015
6. Ghent, March 27-28th, 2015
7. Lisbon, May 20th, 2015
8. Belgrade, June 2nd, 2015
9. Chania, Crete, September 3rd, 2015
10. Vienna, December 15th, 2015
11. Lisbon, May 27th, 2016
12. Chania, Crete, September 9th, 2016
13. Novi Sad, October 21st, 2016
14. Belgrade, June 1st, 2017

There were 86 coordination meetings in total.

At the kick off meeting the decision was made not to elect formally any Steering Committee for the Project. Besides the above given essential reasons, such a decision was also motivated by experiences gained within previous Tempus projects and suggestions of the National Tempus Office to enhance democratic ways of making decisions, by involving all Consortium members. Therefore, PMB gained much more importance, and its meetings had to be more frequent than planned. On the other hand, the coordinator had to intensify everyday consultations with the leaders of the Work Packages and other leading persons responsible for partner institutions in order to ensure efficient and smooth functioning of the project. From this point of view it is very important that CONUS was the Grant Holder institutions. Informally, a group of WP leaders played the role of a formal SC very effectively.

Dissemination and Sustainability

- How did you achieve a multiplier effect of the project? Do you think that the successes will go beyond the immediate target group, for example to the wider education system, local economy and society?
- Do you think that the beneficiaries (institutions) will be able to sustain and develop the achievements of the project? If yes, what measures were set up or are planned to support this continuation? What obstacles were there and what measures were taken to address them?
- Do you foresee any future co-operation between the beneficiaries of your project?
- How do you plan to use the results of the project in the future?
- What measures have been taken to formalise or institutionalise links with local non-university partners?

DISSEMINATION

Project dissemination strategy was based on four main pillars: opening of the main project events to all stakeholders (representatives of wider academic community/Serbian universities outside project consortium, faculties, schools of applied sciences, state authorities, experts in HE, NGOs, non-academic institutions), media campaign, project web site regularly updated, publishing of promotional and other information materials.

Dissemination activities started at the very beginning of the project, at the Opening Conference held on March 3rd, 2014, in Belgrade. Besides, delegated persons from all the partner institutions, representatives of other stakeholders were invited to participate, together with media representatives. The project achieved wide media attention/coverage and was well presented in the main Serbian newspapers and on TV and radio stations. This strategy was continuously implemented to all project events, giving good results in attracting the attention both in

media and in wider academic community. The results of the project were made available to all universities in Serbia as one of the solid pillars for the expected project results.

Dissemination Conferences were organized 7 times. A wider aim of these conferences was to invite industry and civil sector representatives to encourage cooperation with universities in order to support the envisaged reforms of doctoral studies. At each conference, the results of the reform activities were presented. Also, adequate information material was distributed to the participants (as described).

List of dissemination conferences:

1. **Conference in Belgrade held on December 4th, 2014** with Joint session of the NCHE and NCSR in Belgrade
2. **Conference on Doctoral Schools** at the University of Novi Sad on April 3rd, 2015
3. **Conference on Doctoral Schools** held in the Chamber of Commerce and Industry of Serbia on April 23rd, 2015.
4. **Workshop and Dissemination event: Doctoral schools in Serbia in the context of the industry needs for scientific research**, Kragujevac (organized with the Regional Chamber of Commerce and Industry in Kragujevac) June 16th, 2015.
5. **Workshop and Dissemination event: Doctoral schools in Serbia in the context of the industry needs for scientific research**, Niš (organized with the Regional Chamber of Commerce and Industry in Niš) September 23rd, 2015.
6. **Workshop and Dissemination event: Doctoral schools in Serbia in the context of the industry needs for scientific research**, Novi Pazar (organized with the Regional Chamber of Commerce and Industry in Kraljevo, Office in Novi Pazar) October 23rd, 2015,
7. **Meeting: „Research Policy, Industry and Public Sector in Restructuring Doctoral Studies”**, with representatives from industry and public sector, at the University of Novi Sad, October 21st, 2016.

An information leaflet, containing basic information on the aims and deliverables of the project, was distributed during all the Dissemination conferences. All documents are available at the website; they were also sent to target groups, such as University authorities, teaching staff, doctoral students, industry and civil sector. Also, a Manual on the development and implementation of the concept and standards of doctoral studies was published and distributed at the end of the project.

The following books were published:

1. **Science in Serbia 2010-2013**, published by CONUS and NCSTD in 2014
2. **Science in Serbia in 2014**, published by CONUS and NCSTD in 2015
3. **Doctoral Studies in Serbia**, published in Serbian by CONUS in 2014
4. **Doctoral Studies in Serbia**, published in English by CONUS in 2015
5. **Science: State, Strategy, Perspective**, published by SASA in 2016
6. **Roadmap for the Establishment of Strategic Partnership Between Academia, Industry and Other Involved Parties in Improving the Quality Of Doctoral Studies**, published by CONUS and UNS in 2017
7. **From Doctoral Studies to Doctoral Schools**, with special chapter: **Guide for implementation of Doctoral Schools in Serbia** (Activity 4.6.) published by CONUS in 2017

The following papers and presentations were generated:

Two papers **WHY SERBIA NEEDS DOCTORAL SCHOOLS? – POTENTIAL MODELS and QUALITY ASSURANCE IN DOCTORAL STUDIES: DOCTORAL SCHOOLS**, XXI Conference TREND 2015 “University in changes...”

Two papers **SURVEY OF RESEARCH AND INNOVATION IN SERBIA 2011-2016, CONTRIBUTION OF DOCTORAL STUDIES and LAW AMENDMENTS AND NaRDuS - what changes have been brought during first two years?**, XXIII Conference TREND2017 “Higher Education and Science in Serbia” and

Presentation **Doctoral Schools – New Possibility for Cooperation Between Universities and Industry in South East Europe**, Professional Workshop Oil Industry in Serbia and Higher Education in South East Europe, June 24th 2015, Serbian Chamber of Commerce, Belgrade

Invited lecture: **Doctoral schools - concepts and application**, International conference Sensiever 2015 in Novi Sad on 9th October 2015

Poster **DOCTORAL SCHOOLS – A NEW APPROACH IN QUALITY ASSURANCE OF DOCTORAL STUDIES**, International Conference Modernization of Universities through Strengthening of Knowledge Transfer, Research and Innovations, Tempus Project WBCInno, September 18th, 2015, Novi Sad

It is important that the Project coordinator gave regular reports about the achieved results at the meetings of the Rectors Conference of Serbia.

Project coordinator gave a presentation of the main goals of RODOS at the **Conference "Technology and Society"** held in Tivat, Montenegro, in September 2014; also, Project coordinator participated at the international **Conference on the Future of the Doctorate**, organized by the European Commission and held in Riga on 28-29 May 2015 (both activities under special permission of EACEA).

Official Radio-Television of Serbia (RTS) gave two special presentations of the Project RODOS, entitled **Doctoral Studies** (November 27th, 2014) i **Shortcut to the title of Doctor** (January 14th, 2014).

Project coordinator Prof. S. Stankovic took part in a special program of RTS devoted to **Restructuring of Doctoral Studies: a Priority** (June 23rd, 2014).

Official opening of the Doctoral School of Mathematics was followed and presented by RTS and RTV (Radio-Television of Vojvodina) (March 17th, 2016); opening of the Doctoral School of the Megatrend University was covered by Studio B (June 20th, 2016).

NaRDuS was presented at the Plenary Session of CONUS (December 20th, 2015), followed by numerous media.

The Final Project Conference in Belgrade on June 1st, 2017 was presented at RTS at the same day.

All news related to the Project activities were made publicly available at the Websites of all HEIs and the Chamber of Commerce of Serbia.

The TEMPUS visibility was fully respected at the Website and in all dissemination materials and activities. In the first half of the project period, project Website was created (www.rodos.edu.rs). CONUS developed the content for the first version of the website, both in English and Serbian language. More than 200 documents, photos and other materials were uploaded on the website.

Also, the dissemination team created:

1. Project logo in AI, CDR, EPS, JPG, PNG, TIFF formats (monochrome and in colour),
2. Project memo,
3. Project banner,
4. PPT template,
5. Word template and all other relevant document templates (available at the website),
6. Guidelines for documents development and project visual identity protection,

RODOS team carried out also various dissemination activities:

- one to one communications
- meetings with the relevant stakeholders
- meetings with decision makers
- regular meetings with student representatives
- social networks
- email lists (partners mailing list, mailing lists of PMB, etc.)
- printed materials distribution
- student conferences
- coordination meetings
- communication with media.

The RODOS website was regularly updated. WP coordinators were accountable for the information and results content related to their work packages, both in English and Serbian. Partners were occasionally reminded to check the website content and send their suggestions for its improvement.

SUSTAINABILITY

Generally speaking, the Project is expected to be highly sustainable since the performed activities and the corresponding outcomes evidently provide benefits to the project beneficiaries. Also, RODOS involves outstanding experts in the area of education from all Universities in Serbia, both public and private. All participants have a very strong commitment to the goals of the project at the Serbian Universities either by providing know-how experience or as world-wide recognized experts in certain areas. Also, it is to be mentioned that the project is highly sustainable, owing to the fact that it embraced the leading organizations of the Serbian HE, such as the National Council for Higher Education of Serbia (NCHE) and the MoESTD as consortium members. In addition to this, students took an active part in all the legislative changes that will be applied in future and, therefore, their participation is another pillar of sustainability. Higher Education Institutions recognize the need to reform the system doctoral studies, as it raises awareness among student population on their role in various aspects of the entire HE system. The ultimate test for sustainability lies in the adoption of the developed concepts in practice. The enthusiasm RODOS, generated across students, coupled with the willingness of university authorities and the NCHE to help and sustain all the actions, provides the best guarantee that project objectives will, hopefully, continue to flourish after the formal completion of the project.

Brief List of Project Outcomes enhancing Sustainability:

- Project sustainability plan
- Further meetings of the Exploitation Working Group
- Expert network (for continuous monitoring and reporting on the student participation processes in Serbia beyond the project life time)
- Discussion Panels on higher education reform (to provide a platform for internal national discussion on higher education structural reform and student participation)

Having in mind the great importance of the sustainability of this project, special measures were undertaken, oriented towards enhancing long lasting effects of the results of the project:

- Permanent networking within academic community and open forums for reform issues consideration
- Permanent information and involvement of university and faculty management and decision making bodies
- Consultative and coordination role of NCHE in evaluation and formulation of HE policies

- The cooperation between partner universities and all partner institutions and experts will continue after the project and the established network will contribute to permanent exchange of experiences and evaluation of the practice. The other universities from the region will be welcomed to the network.
- Workshops and conferences on strategic issues will be organized after the project.

Numerous formal and informal meetings with the University representatives (deans, department heads, directors of the institutes, etc.) were organized. It is important that the contact persons for partner institutions were, in majority, at high positions within the University hierarchy. In addition, deans and vice deans of all faculties were invited to the large RODOS conferences organized in Belgrade and Novi Sad. They represented a firm basis for further planning and monitoring of the project activities. The target groups of these meetings were students, teaching staff, higher education authorities, as well as interested civil sector organizations. The most important meetings with the above character were:

1. Meeting of CONUS in January 2015,
2. Assembly of CONUS, December 24th, 2015, where NaRDuS was officially presented,
3. Meeting of CONUS, May 18th, 2017.

A university network was created, enabling continuous contacts between the partner institutions and facilitating permanent exchange of information. In such a way, it was ensured that the cooperation among consortium members would continue after the project eligibility period. The established network will contribute to the exchange of experiences and evaluation of practice, with possible involvement of other Universities from Serbia and the entire region.

The following Doctoral Schools established within the Project contributed to strengthening of the university network:

Doctoral School of Mathematics; encompassing all public Universities in Serbia, this Doctoral School increases the capacity of the network of Serbian Universities for establishing similar doctoral Schools in future

International Doctoral School of Megatrend University; increases the dimension of the network by introducing the international aspect

European Joint Doctoral Degree in Science and Technology for Cultural Heritage Preservation; increases the network at the international level

Doctoral School of Vlatacom Institute: enlarges the network by incorporating members from industry.

NaRDuS (National Repository of Dissertation in Serbia) is one of very important achievements of the Project, contributing in an essential sense to its sustainability. NaRDuS relies on: a) the obtained results, published in the book "Doctoral Studies in Serbia" and discussed at different events organized by RODOS; and b) the principle of openness of science and knowledge to public and citizens. Amendments on the Law on Higher Education stipulate: 1. for HEIs, to make public every PhD dissertation prior to its defense, 2. for Universities, to provide an open access digital repository with defended dissertations, with appropriate documentation, and to deliver to the Ministry of Education a copy of the content for a central repository. Within the project RODOS, the central portal NaRDuS was developed. This is fully in line with the guidelines of the framework program of the European Union for research and innovation (Horizon 2020) and will encourage participation of our higher education institutions in the European repository of doctoral dissertations. NaRDuS was organized in such a way that there were two persons at each University authorized for dissertation depositing.

Sustainability of NaRDuS is ensured by the agreement on the functioning and funding of NaRDuS between MoESTD and Computer Center of the University of Belgrade.

The proposal of the LHE which is currently under consideration in the National Assembly of the Republic of Serbia, contains two proposals coming from RODOS, and resulting from DEV2: 1) obligatory meetings of the NCHE with the Chamber of Commerce, 2) establishment of a new body - Council of employers for HEIs.

Gender balance

Please explain to what extent the principle of equal opportunities has been taken into account in the project implementation (i.e. gender analysis carried out, presence of women in decision-making bodies, balanced percentage share of women among the teachers or the enrolled students, etc.). Describe how the project helped to promote gender balance and to identify and address factors influencing gender discrimination.

Equal opportunities are given to both women and men starting from the very beginning of the project. Since the project addressed general issues of reform and modernization at the HE system level, good gender balance in the project became even more important. By including female participants, the project promoted gender balance in the University governance and management and in wider high education and research areas. Quantification of the presence of women in the decision making and other key bodies within the project realizations supports the gender balance analysis. In the Project Management Board and Partner teams female participation was more than 30 %. Moreover, the majority of leaders of many concrete tasks related to the Project activities were women. In the nucleus of the Project team women had vast majority.

All in all, it can be concluded that a good gender balance did exist at the level of project decision making, as well as in the national institutional teams.

On the other hand, the main expected outcomes of the project represent a step forward concerning HE development, the principle of equal opportunities, universal access to studies, positive discrimination of marginalized groups including disabled students. All these issues have been always underlined when targeting further reform steps, in order to achieve not only good gender balance in student and staff population, but also at the level of HE institutional management and key decision making system bodies.

Unexpected outcomes/ spin-off effects

- Did the project implementation produce any unexpected outcomes or spin-off effects, either positive or negative? If yes, please describe them.

A close collaboration has been established with other Tempus projects in comparable project activities in order to reach optimum results with optimum budget. The President of CONUS (Rector of the University of Belgrade), assembled project coordinators in order to synchronize activities, budget and staff involved in creating new structures and new curricula promoted by RODOS. It is expected that these effects will contribute very much to the Project sustainability in the sense of ensuring the existence of positive public opinion about the measures proposed by RODOS.

Statistics and Indicators

This section aims to gather statistical data and indicators of performance covering the entire project duration

Main targets

Please tick the appropriate box

YES NO N/A

Teacher training

Please indicate whether your project has links, targets or objectives related to teacher training

X		
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VET

Please indicate whether your project has links, targets or objectives related to Vocational Education and Training

	X	
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Education levels addressed by the project

Please indicate whether your project has links, targets or objectives related to programmes at :

- Bachelor level
- Master level
- Doctorate level

	X	
	X	
X		

Training and mobilities

Enter the code of the partner country concerned in the first lines and figures in the second and third:

Training of partner country staff and students

Number of academic staff from the partner country's Higher Education Institutions trained/retrained

Please indicate the number of teaching staff (professors, assistants with teaching tasks, etc.) trained and/or retrained during the project lifetime:

(Country of origin)

	RS	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	25				
Number Female	19				

Number of non-academic staff from the partner country's Higher Education Institutions trained/retrained

Please indicate the number University administrative staff (librarians, staff from the International Office, IT specialists, etc.) trained during the project lifetime:

	RS	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	1				
Number Female	5				

Number of staff from the partner country's non Higher Education Institutions trained/retrained

Please indicate the number of staff of non HEI (enterprises, NGOs, Chambers of Commerce, Government, local administration, etc.) trained during the project lifetime:

	RS	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	4				
Number Female	3				

Number of students from the partner countries who have attended programmes/courses developed in the framework of the project

Please indicate the number of students from the partner countries that have been trained and/or retrained in the programmes/courses developed by the project during the project lifetime:

	RS:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	2				
Number Female	0				

Academic/administrative Staff mobility

Number of partner country - EU mobility flows of more than 2 weeks

Please indicate the number of partner country staff mobility flows from the partner country to the European Union during the project lifetime:

(Country of origin)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	n/a	n/a	n/a	n/a	n/a
Number Female	n/a	n/a	n/a	n/a	n/a

Number of EU - partner country mobility flows of more than 2 weeks

Please indicate the number of European staff mobility flows from the European Union to the partner country during the project lifetime:

(Host country)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

Number of partner country – partner country mobility flows of more than 2 weeks

Please indicate the number of staff mobility flows within the same partner country during the project lifetime:

(Country of origin)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

And between two different partner countries:

Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

Student mobility

Number of partner country - EU mobility flows of more than 2 weeks

Please indicate the number of partner country student mobility flows from the partner country to the European Union during the project lifetime:

(Country of origin)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

Number of EU - partner country mobility flows of more than 2 weeks

Please indicate the number of European student mobility flows from the European Union to the partner country during the project lifetime:

(Host country)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

Number of partner country – partner country mobility flows of more than 2 weeks

Please indicate the number of student mobility flows within the same partner country during the project lifetime:

(Country of origin)

	Country Code:	Country Code:	Country Code:	Country Code:	Country Code:
Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

And between two different partner countries:

Number Male	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Number Female	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>

Links to European Higher Education policies

Please tick the appropriate box

Diploma supplement

Please indicate whether the project contributes to the introduction of procedures for the issuing of diploma supplements in the partner country university/ies.

YES NO N/A

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Adoption of a system based on three main cycles, undergraduate (Bachelor), postgraduate (Master) and Doctorate

Please indicate whether your project contributes to the adoption of a system based on three main cycles.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Introduction of double/multiple or joint degrees

X		
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Please indicate whether in the framework of your project the institutions involved plan to develop/issue double/multiple or joint degrees.

Establishment of an ECTS system

X		
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Please indicate whether your project contributes to the introduction and/or development of the European Credit Transfer System at the co-beneficiary partner university(ies).

Promotion of quality assurance procedures at institutional or national level

X		
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Please indicate whether the project contributes to the enhancement of the partner country university/ies strategies for quality assurance. For information on the 'Standards and guidelines for quality assurance in the European higher education area': http://www.bologna-bergen2005.no/Docs/00-Main_doc/050221_ENQA_report.pdf

Qualification frameworks

X		
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Please indicate whether the project contributes to the development of national qualification frameworks and implementation at university level, in line with the European Qualification Framework's principles.

Lifelong learning policies and approaches

		X
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Please indicate whether your project contributes to developing lifelong learning approaches

Modular curriculum structure

X		
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Please indicate whether your project contributes to the promotion of modular curriculum structure.

New teaching and learning methods

X		
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Please indicate whether the project contributes to the development of new teaching/learning methods at the partner country university/ies.

E-Learning

		X
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Please indicate whether the project contributes to the development of an e-learning strategy at the partner country university/ies.

University/Enterprise cooperation

X		
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Please indicate whether the project foresees the implementation of co-operation activities between the partner country university/ies and the private sector.

Links to the labour market in degree programmes

X		
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Please indicate whether the new/restructured curriculum/curricula is/are being developed in order to respond directly to the needs of the local and national labour market, i.e. through internships, intensive training in the field, etc.

Links with other EU education programmes

	X	
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Please indicate whether your project is directly linked to EU educational Programmes other than Tempus such as Erasmus Mundus or the Life Long Learning Programme.

If yes, please indicate to which EU educational programme your project is linked:

EXAMPLE
USE ONE TABLE PER WORK PACKAGE: ADD AS MANY TABLES AS NECESSARY

Table of achieved results

Insert the title and reference number as indicated in your project proposal

<u>Title and reference number of the work package (WP)</u>	
<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	

Insert the indicators of achievement and/or performance as indicated in your project proposal

Activities carried out for the achievement of this result (entire project period):

Activity N	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement

Activity number as indicated in the project proposal

Insert the activity title as indicated in the project proposal

State where and when the activity took place

Provide a brief description of the activity carried out

Insert specific indicators (qualitative and quantitative) which measure the achievements of the activity result

Changes that have occurred in this result since the previous approved report:

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Describe any change to the activity plan described in the previous approved report

Table of achieved results

<u>Title and reference number of the work package (WP)</u>	WP 1 (DEV 1) Quality assurance and funding of doctoral studies
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Trained university staff on QA standards • QA standards for doctoral studies adopted • Bylaws on doctoral studies funding adopted
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
1.1	University staff trained on QA standards	M1	M12	EU partners (UGent, TUC, IST, BOKU)	<p>Partner country representatives paid study visits to the EU partners, according to the plan. An examination of good practice models from EU was provided to the partner country representatives, who actively presented the local needs and the current status in Serbian HEIs.</p> <p>The following staff re-training visits were organized:</p> <p>1. Visit to TUC, Chania, September 19-21, 2014. (18 participants from Serbia) In a three day program, staff from TUC gave an overview of the organization of doctoral studies. A fruitful discussion incorporating all partners was devoted to crucial aspects of organizing doctoral schools.</p> <p>2. Visit to BOKU, Vienna, December 11-13, 2014. (20 participants from Serbia). In a three day program, staff from BOKU gave a presentation of the University and its doctoral study programs, with a special emphasis on doctoral schools.</p> <p>3. Visit to UGent, Ghent, March 24-27, 2015. (20 participants from Serbia). In a very comprehensive and organized way, staff from doctoral schools from Ghent University gave a presentation of Doctoral Schools. Information covered not only academic aspects, but also organizational issues, important for administrative staff.</p>	<p>Number of participants from Serbia at the seminars</p> <p>Number and quality of teachers form EU partners</p> <p>Agenda for the seminars</p> <p>Conclusions from seminars</p> <p>Comments and suggestions regarding process on creating new forms of doctoral studies</p> <p>Acquired competences and new experiences of all members of the team</p> <p>Ability to cope with the other Project activities</p>

					<p>4. Visit to Lisbon University, Lisbon, April 26-28, 2015. (23 participants from Serbia) Presentation covered important aspects of doctoral studies with emphasis on joint doctoral degrees. The presentation was related to both academic and administrative aspects.</p> <p>Within all the above visits attention was paid to the main problems relevant for WP1: quality assurance standards and to funding procedures.</p>	
1.2	QA standards for doctoral studies evaluated	M1	M9	All partners	<p>The existing QA standards for doctoral studies were evaluated by a specially nominated Working Group from the point of view of the current EU practice (Activity 1.1) and the experiences obtained through the performed accreditation in the Serbian HE.</p> <p>A report was formulated, emphasizing the details related to the Salzburg principles and EUA recommendations. The obtained results were published <i>in extenso</i> in the book issued and printed by RODOS "Doctoral Studies in Serbia", and discussed on different occasions.</p> <p>According to the plan, a workshop was organized as a part of the XXI Conference TREND 2015 "University in changes...". Two papers WHY SERBIA NEEDS DOCTORAL SCHOOLS? – POTENTIAL MODELS and QUALITY ASSURANCE IN DOCTORAL STUDIES: DOCTORAL SCHOOLS were presented by RODOS team members . Conference was organised by the University of Novi Sad at Zlatibor Mountain from 23rd to 26th of February 2015, with participation of all stakeholders in Serbian higher education.</p>	All relevant materials published
1.3	Modified QA standards formulated and adopted	M10	M18	All Serbian partners	<p>According to the Proposal, an important highly sustainable outcome was the formulation of modified QA standards. At the PMB meetings in Belgrade, April 3rd, 2014, at Crete, September 20th, 2014, and in Belgrade, December 16th 2014, special Working Groups, including representatives of all partner institutions, were nominated. The preliminary version of the new Standards was issued at the meeting of the Working Group on May 15th, 2015. The proposal reflects the main general aspects of QA for doctoral studies and the situation in Serbia presented in public at the Conference in Belgrade, held on December 4th 2014. In particular, changes were oriented towards:</p>	<p>All documents published</p> <p>Decisions of the CAQA</p> <p>Decisions of the NCHE</p> <p>All relevant decisions published</p>

					<ul style="list-style-type: none"> • emphasis on learning outcomes • emphasis on the research part of the studies • better connection with the society • improvement of the process of supervision • emphasis on transferrable skills • transparency and accountability • better relation with students, especially within the process of supervision. <p>The final version of the new Standards for doctoral studies was discussed and adopted by the Commission for Accreditation and Quality Assurance (CAQA) and the CONUS. Based on this result, the National Council for Higher Education (NCHE) adopted the Standards on 25th June 2016. In such a way, the proposed Standards became an official by-law, as planned.</p> <p>A separate activity was devoted to the Standards for doctoral studies in Arts, having in mind specific aspects of this type of studies. After getting the approval of the University of Arts and CONUS, the new Standards were adopted on 29th December 2015.</p>	
1.4	Models for funding doctoral studies evaluated	M4	M12	All partners	<p>An expert team formed by the PMB analyzed and evaluated different systems for public funding of doctoral studies in EU countries, and, in particular, the existing experiences in the region. The focus was on the research part of the studies. The analysis encompasses acute problems related to the status of doctoral students, including teaching assistantship, health insurance, lodging, etc. An initial Working Group was appointed at the Project Management Board Meeting at Crete, September 20th, 2014. This Working Group made a detailed analysis of the current status of funding doctoral studies in EU countries. This duty was, however, faced with essential obstacles consisting of the fact that there are many different and very specific ways of funding doctoral studies in different EU countries and at different universities. Comparisons with the actual situation in Serbia were done selectively, after choosing the cases with parallelisms with the situation in Serbia, opening new ways for further improvements (see the Project Site, the book "Doctoral Studies in Serbia" and the book "From Doctoral Studies to Doctoral Schools").</p>	All relevant materials published

1.5	Bylaws on funding doctoral studies adopted	M10	M18	All Serbian partners	<p>The Working Group, appointed at the PMB Meeting at Crete, September 20th, 2014, made the first draft of the new regulations and presented it at the PMB Meeting on December 16th, 2014. The Working Group presented the obtained results at the Project meeting at Ghent, March 27th, 2015, and at the Conference held at Novi Sad, April 3rd, 2015. The final version of the proposed new regulations was analyzed and adopted at the Working Group meeting held in Belgrade on May 15th, 2015 (Project Site).</p> <p>The main idea of the proposed regulations is to open a new possibility for students to obtain co-funding of doctoral studies which would be an addition to the existing forms and completely in line with the adopted principles of placing more emphasis to the research part of the studies.</p> <p>The proposed Regulations for funding doctoral studies were adopted by the Ministry of Education in 2015, and incorporated into the bylaws for funding research projects by MoESTD (Call for new projects of April 12th, 2016. - Part for doctoral students). At the Project Site and at the Site of the MoESTD the text of new regulations is given. A separate act dealing with doctoral students was issued before October 30th, 2016 (MoESTD Site).</p>	<p>All materials published</p> <p>Minutes of the meetings of the Working Group</p> <p>New funding regulations adopted by the MoESTD</p> <p>Regulations for funding R&D projects by MoESTD</p>
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Changes that have occurred in this result since the original proposal:

Changes were directed towards performing a much deeper and more comprehensive analysis of the current status of doctoral studies in Serbia than it was planned in the proposal. Conference held on December 4th, 2014, together with the publication distributed to the participants, are beyond the planned outcomes and represent an obvious proof of the important role of RODOS in Serbian HE. The Project teams considered these changes as very beneficial for the rest of Project Activities, especially for the establishment of Doctoral Schools as a new entity.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 2 (DEV 2) Research policy and industry in restructuring doctoral studies
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Bylaws on research policies of doctoral studies adopted • Role of industry and civil sector in doctoral studies analyzed • Roadmap of relationship doctoral studies - industry adopted
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
2.1	Research policy for doctoral studies reconsidered	M7	M20	All Serbian partner institutions	<p>The existing research policy in Serbia was reconsidered in the light of doctoral studies. Attention was paid to the relationship between the Research and Development Institutes and Universities. Comparisons with the research policies in EU countries was done.</p> <p>In December 2014 the book "Science in Serbia, 2010-2013" was issued and printed within the framework of the Project. One paragraph, entitled "Students of Doctoral Studies" has been devoted directly to the topics of Activity 2.1. A critical analysis has been presented, including the main statistical indicators for the given period of time. A new survey book "Science in Serbia in 2014" adopted on May 18th, 2015, and printed by RODOS in October 2015 contains the additional material related to the year 2014. The final book of the Project "From Doctoral Studies to Doctoral Schools" contains in the chapter related to the status of research in Serbia and conclusions related to doctoral studies. Statistical indicators are presented, showing that the state has to act efficiently in order to prevent a very pronounced brain drain. Taking care of doctoral students through better organized supervision has been pointed out, as well as the need for new funding regulations.</p> <p>The outcomes of Activity 2.1 are available at the Project Site.</p>	All relevant materials published

2.2	Bylaws on research policy modified and adopted	M21	M27	All Serbian partners	<p>The project team was very active in proposing and promoting the idea of changing the Law on Higher Education in such a way as to allow better collaboration between R&D Institutes and HEIs in Serbia. Amendments to LHE were adopted by the National Assembly of the Republic of Serbia in September 2014, including a paragraph dealing with this subject. In such a way a door was opened towards the introduction of Doctoral Schools, as stated in the Proposal. This result ensures high sustainability of overall Project results</p> <p>Along the same line, the academic staff of RODOS participated actively in 2015 in the preparation of Amendments to the Law on Scientific Research. Doctoral studies were treated in two paragraphs of the document. These amendments were accepted by the National Assembly December 29th, 2015.</p> <p>Activities encompassed analogous amendments to the Strategy of Research and Development of Serbia, according to the Work plan. A draft was formulated by a Working Group, and adopted at the meeting in Novi Sad on the May 7th, 2015. The text gives a vision of the overall development of doctoral studies, contributing to a faster technological development and improvement of culture and preservation of the national identity. The final text of the Strategy on Scientific and Technological Development of the Republic of Serbia for the period 2016 – 2020 " Research for Innovation" was adopted on March 3rd, 2016 by the Government of the Republic of Serbia, including the text proposed directly by RODOS. The corresponding part in the Action Plan for realization of the Strategy was formulated by RODOS, and adopted by the MoESTD as an act accompanying the Strategy.</p> <p>Based in an initiative of RODOS, Doctoral Schools are incorporated in the final version of the Action Plans of the Strategy of Education, adopted by the Government of the Republic of Serbia on January 31st, 2015. This achievement was an important prerequisite for all actions within the Project.</p>	<p>All documents published</p> <p>Minutes of the meetings published</p> <p>Relevant decisions published</p> <p>Modified Research policy defined and published</p> <p>Text of the Strategy for Research and Development of the Republic of Serbia</p> <p>Action Plans for the Strategy for Research and Development of the Republic of Serbia</p>
2.3	Role of industry and civil sector analyzed	M10	M20	All Serbian partner institutions	<p>According to the Proposal, this activity was initiated in June 2014 (Workshop on HE-Industry relationship held at the Chamber of Commerce and Industry of Serbia, October 2014). At the PMB meeting held on December 4th, 2014, it was decided to launch a</p>	<p>Relevant materials published</p> <p>Results of the questionnaires published</p>

					<p>questionnaire addressed to all the members of the Chamber of Commerce of Serbia (more than 1000 addressees). The on-line form of the questionnaire was implemented at the Site of the Chamber of Commerce. The questionnaire contained the following main items: 1) Current situation in the enterprise; 2) Desirable qualifications of PhD bearers; 3) Collaboration with HE and research institutions; 4) Opinion about doctoral studies in Serbia; 5) Trends of the economic development of Serbia and potential role of doctoral studies. The responses were assembled and analyzed by a Working Group nominated by the PMB. The results were presented and discussed at the Conference held in the Chamber of Commerce on April 23rd, 2015.</p> <p>Having in mind the importance of the subject, it was decided to organize a series of additional similar conferences in other towns of Serbia. In Novi Sad, on the May 7th, 2015, the previous activities and documents were analyzed and plans for future activities were adopted. It was decided to intensify contacts with industry by focusing on large companies, like NIS (Oil Industry of Serbia) or Telekom Serbia. Additional discussions were organized until the end of the Project: in Kragujevac (organized with the Regional Chamber of Commerce Kragujevac) June 16th, 2015, in Niš (Regional Chamber of Commerce Niš), September 23rd, 2015, in Novi Pazar (Regional Chamber of Commerce Kraljevo, Office in Novi Pazar) October 22nd, 2015.</p> <p>The final results of the surveys, in which both industrial organizations and doctoral students took part, are given at the Project Site. They were used as a basis for defining the Roadmap (Activity 2.4).</p>	<p>Number of participants from industry</p> <p>Minutes and conclusions from the organized conferences</p>
2.4	Roadmap for doctoral studies defined and adopted	M4	M12	All Serbian partners	<p>Based on deliverables 2.1, 2.2 and 2.3, a strategy for HE, research institutions and industry was formulated to emphasize the role of quality enhancement of doctoral studies in the form of a Roadmap for collaboration doctoral studies - industry. The initial meeting was held in Novi Sad October 21st, 2016, where the results obtained so far were summarized and inputs for Roadmap defined.</p> <p>The text of the Roadmap was prepared by a Working Group lead by UNS, in collaboration with the Chamber of Commerce of Serbia and all HEIs of Serbia. The final text was submitted to</p>	<p>Minutes of the Working Group for the Roadmap</p> <p>Roadmap published</p> <p>Minutes of the CONUS</p> <p>Documents of the Government of Serbia and the National Assembly of the Republic of Serbia</p>

					<p>CONUS, discussed by all the member Universities, and adopted by CONUS at the meeting held on 18.05.2017. The whole text of the Roadmap is presented at the Project Site in Serbian and English languages..</p> <p>The Roadmap gives a contribution to the establishment of rules, procedures and mechanisms in which the wider community participates in a variety of activities related to doctoral studies. Possibilities for applied research are opened for HEI's and Industry, including joint planning of subjects, financial support and utilization of the research results in practice. The Roadmap contributes to the training of students of doctoral studies, to the continuation of their careers in other sectors, as well as to recognition of PhDs in the labor market.</p> <p>The proposal of the LHE which is currently under consideration in the National Assembly of the Republic of Serbia, contains two proposals coming from RODOS, and resulting from Activities 2.3 and 2.4: 1) obligatory meetings of the NCHE with the Chamber of Commerce of Serbia, 2) establishment of a new body - Council of Employers for HEIs.</p>	
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Changes that have occurred in this result since the original proposal:

The outcomes of the Activities 2.1 and 2.2 have been achieved earlier than planned. Activities 2.3 and 2.4 were continued after the final achievement of the desired outcomes, having in mind the importance of the subject. All in all, the obtained results are qualitatively and quantitatively better than those planned in the Proposal.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 3 (DEV 3) Doctoral schools: concept, standards and organization
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Conference on Doctoral Schools organized • Bylaws on Doctoral Schools adopted • University staff for Doctoral Schools trained • Accreditation standards for joint doctoral degrees adopted
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
3.1	EU experience in Doctoral Schools analyzed	M7	M12	All partners	<p>The existing EU experiences in the domain of doctoral schools and joint doctoral degrees were thoroughly analyzed and evaluated. The university staff from Serbia paid training visits to the EU partners. Attention was paid not only to the academic issues, by also to the organizational and administrative aspects of Doctoral Schools, their accreditation, and recognition of joint doctoral degrees. The analysis on the doctoral study level in Serbia, performed within the RODOS Project and published in the books "Doctoral Studies in Serbia" (Chapters I and II) and "From Doctoral Studies to Doctoral Schools" (Chapters III and IV), gives a comprehensive overview.</p> <p>The activity encompassed the following events:</p> <ol style="list-style-type: none"> 1. Study visit to Technical University of Crete, September 2014 - PhD Studies /European Experiences, Some Examples was the topic of a special session of all Serbian Consortium members with the TU Crete delegation. . 2. Study visit to BOKU, Vienna, December 2014. A special session within the study visit agenda was devoted to the structure, programme and additional facilities offered by Doctoral Schools. 3. TREND 2015 Conference, Zlatibor, February 23-26, 2015. RODOS team members presented new trends in organization and quality assurance of doctoral studies in the EHEA, 4. Study Visit to Ghent University, March 2015. The study visit was specially focused on the experiences of Ghent 	<p>Number of participants of the study visits</p> <p>Agenda and minutes of the meetings in EU Institutions</p> <p>All relevant materials and decisions published</p> <p>Material for the Conference TREND</p> <p>Papers published</p>

				<p>University Doctoral Schools,</p> <p>5. Visit to Lisbon University, Lisbon, May 2015. Presentation covered important aspects of doctoral studies with emphasis on joint doctoral degrees</p> <p>6. Participation at the international conference on the Future of the doctorate, organized by European Commission and held in Riga on 28-29 May 2015,</p> <p>7. Study visit to Technical University of Crete, September 2015. A round table was organized on Concepts of Doctoral Schools in Serbia</p> <p>8. Study visit to BOKU, Vienna, December 2015. Overview on Doctoral Studies in Austria was given, with focus on financing, scholarships, accreditation and organization of Doctoral Schools in Austria</p> <p>9. Visit to Lisbon University, Lisbon, May 2016. The Portuguese Quality Assurance Agency and the Portuguese Accreditation System were presented, as well as International Doctorate Networks and International Doctoral Schools organized by IST. A round table with the subject Accreditation standards for joint study programs was organized</p> <p>10. Study visit to Technical University of Crete, September 2016. Presentation of Doctoral Studies and Doctoral Schools in Greece was given. A Round table on Standards for Establishing of the Doctoral Schools was organized.</p> <p>11. TREND 2017 Conference, Zlatibor, February, 22-24, 2017. The title of the Conference was “Higher Education and Science in Serbia”. RODOS team members presented papers entitled “SURVEY OF RESEARCH AND INNOVATION IN SERBIA 2011-2016, CONTRIBUTION OF DOCTORAL STUDIES” and “LAW AMENDMENTS AND NaRDuS - what changes have been brought during first two years?”. Conference was organized by University of Novi Sad. A special panel: Accreditation Standards for Establishing Doctoral Schools was organized on February 2nd, 2017.</p>	
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3.2	Conference on Doctoral Schools organized	M13	M13	UNS	<p>A Conference on Doctoral Schools was organized in the large hall of the University of Novi Sad on April 3rd, 2015 (more than 50 representatives of all HEIs of Serbia), A comprehensive overview of European experiences was presented using different characteristic examples (University of Ghent, BOKU University, as partners in RODOS Project, University of Brussels, University of Luxemburg, University of Helsinki, University of Szeged, all HEI's in France and Estonia), emphasizing the areas of interest (quality and excellence in research, support of students during the whole PhD cycle, carrier development, transferable skills, continuous contacts with the labour market, open space for national and international mobility of students and staff). A very intensive discussion resulted into important conclusions for further actions.</p>	<p>Number of participants Structure of participants Agenda of the conference Presentations from the conference</p>
3.3	Bylaws on founding Doctoral Schools adopted	M13	M21	All Serbian Universities	<p>Doctoral Schools were explicitly introduced, as a result of an initiative of RODOS, in the Action Plans for the Strategy of Education of the republic of Serbia adopted by the Government of the Republic of Serbia on January 31st, 2015. Without going here into details, the Action Plans define a roadmap for introduction of Doctoral schools in Serbian HE, important for all activities within the Project .</p> <p>Based on deliverables 3.1 and 3.2, new accreditation standards and bylaws for the establishment of Doctoral Schools were discussed on many occasions. Their aim was to increase international and social value of the doctorate, teaching and research quality culture and support to doctoral students in all respects (supervision, guidance, student rights, insurance). The main intention was to find the most efficient ways of introducing Doctoral Schools in Serbia, not requiring substantial changes of legal regulations, having in mind versatility of situations at different universities and momentum of the HE system resisting to changes. One of very important conclusions for implementability of Doctoral Schools has been that no explicit changes of the Law on HE is required. General legal aspects of the problem of founding Doctoral Schools in Serbia have been covered by the Chapter VIII in the book "From Doctoral Studies to Doctoral Schools".</p> <p>In this sense, the Regulations for doctoral studies at UB, adopted</p>	<p>Minutes of the PMB meetings Minutes of the related conferences and round tables All relevant materials and decisions published Decisions of CONUS Draft versions of the proposal of LHE Decisions of the CAQA and the NCHE</p>

					<p>May 24th, 2016, at the initiative of RODOS serves as a good example. The document allows different forms of founding Doctoral Schools in line with the main ideas of RODOS. It has been taken as an example at the majority of Serbian Universities.</p> <p>RODOS initiated also changes in the LHE, which are not necessary, but can be helpful for founding Doctoral Schools (text at the Project Site). The amendment was adopted by MoESTD during a very long procedure lasting several years; however, until now the text of the new LHE has not been adopted yet. The last stage of the process of formulating the amendment took place on May 18th, 2017, when CONUS supported unanimously the amendment proposed by RODOS.</p> <p>The Guidelines for establishing Doctoral Schools represent one of the important outcomes of the Project. They were proposed by a nominated Working Group at the round table discussion in Belgrade November 17th, 2016. Proposed by the CAQA, these Guidelines were discussed and adopted by the NCHE on May 22nd, 2017. The Guidelines represent an important document indicating possible ways of establishing Doctoral Schools at different levels and within different organizational structures. This is a comprehensive legal basis for all future actions in the direction of establishing Doctoral Schools. They are given at the Project Site.</p>	
3.4	Staff trained on doctoral school organization	M10	M24	EU partners	<p>In order to fulfill all the requirements resulting from deliverables 3.3 and 4.1 and to organize establishment of the adopted models for Doctoral Schools in an efficient way, the task force from Serbia, including academic and management staff and administration, was trained in EU countries on Doctoral School organization and functioning within the following visits:</p> <p>1. Visit to TUC, Chania, September 19-21, 2014. In a three day program staff from TUC gave an overview of the organization of doctoral studies with the emphasis on joint doctoral degrees</p> <p>2. Visit to BOKU, Vienna, December 11-13, 2014. In a three day program, staff from BOKU gave a presentation of the University, its doctoral study programs, with a special emphasis on doctoral schools introduced in some fields.</p>	<p>Number of participants from partner institutions</p> <p>Agenda of the meetings</p>

					<p>3. Visit to UGent, Ghent, March 24-27, 2015. In a very comprehensive and organized way, staff from doctoral schools from Ghent University gave a presentation of Doctoral Schools organized at UGent</p> <p>4. Visit to Lisbon University, Lisbon, May 26-28, 2015. Presentation covered important aspects of doctoral studies with the emphasis on joint doctoral degrees</p> <p>5. Study visit to Technical University of Crete, September 1-4, 2015. Presentation of accreditation and organization of Doctoral Studies and Doctoral Schools in Greece and TUC was given</p> <p>6. Study visit to BOKU, Vienna December 16-18, 2015 Overview on accreditation and organization of Doctoral Schools in Austria and BOKU.</p> <p>7. Visit to Lisbon University, Lisbon, May 25-27, 2016 The Overview on accreditation and organization of Doctoral Schools in Portugal and IST, including international Doctoral Schools.</p>	
3.5	Accreditation standards for joint degrees adopted	M19	M27	NCHE, CONUS	<p>A committee nominated by the PMB formulated the new accreditation standards for Joint Doctoral Degrees, according to the Proposal, on the basis of the LHE and the best EU practice, including both teaching and research parts of the studies. The final text is presented at the Project Site and in the book "From Doctoral Studies to Doctoral Schools", Chapter IX, and the related Appendix. These standards were evaluated and adopted by the CAQA and CONUS. The proposal of new standards was addressed to the NCHE. After detailed considerations, the NCHE adopted the proposed standards March 27th, 2017. so that they became official bylaws in the Republic of Serbia.</p>	<p>All relevant materials and decisions published</p> <p>Decisions of the CAQA and the NCHE</p>
3.6	Accreditation standards for Doctoral Schools				<p>A Working Group nominated by the PMB was working, according to the modified Work Plan, on the formulation of the accreditation standards for establishing Doctoral Schools on the basis of the LHE and the best EU practice. Two round tables on standards for establishing Doctoral Schools were organized. The first draft of the Standards was prepared after the first round table (Crete 2016). After getting EU partners' feedback, the Working Group prepared the final version of the Standards. At the second round table organized in Belgrade November 17th, 2016, the final text was discussed and the preliminary version adopted. The text</p>	<p>All the relevant materials published</p> <p>Minutes of the Working Group meetings</p> <p>Decisions of the CAQA and NCHE</p>

					was formulated in accordance with the Serbian legal framework. The activity was successfully finalized after the adoption of the proposal by the CAQA, and, consecutively, by the NHCE. The NCHE adopted the integral text of all standards related to Doctoral Schools March 27th, 2017. It is important to mention that these standards became a part of the general Standards for Self-evaluation of the Serbian HEIs (new Standard 15 - see the Project Site and the site of NCHE).	
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Changes that have occurred in this result since the original proposal:

Some changes were made in relation with Activity 3.3 from the point of view of achieving realizable structures with minor modifications of the legal regulations (having in mind time constants and inertia of administration, resistance to changes, etc.). New regulations were formulated in a pragmatic and more flexible way than formulated by the Proposal. The adopted approach covers a much larger scope of possible situations and contributes more directly to the overall restructuring of Doctoral Studies in Serbia. The achieved outcomes surpass both quantitatively and qualitatively those planned in the Proposal.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 4 (DEV 4) Establishment and implementation of doctoral schools with selected study programs
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Nine fully operative integrated and institutionally accepted Doctoral Schools • New doctoral programs prepared and adopted by respective University Senates • Rules and regulations for Doctoral Schools • Accreditation of the study programs for Doctoral Schools when necessary
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
4.1	Selected models for Doctoral Schools established	M10	M18	All Serbian partner Universities	<p>Activity 4.1 has been conceived and formulated in the Proposal following from the <i>top-down</i> methodology, in which strict general aspects and rules are predefined, so that the implementation of study programs follows as a consequence. However, in spite of all possible advantages of pursuing the top-down approach, the inverse <i>bottom-up</i> approach has been found to be more adequate, having in mind versatility of structures and ideas connected to the establishment of doctoral schools and different conditions for their implementation at different universities and within different fields. In this sense, Activity 4.3 Formulation of Selected Study Programs for Doctoral Schools appears to be, in some sense, a prerequisite for Activity 4.1. The PMB concluded several times at its meetings (December 16th, 2014, April 3rd, 2015) that these two activities have to be merged and to be considered as one unified general activity aimed at forming a number of diverse Doctoral Schools with selected study programs. Indeed, specific doctoral schools have to result from the context (at least their first draft) and not vice versa (see the text within Activity 4.3 below). These considerations, essential for the Project, are presented in detail in both books (Doctoral Studies in Serbia, Chapter III and From Doctoral Studies to Doctoral Schools, Chapters VII and VIII) and discussed on numerous occasions (Joint session of the NCHE and NCSR D in Belgrade on December 4th 2014, Conference on Doctoral Schools in Novi Sad on April 3rd 2015, Round table in Belgrade on November 17th 2016, Panel at the TREND</p>	<p>All relevant material published</p> <p>Minutes of the relevant meetings</p> <p>Decisions of the PMB</p> <p>Decisions of relevant institutions</p>

					<p>Conference on Zlatibor on February 22nd, 2017 and Final Project Conference in Belgrade June 1st, 2017, and other project meetings - see the Project Site). In this sense, the Doctoral Schools will not be regulated obligatorily by accreditation standards - they can be also regulated in a more flexible way through internal university and/or faculty regulations. This decision has been taken at the level of Project as a clear guideline for the future organization of Doctoral Schools.</p> <p>Formally speaking, the outcome of the Activity 4.1 is given in the form of the Chapter VII of the book From Doctoral Studies to Doctoral Schools, entitled MODELS OF DOCTORAL SCHOOLS IN SERBIA. It should be emphasized that this chapter gives a broader approach to the subject, with respect to the plan given in the Proposal. This is essential for widespread applicability of the concept of Doctoral Schools, and, consequently, for sustainability of the Project.</p>	
4.2	Doctoral School Offices opened and equipped	M19	M30	All Serbian partners	<p>After a detailed analysis of all aspects of providing administrative support to Doctoral Schools, the PMB found that the capacity of Serbian HEIs is such that formal opening of Doctoral School Offices is not necessary for efficient functioning of the new organizational structure. This is, obviously, also connected to the adopted general methodology oriented towards building a large implementation front of diverse types of Doctoral Schools (much more than planned in the Proposal), as described in Activity 4.1. The PMB decided to make a general contribution to the organizational support of Doctoral Schools by:</p> <ol style="list-style-type: none"> 1) widening IT capacity of selected HEIs (connected directly or indirectly with concrete case studies) by purchasing additional equipment (servers, laptops), with the aim to facilitate intensive R&D activities; 2) introducing and implementing university repositories for doctoral dissertations at UAB and UM (where such repositories did not exist before) 3) introducing and implementing the repository of doctoral dissertations at the state level (National Repository of Doctoral Dissertations in Serbia - NaRDuS), located at the MoESTD (see the book From Doctoral Studies to Doctoral Schools, Chapter VI). 	<p>Decisions of the PMB</p> <p>Description of the Repositories at UAB and UM</p> <p>Description of NaRDuS at the MoESTD</p> <p>Distribution of the equipment among Faculties</p>

					<p>NaRDuS (http://nardus.mpn.gov.rs/) is a common portal of PhD dissertations and thesis evaluation reports from all Serbian universities. It is based on the Law on Higher Education (Amendments, Sept. 2014).</p> <p>All universities are obliged to deposit basic information about each and every dissertation - together with the thesis evaluation report and dissertation itself - to NaRDuS within the three months period starting from the date of PhD dissertation defense.</p> <p>From the point of view of direct impact on HE of Serbia, NaRDuS represents one of the major concrete achievements of RODOS, contributing in an essential way to a sustainable restructuring of Doctoral Studies in Serbia.</p>	
4.3	Selected study programs formulated	M10	M20	All partners	<p>In the sense of the explanations done within Activity 4.1, the following Doctoral Schools have been founded::</p> <p>1. Doctoral School of Mathematics. Faculties of Mathematics of the Universities of Belgrade, Novi Sad, Kragujevac, Nis and Novi Pazar, together with the Institute of Mathematics of the Serbian Academy of Sciences and Arts, proposed a Doctoral School of Mathematics, an elite organization offering a set of courses taught by the best teachers in Serbia, and organizing doctoral research projects supervised by the best researchers in particular domains. The School does not require any need for changing legal regulations. However, it requires accreditation, already done by CAQA.</p> <p>2. Doctoral School of Medicine. This Doctoral School will take care primarily of transversal skills, by organizing specific courses for all doctoral students at the Faculty of Medicine, University of Kragujevac, which contains many different Divisions (study programs). It will also organize supervision in a more efficient way. Accreditation has been done by CAQA.</p> <p>3. Doctoral School of Technical Sciences. The Faculty of Technical Sciences at the University of Novi Sad made a decision at the highest hierarchical level to organize a Doctoral School of Technical Sciences, comprising 16 study programs in different disciplines of Technology (Electrical, Mechanical, Civil Engineering, Architecture, Applied Mathematics, etc). The School follows structurally the model adopted by RODOS and presented in the book From Doctoral Studies to Doctoral</p>	<p>All relevant material published</p> <p>All relevant decisions published</p>

				<p>Schools, covering transversal skills, supervision, multidisciplinary and carrier guidance. All study programs have already been accredited.</p> <p>4. International Doctoral School of the Megatrend University. The University Megatrend (new name: John Neisbitt University) organized an International Doctoral School in all the fields covered by the existing Faculties. University Primorska, Slovenia, and Bari University, Italy, have been International partners on the basis of Joint Degrees. The model follows the concepts adopted in RODOS. All the study programs have been accredited by CAQA.</p> <p>5. Doctoral Schools at the University of Belgrade. University of Belgrade has undertaken a multitude of measures oriented towards incorporating Doctoral Schools in its practice. Besides the introduction of Doctoral Schools in its Regulations for Doctoral Studies, University of Belgrade decided to merge all doctoral study programs at the University level and to organize a Doctoral School of Belgrade University. Following the adopted general line of thought, RODOS organized and funded a course of transferrable skills (TRAIN Program, spring 2016). Following one of the paradigms, a Doctoral School of Medicine will be established jointly with the Faculty of Dentistry and Faculty of Pharmacy. It is expected that the University of Belgrade will continue to organize a large number of Doctoral Schools in near future (guaranteeing high sustainability of the Project).</p> <p>6. Doctoral School of Biology. This Doctoral School is centered around the Faculty of Biology at the University of Belgrade and the Institute of Molecular Genetics and Genetic Engineering, member of the University of Belgrade, as an example of a fruitful collaboration between Universities and Research Institutes. The Scholl primarily takes care of the laboratory facilities and research, trying to put together Faculty and Institute staff and to improve supervision. The Scholl also takes care of the organization of transversal skills needed for biologists.</p> <p>7. Doctoral School of Arts. University of Arts in Belgrade has an intention to implement a Doctoral School of Arts, in which the particular Faculties (Music, Painting, Applied Arts, Theatre) will formally continue functioning as before, but in which transversal skills would be taught within the School. In this</p>	
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					<p>sense, a doctoral training was organized by RODOS team April 25th, 2017, in cooperation with the Intellectual Property Office of the Republic of Serbia, Belgrade, devoted to diverse aspects of intellectual property in arts. Further organizational and administrative steps do not require additional accreditation - only decisions at the University level.</p> <p>8. European Joint Doctoral Degree in Science and Technology for Cultural Heritage Preservation. The Institute of Physics, as a member of the University of Belgrade, conceived and organized a Doctoral School with the University La Sapienza, Italy, Politecnico do Milano, Italy, and University of Avignon, France, devoted to Science and Technology for Cultural Heritage Preservation. The students should get Multiple Doctoral Degree from the Universities consortium members. The Institute of Physics applied for funding this Project from EU funds.</p> <p>9. Doctoral School as Initiative of an R&D Institute. Vlatacom Institute, Belgrade, decided to organize a Doctoral School in the area of Advanced Information and Communication Technology (Radar Systems, Electro-Optical Systems, Cryptology) using its own human and technical resources, in conjunction with several members of CONUS, which would cover all academic and administrative aspects in their domain of competence. Documents are prepared; in near future decision will be made to initiate the accreditation step.</p> <p>It was decided at the PMB to add an additional value to the Project by organizing several courses related to transversal skills (research methodology, project management, composition of scientific papers, research ethics, etc.). These courses would be kept open for all doctoral students at particular Universities (nucleus for the organization of these courses was made at the PMB meeting at Novi Sad on April 3rd, 2015). It is expected to achieve in such a way two main goals: 1) to get more experience in organization of short courses for doctoral students (similar to those organized in UGent); 2) to show in an evident way advantages provided by Doctoral Schools.</p>	
4.4	Rules and regulations for students formulated	M19	M30	All Serbian partners, PhDSS	Starting from Deliverables 1.4 and 1.5, devoted to general aspects of student status, efforts were done to formulate rules and regulations specific for Doctoral Schools, enhancing the support	Student questionnaires published Decisions by student authorities published

				<p>offered to students, increasing their creativity, quality of supervision and the social value of the doctorate. Rules and regulations for students were proposed by PhDSS and the Working Groups for Activity 4.3 for each Doctoral School/study program formulated within the Project. Their particular forms were defined in all concrete cases by the University bodies in charge (see Project Site).</p> <p>The necessary background for these rules and regulations were taken to be the surveys for PhD candidates on doctoral studies in the Republic of Serbia in 2014, 2015 and 2016, conducted by the Association of Doctoral Students and Young Researchers of Serbia. The results of all these surveys can be found on the website of the organization www.doktoranti.org.rs.</p> <p>Two main conclusions should be pointed out:</p> <p>a) The quality of a supervisor's work is highlighted as one of the key success factors of doctoral studies in surveys conducted among students, and it is also one of the priorities of the European standards. According to the Statistical Office of Serbia, approximately 82% of the total number of higher education teachers in Serbia fulfill the minimum requirements for the role of supervisor. In regard to the applicable standard, according to which a supervisor can take on five doctoral theses at the same time, the question is whether in this case each student can have full attention of a supervisor. It is suggested that a higher education institution forms a "supervisory committee" that manages and monitors students. In such a way a better basis for education is achieved, transparency is increased, privatization can be prevented and potential personal conflicts between supervisors and students can be suppressed.</p> <p>b) In the evaluation of doctoral theses, it is necessary to put the focus on the essential aspects and the assessment of real scientific contribution by promoting self-assessment and insights of members of relevant committees, i.e. putting personal responsibilities in the forefront. This way, the negative effects of the occurrence of "predatory journals" would be held at bay.</p> <p>In accordance with these conclusions the Partner Universities issued new Regulations for doctoral studies, containing an important part dealing with students and their position, as well as</p>	<p>Decisions of the Association of Doctoral Students and Young Researchers of Serbia</p> <p>Regulations for doctoral studies at the Partner organizations</p>
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					Regulations for procedures of identifying non-academic behavior, which contain an important part dealing with doctoral dissertations.	
4.5	Selected study programs accredited and implemented	M28	M36	NCHE, MESTD	<p>According to the results from deliverables 4.1 – 4.3, extreme efforts have been done in the direction of formal establishment and implementation of the founded Doctoral Schools. Having in mind the adopted methodology, a large number of Schools (much more than planned in the Proposal) of diverse kinds have been founded, each having its own specific properties. At the end of the Project eligibility period, we have the following situation:</p> <ol style="list-style-type: none"> 1) Doctoral School of Mathematics, accredited, students enrolled in 2016, 2) Doctoral School of Medicine, accredited, students enrolled in 2017, 3) Doctoral School of Technical Sciences, in the process of accreditation, 4) Doctoral School of the Megatrend University, accredited, students enrolled in 2016, 5) Study programs on Bio-photonics and Biomedical Engineering and Technology (part of the University of Belgrade - Interdisciplinary Doctoral School in the process of establishing), accredited (financially supported by RODOS) students enrolled in 2016, 6) Doctoral School of Biology, accredited, students enrolled in 2015, 7) Doctoral School of Arts, study programs accredited, student enrolment in doctoral training in 2017, 8) European Study Program in Science and Technology for Cultural Heritage Preservation, submitted for EU funding, 9) Doctoral School in ICT promoted by Vlatacom Institute, currently under consideration by several HEIs. <p>It is of utmost importance that numerous HEIs expressed their willingness to organize and implement a Doctoral School. This represents a very important result, guaranteeing high Project sustainability.</p>	<p>All relevant material published</p> <p>Decisions by the CAQA</p> <p>Decisions by the local Faculty authorities</p>

4.6.	Guide for implementation of Doctoral Schools in Serbia				<p>Based on the results obtained within DEV1-DEV4 a document (Guide) was produced, containing a roadmap for the introduction and development of Doctoral Schools in Serbia. The document contains a general strategy for reconstruction of doctoral studies in Serbia, general description and main features of Doctoral Schools, presentation of different modalities for implementation of the concept of Doctoral Schools in Serbia, as well as a formal detailed insight into the selected implemented examples. The essential sustainability issues are covered, together with synergies with the Roadmap for connections Doctoral Studies-Industry-Administration.</p> <p>Formally speaking, the outcome of the Activity 4.6 is given in the form of the Chapter VIII of the book "From Doctoral Studies to Doctoral Schools" and the Annexes 7-9 in the book .</p>	<p>Decisions of the PMB All documents published</p>
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Changes that have occurred in this result since the original proposal:

The main changes are related to Activities 4.1 and 4.3. Namely, it has been realized that the approach adopted in the Proposal, which starts from the establishment of four predefined Doctoral Schools in 4.1 and continues in 4.3 by elaborating the corresponding study programs, is not adequate. Namely, it is difficult to expect success of such a top down approach in the situation characterized by the lack of financial support and strictly defined regulations of different kinds. Rather, it has been adopted to pursue the bottom up approach, which starts from concrete study programs and from people willing to collaborate in a constructive way, and will end up with the establishment of Doctoral Schools organized in numerous possible ways. In this sense the Project mission is to open doors for different ways of thinking and different structures leading to harmonization with EHEA and EUA directions. Moreover, all additional conferences, workshops and contacts mentioned above were oriented towards changing the entire atmosphere and state of mind in the HE space of Serbia, enabling efficient realization of the main Project goals and ensuring high sustainability.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 5 (QPLN) Quality Plan
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Assessment of self evaluation results • Assessment and conclusions of CQCM • Assessment and conclusions of external expert • Suggestions of peer reviewers
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
5.1	Report on self evaluation	M12, M24, M36	M12, M24, M36	All partners)	<p>The University of Ghent, as the Lead Partner for the Work Package 5 – Quality plan, prepared an outline of activities to be implemented in the form of a Quality Control and Monitoring Plan (Project Site). According to this document, Quality control and monitoring had to be achieved through a number of measures:</p> <ol style="list-style-type: none"> 1. Procedures for self-evaluation established by CQCM. 2. Everyday monitoring of work plan realization 3. Internal evaluation (questionnaires) 4. External evaluation (expert). <p>A self evaluation questionnaire was defined in accordance with the methods and procedures defined by the Consortium members and in compliance with the EU academic values.</p> <p>The PMB decided to organize self-evaluation two times, in order to achieve direct coordination and synchronization with the evaluation done by the external expert, having in mind that a combination of internal and external view on the project was expected to provide a useful input in the process of securing quality of the RODOS project. All quality control reports contained evaluation of the indicators specified in the LFM, as well as recommendations relevant for the accomplishment of the project objectives.</p> <p>The first self evaluation assessment was performed on M18. The analyzed results were included in the annual reports of the CQCM. The questionnaires did not only ascertain satisfaction</p>	<p>Decisions of the PMB</p> <p>Decisions of all relevant bodies</p> <p>Text of the questionnaires</p> <p>Published results of self-evaluation</p>

					<p>levels, but also served for wider research purposes, e.g. for measuring awareness of certain topics.</p> <p>The second self evaluation assessment was performed on M40. It provided a summary of the results achieved in the Project, as well as an evaluation of the quality of these results.</p>	
5.2	Report of the Committee for QC and Monitoring	M7	M7	UGent	<p>Committee for Quality Control and Monitoring (CQCM) , established at the project kick-off meeting, had the following members:</p> <ol style="list-style-type: none"> 1. Dieter De Bruyn, University of Ghent, 2. Vassilis Moustakis, Technical University of Crete, 3. Srdjan Stankovic, Conference of the Universities of Serbia, 4. Verka Jovanovic, University Singidunum and 5. Slobodan Radicev, Association of PhD candidates and young researchers of Serbia <p>Members of the CQCM continuously performed monitoring of the work plan realization and shared information about the progress. They prepared intermediate reports about internal quality control and monitoring of the intermediate project results to the PMB. The quality control entailed both the content of the project and publication and dissemination of the results of the project (Project Site).</p> <p>The CQCM had the following meetings:</p> <ol style="list-style-type: none"> 1. Ghent, July 3rd, 2014 2. Belgrade, October 14th, 2014 3. Ghent, March 27th, 2015 4. Chania, Crete, September 3rd, 2015 5. Lisbon, May 27th, 2016 6. Chania, Crete, September 9th, 2016 7. Belgrade, June 1st, 2017 	<p>Detailed description of QPLN work package</p> <p>Minutes of the meetings</p> <p>Structure of the PQCC reports adopted</p> <p>The report about evaluation of the project results presented by the PCQCM board to the PMB</p> <p>The document about evaluation criteria and mechanisms done by the PQCC</p> <p>Minutes of the meetings</p>
5.3	Report of external experts on QC	M12	M12	CONUS	<p>Prof. Petar Maric from Banja Luka University, Bosnia and Herzegovina, was elected as an internationally renowned expert to make an external assessment of the Project results.</p> <p>The external expert evaluated the project for the first time in M18 and wrote a report that was made publically available on the Project Site. Methodology of this quality control included an assessment not only on timely execution of the activities, but also on the quality of the achieved outcomes and outputs and the</p>	Evaluation results published.

					<p>efficiency of the implementation of the project results. The report included comments about possible discrepancies between the planned and the accomplished activities and suggestions how to achieve the planned goals.</p> <p>The first external evaluation was very important for the Project results, having in mind that the Project team acted in line with the given suggestions.</p> <p>The external expert evaluated the project for the second time in M40, making a final assessment of the project results. It is important that the final evaluation confirmed that the actions undertaken on the basis of the suggestions made in the first report were successful.</p>	
5.4	Peer reviews of the study programs	M28	M30	CONUS, EU partners	<p>The study programs formulated for the selected Doctoral Schools were evaluated by the academic staff from the EU institutions. The PMB took all necessary measures oriented towards taking into account all the suggestions and ensuring quality of the study programs. The contact person of CSU had the duty to monitor all the performed actions.</p> <p>The proposed study programs are discussed at the following round tables:</p> <ol style="list-style-type: none"> 1. Crete, September 2nd, 2015, Round table: Concept of the Doctoral School in Serbia 2. Vienna, December 18th, 2015, Round table: Models of Doctoral Schools in Serbia 3. Lisbon, May 27th, 2016, Round table: Accreditation standards for joint study programs 4. Crete, September 8th, 2016, Round table: Standards for Establishing of the Doctoral Schools <p>Suggestions of the EU partners were done directly to the partners proposing study programs, including specially organized study visits of EU experts paid to these partners institutions. The round table organized at Crete in 2016 was of great importance for the adoption of the final view on establishing Doctoral Schools in Serbia.</p>	<p>Minutes of the meetings and round tables</p> <p>Decisions of the PMB</p>

Changes that have occurred in this result since the original proposal:

Peer reviews of the study programs were not formalized through formal documents. Rather, the process of creation was emphasized, so that the proposed study programs were discussed at the round tables and at individual coordination meetings.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP6 (DISS) Dissemination of the project results
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Web site created and properly utilized • Dissemination conference organized • Internal and external dissemination realized • Dissemination conference with doctoral students organized • Flyers, leaflets distributed to academic institutions, industry and representatives of labour market
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
6.1	Project promoted by Web site	M2	M36	CONUS	The project website was created within 45 days from the beginning of the project. It gives a complete insight into the background and objectives of the project, the planned and realized activities and the expected outcomes/outputs. Links to participating institutions were provided with contact information of representatives. All project material was posted on this website and made available to public.	Website created Web portal created - Number of visits to the Website - Quality and relevance of data on the Website All information and results concerning ongoing activities
6.2	Dissemination conference with industry and society	M12	M12	UBG	Dissemination Conferences were organized 7 times. A wider aim of these conferences is to invite industry and civil sector representatives to encourage cooperation with universities in order to support the envisaged reforms of doctoral studies. At each conference the results of the reform activities were presented. Also, adequate information material was distributed to the participants (as described). List of dissemination conferences: 1. Conference in Belgrade held on December 4th, 2014 with Joint session of the NCHE and NCSR D in Belgrade 2. Conference on Doctoral Schools at the University of Novi Sad on April 3rd, 2015 3. Conference on Doctoral Schools , held in the Chamber of Commerce and Industry of Serbia on April 23rd, 2015. 4. Workshop and Dissemination event: Doctoral schools	Dissemination conference Number of participants from different stakeholders from Serbia and abroad Number of attendees to conferences Number of dissemination conference and workshops

					<p>in Serbia in the context of the industry needs for scientific research, Kragujevac (organized with the Regional Chamber of Commerce and Industry in Kragujevac), June 16th, 2015.</p> <p>5. Workshop and Dissemination event: Doctoral Schools in Serbia in the context of the industry needs for scientific research, Niš (organized with the Regional Chamber of Commerce and Industry in Niš), September 23rd, 2015.</p> <p>6. Workshop and Dissemination event: Doctoral schools in Serbia in the context of the industry needs for scientific research, Novi Pazar (organized with the Regional Chamber of Commerce and Industry in Kraljevo, Office in Novi Pazar) October 22nd, 2015.</p> <p>7. Meeting: „Research Policy, Industry and Public Sector in Restructuring Doctoral Studies”, with representatives from industry and public sector, at the University of Novi Sad, October 21st, 2016.</p> <p>At each conference, the results of the reform activities were presented. Also, adequate information material was distributed to the participants.</p>	
6.3	Dissemination documents	M7	M36	CONUS	<p>An information leaflet, containing basic information on the aims and deliverables of the project, was distributed during all the Dissemination conferences. All documents are available at the website; they were also sent to target groups, such as University authorities, teaching staff, doctoral students, industry and civil sector. Also, a Manual on the development and implementation of the concept and standards of doctoral studies was published and distributed at the end of the project.</p> <p>The following books were published:</p> <ol style="list-style-type: none"> 1. Science in Serbia 2010-2013 published by CONUS and NCSTD in 2014 2. Science in Serbia in 2014 published by CONUS and NCSTD in 2015 3. Doctoral Studies in Serbia published in Serbian by CONUS in 2014 4. Doctoral Studies in Serbia published in English by CONUS in 2015 5. Science: State, Strategy, Perspective, publish by SASA in 	<p>Project logo in AI, CDR, EPS, JPG, PNG, TIFF formats (monochrome and in color)</p> <p>Project memo</p> <p>Project banner</p> <p>PPT template</p> <p>Word template and all other relevant document templates</p> <p>Manual for web portal use dissemination questionnaire</p> <p>Dissemination activities:</p> <ul style="list-style-type: none"> - one to one communication - meetings with the relevant stakeholders - meetings with decision makers

					<p>2016</p> <p>6. Roadmap for the Establishment of Strategic Partnership Between Academia, Industry and Other Involved Parties in Improving the Quality Of Doctoral Studies published by CONUS and UNS in 2017</p> <p>7. From Doctoral Studies to Doctoral Schools with special chapter: Guide for implementation of Doctoral Schools in Serbia (Activity 4.6.) publish by CONUS in 2017</p> <p>The following papers and presentations were generated:</p> <p>Two papers WHY SERBIA NEEDS DOCTORAL SCHOOLS? – POTENTIAL MODELS and QUALITY ASSURANCE IN DOCTORAL STUDIES: DOCTORAL SCHOOLS, XXI Conference TREND 2015 “University in changes...”</p> <p>Two papers SURVEY OF RESEARCH AND INNOVATION IN SERBIA 2011-2016, CONTRIBUTION OF DOCTORAL STUDIES and LAW AMENDMENTS AND NaRDuS - what changes have been brought during first two years?, XXIII Conference TREND2017 “Higher Education and Science in Serbia” and</p> <p>Presentation Doctoral Schools – New Possibility for Cooperation Between Universities and Industry in South East Europe, Professional Workshop Oil Industry in Serbia and Higher Education in South East Europe, June 24th, 2015, Serbian Chamber of Commerce, Belgrade</p> <p>Invited lecture: Doctoral schools - concepts and application, International conference Sensiever 2015 in Novi Sad on 9th of October, 2015</p> <p>Poster DOCTORAL SCHOOLS – A NEW APPROACH IN QUALITY ASSURANCE OF DOCTORAL STUDIES, International Conference Modernization of Universities through Strengthening of Knowledge Transfer, Research and Innovations, Tempus Project WBCInno, September 18th, 2015, Novi Sad</p>	<ul style="list-style-type: none"> - regular meetings with student representatives - email lists - printed materials distribution - student conferences - coordination meetings - communication with media
6.4	Dissemination conference with doctoral students	M22 M34	M22 M34	UNI,UKG	<p>PhDSS participated as one of the main organizers in three Conferences given below. Their representatives had the opportunity to address the audience through introductory presentations. The aim of the active participation of students was</p>	<p>Number of students participating</p> <p>Number of participants from different stakeholders from</p>

				<p>to get an insight into the actual status of doctoral students and to get directly their response to the results obtained within the project. Also, it is anticipated that students from EURODOC and some other national PhD student organizations will participate and will share experience in the organization of doctoral studies in their countries.</p> <ol style="list-style-type: none"> 1. Conference on Doctoral Schools at the University of Novi Sad, April 3rd, 2015 2. Round table: Accreditation Standards for Establishing Doctoral Schools in Serbia, Belgrade, November 17th, 2016 3. Final Project Conference " From Doctoral Studies to Doctoral Schools", Belgrade, June 1st, 2017. 	<p>Serbia and abroad</p> <p>Number of attendees to conferences</p> <p>Number of conferences and workshops</p>
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Changes that have occurred in this result since the original proposal:

PMB decided to increase the number of dissemination conferences organized within the Project, especially of those related to the cooperation with industry and civil sector. Having this in mind, it has been found inappropriate to organize three conferences with students as the only formal organizer, having in mind their more than active participation in all the organized events.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 7 (EXP) Sustainability of the project results
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Conclusions and plans for the development of doctoral studies • Interconnections and collaboration of the Universities in Serbia in the domain of doctoral studies • Interest of industry and civil sector for doctoral studies • Interest of HEIs for establishing Doctoral Schools • Wide-spread knowledge and acceptance of university quality standards and rules and procedures for doctoral studies
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
7.1	Reports of meetings with University representatives with conclusions and further sustainability plans	M6 M18	M6 M18	All Serbian partners	<p>Numerous formal and informal meetings with the University representatives (deans, department heads, directors of the institutes, etc.) were organized during the eligibility period. It is important that the contact persons for partner institutions were, in majority, at high positions in the University hierarchy. In addition, deans and vice deans of all faculties were invited to the large RODOS conferences organized in Belgrade and Novi Sad. They represented a firm basis for further planning and monitoring of the project activities. The target groups of these meetings were students, teaching staff, higher education authorities, as well as interested civil sector organizations. The most important meetings with the above character were:</p> <ol style="list-style-type: none"> 1. Meeting of CONUS in January 2015 2. Assembly of CONUS, December 24th, 2015, where NaRDuS was officially presented 3. Meeting of CONUS, May 18th, 2017. 	<p>Decisions of the PMB</p> <p>Minutes from the meeting</p> <p>Conclusion for further planning</p>

7.2	Network of Universities in Serbia	M4	M36	All Serbian partners	<p>A university network was created, enabling continuous contacts between the partner institutions and facilitating permanent exchange of information. In such a way it was ensured that the cooperation among consortium members would continue after the project eligibility period. The established network will contribute to the exchange of experiences and evaluation of practice, with possible involvement of other Universities from Serbia and the entire region.</p> <p>The following Doctoral Schools established within the Project contributed to strengthening of the university network:</p> <p>Doctoral School of Mathematics; encompassing all public Universities in Serbia, this Doctoral School increases the capacity of the network of Serbian Universities for establishing similar doctoral Schools in future</p> <p>International Doctoral School of Megatrend University; increases the dimension of the network by introducing the international aspect</p> <p>European Joint Doctoral Degree in Science and Technology for Cultural Heritage Preservation; increases the network at the international level</p> <p>Doctoral School of Vlatacom Institute; enlarges the network by incorporating members from R&D sector and industry.</p> <p>The university network will continue functioning after the eligibility period.</p> <p>There were in total 86 coordination meetings.</p>	<p>Number of institutions participating in the network</p> <p>Number of coordination meetings</p> <p>Profile of the Doctoral Schools established</p>
7.3	Promotion of Doctoral Schools in Serbia	M9 M21 M33	M9 M21 M33	UBG, UNS, UNI, UKG, SUNP	<p>One of the main goals of all the conferences organized within RODOS was to promote the idea of restructuring Doctoral Studies in Serbia by introducing Doctoral Schools. Information on the concept of Doctoral Schools was given, including advantages over the existing PhD programs at different universities, necessity of link with industry and their needs, exploring possibility to involve more countries from the region with similar historical background in education and therefore to ensure long term sustainability of this concept.</p> <p>The following promotion meetings have to be mentioned as</p>	<p>Number of meetings</p> <p>Minutes from the meetings</p> <p>Conclusion for further planning</p> <p>Impact of the meetings to public opinion</p>

					<p>important:</p> <ol style="list-style-type: none"> 1. Workshop on Science in Serbia held on November 4th, 2014, at the Serbian Academy of Sciences and Arts. 2. TREND 2015 Conference, Zlatibor, February, 23-26, 2015. RODOS team members presented new trends in organization and quality assurance of doctoral studies in the EHEA. 3. Participation at the International Conference on the Future of the Doctorate, organized by the European Commission and held in Riga on 28-29 May 2015. 4. Conference on Science: State, Strategy, Perspective, June 5-6, 2015. 5. TREND 2017 Conference, Zlatibor, February, 22-24, 2017. A special panel: Accreditation Standards for Establishing Doctoral Schools. 6. Dissemination event: Signing of the agreement on establishing national Doctoral School of Mathematics, Novi Sad, March 17th, 2016. 7. Dissemination event: Establishment of the International Doctoral School of University Megatrend, Belgrade, June 20th, 2016. 8. SENSEIVER 2015 International Conference, Novi Sad October 9th, 2015. 9. Third International Interdisciplinary Meeting of Young Researchers in Social and Humanistic Sciences, KONTEKSTI, Novi Sad, December 1st, 2015. 10. Professional Workshop Oil Industry in Serbia and Higher Education in South East Europe, June 24th, 2015, Serbian Chamber of Commerce, Belgrade. 11. International Conference Modernization of Universities through Strengthening of Knowledge Transfer, Research and Innovations, Tempus Project WBCInno, September 18th, 2015, Novi Sad. <p>All the conferences organized within RODOS were aimed at promoting doctoral schools. The main task was to give information on the concept of doctoral schools, advantages over the existing PhD programs Report on student.</p>	
7.4	Improvement of NaRDuS – National Repository of	M40	M43	CONUS, MESTD,	NaRDuS (National Repository of Dissertation in Serbia) is one of very important achievements of the Project, contributing in an	Documentation about NaRDuS at the site of MoESTD

	Dissertations in Serbia			UBG	<p>essential sense to its sustainability.</p> <p>NaRDuS relies on: a) the obtained results, published in the book "Doctoral Studies in Serbia" and discussed at different events organized by RODOS; and b) the principle of openness of science and knowledge to public and citizens. Amendments on the Law on Higher Education stipulate: 1. for HEIs, to make public all PhD dissertations prior to their defense, 2. for Universities, to provide an open access digital repository containing the defended dissertations (with appropriate documentation), and to deliver to the Ministry of Education a copy of the content for the central repository. Within the project RODOS, the central portal NaRDuS was developed. This is fully in line with the guidelines of the framework program of the European Union for research and innovation (Horizon 2020) and will encourage participation of the Serbian higher education institutions in the European repository of doctoral dissertations. NaRDuS was organized in such a way that there are two persons at each University authorized for dissertation depositing.</p> <p>Sustainability of NaRDuS is ensured by an agreement on functioning and funding of NaRDuS between MoESTD and Computer Center of the University of Belgrade.</p>	<p>Rules and regulations concerning NaRDuS</p> <p>Agreement on the functioning and funding of NaRDuS</p>
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Changes that have occurred in this result since the original proposal:

An important change was the introduction of NaRDuS, the official repository of doctoral dissertations (not existing in the Proposal). NaRDuS represents one of key achievements of the Project, and contributes in an essential way to dissemination of the results.

Please add as many tables as necessary.

<u>Title and reference number of the work package (WP)</u>	WP 8 (MNGT) Management of the project
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<u>Indicators of achievement and or/performance as indicated in the project proposal</u>	<ul style="list-style-type: none"> • Correct project development • Clearly defined responsibilities of all the Consortium members • Efficient and effective implementation of the Project, in line with proposed objectives and activities • Quality and timely information on project progress, and internal project QA, enabling proactive task management and coordination • Conclusions and actions of PMB • Correct financial management
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Activities carried out to date to achieve this result:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out	Specific and measurable indicators of achievement
8.1	Daily management of the project	M1	M36	CONUS	Daily management of the project was done by CONUS, under the supervision of the appointed contact person. He took care of all events, helped by the administrative staff. CONUS ensured continuous coordination of all activities and adequate preparation of all the planned events. If necessary, CONUS consulted PMB by organizing virtual meetings. In such a way, smooth running of the project was ensured.	Minutes from the meetings Number of participants Timely performing and completing of all activities Smooth running of the project Successful financial management of the project
8.2	Instructions for financial management	M1	M2	CONUS	CONUS published within 45 days after the beginning of the project written instructions for financial management of the project. All the Consortium members got this document with the corresponding explanations. This deliverable has been very important for efficient financial management of the project and fulfillment of the obligations with respect to EACEA.	Minutes from the meetings Number of participants Timely performing and completing of all activities Smooth running of the project Successful financial management of the project
8.3	Regular meetings of the PMB	M10	M20	CONUS	The PMB was founded at the kick off meeting which was organized much later than planned because of technical reasons. The PMB contained all the Consortium members. It was decided at this meeting not to appoint any Steering Committee, in order	Minutes from the meetings

				<p>to ensure active participation of all Consortium members. Meetings of the PMB have been organized much more frequently than it was planned, having in mind the importance of analyzing the planned and the achieved activities much more frequently in the situation where the Steering Committee was not formally appointed. Indeed, all the planned and the achieved activities were analyzed on the basis of reports from all the Consortium members and the lead partners of the work packages. These reports represented a good basis for further planning.</p> <p>The following meetings of the PMB were held:</p> <ol style="list-style-type: none"> 1. Belgrade, Kick off Meeting, March 3rd, 2014 2. Belgrade, June 19th, 2014 3. Chania, Crete, September 20th, 2014 4. Belgrade, December 16th, 2014 5. Novi Sad, April 3rd, 2015 6. Ghent, March 27-28th, 2015 7. Lisbon, May 20th, 2015 8. Belgrade, June 2nd 2015 9. Chania, Crete, September 3rd 2015 10. Vienna, December 15th 2015 11. Lisbon, May 27th 2016 12. Chania, Crete, September 9th 2016 13. Novi Sad, October 21st 2016 14. Belgrade, June 1st 2017 	
8.4	Regular meetings SC coordination meetings	M7 M19 M31	M7 M19 M31	<p>At the kick off meeting the decision was made not to elect formally any Steering Committee for the Project. Besides the above given essential reasons, such a decision was also motivated by the experiences gained within previous Tempus projects and suggestions of the National Tempus Office to enhance democratic ways of making decisions involving all Consortium members. Therefore, PMB gained much more importance, and its meetings had to be more frequent than planned. On the other hand, the coordinator had to intensify everyday consultations with leaders of the Work Packages and other leading persons responsible for partner institutions, in order to ensure efficient and smooth functioning of the project. From this point of view it is very important that CONUS was the Grant Holder institution. Informally, a group of leaders of WP's actual for the past period of time played the role of a formal SC very effectively.</p>	Minutes from the meetings

8.5	External financial audit	M31	M31	CONUS	<p>As per EACEA and Tempus IV application guidelines, an external financial audit was done with the aim to evaluate cost-efficiency of the project implementation. External audit was done by the company Privredni savetnik - revizija d.o.o.</p> <p>Copies and originals of all the supporting relevant documents will be kept at the University of Belgrade as the grant applicant institution in the next five years.</p>	Independent audit report of factual findings published
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Changes that have occurred in this result since the original proposal:

Changes made in relation the Steering Committee and PMB are explained above in the Table. The elected PMB was found to be a very flexible body, whose decisions were, by definition, democratic and based on consensus,, enabling active and direct participation of all Consortium members. This is a structure in which the emphasis is laid on academic and technical arguments, exposed, as a rule, to the PMB by the leaders of particular Work Packages.

Please add as many tables as necessary.

SUMMARY REPORT FOR PUBLICATION

Project title

Restructuring of doctoral studies in Serbia – RODOS

Objectives (as indicated in the project proposal)

Wider Objective:

Restructuring doctoral studies in RS in line with the Bologna Process and Salzburg Principles, with the emphasis on **quality of research** and **integrative processes** involving universities, institutes, industry and civil sector and resulting in **Doctoral Schools**

Specific Project Objective/s:

What are the specific objectives, which the project shall achieve?

- To reconsider in detail the existing **national policies/standards for doctoral studies** in RS and to develop new ones, better adapted to the current experiences and needs, including a new **bylaw on public funding of doctoral studies** based on doctoral research projects
- To restructure doctoral studies in RS in order achieve a synergy between **scientific research Institutes and Universities** and compatibility with the **needs of industry**
- To develop the concept of **joint doctoral studies** at intra university and inter university levels in the form of **Doctoral Schools**, and to implement four models in selected fields (Material Sciences, Cyberphysical Systems, Arts and Humanities, Natural Sciences)

Outcomes

WP 1 (DEV 1) Quality assurance and funding of doctoral studies

WP 2 (DEV 2) Research policy and industry in restructuring doctoral studies

WP 3 (DEV 3) Doctoral schools: concept, standards and organization

WP 4 (DEV 4) Establishment and implementation of doctoral schools with selected study programs

WP 5 (QPLN) Quality plan

WP6 (DISS) Dissemination of the project results

WP 7 (EXP) Sustainability of the project results

WP 8 (MNGT) Management of the project

Activities

WP 1 (DEV 1) Quality assurance and funding of doctoral studies

- 1.1. Training of university staff in QA standards for doctoral studies in EU
- 1.2. Evaluation of the existing QA standards for doctoral studies in Serbia
- 1.3. Formulation and adoption of modified QA standards for doctoral studies
- 1.4. Evaluation of models for public funding of doctoral studies
- 1.5. Formulation and adoption of bylaws on public funding of doctoral studies

WP 2 (DEV 2) Research policy and industry in restructuring doctoral studies

- 2.1. Analysis of the research policies in Serbia in the light of doctoral studies
- 2.2. Adoption of modified bylaws on research policies for doctoral studies
- 2.3. Analysis of the role of industry and civil sector in doctoral studies
- 2.4. Definition and adoption of roadmaps for doctoral studies

WP 3 (DEV 3) Doctoral schools: concept, standards and organization

- 3.1. Analysis and evaluation of EU experience in the domain of Doctoral Schools
- 3.2. Organization of a conference on doctoral schools
- 3.3. Formulation and adoption of bylaws for establishment of Doctoral Schools
- 3.4. Training of the university staff on Doctoral School organization and joint doctoral degree accreditation
- 3.5. Formulation and adoption of accreditation standards for joint doctoral degrees
- 3.6. Accreditation standards for Doctoral Schools

WP 4 (DEV 4) Establishment and implementation of doctoral schools and selected study programs

- 4.1. Concept and establishment of selected models for Doctoral Schools
- 4.2. Provision of space and equipment for Doctoral School Offices
- 4.3. Formulation of selected study programs for Doctoral Schools
- 4.4. Formulation of rules and regulations for the status of students at Doctoral Schools
- 4.5. Accreditation and implementation of selected study programs for Doctoral Schools

WP 5 (QPLN) Quality Plan

- 5.1. Self evaluation by consortium members
- 5.2. Internal quality control by Committee for Quality Control and Monitoring
- 5.3. External quality control by external experts
- 5.4. Peer review of the study programs

WP6 (DISS) Dissemination of the project results

- 6.1. Creation and updating project Web site
- 6.2. Organizing dissemination conference with industry and society at large
- 6.3. Distribution of project documents through web site, information leaflets and reports
- 6.4. Organizing dissemination conference with PhD students

WP 7 (EXP) Sustainability of the project results

- 7.1. Meetings with University representatives
- 7.2. University networking
- 7.3. Promotion of Doctoral Schools in Serbia
- 7.4. Improvement of NaRDuS – National Repository of Doctoral Dissertations in Serbia

WP 8 (MNGT) Management of the project

- 8.1. Daily management of the project
- 8.2. Formulation of the instructions for financial management of the project
- 8.3. Regular meetings of the PMB
- 8.4. Regular coordination meetings of SC
- 8.5. External financial audit

Achieved results

The project has delivered good results, since all the important activities planned in the Proposal were successfully performed in time, in spite of diverse difficulties inevitable for an ambitious system oriented Project with a large consortium. The planned results have been achieved. Moreover, some activities have been well above the planned level and depth. Also, some important new activities have been added to the list. More specifically, the following results are to be notified:

- Definition of a questionnaire related to doctoral studies, distribution to all Serbian HE institutions and critical analysis of the obtained results
- In depth evaluation of the status and perspectives of doctoral studies in Serbia
- Publication and distribution of a book "Doctoral Studies in Serbia" written by RODOS staff
- Organization of large Conference at UBG with more than 170 participants where findings of the whole analysis were presented and discussed
- Evaluation of the existing Quality Assurance standards in EU and Serbia
- Adoption by the National Council for Higher Education of new accreditation standards for joint degrees
- Adoption by the National Council for Higher Education of new accreditation standards for Doctoral Schools
- Analysis of the existing approaches in EU to the problem of funding doctoral studies
- Critical analysis of the existing system for funding doctoral studies in Serbia
- Formulation of a proposal of new possibilities for co-funding doctoral studies based on dedicated doctoral research projects
- Adoption of the new Rules for Funding Doctoral Studies by the Ministry for Education, Science and Technological Development
- Publication of two books "Science in Serbia 2010-2013" and "Science in Serbia 2014" with special chapters devoted to doctoral studies
- Formulation and proposal of a part of the Action Plan of Strategy of Research and Technological Development of Serbia devoted to doctoral studies
- Successful changes of the Law on Higher Education and the Law on Scientific Research Activity oriented towards the main Project goals
- In depth analysis of the current status of the collaboration industry - HE based on a special questionnaire
- Organization of numerous conferences at different towns in Serbia devoted to the synergy doctoral studies - industry and civil sector in the light of the third mission of Universities
- Publication of the Roadmap for collaboration doctoral studies – industry in Serbian and English
- Comprehensive analysis of concepts, standards and organization of Doctoral Schools in EU
- Discussions about the concept of Doctoral Schools in Serbia at all Serbian Universities
- Study visits to EU partner organizations oriented towards getting acquainted with Doctoral School organization and the corresponding legal regulations
- Diverse models for Doctoral Schools elaborated in different fields
- Concept of Doctoral Schools in Serbia defined, discussed and published
- Promotion of Doctoral Schools done actively at all Serbian Universities
- Rules and regulations for doctoral students adapted to the concept of Doctoral Schools
- Specific bylaws related to Doctoral School founding adopted by the National Council for Higher Education
- Nine selected models of Doctoral Schools established at different Universities (Mathematics, Medicine, Technical Sciences, Economy, Arts and Humanities, Biology, Cultural Heritage, Bio-Photonics, Cyber-Physical Systems)
- Selected study programs designed for Doctoral Schools in different domains formulated, adopted, accredited and first students enrolled
- Legal regulations for Doctoral Schools elaborated adopted by the National council for Higher Education
- Specific courses on transversal skills in future Doctoral Schools elaborated and organized
- Mutual understanding and successful cooperation between partners achieved
- Numerous dissemination documents created
- Website and web portal created with website and visual identity of the project
- Legal tendering procedure for purchasing equipment initiated, equipment purchased and installed at the Partner Universities
- Software tools for PhD theses repository (NaRDuS) designed, implemented and installed at the Ministry of Education, Science and Technological Development
- Association of PhD students and young researchers of Serbia reported on student evaluation each Project year
- Book "From Doctoral studies to Doctoral Schools" published, containing the majority of the Project results

Future developments

The Project RODOS was devoted to some of the basic issues in HE reforms, targeting doctoral studies as one of top strategic priorities for further development of science and technological development. We believe that the obtained results can represent a good starting point for future development concerning quality of studies and research environment, financial support, interconnection with industry and society, developing of innovative structures supporting research excellence, multidisciplinary and offering wider knowledge and skills for carrier development of young researchers. The following lines of continuation of the Project activities can be envisaged:

- The results and tools developed for the **analytical approach to the research policies and other key areas of Doctoral Studies** at Serbian HEI's, **including introduction/implementation of the repository of doctoral dissertations at the state level** (National Repository of Doctoral Dissertations in Serbia - **NaRDuS** will contribute to visibility/transparency of doctoral theses, the application of the research results in different areas, comprehensive planning and efficient evaluation of Serbian HEI's, including substantial quality enhancement of the research in general.
- The **model of Doctoral Schools**, including flexible structures and management, and the **Guidelines** for establishing new structural units is already recognized as an **important tool in implementing principles of innovative doctoral training in line with EU practice and future tendencies**. Each university will be able to adopt its own strategy and find its own optimal solution in modernization and improvement of doctoral studies, the mode/guidelines and the experiences of already established DS in Serbian HE space being of crucial importance in making decisions.
- The **changes in the legal framework** at different levels and areas (QA standards, corresponding by-laws, strategic documents and action planes, changes of LHE....) will contribute to the system efficiency and its harmonization with the EHEA tendencies. These results are of high importance for the Project result sustainability.
- The **Roadmap for cooperation of HE, industry and civil sector in doctoral studies** has been considered as fundamental in establishing mechanisms for continuous interactive work, opening new horizons in for creativity in defining the research projects and applicability of research results in technological and social development. It is expected that the knowledge and experiences of doctoral students gained through industrial experience, together with the development of transferable skills offered by Doctoral Schools,, will considerably contribute to employability of doctoral students/young researchers in wider areas.
- **An improvement of the HE policy in Serbia is expected through close cooperation of the main HE system bodies** (NCHE, CONUS, NCSTD, in cooperation with MoESTD) in implementing the Action plan of the Strategy of Education Development in Serbia 2020, giving new impulses to the strategic planning oriented towards increased quality, efficiency and employability of the students of doctoral studies, being embedded in the concept of Doctoral Schools.
- Since all **members of the project consortium**, including the MoESTD, the NCHE, the CONUS and RS universities, are the **most important actors in developing HE policy, modernization of HE system in Serbia is expected to continue as a dynamic process** of the improvement of university performances targeting European modernization agenda goals and a full involvement of RS universities in EHEA.

Other remarks

The Consortium has been committed towards the vision and aims of the Project and feels confident that the Project objectives, activities and results are very important for restructuring of Doctoral Studies in Serbia.

Additionally, all participants developed excellent relations, increased the level of communication, understanding and support, which is important for their further work and sustainability of the Project. Some of the members of the Project team have met for the first time and have expanded their professional network, established good communications and found common interests for further common endeavors. All Project members feel happy to have had an opportunity to work together for the benefit of the Serbian HE and the whole EHEA.

FINANCIAL STATEMENT

Instructions

In addition to this form, you are requested to fill in the Financial Statement and accompanying financial tables in the "**Financial Statement**" excel file published on the website.

Please note that the excel file is composed of 11 different excel worksheets. Please go through each one of these worksheets and fill in the financial tables. For each budget heading, you must declare all expenditure incurred by the project during the eligibility period, both paid by Tempus and co-financed.

The "Financial Statement" excel file is composed of the following excel worksheets:

Annex IV/13:	Financial Statement and Request of Payment of the balance
Annex IV/14:	Country codes
Annex IV/15:	Staff Costs
Annex IV/16:	Travel Costs and Cost of Stay
Annex IV/17:	Equipment Costs
Annex IV/18:	Printing and Publishing
Annex IV/19:	Other Costs
Annex IV/20:	Expenses > Euro 25,000
Annex IV/21:	List of Partners and Experts
Annex IV/22:	Indirect Cost
Annex IV/23:	Co-financing and exchange rate

The financial tables are protected and pre-formatted but you can insert rows according to your needs. Please note that the relevant information has to be encoded manually in the financial tables. Please avoid copy-paste. Please check the calculations carefully and ensure that the declared amounts are correct. Amendments to the declared amounts will not be accepted after submission of the report.

Please note that for invoices in a currency other than EURO the equivalent amount in EURO must be indicated on the invoice. Any conversion of actual costs into EURO shall be made by the co-ordinator at the monthly accounting rate established by the Commission and published on its website (<http://ec.europa.eu/budget/inforeuro>) applicable on the month of the first pre-financing until the second pre-financing is received, after which the rate of the month of the second pre-financing must be applied.

ACKNOWLEDGEMENT OF RECEIPT

Your name: Srdjan Stanković

Complete address: Conference of the Universities of
Serbia (CONUS), Studentski trg 1

RS - 11000 Belgrade
Country code Postal code City

This page of the form will be returned to you on receipt of your implementation report and financial statement. Therefore please enter your name and address in the box above. Please remember to send in this page with each of your reports.

For internal use only

Tempus Project No. **544093/2013**

under the Tempus programme.

Yours sincerely,

Done at,

Date

CHECK-LIST

WHAT INFORMATION NEEDS TO BE SENT?



Declaration: duly signed by the contact person and the legal representative of the coordinator (institution) – Annex IV/2



Final report on implementation of the project – Annex IV/3-5



Statistics and indicators – Annex IV/6-8



Table of achieved results – Annex IV/10



Summary report for publication – Annex IV/11



Financial statement: Annex IV/13-23 (please complete the financial statement in the separate "Financial Statement" excel file: make sure that all excel sheets, if required, are duly filled in)



Supporting documents for expenditure ‘Paid from Tempus’ and/or ‘Co-financed’ only for equipment purchase and staff costs subcontracting where the total value of the purchase/subcontract is more than EUR 25 000 and for staff costs where a higher salary rate (see Annex 3 of the Guidelines) has been applied.



Acknowledgement of receipt – Annex IV/24