

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.).

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;

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



- 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.

III. Analysis of ARACIS's performance indicators

Domain A. INSTITUTIONAL CAPACITY

This domain analyzes the institutional capacity according to three important criteria: administrative, and financial resources, research infrastructures and quality of human resource.

In administrative terms, the UTCB Doctoral School has implemented mechanisms provided for in the specific legislation on the organization of doctoral studies and IT systems which are effectively implemented. In relation to the financial resources, doctoral program appears to have governmental funding as well as additional supports, although these funding has been continuously decreasing; in consequence measures are needed to try to recover them.

In relation to the research infrastructure, in general terms, laboratory equipments, databases, softwares, computers, and another materials available for PhD students, as well as collaboration agreements with other research institutions, and the publicly of research services through platforms such as ERRIS, are considered enough to the research developed by PhD students.

Finally, in quality human resources terms, the number of supervisors who has the CNATDCU habilitaton is just in the minimum established, their scientific activity visible at international level is enough. However some efforts to increase it should be adopted, specially with the publication of papers in international high impact journals to have a higher number of supervisors because exceptional situations, as the death of two of them recently, coud put this criterion in jeopardy.



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

The UTCB Doctoral School has implemented mechanisms provided for in the specific legislation on the organization of doctoral studies which are effectively implemented, as well as a IT system to keep track of doctoral students and their academic background; finally PhD supervisors have the possibility to use a software to verify the percente of similarity in doctoral theses. So it is possible conclude that there are appropriate mechanisms provided for administrative management. Finally, in relation to the financial resources, doctoral program appears to have governmental funding as well as additional supports, although these funding has been continuously decreasing; in consequence measures are recommended to try to recover them and not have problems in future.

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.

The standard related with the organization of doctoral studies has been performed by two indicators. In general terms the institution has internal regulations which are effectively implemented, so it is possible conclude that there are mechanisms provided for administrative management.

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*

The UTCB Doctoral School has implemented mechanisms provided for in the specific legislation on the organization of doctoral studies. They have been approved by the UTCB Senate and they include regulations for conducting elections for the position of their representative in CSD, for organizing and conducting doctoral studies, recognizing the status of a Doctoral advisor, the equivalence of the doctoral degree obtained abroad. Different branches and fields have representation in CSD. Evidences of their conduct have been included, for example director and members in CSD election.



Recommendations:

The indicator is fulfilled.

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*

The document that regulates the organisation and document of university doctoral studies (Annex I.27) was approved on December 2020, so they have been updated. Different regulations that regulate the government of the Doctoral School are approved and are functioning well.

Recommendations:

The indicator is fulfilled.

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

The IOSUD has an appropriate IT system to keep track of doctoral students and their academic background as well as software program available to all PhD supervisors to verify the percentage of similarity in doctoral theses. Evidences of their use have been reported additionally. In consequence, it is possible conclude that the IOSUD has the logistical resources necessary to carry out the doctoral studies mission.

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.*

Primary databases were made in Excel and Access. In order to modernize and streamline the system of recording of PhD students and their journey, an online electronic platform has been developed through the FDI-2018-0125 Project – Supporting tools for increasing the quality of scientific results and promoting academic ethics and ethics at IOSUD UTCB level. Personal data, as well as information about PhD studies status are included in the new database. This platform also contains a videoconferencing module where the public support of graduates is archived. The electronic library digilib is used to deposit doctoral thesis. The exiting IT system to keep track of doctoral students and their academic background is considered effective and appropriate.



Recommendations:

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.

IOSUD UTCB has implemented a system of verifying the originality of theses and scientific works developed by PhD students through the electronic comparison of documents offered by sistemantiplagiat.ro. Annex II.9 shows the last contract in force for the use of this software. In the meeting with the ethic commission, its president explained that all PhD supervisors can verify the percentage of similarity in doctoral theses and additional data have been sent with evidences of the similitude checking for all theses defended along the period 2016-2020.

Recommendations:

The indicator is fulfilled.

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.*

This standard includes three indicators, two of them have been classified as fulfilled and the last one as partially fulfilled. Doctoral program appears to have governmental funding as well as additional supports, in consequence the three indicators included in this standard have been considered fulfilled. Nevertheless, additional funding has been continuously decreasing, so urgent measures are needed to recover funding.

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.*

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38 PhD advisors in the field of Civil and Building Service have been identified; in relation to the 8 research contracts with national funding in the PNIII programme in progress in 2020 only 3 of them are related with this field. At least 2 research or institutional development grants/human resources should have been obtained by the PhD advisors in the field of Civil and Building Service. Dr. Ilinca Nastae justifies



a experimental demonstrative project PED 2019. Dr. Cristianne Croitoru, who has just got the habilitation to be supervisor has justified a complex projects in CDI consortia-field 3 – energy, environmenta and climate change, and an experimental demonstrative project PED 2019. In consequence the minimum requiered for this indicator has been met. Evidences (Annex I.45) only included the responsible of the projects, but during the visit responsible of Doctoral School has explained that other researchers as well as students are implicated in the development of projects. Besides, projects included in the table of the report are only some examples; research projects financed by European funds, internatonal bilateral collaboration projects or contracts with World Bank Consulting are also mentioned. Additional information about them has been provided.

Recommendations:

The indicator is fulfilled.

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%.*

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Table 24 shows the number of PhD students who have been or are beneficiaries of sources of funding other than government funding from 2016-2017 to 2020-2021 academic years. It is possible conclude, according with this table, that the percentage of them is not less that 20%, although the additional funding has been continuously decreasing until the limit value of 20% during the current year. In consequence, although the indicator has been considered fulfilled, urgent measures are needed to recover funding.

Recommendations:

The indicator is fulfilled.

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

Doctoral grants obtained by the university through institutional contracts and of tuition fees collected from the doctoral students enrolled in the paid tuition system should be 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.). There is a reference of a GID program (Annex I.72) for the financing of research or for participation in international conferences and only a competition in academic year 2018/2019 and in a percentage of about 3.5% of the budget. Besides, Annex II.10 should have reported information about the activity (conferences, internal grants, publication of papers, etc.). Additional information has been provided to explain that, at this moment another round of doctoral grants and 15 grants have been retained with a total amount of 101.037 lei. Table 25 shows the dynamics of the income obtained by institutional contract and income from tuition fees. Results have shown that the total amounts of doctoral grants obtained by the university is higher than 10%.

Recommendations:

The indicator is fulfilled.

Criterion A.2. Research infrastructure

Guidelines includes in criteria A.2 only one indicator. A.2.1.1, included in the only one standards A.2.1., however in the self-assessment report, A.2.1.2 indicator has been included. It is related with collaboration agreements with higher education institutions, research institutes, research networks for the partnership operation.

In general terms, the doctoral school and the departments that are related with the field, has laboratory equipments, databases, softwares, computers, and another materials available for PhD students, although a higher segregation has been detected, with an excessive number of laboratories; nevertheless doctoral school members collaborate to provide supplementary funds, specially in the case on very expensive equipments. Besides collaboration agreements with other research institutions, as well as the publicly of research services through platforms such as ERRIS, are interesting to link research with social demands, so they are considered an important complement to the research developed in laboratories and thanks to research project with funds from the government.

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

Guidelines includes in criteria A.2 only the indicator. A.2.1.1, however in the self-assessment report, A.2.1.2 indicator has been also included. This new indicator is related with collaboration agreements with higher education institutions, research institutes, research networks for the partnership operation. Both indicators has been evaluated and they, as well as documents, evidences and PhD students and graduates, have shown that, in general terms, the doctoral school and the departments that are related with the field, have laboratory equipments, databases, softwares, computers, and another



materials available for PhD students. In the case of laboratories, a higher segregation has been detected, with an excessive number of laboratories; higher laboratories have more capacity to optimize resources and to generate better research results. Nevertheless doctoral school members have explained that departments and laboratories collaborate to provide supplementary funds, specially in the case on very expensive equipments. Collaboration agreements with other research institutions could also help to provide a broad spectrum of research possibilities.

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.*

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As I have not been in the visit to the university, the evaluation of this index has been made according to information in annexes describing laboratories, equipments as well as other necessary resources available to PhD students. In general terms, the doctoral school and the departments that are related with the field, have laboratory equipments, databases, softwares, computers, and another materials available for PhD students. In the case of laboratories, a higher segregation has been detected, with an excessive number of laboratories; nevertheless doctoral school members have explained that departments and laboratories collaborate to provide supplementary funds, specially in the case on very expensive equipments.

Recommendations:

The indicator is fulfilled.

Performance Indicator A.2.1.2. *IOSUD/The Doctoral School has collaboration agreements with higher education institutions, research institutes, research networks for the partnership operation of various research infrastructures and publicity presents its offer of research services through profile platforms such as ERRIS.*

Collaboration agreements with other research institutions have been justified, for example a cluster to support, promote an encourage research, education and innovation in order to develop and implement solutions that transform bucares into a smart city, or a cluster for the promotion of building with almost zero energy consumption in Romania. These collaborations, as well as the publicly of research services through platforms such as ERRIS, are interesting to link research with social demands, so they are considered an important complement to the research developed in laboratories and thanks to research project with funds from the government.

Recommendations:



The indicator is fulfilled.

Criterion A.3. Quality of Human Resources

This criterion includes two standards, both of them with the objective to identify if the staff that collaborate in the domain is sufficient qualified to ensure the conduct of doctoral study program. In general terms it has been possible conclude that although now there are a higher number of PhD advisors with the the CNATDCU habilitation and working at full-time and with indefinite contract, the higher number of retired PhD supervisors, as well as the higher number of students supervised by some of the professors, and the low international visibility, have become evident the shortage of increasing the number of PhD advisors. Although the number of supervisors who has the CNATDCU habilitaton is just in the minimum established, and some of them have a number of students supervised higher than the limits stablished, this situation could be considered exceptional because two supervisors has recently passed away and urgent solutions have been adopted. Finally, it has been possible conclude that the scientific activity visible at international level is enough. In consequence, although the indicators have been considered fulfilled, it is necessary to make an effort to work to increase the number of PhD advisors because the domain could may be in danger of not having qualified supervisors in a short period of time.

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

This standard includes four indicators. Their evaluation has shown that all of them could be considered fulfilled, although the exceptional situation of concentration of students in some cases. The number of PhD advisors included in the field of civil and building services engineer (38) could be considered enough, although a concentration of students under supervision in the case of some of them have been detected because two advisors have just passed away and urgen solutions should have been adopted. Nevertheless, in the case of some topics with higher interest, it could be recommened to increase the number of advisors. In relation to the qualification of staff, a suficient number of supervisors has the CNATDCU habilitaton and full-time and indefinite contract, however the meetings, the higher number of retired PhD supervisors, as well as the higher number of students supervised by some of the professors, have become evident the shortage of professor with the habilitation to be PhD supervisor. In consequence it is necessary to make an effort to increase the number of PhD advisors habilitated.

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

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In the field of Civil and Building Services Engineering, 38 PhD advisors, all of them with candidates (according to Table 31) are affiliated so the minimum of 3 doctoral advisors required is met. 50% of them have to meet the minimum standards of the CNATDCU, that is to say, at least 19 of them have to meet the cited standards. According to the self-assessment report 18 PhD advisors meet the conditions of habilitation and one candidate for habilitation has just received the approval. Taking into account the date of the last year, it is possible consider that this indicator is fulfilled, although it is necessary to make an effort to increase the number of PhD advisors habilitated because the number is just in the limit.

Recommendations:

The indicator is fulfilled.

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

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Table 29 in the self-assessment report summarizes laboral situation of the 38 doctoral supervisors with doctoral candidates. At least 19 of them should have a full-time employment contract for an indefinite period with the IOSUD. According to information of Table 29, 20 of them are tenured, so this indicator is considered fulfilled. Nevertheless, it is necessary to make an effort to rejuvenate the PhD supervisors staff because the number of tenured is too high.

Recommendations:

The indicator is fulfilled.

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

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Table 30 in the self-assessment report includes the list of advanced university training program subjects activated in the academic year 2020-2021. This table includes other domains, not only Civil and Building Services Engineering one; in this case, three coordinator has been included in disciplines 2,3 and 5 respectively. All of them are PhD supervisors, so they have accredited their experience in the field. The revision of Annexes has shown some merits of these professors on the field, and CV are available on the website in Romanian language.



Recommendations:

The indicator is fulfilled.

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

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Table 31 of self-assessment report summarizes the distribution of the doctoral students in coordination for at the time of reporting. 38 doctoral supervisors are included in the list, all of them with doctoral students under supervision along the period. 8 of them can not exceed 8 doctoral students and, in any case this number could be higher than 12. According to the list of Table 31 a total of 12 supervisors have more than 8 students under supervision, and in the case of 4 of them the number is higher than 12. The report justifies that 8 doctoral students have been distributed to advisors because of the death of two doctoral advisors, so this situation could be considered exceptional, so the indicator has been considered fulfilled. Besides, during the meetings it has become evident that the shortage of professor with the habilitation to be PhD supervisor.

Recommendations:

The indicator is fulfilled.

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

This standard includes two indicators, both of them considered fulfilled and showing that the doctoral advisors within the domain are carrying out a properly scientific activity visible at international level. Nevertheless, and as the number of supervisors who has the CNATDCU habilitation is just in the minimum established, some efforts are necessary to increase this number, specially with the publication of papers in international high impact journals. This effort could also increase the international visibility of the advisors.

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 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*

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.



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.

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Table 32 of self-assessment report includes the 24 PhD supervisors at the time of the evaluation with international visibility and scientific activity in the last 5 years; this number represents 63% of the total of supervisors (38), a value higher than the 50% minimum required. This result is well in tune with results of meetings; during the discussions, concern for enhancing the number of international publications has been witnessed.

Recommendations:

The indicator fulfilled.

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

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In the field of Civil and Building Services Engineering, 38 PhD advisors, all of them with candidates. According to the self-assessment report 18 PhD advisors meet the conditions of habilitation and one candidate for habilitation has just received the approval. In consequence just 50% of PhD advisors continue to be scientifically active. Although the limit is fulfilled, it is necessary to make an effort to increase it because it will also make the scientific activity more visible at international level.

Recommendations:

The indicator is fulfilled.

Domain B. EDUCATIONAL EFFECTIVENESS

This domain evaluates the number, quality and diversity of candidates enrolled for the admisión contest, the content of doctoral programs and the results of their studies and procedures for their evaluation. To do that three criteria have been considered using for this 13 indicators classified in four criteria. It is important to highlight that criterion B.4, about quality of doctoral theses and which includes one standard and one indicator, has not been included in Annex 4 List of the domains, criteria, standards, performance



indicators and list of critical performance indicators for the periodical external evaluation of Doctoral Study Domains; however it has been discussed in the self-assessment report. Besides indicators B.2.1.4, B.2.1.5, B.3.1.2, B.3.2.1 and B.3.2.2, they have not been discussed in the self-assessment report so standards B.2.1 about the training program and B.3.1 about relevant contribution per doctoral students have not been evaluated completely; in the case of standard B.3.2, about commissions for public defense of doctoral theses, none of the two indicators included in it have been evaluated so this standard has not been fulfilled; nevertheless during the meetings this last point was discussed with evaluation commission members.

A general admission to doctoral study programs is well defined and applied showing the capacity to attract candidates from outside the higher education institution, in fact it has improved the last year. The training program is well designed, including an obligatory subject about ethics and academic integrity and optional subjects to study in-depth the research methodology and modelling tools, as well as specific technical courses in the domain. As result the expelling rate does not exceed the limit established and invalidated theses during the evaluation period have not been detected. Nevertheless, the ration between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance and the conunselling/guidance from functional guidance commissions, have not been discussed. Finally results of doctoral studies have been justified through scientific contributions including papers and conferences, patents, as well as an important relationship between the university and companies, making possible knowledge transfer to society. In spite of the positive results so far, to try to improve the quality of theses, I recommend the inclusion of more indicators, for example: ratio of international thesis, ratio of thesis developed under double agreements, between others

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

The criterion about the number, quality and diversity of candidates enrolled for the admission contest have been evaluated with three indicators, according to two standars. In general terms, the program has the capacity to attract candidates from outside the higher education institution, in fact it has improved the last year. Besides, a general admission to doctoral study programs is well defined and applied and expelling rate does not exceed the limit established.

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.

This standard only includes one indicator, the ratio between the number of graduates of masters' of other higher education institutions and the number of seats. The ratio has been equal or higher than the limit value and it has improved the last year.

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.

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The ratio between the number of graduates of masters' of other higher education institutions and the number of seats has been equal or higher than the limit value (0,2) and it has improved the last year. In consequence, this indicator has been considered fulfilled.

Recommendations:

The indicator is fulfilled.

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

The standards about the candidates admitted to doctoral studies and their performance are evaluated with two indicators. A general admission to doctoral study programs is well defined and applied and expelling rate does not exceed 30% of admitted students, so both indicators is considered fulfilled.

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.*

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A general description about admission procedure has been included in the self-assessment report and Annex I.21 describes in detail the procedure for mechanical engineering and civil and building services engineering domains. Evidences about the application of criteria have been sent by email after to be requested during the meeting with members fo evaluation commision.

Recommendations:

The indicator is fulfilled.

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

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.



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

499 students have been admitted in IOSUD UTCB along the last 8 academic years and 144 of them have abandoned university doctoral studies, representing a expelling rate of 28,9%. This rate does not exceed 30% permitted. This ratio has been considering that, according with the report, table 35 includes data about the particularly case of the field to civil and building services engineering.

Recommendations:

The indicator is fulfilled.

Criterion B.2. The content of doctoral programs

The criterion about the content of doctoral programs is evaluated with five indicators, included in only one standard that describes the training program. In general terms the training program is well designed, including an obligatory subject about ethics and academic integrity and optional subjects to study in-depth the research methodology and modelling tools, as well as specific technical courses in the domain. Besides, the ration between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance and the conunselling/guidance from functional guidance commissions is appropriate.

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.

The standard about the training program is evaluated according to 5 indicators, all of them considered fulfilled. In general terms the training program is well designed; it describes skills, knowledge, responsibility and autonomy that doctoral students should acquire, and it includes an obligatory subject about ethics and academic integrity and optional subjects to study in-depth the research methodology and modelling tools, as well as specific technical courses in the domain. Besides, the ration between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance and the conunselling/guidance from functional guidance commissions is according the specified limit.

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

The training program includes a compulsory subject about ethic and academic integrity and some optional subjects included in three different groups. Particularly groups 1 and 2 include relevant disciplines to study in-depth the research methodology and/or the statistical data processing. PhD students, graduates and employers have made a very positive appraisal of the knowledge and opportunity of these disciplines.



Recommendations:

The indicator is fulfilled.

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*

There is a compulsory subject about ethics and academic integrity (Annex I.93). Besides, the optional subject (U02.10.ICV.IZ.D01.1.PPUA. PIG.OP.02) includes also these topics (Annex I.93). In consequence this indicator has been considered fulfilled.

Recommendations:

The indicator is fulfilled.

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*

Annex I.93 describes subjects including general topics, knowledge, skills, responsibility and autonomy that doctoral students should acquire, competences and evaluation process. In consequence, subjects are well described.

Recommendations:

The indicator is fulfilled.

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

There is an error in the English version of the internal evaluation report so the justification of this indicator has been included in the Romanian version of the report and the English translation of the text has been sent as additional information.

Evidences have shown (Annex II.12) that all the doctoral students in the domain (279) receive counselling and guidance from functional guidance commissions that include a staff of 130 people to which are added the 42 doctoral supervisors.

Recommendations:

The indicator is fulfilled.

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

There is an error in the English version of the internal evaluation report so the justification of this indicator has been included in the Romanian version of the report and the English translation of the text has been sent as additional information.

Evidences have shown (Annex II.12) that all the doctoral students in the domain (279) receive counselling and guidance from functional guidance commissions that include a staff of 130 people to which are added the 42 doctoral supervisors. In consequence the ratio of 1.6:1 is quite lower than the 3:1 established limit.

Recommendations:

The indicator is fulfilled.

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

This criterion describes the results of doctoral studies through presentations at scientific conferences, publications, technological transfer, patents, products and service orders. To do that four indicators organized in two standards are included in guidelines and classified as fulfilled. They have shown enough scientific contributions including papers and conferences, patents, as well as an important relationship between the university and companies, making possible knowledge transfer to society. Besides a contribution of external referents from another higher education institution and significant number of external scientific specialist in the commissions for public defense of doctoral theses have been justified, according to the national legislation.



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

This standard includes two indicators that have shown appropriate mechanisms to exploit the results of doctoral studies (e.g. technological transfer, products, patents, etc.) as well as scientific contributions including papers and conferences and some patents. During meetings a clear relationship between the university and companies has already been demonstrated, making possible the transference of knowledge to society. As result, the ratio between the number of presentations of doctoral students who completed their doctoral studies within the evaluated period and the number of doctoral students who have completed their doctoral studies within the evaluated period is according the limit established.

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

123 thesis have been defended during the reporting period for the civil engineer and building services field with contributions to scientific events and publications (Annex II.13). In relation to list of patents, models and technologies obtained, the list included in Annex I.52. Annex I.53 includes a list of awards.

Recommendations:

The indicator is fulfilled.

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

There is an error in the English version of the internal evaluation report so the justification of this indicator has been included in the Romanian version of the report and the English translation of the text has been sent as additional information.

In the database of the UTCB Doctoral School there are 123 theses defended during the reporting period for the field Civil Engineer and Installations, and in Annex II.13 are presented contributions to



scientific events for these PhD students. All the theses have, at least, one international contribution, in consequence the ratio between the number of presentations of doctoral students who completed their doctoral studies in the evaluated period (last 5 years), and the number of students PhD students who have completed their doctoral studies in the evaluated period (last 5 years) is at least equal to 1.

Recommendations:

The indicator is fulfilled.

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.

This standard includes two indicators to be evaluated and both have been classified as fulfilled. In general terms they have shown that the Doctoral School engages a significant number of external scientific specialists in the commissions for public defense of doctoral theses, according to the national legislation.

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

There is an error in the English version of the internal evaluation report so the justification of this indicator has been included in the Romanian version of the report and the English translation of the text has been sent as additional information.

During the reporting period, 123 doctoral theses were defended in the field under the coordination of 54 doctoral supervisors (Annex II.18). It is possible to conclude that 18 doctoral supervisors had 2 doctoral theses defended per year, 2 had 3 theses PhD, and 1 had 4 theses in one year. However there were no situations in which references from a higher education institution other than IOSUD UTCB had more than 2 doctoral theses evaluated.

Recommendations:

The indicator is fulfilled.

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

There is an error in the English version of the internal evaluation report so the justification of this indicator has been included in the Romanian version of the report and the English translation of the text has been sent as additional information.

The list of the theses defended in the period 2015-2020 (Annex II.18) has shown that the ratio between the number of doctoral theses assigned to a certain scientific referent from another higher education institution than the one in which the doctoral thesis is organized and the number of doctoral theses defended in the field of Civil Engineering and Installations does not exceed 0.3, by reference to the situation registered in the last 5 years.

Recommendations:

The indicator is fulfilled.

Criterion B.4. Quality of doctoral theses

This criterion has not been included in Annex 4 List of the domains, criteria, standards, performance indicators and list of critical performance indicators for the periodical external evaluation of Doctoral Study Domains, however it has been discussed in the self-assessment report. In consequence it has been included in the evaluation report. For the evaluation only one indicator included in one standard has been discussed, not showing invalidated theses during the evaluation period. In the case to include this criterion, I recommend the inclusion of more indicators to evaluate for example: number of international papers related with theses, number of theses with international mention or number of theses developed according to double titles with another universities. In my opinion the evaluation of the quality of doctoral theses only taking into account the percentage of invalid thesis is not appropriate.

Standard B.4.1. Doctoral theses meet high quality standards

The evaluation of this standard only includes one indicator, that has been considered fulfilled because during the evaluation period there were no situations with invalidated theses without the right to restore and resume the public support process.

Performance Indicator B.4.1.1. *At the level of IOSED, the percentage of invalid thesis, without right of recovery and the resumption of the public support process, at the level of the CNATDCU General Council, is no more than 5% in the last five years.*

During the evaluation period, there were no situations with invalidated theses, without the right to restore and resume the public support process, at the level of the CNATDCU General Council within ISOUD UTGB.

Recommendations:

The indicator is fulfilled.



Domain C. QUALITY MANAGEMENT

The evaluation of the domain related with the quality management includes four criteria and 11 indicators, classified according to four standards. In general terms it has been possible to conclude the existence and implementation of the internal quality assurance system. Important efforts to enhance the internationalization of doctoral studies could be well received because it could have positive effects in another indicators, for example number of publications, CV of PhD supervisors, number of international candidates, and funds.

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

The existence and implementation of the internal quality assurance system has been evaluated by three indicators included in one standard. Results of the evaluation have shown that, in general terms, there are implemented tools to evaluate program quality as well as to develop strategies and policy of action in order to remedy the deficiencies reported and to stimulate the scientific and academic performance, although a specific application to the case of civil and building services engineer should have been included.

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.

The standard includes two indicators that have shown that, in general terms, there are implemented tools to evaluate program quality as well as to develop strategies and policy of action in order to remedy the deficiencies reported and to stimulate the scientific and academic performance. An extra indicator C.1.1.3 has been included with general lines adopted to improve quality, however specific lines have not been included for the civil engineer and building services.

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*



There is a commission for quality assessment and assurance. Composition is included in general operation to the doctoral school. This commission includes professor of civil and building services engineer domain. Evidences of the self-evaluation of this commission, for example meetings, points analyzed in these meetings and proposal to improve quality of the program have been justified during the evaluation process.

Recommendations:

The indicator is fulfilled.

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

Mechanisms to identify level of satisfaction with the doctoral program in order to ensure continuous improvement have been implemented with online questionnaire. Evidences of results of these evaluation and feedback from doctoral students have been included in self-assessment report.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.1.1.3. *Following the internal evaluation, both IOSUD and doctoral schools develop strategies and policy of action in order to remedy the deficiencies reported and to stimulate the scientific and academic performance of IOSUD.*

Annex II.15 show evidences of measures to remedy deficiencies in doctoral work and to boost scientific and academic performance, according to a general framework approved.

Recommendations:

The indicator is fulfilled.

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

This criterion only includes one standard and one indicator which evaluation has shown that website could be improve for better visualization of the results of the program and to be totally available in English.

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



This standard includes only an indicator that evaluate the website of the institution that includes information about the program. Although nowadays website is not the prefer way to get information by the students, it could be improved in order to better visualize the results of the program and to be totally available in English. It could be positive to attract more students from abroad.

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*

General information about the doctoral program is included in website. Nevertheless, all the sections about academic concerns, admision criteria, etc. should be also in English.

Recommendations:

The indicator is fulfilled.

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

In general terms, doctoral students have access to the resources needed for conducting doctoral studies, including laboratories, research spaces as well as academic databases and tools to develop their research work according to ethical codes. The three indicators includes for this standard have been considered as fulfilled.

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

All doctoral students have access to international databases available at the university and specific to the activity filed. General information about these database has been included in the self-assessment report.

Recommendations:

The indicator is fulfilled.

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

The sistemantiplagiat.ro of verifying the originality of theses and scientific works is available for students to check their works through the electronic document comparison service. Besides, efforts to promote deontology and ethics at the level of IOSUD UTCB have had as result the development of a database in the national SemPlag platform containing at present 250 doctoral theses, 15 empowerment theses and 30 dissertations. An overview of the findings for, at least, doctoral theses presented, could be reported.

Recommendations:

The indicator is fulfilled.

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

Access of doctoral students to laboratories and research centres in departments is describes in internal regulations (Annex I.17). During the meetings, students and graduates discussed about the facilities depending as well as the support of PhD supervisors and departments to use equipments, softwares and other research resources.

Recommendations:

The indicator is fulfilled.

Criterion C.3. Internationalization



This criterion includes only one standard which, in turn, includes four indicators to evaluate internationalization of doctoral studies strategy. In general terms, important efforts to enhance the internationalization of doctoral studies have been developed, including some agreements with prestigious universities that has resulted in articles in SCOPUS, theses defended in other languages, the participation of international doctors to support doctoral studies or the organization of international events. An important effort to increase the number of theses written in other languages has been shown.

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

This standard includes four indicators to evaluate internationalization of doctoral studies strategy, all of them considered fulfilled. In general terms, important efforts to enhance the internationalization of doctoral studies have been developed, including some agreements with prestigious universities that has resulted in articles in SCOPUS, theses defended in other languages, the participation of international doctors to support doctoral studies or the organization of international events. Besides, an important effort to increase the number of theses written in other languages has been shown.

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

Agreements with prestigious universities have been justified for doctoral studies (Annex II.19) and Annex II.20 the list of PhD students with internships abroad. From this last Annex it is possible conclude that 18 students from the domain had such mobilities in the analysed period of time in the framework of joint programs. In fact over the analyzed period the doctoral students performed (around 300) at least 98 mobilities abroad, representing a percentage over 33%.

Recommendations:

The indicator is fulfilled.

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

International activities for doctoral students have been described, including cooperation with prestigious international universities for thesis supervision and cotutele. As result, 26 articles belonging to the doctoral students which have been published in a book that is awaiting SCOPUS and ISI indexation in IOP conference series: earth and environmental science series. Extra activities have been described during the meetings. Some information about financial support should have been described.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.3. *At least 10% of the doctoral theses within each Doctoral School of IOSUD are written and/or defended in an international language or carried out in joint supervision*

Total data about the number of theses defended in other languages have been included: 6 doctoral theses in English and 2 in Frech. 123 theses have been included in Annex II.18 in the domain. If only the 8 theses already defended are considered, the criterion is partially fulfilled, however 21 more are in progress and 6 of those theses will be defended in September 2021, so the dates have been already scheduled and in this case the percentage could rise to 11%, higher than the specified limit.

Recommendations:

The indicator is fulfilled.

Performance Indicator C.3.1.4. *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

The participation of international doctors to support doctoral studies have been promoted: personalities from international academic community are invited to take part in the doctoral committees, there are three foreign members invited to be part of the doctoral committees, there are various foreign membrs invited to be in advisory committees. Interesting events have been described during the meetings, for example Solar Decathlon Europe, between others.

Recommendations:

The indicator is fulfilled.

IV. SWOT Analysis

<p><u>Strengths:</u></p> <ul style="list-style-type: none"> - Implementation of suitable administrative mechanisms to manage the program. - Research infrastructure and national and international projects to support researches. - Enough number of candidates enrolled for the admission contest. - The existence of a suitable training program with the collaboration of international doctors. - The existence of a suitable internal quality assurance system. 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> - Low number of PhD supervisors with habilitation. - Reduction of financial resources. - Low number of indicators to evaluate quality of these defended.
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> - The existence of graduates working in important companies could be an opportunity to cotutela of thesis. - Relationships with international universities could be useful to sign supervisors improving the internationalization but also the future demand of them. - The existence of a suitable internal quality assurance system that could leader proposal to improve the program to overcome weaknesses detected. 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> - COVID pandemia could affect to the mobility or international collaborations. - Demand of professional of civil and building engineering could make difficult increase the number of PhD supervisors with habilitation. - National legislation that could doubt about the independence of the members who participate in PhD theses committees. - Bad economic situation because of COVID pandemia could reduce funds from another institutions.

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1		A.1.1.1	Fulfilled	
2		A.1.1.2	Fulfilled	
3		A.1.2.1	Fulfilled	
4		A.1.2.2	Fulfilled	
5		A.1.3.1	Fulfilled	
6	*	A.1.3.2	Fulfilled	
7	*	A.1.3.3	Fulfilled	
8	C	A.2.1.1	Fulfilled	
9	C	A.3.1.1	Fulfilled	
10	*	A.3.1.2	Fulfilled	
11		A.3.1.3	Fulfilled	
12	*	A.3.1.4	Fulfilled	Collaborate with international universities to sign potential PhD supervisors

13	C	A.3.2.1	Fulfilled	Give funds to PhD supervisors to increase the number of publications in international journals
14	*	A.3.2.2	Fulfilled	
15	*	B.1.1.1	Fulfilled	
16	*	B.1.2.1	Fulfilled	
17		B.1.2.2	Fulfilled	
18		B.2.1.1	Fulfilled	
19		B.2.1.2	Fulfilled	
20		B.2.1.3	Fulfilled	
21		B.2.1.4	Fulfilled	
22	C	B.2.1.5	Fulfilled	
23	C	B.3.1.1	Fulfilled	
24	*	B.3.1.2	Fulfilled	
25	*	B.3.2.1	Fulfilled	
26	*	B.3.2.2	Fulfilled	
27		C.1.1.1	Fulfilled	
28	*	C.1.1.2	Fulfilled	
29	C	C.2.1.1	Fulfilled	
30		C.2.2.1	Fulfilled	
31		C.2.2.2	Fulfilled	
32		C.2.2.3	Fulfilled	
33	*	C.3.1.1	Fulfilled	Increase the number of agreements with international journals
34		C.3.1.2	Fulfilled	
35		C.3.1.3	Fulfilled	Increase the number of agreements with international journals

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

The doctoral program shows important strengths that which results in a high number of candidates enrolled for the admission contest and that will support the program the next years. Some of them are related with a suitable implementation of administrative mechanisms to manage the program as well as



internal quality assurance system, supported by a training program with the collaboration of international doctors, interesting research infrastructure, national and international projects, as well as collaborations with companies to make possible the transfer of results to society. Besides, relationships with international universities as well as graduates working in important companies could be an opportunity to cotutela of thesis, improving the internationalization but also the future demand.

Despite positive points detected and the fulfillment of established limits, it is important to emphasise the low number of PhD supervisors with habilitation, in part because of the low number of papers published in international high impact journals, so it is necessary to look for strategies to increase them. COVID pandemic and its effect on countries economy could affect next years to the program so it would be necessary to improve the image of the program in website to try to sign international candidates in a country where there will be important investment in civil and building engineering. Strategies to improve the internationalization of the program as well as the look for funds should be also priority to improve quality indicators.

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.*