

The External Evaluation Report of a Doctoral Study Domain

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I. Introduction¹

In this chapter, the following shall be summarized:

- the context in which this external evaluation report was drafted (**the type of evaluation, the period of the evaluation visit, the composition of the Experts Committee** etc.);
- details about the doctoral school(s) of which the doctoral domain under review is part (number of doctoral advisors, number of students, institutional context, short history etc.);
- details about the doctoral study domain under review (number of students, institutional context, short history etc.).

The evaluation was carried out for the Electrical Engineering doctoral domain in the period from 14.6.-25.6.2021. The panel members were prof. C. Fosalau, prof. K. Miličević and student member T. Lupu.

Introduction according to the self-assessment document

The School of Engineering - Polytechnic University of Bucharest, through the efforts of professors and students, has consolidated its academic status and prestige in 200 years, being the most prestigious school of engineers in Romania. You come from all sides and all the state! was the call of Gheorghe Lazăr from Înștiințarea, through which, through the princely Opis, in 1818 the first higher technical school with teaching in Romanian and the first engineering courses were opened, at the Sfântul Sava monastery in Bucharest, which, in 1832, was reorganized into the College of at St. Sava. On October 1, 1864, the "School of Bridges and Roads, Mines and Architecture" was established, which, on October 30, 1867, became the "School of Bridges, Roads and Mines", with a duration of studies of 5 years. Under the leadership of Gheorghe Duca, on April 1, 1881, the institution was restructured and became the "National School of Bridges and Roads". On June 10, 1920, the Polytechnic School of Bucharest was established, with four sections: Electromechanics, Constructions, Mines and Metallurgy, Industrial Section. Since November 1920, the name is changed to POLITEHNICA in Bucharest. On August 3, 1948, the Polytechnic Institute of Bucharest was established, which initially included four faculties and in which, since 1950, most of the current faculties have appeared. Based on the resolution of the University Senate of November 1992, the Polytechnic Institute of Bucharest became, by OM 7195 / 19.12.1992, the University POLITEHNICA of Bucharest (UPB). As a recognition of the achievements of the entire academic community, in terms of excellence of study programs, quality and visibility of scientific research, through its administrative and institutional capacity, POLITEHNICA University of Bucharest has been classified as advanced research and education universities, being the only university in Romania which is in all areas of ranking in the first

¹ Each time when applicable the information shall be presented gender-wise.

category (A) for all study programs. In 2015, following the evaluation of the Romanian Agency for Quality Assurance in Higher Education, UPB obtained the reconfirmation of accreditation, with a high degree of trust.

II. Methods used

This chapter will contain the methods and tools used in the external evaluation process, before and during the evaluation visit, including at least:

- The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;
- The analysis of documents made available by the IOSUD, in physical format, during the evaluation visit (if such documents have been requested);
- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;
- Visiting the buildings included in the institution's property, comprising (indicative and non-exhaustive list, which shall be changed according to the context):
 - classrooms;
 - laboratories;
 - the institution's library;
 - research centers;
 - the Career Counselling and Guidance Center;
 - lecture halls for students;
 - the student residences;
 - the student cafeteria;
 - sports ground etc.;
- Meeting/discussions with doctoral students in the doctoral study domain under review;
- Meeting/Discussions with the graduates of the doctoral study domain under review;
- Meeting/Discussions with employers of the graduates in the doctoral study domain under review;
- Meeting/Discussions with the school officials of the Doctoral School(s) in which the doctoral study domain under review is operating;
 - Meeting/Discussions with the doctoral advisors in the doctoral study domain under review;
 - Meeting/discussions with the representatives of the various structures of the IOSUD/Doctoral School(s) in which the doctoral study domain under review is operating:
 - The Council of the Doctoral School, the University Senate, the Board of Directors, the Quality Assessment and Assurance Commission, the Quality Assurance Department, the Ethics Commission (including with the student representatives of these structures);
 - the Career Counselling and Guidance Center;
 - student organizations;
 - secretariats;
 - various departments/administrative offices (Social/Student residences-Cafeterias etc.);
 - Application of questionnaires to doctoral students or academic staff in the doctoral study domain under review.

The methods and tools used in the external evaluation process included:

- The analysis of the internal evaluation report of the doctoral study domain under review and its Annexes;



- The analysis of documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format;
- Online preliminary meeting for the preparation and harmonization of evaluation steps, in hybrid mode, of doctoral study domains and IOSUD;
- Online meeting with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD);
- Online meeting with the contact person for the doctoral study domain under review and the team who drafted the internal evaluation report;
- Online meeting with Doctoral Schools Council (CSD members);
- Online meeting with PhD students;
- Online meeting with the academic staff corresponding to the doctoral study domain;
- Online meeting with the members of the Ethics Commission;
- Online meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain;
- Online meeting with employers of Doctoral graduates in the domain;
- Online meeting with graduates for the respective doctoral study domain;
- Internal domain evaluation panel meetings;

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

**general description of domain analysis.*

Criterion A.1. The administrative, managerial institutional structures and the financial resources

**general description of the criterion analysis.*

Standard A.1.1. The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies.

**general description of the standard analysis.*

Performance Indicator A.1.1.1. *The existence of specific regulations and their application at the level of the Doctoral School of the respective university doctoral study domain:*

- (a) the internal regulations of the Doctoral School;*
- (b) the Methodology for conducting elections for the position of director of the Council of doctoral school (CSD), as well as elections by the students of their representative in CSD and the evidence of their conduct;*
- (c) the Methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies);*
- (d) the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad;*



e) functional management structures (Council of the doctoral school), giving as well proof of the regularity of meetings;

f) the contract for doctoral studies;

g) internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The institution organizing doctoral studies (IOSUD) has implemented the effective functioning mechanisms provided for in the specific legislation on the organization of doctoral studies. It has provided as annexes of self-assessment document all needed documents:

- Annex A.1.1.1.a1 – IOUDS-UPB Regulations

- Annex A.1.1.1.a2 – DS-EE Regulations

- Annex A.1.1.1.b2 – DS-EE Elections

- Annex A.1.1.1.b3 – Structure of Doctoral Schools

- Annex A.1.1.1.c – Elections of CUDS director

- Annex A.1.1.1.d – Methodologies for organizing and conducting doctoral studies in IOUDS-UPB

- Annex A.1.1.1.e – Recognition of the quality of doctoral supervisor and equivalence of the doctorate held abroad

- Anexa A.1.1.1.f1_Tabel_PV-CSUD

- Annex A.1.1.1.f2 – Functionality of the CDS management structures

- Annex A.1.1.1.g – University Studies Contract of Doctorate

- Anexa B.2.1.3 – Fisa disciplina SD

The meetings did not raise any doubts about effective functioning mechanisms.

Performance Indicator A.1.1.2. The doctoral school' Regulation includes mandatory criteria, procedures and standards binding on the aspects specified in Article 17, paragraph (5) of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The criteria, procedures, and mandatory standards for the aspects specified in art.17, par. 5 of GD681/2011 are regulated by the IOUDS-UPB Regulation (Annex A.1.1.1.a1 – IOUDS-UPB Regulations) and the Regulation of the Doctoral School of Electrical Engineering (Annex A.1.1.1.a2 – DS-EE Regulation).

The meetings did not raise any doubts about the indicator.



Standard A.1.2. The IOSUD has the logistical resources necessary to carry out the doctoral studies' mission.

**general description of the standard analysis.*

Performance Indicator A.1.2.1. *The existence and effectiveness of an appropriate IT system to keep track of doctoral students and their academic background.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

For the record of doctoral students and their academic career IOSUD uses an online system (http://doctorat_electro.iem.pub.ro/intranet/) implemented on the Moodle platform . The meetings have confirmed that the system is functional.

Furthermore, IOSUD uses an offline database system managed and continuously updated by the DS-EE secretariat, composed of Word, Excel files containing information on the contact details of doctoral students enrolled in each year of study, records of their activities, etc. It was not clear if a part of the system is an online system so that students have an insight into important data regarding their study status, their finished and remaining activities, etc. Visit by the DD panel coordinator confirmed that these data is available to the students online. Hence, the indicator is fulfilled.

Performance Indicator A.1.2.2. *The existence and use of an appropriate software program and evidence of its use to verify the percentage of similarity in all doctoral theses.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The computer program used in IOUDS-UPB is Turnitin (<https://www.turnitin.com/ro>). Within the DSEE since the introduction of this verification mechanism, 31 doctoral theses have been investigated, the similarity percentages being presented in Annex A.1.2.2 – Data on the use of Turnitin.

The meetings did not raise any doubts about the indicator.

Standard A.1.3. The IOSUD makes sure that financial resources are used optimally, and the revenues obtained from doctoral studies are supplemented through additional funding besides governmental funding.

**general description of the standard analysis.*

Performance Indicator A.1.3.1. *Existence of at least one research or institutional / human resources development grant under implementation at the time of submission of the internal evaluation file, per doctoral study domain under evaluation, or existence of at least 2 research or institutional development / human resources grant for the doctoral study domain, obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. The grants address relevant themes for the respective domain and, as a rule, are engaging doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

In the last 5 years, over 30 research-development-innovation grants coordinated by DS-EE members have been carried out, of which over 7 grants are still in progress at the time of submitting the selfassessment report. Details are presented in Annex A.1.3.1 – Research or institutional development grants / human resource.

The meetings did not raise any doubts about the indicator. However, there are at the moment several active projects. Nevertheless, it is recommended to develop a strategy how to further increase the number and amount of project funds. For example, UPB and/or doctoral school could offer internal funding for researchers, i.e. some kind of "start-up" to initiate research activities and prepare it for a grant application.

Performance Indicator *A.1.3.2. *The percentage of doctoral students active at the time of the evaluation, who for at least six months receive additional funding sources besides government funding, through scholarships awarded by individual persons or by legal entities, or who are financially supported through research or institutional / human resources development grants is not less than 20%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is not fulfilled.

At the moment of elaborating the self-evaluation report, within the field of doctoral studies Electrical Engineering there are a total number of 172 doctoral students benefiting from the financing from the state budget. There are 18 budget students who have received / benefit from complementary funding for at least six months, representing 10% of the number of doctoral students funded / who have been funded from the state budget and who are enrolled in the preparation of the self-assessment report. The summary table is presented in Annex A.1.3.2 – Beneficiary doctoral students and other sources of funding.

The percentage is lower than 20%, i.e. the indicator is not fulfilled. Thus, it is recommended to develop a strategy how to increase additional funding sources.

Performance Indicator *A.1.3.3.² *At least 10% of the total amount of doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system is used to reimburse professional training expenses of doctoral students (attending conferences, summer schools, training, programs abroad, publication of specialty papers or other specific forms of dissemination etc.).*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

² The indicators marked with an asterisk (*) hold a special status, referring exclusively to the evaluation of doctoral studies domains, as per Article 12 from the annex No.1 of the Order of the minister of education No. 3651/12.04.2021 approving the Methodology for evaluating university doctoral studies and the system of criteria, standards and performance indicators used in the evaluation. In case they are not met, the Agency extends a period of maximum 3 years to IOSUD to correct the respective deficiencies.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is not fulfilled.

The revenues allocated for the PhD field in Electrical Engineering are presented in Annex A.1.3.2 – Ph.D. students benefiting from other sources of funding. Within the MySMIS 125125 project – Development of entrepreneurial skills of doctoral and postdoctoral students - key to career success (A-success) a number of 22 doctoral and postdoctoral students received financial support for participating in conferences and publishing scientific articles. Within the project, a number of 16 doctoral students benefited from a scholarship in the amount of 1800 lei / month for 12 months, and the 6 postdoctoral students benefited from a scholarship in the amount of 2700 lei / month for 12 months.

At the meetings seemed that the criteria for financing of conferences is not completely clear to the students. Thus, it is recommended to define criteria more precisely and to communicate it to the students.

Furthermore, there is no methodology for calculating the percentage, as it was also confirmed upon additional enquiry towards the DD contact person. Thus it is recommended to develop a methodology in order to be prepared for future evaluation procedures and to have it internally as one of indicators relevant for internationalization

Criterion A.2. Research infrastructure

**general description of the criterion analysis.*

Standard A.2.1. The IOSUD has a modern research infrastructure to support the conduct of doctoral studies' specific activities.

**general description of the standard analysis.*

Performance Indicator A.2.1.1. *The venues and the material equipment available to the doctoral school enable the research activities in the evaluated domain to be carried out, in line with the assumed mission and objectives (computers, specific software, equipment, laboratory equipment, library, access to international databases etc.). The research infrastructure and the provision of research services are presented to the public through a specific platform. The research infrastructure described above, which was purchased and developed within the past 5 years will be presented distinctly.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Through access to the research logistics resources of the Faculty of Electrical Engineering (<https://erris.gov.ro/FIE-UPB>), DS-EE has the necessary infrastructure to support the specific activities of doctoral studies. Thus, within the premises of the Faculty of Electrical Engineering there are 35 laboratories, to which are added 3 laboratories located in the CAMPUS research center. The research infrastructure of DS-EE is detailed in Annex A.2.1.1 – Research infrastructure.

In general, the meetings:

- Online meeting with PhD students;
- Online meeting with the Directors/ persons in charge of the research centers/laboratories within the doctoral study domain;
- Online meeting with employers of Doctoral graduates in the domain;
- Online meeting with graduates for the respective doctoral study domain;

have confirmed the satisfaction with the equipment and the resources in general.



Criterion A.3. Quality of Human Resources

**general description of the criterion analysis.*

Standard A.3.1. At the level of each domain there are sufficient qualified staff to ensure the conduct of doctoral study program.

**general description of the standard analysis.*

Performance Indicator A.3.1.1. *Minimum three doctoral thesis advisors within that doctoral domain, and at least 50% of them (but no less than three) meet the minimum standards of the National Council for Attestation of University Degrees, Diplomas and Certificates (CNATDCU) in force at the time when the evaluation is carried out, which standards are required and mandatory for obtaining the enabling certification.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The DS-EE has had in its composition in the last 5 years up to 39 doctoral supervisors. Of these, 26 advisers are affiliated at the time of the self-assessment report. The sheets with the fulfillment of the CNATDCU minimum standards in force for each leader, as well as the summary table indicating whether or not they meet the minimum standards in force area presented in Annex A.3.1.1 – The situation of meeting the CNATDCU minimum standards. Thus, out of the 26 currently affiliated doctoral supervisors, more than 50% of them (19 supervisors) meet the CNATDCU minimum standards.

The meetings did not raise any doubts about the indicator.

Performance Indicator *A.3.1.2. *At least 50% of all doctoral advisors have a full-time employment contract for an indefinite period with the IOSUD.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The Doctoral School of Electrical Engineering has at the date of reporting 26 supervisors. Of these, 13 have an employment contract of indefinite duration with UPB – Annex A.3.1.2 – Fulltime PhD supervisors.

The meetings did not raise any doubts about the indicator.

Performance Indicator A.3.1.3. *The study subjects in the education program based on advanced higher education studies pertaining to the doctoral domain are taught by teaching staff or researchers who are doctoral thesis advisors / certified doctoral thesis advisors, professors / CS I or lecturer / CS II, with proved expertise in the field of the study subjects they teach, or other specialists in the field who meet the*

standards established by the institution in relation with the aforementioned teaching and research functions, as provided by the law.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The holders of the general disciplines, GD (DG), from the training program based on advanced university studies, ATP (PPA), are established by IOUDS-UPB and have the necessary competencies to support the respective disciplines, as it appears from Annex A.3.1.3.a – titular CVs for GD disciplines. Teachers who are part of the examination commissions for specialized disciplines, SD (DS), within the ATP (PPA) have the necessary expertise to support the teaching of these disciplines and the evaluation of doctoral students, as shown in Annex A.3.1.3.b – tenured CVs for SD disciplines. The evaluation of the doctoral students for the SD disciplines is registered according to a standardized catalog sheet, presented in Annex A.3.1.3.c – Examination catalog sheet within the TPA (PPA).

The meetings did not raise any doubts about the indicator.

Performance Indicator *A.3.1.4. *The percentage of doctoral thesis advisors who concomitantly coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs³ does not exceed 20%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The summary table on the situation of coordination of doctoral students by doctoral supervisors affiliated to DS-EE at the time of elaboration of this self-evaluation report is presented in Annex A.3.1.4 - The situation of coordination of doctoral students. Thus, out of the 26 currently affiliated doctoral supervisors, 4% of them (1 supervisor) coordinate at the same time more than 8 doctoral students, but not more than 12, during the doctoral internship.

The meetings did not raise any doubts about the indicator.

Standard A.3.2. *The Doctoral advisors within the domain are carrying out a scientific activity visible at international level.*

**general description of the standard analysis.*

Performance Indicator A.3.2.1. *At least 50% of the doctoral thesis advisors in the evaluated domain have at least 5 Web of Science- or ERIH-indexed publications in magazines of impact, or other*

³ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No.1/2011 with subsequent amendments and additions, with additional extension periods approved as per Article 39, paragraph (3) of the Code of doctoral studies approved by the GD No. 681/2011 with subsequent amendments and additions.

achievements of relevant significance for that domain, including international-level contributions that indicate progress in scientific research - development - innovation for the evaluated domain. The aforementioned doctoral thesis advisors enjoy international awareness within the past five years, consisting of: membership on scientific boards of international publications and conferences; membership on boards of international professional associations; guests in conferences or expert groups working abroad, or membership on doctoral defense commissions at universities abroad or co-leading with universities abroad. For Arts and Sports and Physical Education Sciences, doctoral thesis advisors shall prove their international visibility within the past five years by their membership on the boards of professional associations, membership in organizing committees of arts events and international competitions, membership on juries or umpire teams in artistic events or international competitions.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The 26 Ph.D. supervisors affiliated to DS-EE at the time of the self-assessment report have a remarkable international visibility in the last five years, publishing numerous papers indexed or listed WOS and participating in the scientific committees of international publications and conferences. international professional associations or being invited to conferences or groups of experts held abroad, in commissions for the defense of doctoral theses at foreign universities or in co-supervision with a foreign university. All supervisors have at least 5 publications indexed Web of Science a very good international visibility in the last 5 years, according to the data in Annex A.3.2.1 – Publications / visibility of Ph.D. supervisors.

The meetings did not raise any doubts about the indicator. However, to increase the visibility even more, it is recommended to define measures of promoting and rewarding the scientific excellence of doctoral thesis advisors.

Performance Indicator *A.3.2.2. *At least 50% of the doctoral thesis advisors in a specific doctoral study domain continue to be active in their scientific field, and acquire at least 25% of the score requested by the minimal CNATDCU standards in force at the time of the evaluation, which are required and mandatory for acquiring their enabling certificate, based on their scientific results within the past five years.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

the DS-EE has 26 affiliated PhD. supervisors at the time of the self-assessment report. Of these, at least 17 (more than 50%) doctoral supervisors continue to be scientifically active, obtaining at least 25% of the score required by the CNATDCU minimum standards, as presented in Annex A.3.2.2 – Scientific results 2016-2020. This annex contains the sheets with the scores related to the minimum CNATDCU standards obtained in the last 5 years for each leader, as well as the summary table indicating whether or not they meet this criterion.

The meetings did not raise any doubts about the indicator.



Domain B. EDUCATIONAL EFFECTIVENESS

**general description of domain analysis.*

Criterion B.1. The number, quality and diversity of candidates enrolled for the admission contest

**general description of the criterion analysis.*

Standard B.1.1. The institution organizing doctoral studies has the capacity to attract candidates from outside the higher education institution or a number of candidates exceeding the number of seats available.

**general description of the standard analysis.*

Performance Indicator *B.1.1.1. *The ratio between the number of graduates of masters' programs of other higher education institutions, national or foreign, who have enrolled for the doctoral admission contest within the past five years and the number of seats funded by the state budget, put out through contest within the doctoral domain is at least 0.2 or the ratio between the number of candidates within the past five years and the number of seats funded by the state budget put out through contest within the doctoral studies domain is at least 1,2.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The result is an average ratio of 0.2326, with a strong, monotonous upward trend in the last 3 years. Thus, somewhat lower ration for 2016/2017 (0,1667) is not worrying. Details regarding the origin of our candidates are presented in Annex B.1.1.1 – Origin of doctoral students.

The meetings did not raise any doubts about the indicator.

Standard B.1.2 Candidates admitted to doctoral studies demonstrate academic, research and professional performance.

**general description of the standard analysis.*

Performance Indicator *B.1.2.1. *Admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific or arts/sports research, publications in the domain and a proposal for a research subject. Interviewing the candidate is compulsory, as part of the admission procedure.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The DS-EE complies to these requirements, each year the admission methodology is approved by UPB Senate, as defined by "Annex B.1.2.1_bis_AdmissionMethodologies.pdf" document. This information is published in a timely manner on the DS site too <http://sdiie.pub.ro>.

Performance Indicator B.1.2.2. *The expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4, years after admission⁴ does not exceed 30%.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

There is an average rate of 5.5%, much lower than the 30% threshold of the criterion. Details on this statistic are presented in Annex B.1.2.1 - The situation of dropping out of doctoral students.

The meetings did not raise any doubts about the indicator.

Criterion B.2. The content of doctoral programs

**general description of the criterion analysis.*

Standard B.2.1. The training program based on advanced university studies is appropriate to improve doctoral students' research skills and to strengthen ethical behavior in science.

**general description of the standard analysis.*

Performance Indicator B.2.1.1. *The training program based on advanced academic studies includes at least 3 disciplines relevant to the scientific research training of doctoral students; at least one of these disciplines is intended to study in-depth the research methodology and/or the statistical data processing.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Within the DS-EE, the curriculum of the Advanced Training Program includes two specialized disciplines (SD) and three common disciplines within the CUDS (GD), of which one discipline is the Research Methodology and scientific authorship. The training program based on advanced university studies in IOUDS-UPB includes 5 compulsory disciplines, of which 2 are specialized disciplines, established by the doctoral supervisor and 3 are disciplines that provide transversal competencies, which were approved by the Rector's Decision no.41 /30.10.2018, at the proposal of CUDS. The annex presents this decision, as well as the list of functions, at CUDS level, which certifies the programming of the disciplines. In Annex B.2.1.1 – GD subject sheets is detailed the sheet of this discipline relevant for the training in scientific research of doctoral students.

The meetings did not raise any doubts about the indicator.

⁴ 3 years for the doctoral university studies with the duration stipulated at Article 159, paragraph (3), respectively 4 years for the doctoral university studies with the duration stipulated at Article 174, paragraph (3) of the Law of national education No. 1/2011 with subsequent amendments and additions.

Performance Indicator B.2.1.2. *At least one discipline is dedicated to Ethics and Intellectual Property in scientific research or there are well-defined topics on these subjects within a discipline taught in the doctoral program.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

Within the DS-EE, the curriculum of the Advanced Training Program includes two specialized disciplines (SD) and three common disciplines within the CUDS (GD), of which one discipline is Ethics. In Annex B.2.1.1 – GD subject sheets is detailed the file of this discipline relevant for deepening the aspects related to ethics and intellectual property in the scientific research of doctoral students.

The meetings did not raise any doubts about the indicator.

Performance Indicator B.2.1.3. *The IOSUD has mechanisms to ensure that the academic training program based on advanced university studies addresses „the learning outcomes”, specifying the knowledge, skills, responsibility and autonomy that doctoral students should acquire after completing each discipline or through the research activities⁵.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The competencies, skills and aptitudes that doctoral students in the field of Electrical Engineering must acquire after completing each discipline or through research activities are substantiated by the Training Plan based on advanced university studies of each doctoral student and by the related Disciplines: Project Management and Methodology research and scientific authority; these documents are drawn up by each holder and approved by the Council of the Doctoral School of Electrical Engineering. Annex B.2.1.3. – SD subject sheets exemplify these aspects.

The meetings did not raise any doubts about the indicator, as well as the data given by DD contact person upon additional enquiry.

Performance Indicator B.2.1.4. *All along the duration of the doctoral training, doctoral students in the domain receive counselling/guidance from functional guidance commissions, which is reflected in written guidance and feedback or regular meeting.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

⁵ Or by what the graduate should know, understand and to be able to do, according to the provisions of the Methodology of 17 March 2017 regarding inscription and registration of higher education qualifications in the National Register of Qualifications in Higher Education (RNCIS) approved by the Order No.3475/2017 with subsequent amendments and additions.



- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

Regulations IOUSD-UPB and DS-EE, Chapter II "Organization of doctoral studies", Section "Guidance of doctoral students", Art. 19, point 2, Chapter IV "Ensuring the quality of doctoral studies programs", Art. 49, point 4, a, Art. 28, point 1, e, Art. 29, 30, 32, Section "Defending the doctoral thesis before the guidance and public support commission", Art. 36, 37, regulates this aspect. Part of the results of this counseling / guidance from the members of the guidance commissions are found in the joint scientific publications or communications of the doctoral student with at least one of the members of the guidance commission. From the data presented in Annex B.2.1.4 – Publications of doctoral students together with the guiding commission it results that at least 13 (36%) of the 36 doctoral students who have defended their doctorate or completed their doctoral training period in the period subject to evaluation have such collaborations. The counseling and guidance for solving the deficiencies reported during the presentation of the thesis manuscript in the Guidance Commission in order to finalize it for progress for analysis and preparation of reports from the Public Support Commission was a necessary, significant step in the activity of each doctoral student. Previous versions (after Turnitin verification) and the final version of the thesis can be compared.

The meetings did not raise any doubts about the indicator. Furthermore, the students are very positive towards their relationship with their supervisors in general. For example, defining the PhD area based also on the student's interests at the beginning of the study/research is very beneficial for the success of the research.

Nevertheless, it is recommended to open a communication channel for students to report discretely possible problems (technical, scientific, personal, ...) with their advisor.

Performance Indicator B.2.1.5. For a doctoral study domain, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance must not exceed 3:1.

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The average of the reported years indicates an average coefficient of approx. $1.43 < 3$. Annex B.2.1.5 - Guidance Committees. The meetings did not raise any doubts about the indicator.

Criterion B.3. The results of doctoral studies and procedures for their evaluation.

**general description of the criterion analysis.*

Standard B.3.1. Doctoral students capitalize on the research through presentations at scientific conferences, scientific publications, technological transfer, patents, products and service orders.

**general description of the standard analysis.*

Performance Indicator B.3.1.1. For the evaluated domain, the evaluation commission will be provided with at least one paper or some other relevant contribution per doctoral student who has obtained a doctor's title within the past 5 years. From this list, the members of the evaluation commission shall randomly select 5 such papers / relevant contributions per doctoral study domain for review. At least 3 selected papers must contain significant original contributions in the respective domain.



- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The representative works of the 33 doctoral students who obtained the doctorate in the field of Electrical Engineering in the last five years, validated by CNATDCU, are prepared in the SD-IE secretariat, in order to be randomly selected. Their list is presented in Annex B.3.1.1 – Selection of representative works of doctoral students

The meetings did not raise any doubts about the indicator.

In the paper:

- *Measuring the Hemodynamic Flow in the Brachial-Ulnar-Radial Arterial System; Alexandru M. Morega, Cristina Savastru, and Mihaela Morega*

there is a significant contribution in performing numerical simulations using a more realistic computational domain produced through reconstruction techniques and starting from CTscans evidence the complex hemodynamic flow. Although it seems to be narrow to computer science, it is important to emphasize also elements of electrical engineering (usage of various electrical sensors in the research) and importance of multidisciplinary approach.

The paper:

- *Parameter Identification of Magnetic Coupled Resonators in Power Wireless Transfer Systems; Maria-Lavinia Iordache, Marilena Stănculescu, Mihai Iordache, Dragoș Nicolae, Victor Bucată*

presents a procedure for wireless power transfer system (WPT) parameters identification using ANSYS Extractor Q3D Program. It is concluded that the parameters identification of the magnetic coupled resonators in power wireless transfer system plays a key role in system functioning, following that their efficiency depends on parameters values. However, this kind of conclusion can not be taken as a significant contribution.

Performance Indicator *B.3.1.2. *The ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period (past 5 years), including posters, exhibitions made at prestigious international events (organized in the country or abroad) and the number of doctoral students who have completed their doctoral studies within the evaluated period (past 5 years) is at least 1.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The 36 PhD students who have completed their doctoral studies in the field of Electrical Engineering in the last five years have participated in prestigious international events. Their list is presented in Annex B.3.1.2 – Selection of doctoral students' participation in prestigious international events. Each doctoral student who has become a doctor has given at least one presentation in this category, so that the ratio is greater than 1.

The meetings did not raise any doubts about the indicator.

Standard B.3.2. *The Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses in the analyzed domain.*

**general description of the standard analysis.*

Performance Indicator *B.3.2.1. *The number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD should not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The situation of the allocation of doctoral theses defended in DS-EE to the referents coming from other higher education institutions is detailed in Annex B.3.2.1 – Information regarding the public support of the theses in DS-EE. The synthesis by years of the maximum number of doctoral theses of the same doctoral supervisor that were assigned to the same referent from outside IOUDS-UPB not exceed two (2) in a year for the theses coordinated by the same doctoral thesis advisor.

The meetings did not raise any doubts about the indicator.

Performance Indicator *B.3.2.2. *The ratio between the doctoral theses allocated to one scientific specialist coming from a higher education institution, other than the institution where the defense on the doctoral thesis is organized, and the number of doctoral theses presented in the same doctoral study domain in the doctoral school should not exceed 0.3, considering the past five years. Only those doctoral study domains in which minimum ten doctoral theses have been presented within the past five years should be analyzed.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

In the period 2016-2020, 36 doctoral theses were defended in the Doctoral School of Electrical Engineering. The situation of the allocation of doctoral theses, defended in DS-EE, to the referents coming from other higher education institutions is detailed in Annex B.3.2.1 – Information regarding the public support of the theses in DS-EE. From these data, it results that the maximum number of assigned theses allocated to a certain scientific referent from another higher education institution than IOUDS-UPB is 9, which leads to a specific ratio of this criterion of $0.25 < 0.3$.

The meetings did not raise any doubts about the indicator.

Domain C. QUALITY MANAGEMENT

**general description of domain analysis.*

Criterion C.1. Existence and periodic implementation of the internal quality assurance system

**general description of the criterion analysis.*

Standard C.1.1. There are an institutional framework and procedures in place and relevant internal quality assurance policies, applied for monitoring the internal quality assurance.

**general description of the standard analysis.*

Performance Indicator C.1.1.1. *The Doctoral school in the respective university study domain shall demonstrate the continuous development of the evaluation process and its internal quality assurance following a procedure developed and applied at the level of the IOSUD, the following assessed criteria being mandatory:*

- (a) the scientific work of Doctoral advisors;*
- (b) the infrastructure and logistics necessary to carry out the research activity;*
- (c) the procedures and subsequent rules based on which doctoral studies are organized;*
- d) the scientific activity of doctoral students;*
- e) the training program based on advanced academic studies of doctoral students;*
- f) social and academic services (including for participation at different events, publishing papers etc.) and counselling made available to doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

According to the documents presented in Annex C.1.1.1 – Procedures for evaluating and monitoring the evolution of doctoral schools.

(a) All criteria (a) - (e) are covered by the evaluation process. Thus, among others:

(b) Chapters A.3.1, A.3.2, of self-assessment document

(c) Chapter A.1.2, A.1.3, A.2.1, C.1.1, C.2.2, C.3.1 of self-assessment document

(d) Chapter C.1.1, C.2.2, of self-assessment document

(e) Chapters B.1.2, B.2, B.3.1, C.3.1, of self-assessment document

(f) Chapters A.1.1, B.2.1 of self-assessment document

The meetings did not raise any doubts about the data. However, there is no clear strategy document. There is a Management plan, but it is missing clear goals, actions, measures and measurable indicators. Thus, it is recommended to have such document or to adapt the Management plan in order to have more clearly defined goals and a path how to reach them.

Performance Indicator *C.1.1.2. *Mechanisms are implemented during the stage of the doctoral study program to enable feedback from doctoral students allowing to identify their needs, as well as their overall level of satisfaction with the doctoral study program in order to ensure continuous improvement of the academic and administrative processes. Following the analysis of the results, there is evidence that an action plan was drafted and implemented.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The IOSUD-UPB and SD-IE Regulations, Chapter II "Organization of doctoral studies", Section "Doctoral student status" Art. 17 point 2, k, and Chapter II "Organization of doctoral studies", Section "Programs of doctoral university studies (criteria, procedures, standards)", Art. 28 point 1, e, regulates this aspect. For PCS, internal quality assurance takes into account: the type of doctoral study programs, research / development and innovation activities, interaction and impact in society and contribution to regional development, support and services provided to students, professional development of program leaders doctoral and auxiliary staff. Feedback mechanisms from PhD students were developed and implemented in SD-IE through the Periodic Reporting Sheet (monthly) which provides progressive feedback and through the PPA Satisfaction Measurement Sheet. These documents are presented in Annex C.1.1.2 – Feedback procedures from doctoral students. The meetings did not raise any doubts about the indicator.

Criterion C.2. Transparency of information and accessibility of learning resources

**general description of the criterion analysis.*

Standard C.2.1. Information of interest to doctoral students, future candidates and public interest information is available for electronic format consultation.

**general description of the standard analysis.*

Performance Indicator C.2.1.1. *The IOSUD publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information such as:*

- (a) the Doctoral School regulation;*
- (b) the admission regulation;*
- (c) the doctoral studies contract;*
- (d) the study completion regulation including the procedure for the public presentation of the thesis;*
- (e) the content of training program based on advanced academic studies;*
- (f) the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;*
- (g) the list of doctoral students within the domain with necessary information (year of registration; advisor);*
- (h) information on the standards for developing the doctoral thesis;*
- (i) links to the doctoral theses' summaries to be publicly presented and the date, time, place where they will be presented; this information will be communicated at least twenty days before the presentation.*
 - description of the facts, the findings from the assessed institution's documents and the evaluation visit itself*
 - analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself*

Recommendations:

The indicator is fulfilled

The Doctoral School, through IOSUD, publishes on the website of the organizing institution, in compliance with the general regulations on data protection, information related to this criterion – are available on the web pages of IOSUD-UPB (<https://upb.ro/doctorat/>) and of DS-EE (<http://www.sdie.pub.ro>, <http://www.electro.pub.ro/>, section "Doctorate"). The meetings did not raise any doubts about the indicator.

Standard C.2.2. The IOSUD/The Doctoral School provides doctoral students with access to the resources needed for conducting doctoral studies.



**general description of the standard analysis.*

Performance Indicator C.2.2.1. *All doctoral students have free access to one platform providing academic databases relevant to the doctoral studies domain of their thesis.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The IODS-UPB is a founding member of the ANELIS Plus consortium (Annex C.2.2.1 – ANELIS Plus Contract) throughout the evaluated period, benefiting from access to relevant academic resources throughout the evaluated period. Any doctoral student can access the necessary information from any terminal in the upb.ro domain, through the UPB Central Library website (<http://www.library.pub.ro/>) or directly by accessing <http://www.anelisplus.ro/>. Membership of the ANELIS Plus consortium ensures: (a) access to the database platform is permanently available; (b) access to the database platform was allowed for the majority of the period under evaluation; (c) the field of doctoral studies in Electrical Engineering was represented at the level of databases by (i) 6 generalist databases, with publications relevant to the field (Wiley, Sage, Ebsco, Scopus, ProQuest, Web of Science); (ii) a domain representative database (IEEE).

The meetings did not raise any doubts about the indicator.

Performance Indicator C.2.2.2. *Each doctoral student shall have access, upon request, to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The computer program contracted and implemented by IODS-UPB is Turnitin (<https://www.turnitin.com/ro>). Within DS-EE, since the introduction of this verification mechanism, 31 doctoral theses were investigated, the similarity percentages obtained being presented Annex B.3.2.1 – Information on the public defense of theses in DS-EE .

The meetings did not raise any doubts about the indicator.

Performance Indicator C.2.2.3. *All doctoral students have access to scientific research laboratories or other facilities depending on the specific domain/domains within the Doctoral School, according to internal order procedures.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The IODS-UPB and DS-EE regulations regulate the access of all doctoral students to the scientific research infrastructure.

The meetings did not raise any doubts about the indicator.

Criterion C.3. Internationalization

**general description of the criterion analysis.*

Standard C.3.1. There is a strategy in place and it is applied to enhance the internationalization of doctoral studies.

**general description of the standard analysis.*

Performance Indicator *C.3.1.1. *IOSUD, for every evaluated domain, has concluded mobility agreements with universities abroad, with research institutes, with companies working in the field of study, aimed at the mobility of doctoral students and academic staff (e.g., ERASMUS agreements for the doctoral studies). At least 35% of the doctoral students have completed a training course abroad or other mobility forms such as attending international scientific conferences. IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad, up to at least 20%, which is the target at the level of the European Higher Education Area.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is partially fulfilled

The Doctoral School of Electrical Engineering benefits from all ERASMUS agreements concluded by the Faculty of Electrical Engineering and by UPB, as well as other mobility agreements with foreign universities, research institutes, companies carrying out activities in the field of Electrical Engineering, according to data presented in Annex C.3.1.1 – ERASMUS agreements and other collaboration agreements. ERASMUS type agreements with partner universities constitute the framework in which doctoral students can benefit from research internships, etc., during the doctoral period, including during the finalization of the doctoral thesis. For IODS-UPB Ph.D. students, ERASMUS agreements were concluded which included two types of mobility: study mobility and, respectively, placement type mobility. Both types of mobility are presented in Annex C.3.1.1 – ERASMUS agreements and other collaboration agreements. PhD students from SD-IE have completed an internship abroad or another form of mobility such as participating in international scientific conferences, as shown by Annex B.3.1.2 – Selection of participation of doctoral students at prestigious international events.

The meetings did not raise any doubts about the data. However, there is no methodology for calculating the percentage, as it was also confirmed upon additional enquiry towards the DD contact person. Thus, it is recommended to develop a methodology to be prepared for future evaluation procedures and have it internally as one of the indicators relevant for internationalization.

Performance Indicator C.3.1.2. *In the evaluated doctoral study domain, support is granted, including financial support, to the organization of doctoral studies in international co-tutelage or invitation of leading experts to deliver courses/lectures for doctoral students.*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled

The IODS-UPB and DS-EE support, including financially, the organization of doctorates in international co-supervision, respectively the invitation of first-rate experts to give courses/lectures for doctoral students. Thus, during the evaluated period, 1 doctorate in co-tutoring was organized. At the same time, leading experts were invited to give lectures at the International Conference organized in our faculty - IEEE Advanced Topics in Electrical Engineering (ATEE), which was attended by many Ph.D. students. Details are presented in Annex C.3.1.2 – International collaborations.

The meetings did not raise any doubts about the indicator.

Performance Indicator C.3.1.3. *The internationalization of activities carried out during the doctoral studies is supported by IOSUD through concrete measures (e.g., by participating in educational fairs to attract international doctoral students; by including international experts in guidance committees or doctoral committees etc.).*

- description of the facts, the findings from the assessed institution's documents and the evaluation visit itself

- analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself

Recommendations:

The indicator is fulfilled.

The activities within DS-EE include concrete measures aimed at the Internationalization of doctoral studies, by attracting international doctoral students (3 AUF scholarship holders and 1 scholarship holder from the University of Guanajuato-Mexico) in the period 2014-2018 and including international experts in 6 guidance commissions. or defending doctoral theses. At the same time, many leading experts are included in the Scientific Committee of the International Conference organized by our faculty – IEEE Advanced Topics in Electrical Engineering (ATEE), who will give guest lectures. The details are presented in Annex C.3.1.2 – International collaborations. IODS-UPB participated in 2016-2020 in numerous educational fairs to attract international doctoral students. These participations are presented in Annex C3.1.3 - Educational Fairs for the years 2017 and 2018.

The meetings did not raise any doubts about the indicator.

IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - the strengths identified throughout the report will be resumed as part of the indicators' analysis. Other general strengths that do not fall within a particular indicator may be formulated. - organization of high-quality conferences, such as IEEE Advanced Topics in Electrical Engineering - laboratories are well-equipped - students are satisfied with their advisors and the PhD study in general 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - the weaknesses identified throughout the report will be resumed as part of the indicators' analysis. Other general weaknesses that do not fall within a particular indicator may be formulated. - unclear financial support for students and research teams in the starting phase of research
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - possible lines of action for the development of the institution under review shall be identified; - examples of opportunities: a favorable economic environment in the proximity of the assessed 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - the possible causes of the deficient aspects (the causes of the identified weaknesses), which are practically the threats to the proper functioning of the institution, shall be identified;

<p>institution, the uniqueness of the study programs and their relevance to the local/national market, the overall attractiveness of the study programs etc.</p> <p>- possible stronger cooperation with the industry - stronger internationalization</p>	<p>- besides, there may be external threats, such as: the inopportune economic environment in the proximity of the assessed institution, the conduct of low attractiveness study programs for both candidates and the labor market etc.</p> <p>- PhD study seems to be too hard for students employed outside the University, i.e. it is hard for them to balance work and studying. This could result with a lower interest to enroll the PhD study.</p>
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V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations

The recommendations contained in the report shall be resumed in the indicators' analysis. Other general recommendations may be made that do not fit within a particular indicator.

VERY IMPORTANT!!! – *Each identified weakness must be correlated with at least one recommendation to improve the situation!*

VI. Conclusions and general recommendations

Several important issues raised during the evaluation are resumed and some general conclusions are drawn on the quality of the education provided within the doctoral study domain under review; the Experts' Panel also presents general assessments about the institution. Other general recommendation may also be presented, which cannot be related to a specific indicator and have not been presented at point V.

A decision is proposed, together with the reasons for granting it (if the Experts' Panel members do not reach a consensus, each of them can propose and argue his/her own decision).

VII. Annexes

The following types of documents shall be attached:

- *The detailed schedule of the evaluation visit – MANDATORY.*
- *The survey questionnaire applied to doctoral students or academic staff in the doctoral study domain under review, the results - optional (e.g., in graphic form) and their interpretation - if applicable.*



- *Scanned documents – any document requested from the IOSUD during the evaluation visit and received, which is not found in the internal evaluation file received before the visit and referred to in the report.*
- *Pictures – if relevant issues are raised regarding the condition of the student residences, cafeterias, premises for teaching and learning activities, library etc.*
- *Screenshots/Print screens of the Doctoral School/IOSUD website proving specific claims in the report, accompanied by the date when they were accessed and saved.*
- *Any other documents relevant to the evaluation process referred to in the report.*

5.7.2021.

