Annex No. 3

External Evaluation Report Doctoral Study Domain Physics Politehnica University București

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I. Introduction[1]

This report summarizes my impressions as ARACIS International Expert Evaluator of the Doctoral Study Domain Physics within IOSUD Politehnica University Bucuresti (UPB). The evaluation of university Doctoral Domain Physics at the Univeristy Politehnica Bucharest was carried out by ARACIS in view of maintaining accreditation, procedure of quality assurance aimed to certify fulfillment of operating standards by the institutions organizing university doctoral studies, based on the provisions of art. 4 para.

(2)of the Government Emergency Ordinance no. 75/2005 on Quality Assurance of Education, approved with amendments by the Law No. 87/2006, with subsequent amendments and additions.

The evaluation processes was performed by the Romanian Agency for Quality Assurance in Higher Education (ARACIS), who recruited the following Experts Committee, in charge of Evaluation of the Doctoral Domain Physics at the University Politehnica Bucharest:

Coordinator:
Prof.PhD Nagy Ladislau
Babes Bolyai University Cluj-Napoca
International expert:
Prof.dr. Razvan Ionut Ghinea University of Granada, Spain **PhD student:**
Andrei Deaconu
Babes Bolyai University Cluj-Napoca

The evaluation period extended from 15/06/2021 to 25/06/2021, and it was developed in a hybrid mode, meaning that the evaluation benefited from both online meetings and on-site visits.

After my appointment as an International Expert Evaluator, I was informed by the Director (Prof Dr. Bunoiu Madalin, West University Timisoara), the Coordinator (Prof. Dr. Danciulescu Daniela, University of Craiova) as well as the Technical Assistant (Assoc. Prof. Cozminca Irina) of the evaluation team on important aspects of the evaluation process, such as:
- Working methodology and the structure of the evaluation panels, for IOSUD and doctoral study domains, including contact data;
- Doctoral Study Domain that was going to be evaluated;
- All important working documents, such as The Guidelines for Periodical External Evaluation of the Institution Organising Doctoral Study Programs (IOSUD), respectively of the Doctoral study domains; The Doctoral Studies Code of June 29th, 2011 and the Order no. 3651/12.04.2021 for the approval of the Methodology on conducting the evaluation of university doctoral studies and of the systems of criteria, standards and performance indicators used in the evaluation; General presentation of the HE and QA systems in Romania.
- Detailed on-line meetings and visit schedule;
- Credentials and how to access the Internal evaluation reports and their annexes uploaded by the evaluated institution;

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

Background

At UPB were established in 2012 a total of 13 doctoral schools, generally grouped in the fields of doctoral studies and integrated into faculties: Electrical Engineering, Energy, Automatics and Computers, Electronics, Telecommunications and Information Technology, M echanical and Mechatronic Engineering, Engineering and Technology Systems Management, Biotechnical Systems Engineering, Transportation, Aerospace Engineering, Materials Science and Engineering, Applied Chemistry and Materials , Applied Science, Entrepreneurship, Engineering and Business Management. Subsequently, in 2013, by the decision of the UPB Senate, the Doctoral School of Engineering and Applications of Lasers and Accelerators was established, in an interdisciplinary field, that of border research, grouped on the structure of the ELI- NP project, which aims to provide highly qualified specialists for the activities of high complexity that will be carried out within the facilities offered by ELI-NP. Doctoral School of "Engineering and Applications of Lasers and Accelerators" (S.D.I.A.L.A.) was founded on the basis of the partnership between the University of POLITEHNICA Bucharest (UPB), the National Institute of Research and Development for Physics and Nuclear Engineering "HoriaHulubei" (IFIN-HH), the National Institute of Research and Development for Laser, Plasma and Radiation Physics (INCDFLPR) and the National Institute of Research and Development for Materials Physics (INCDFM) for the achievement of excellence in training and research and optimization of the joint use of human resources, materials and financial.

The evaluated Doctoral Domain - Physics - operates within two doctoral schools:
1. Doctoral School of APPLIED SCIENCES (SDSA)
2. Doctoral School of Engineering and Applications of Lasers and Accelerators (SDIALA)

For this specific domain, there are 16 doctoral supervisors (12 at SDSA and 4 at SDIALA). In the last 5 years (2016-2021), a total of 56 students were admitted to the PhD program (43 at SDSA and 13 at SDIALA) and 20 of them have already completed their doctoral thesis (50% defended in English). However, the number of students admitted to the doctoral program is showing a decreasing trend in the last 3 years.

The Physics Doctoral Domain covers a large variety of areas of research, which obviously has a great benefit for potential candidates, since they can easily find an area that they might be interested in or that may appeal to them for the development of their doctoral thesis.

The cycle of doctoral studies organized by both SDSA and SDIALA has two mandatory components:
- Training program based on advanced university studies, lasting 3 months and which must be completed by the doctoral student in the first year of the doctorate;
- Individual scientific research program, lasting five semesters.

One important aspect is that each PhD student benefits from the existence of an individual Guidance Commission, that will help and assess throughout the development of the thesis.

All PhD students have access to an impressive list of research facilities located either within the Faculty of Applied Sciences at UPB or at the Horia Hulubei Magurele Institute of Physics and Nuclear Engineering (IFIN-HH) and National Research-Development Institute for Laser Physics (INFLPR). A great part of the research facilities and/or research equipment was either built or acquired in the last 5 years, which proves the continuous effort of the evaluated institution to provide its students with the best resources for the proper development of their PhD Thesis.

Finally, PhD Students have access to UPB Central Library, a facility of 18000sqm built area, equipped with more than 1,300,000 volumes and 6 reading rooms, all with Internet access. All resources of the library are available online through the ALEPH application. The institution also offers free online access to scientific databases through the ANELIS-Plus project.

II. Methods used

Self Assessment Report

The institution has taken the evaluation process very seriously and carefully prepared a Self Assessment Report of the Physics Doctoral Domain. This document was available as a 54 pages .pdf document in the ARACIS cloud, and I was able to access it easily, on-time and as often as necessary. To support information included in the Self Assessment Report, the evaluated institution also included a total of 57 Annexes that were later completed with another 12 additional documents, as requested by the evaluation panel. All these documents were uploaded to the ARACIS cloud and were available for review by the evaluation panel. No physical documents were requested during the evaluation visit.

Additional Information available on-line

To complete this evaluation report, documents, data and information available on the IOSUD/Doctoral School(s) website, in electronic format was also frequently consulted:
- http://www.physics.pub.ro/Scoala_Doctorala_FSA/ROM/index.htm
- http://www.nipne.ro/sdiala/

Similarly, webpages corresponding to research facilities mentioned in the Self Assessment Report were consulted in order to verify the provided information:
- http://www.eli-np.ro
- https://cssnt-upb.ro/echipamente/
- http://drmr.nipne.ro

- http://www.nipne.ro/research/departments/dfn.php
- https://cetal.inflpr.ro/newsite/laboratories

Meeting/discussions with doctoral students in the doctoral study domain under review

The meeting/discussions with doctoral students in the doctoral study domain under review was on-line and took place on 16/6/2021. At the meeting participated 5 students from both SDSA and SDIALA, belonging to different years (stages) of the PhD program. As expected, students were commonly positive and stated that PhD Supervisor were at all time supportive and accessible, that they have their own allocated space and easy access to research resources. Although students highly appreciated the training program, they were not fully satisfied with the contents of the available courses. On the other hand, students showed some concerns regarding the number and value of scholarships and financial allocations made available to them.

Another important discussed topic was the involvement of PhD Students in teaching activities within the University, as not all of them benefit of it. However, this could not be an option for all of them, as some have contractual agreements with affiliated research facilities. Lastly, it was truly concerning that students were largely unaware of the existence of a student satisfaction questionnaire.

Meeting/Discussions with the graduates of the doctoral study domain under review

Meeting/Discussions with the graduates of the doctoral study domain under review was on-line and took place on 16/6/2021. At the meeting participated 3 former students from both SDSA and SDIALA. Overall, they all seem satisfied with the quality of their development throughout the PhD, and they easily found a job. However, it has to be mentioned that all 3 participants still had very close links with the institution and were not sufficiently detached to provide a fully objective view. It would have been interesting to meet a former student that works outside UPB or any of the associated research institutes. All graduates valued positively the tight bond between the Doctoral School and several Research Institutes, as well as the established international working networks.

Meeting/Discussions with employers of the graduates in the doctoral study domain under review

The meeting/Discussions with employers of the graduates in the doctoral study domain under review was on-line and took place on 17/6/2021. At the meeting participated 4 employers of graduate students from both SDSA and SDIALA. Overall, they were all satisfied with the level of training of the graduates as well as their considerably high level of multidisciplinary approach. They all agreed that both employers and doctoral school can benefit from constant cooperation that should start as soon as possible.

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 Directors of the Doctoral School(s) in which the doctoral study domain under review is operating was on-line and took place on 16/6/2021. At the meeting participated the Director of SDSA Prof. Cristina Stan and the Director of SDIALA Prof. Calin Ur. It was discussed the number of PhD students of the evaluated domain, the number of PhD supervisors, how the doctoral schools are organized and the strategy of the evaluated institution to attract foreign PhD Students. One of the concerns expressed by this evaluator was that, although the evaluated institution accounts with a very high number of international collaborators, there is a relatively low number of international participants within PhD Committees (only 15% of PhD Committees in last 5 years). All discussed items were properly answered by the participants.

During the meeting, participants were informed on the results of the review of the self-assessment report and several complementary documents were requested. All requested documents were uploaded by the evaluated institution within few days from request.

Meeting/Discussions with the doctoral advisors in the doctoral study domain under review

The meeting/discussions with the doctoral advisors in the doctoral study domain under review was on-line and took place on 16/6/2021. At the meeting participated a total of PhD Advisors as well as the Director of SDSA Prof. Cristina Stan. Generally, it was discussed the specific research field of the participants, the number of PhD students that they supervise currently, their actual position within the SDs and their strategy to attract possible PhD candidates. The evaluation panel addressed questions regarding the average time of development of a PhD Thesis (answered as typically 4-5 years), the average number of ISI publication of a PhD Student (answered as typically 2-3) and the first year of publication of an ISI paper (answered as typically end of 2nd beginning of 3rd year).

Participants were also asked regarding the students' research training and internships in foreign institutions. It was answered that PhD Students are encouraged to attend lectures at international conferences, but not necessarily research training and internships. Research internships are generally not very long (maximum 1-2 months).

All question were adequately answered and it seems that the doctoral domain works under the guidelines of a first-class institution, with considerable research potential as well as considerable research output. PhD supervisors are supportive with their students and this is clearly reflected on the quality and quantity of the research output of the evaluated institution.

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 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 were on-line and took place on 15/6/2021 (Representatives of UPB, IOSUD and DD management), 15/6/2021 (Ethics Commission) and 17/6/2021 (Quality Assurance Department). All were joint meetings for IOSUD and different DD panel evaluators.

General aspects of IOSUD organization within UPB, funding sources, achievements of the last years and projects for the future were discussed. Also, some limitations were mentioned regarding the organization of PhD co-tutelage with foreign institutions due to poor national regulation. Strengths in the area of joint doctoral student - master student - doctoral supervisor teams and young professors for the orientation and focus of activities within IOSUD. The IT PhD Student management program was presented (with live demonstration), highlighting its main aspects. It seems to be an adequate program that allows continuous and efficient monitoring of PhD Students. On the other hand, Mrs. Adina Magda Florea mentioned the intention of IOSUD and UPB to implement in the near future an electronic signature system for the (almost) complete digitalization of the bureaucratic flow within IOSUD.

Doina Raducanu, chair of the Ethics Committee, explained the mission and purpose of the ethics committee and its composition. She also resumed what kind of complaints the Ethics Committee received and how they were addressed and eventually solved. According to the current commission regulation, anonymous complaints are not accepted.

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 school officials of the Doctoral School(s) in which the doctoral study domain under review is operating was on-line and took place on 17/6/2021. At the meeting participated the Director of SDSA Prof. Cristina Stan, the Director of SDIALA Prof. Calin Ur as well as 4 other members of SDSA or SDIALA councils. It was discussed the activity of the doctoral school council, what type of decision are they in charge of and other issues arising, such as periodical internal evaluation. The evaluation panel required additional documents (report with CSD meetings in last five years, report of periodical internal evaluation of the PhD Advisors) that were submitted within few days upon request. All discussed items were properly answered by the participants. The evaluation team also requested additional information on how student satisfaction questionnaires are presented and how their results are further considered and insisted on the importance of these questionnaires.

The Evaluation Visit

The evaluation visit took place on 22/06/2021. I participated as representative of the evaluation panel of the Physics Doctoral Domain. During the Evaluation Visit, I

had the opportunity to meet the Director of SDSA Prof. Cristina Stan, the Director of SDIALA Prof. Calin Ur as well as other members of SDSA or SDIALA council, members of the University Senate, PhD Supervisors, Technical Research Staff and of course, several PhD Students.

The visit started at the Horia Hulubei Magurele Institute of Physics and Nuclear Engineering (IFIN- HH) by visiting all the research facilities available at ELI-NP and continued wit a short visit at Tandem Accelerators Department. During the visit I had the opportunity to speak with research staff, PhD supervisors and PhD Students, that were all clearly satisfied by the available resources.

The visit continued jointly with panel members from IOSUD evaluation, as we met with members of University and IOSUD governance. After lunch break, we had the opportunity to visit, jointly with panel members from IOSUD evaluation, research facilities and available equipment at the Center for Surface Science and Nanotechnology (CSSNT-UPB). The available equipment there is state-of-the art, although some problems with available and/or allocated space were raised during the visit. PhD Students that we met were all clearly satisfied by the available resources.

As research facilities, were also visited the PRECIS and Center for Advanced Research on New Materials, Products and Innovative Processes CAMPUS facilities, both recently built and equipped. Both research facilities are truly remarkable, as they fulfill all recent requirements in terms of space distribution, allocated spaces, available complementary services, etc. In terms of research infrastructure, both facilities are extremely well equipped with state-of-the art equipment that can clearly help and motivate students to properly engage in their research activities. All the research staff that joined the visit were clearly satisfied with the available resources.

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.

The institutional regulation of the organization and conduct of university doctoral studies in IOSUD- UPB was first adopted by the UPB Senate Decision of 2011, and then the new Regulation corresponding to the legal regulations in force, was adopted by the UPB Senate Decision No. of 13.12.2018.

The regulations of SDSA and SDIALA are easily available online. Regulations are constantly updated at both UPB and DS levels in accordance with the current legislative orders and laws.

Evaluated institution presented 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. Also, the methodologies for organizing and conducting doctoral studies (for the admission of doctoral students, for the completion of doctoral studies) were submitted.

Similarly, it was proven the existence of mechanisms for recognizing the status of a Doctoral advisor and the equivalence of the doctoral degree obtained abroad; the functional management structures (Council of the doctoral school), with proof of the regularity of meetings and the contract for doctoral studies. Finally, the internal procedures for the analysis and approval of proposals regarding the training for doctoral study programs based on advanced academic studies were also submitted.

It is considered that the evaluated institution provided all required specific regulations as well as proof of their application at the level of the Doctoral School of the respective university doctoral study domain. When needed, additional documents were provided. Based on the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, this performance indicator is considered to be fulfilled

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.*

The evaluated institution submitted for review regulation of SDSA and SDIALA, and both included mandatory criteria, procedures and standards binding on the

aspects specified in Article 17, paragraph

⑸ of the Government Decision No. 681/2011 on the approval of the Code of Doctoral Studies with subsequent amendments and additions. Based on the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, this performance indicator is considered to be fulfilled

The indicator is fulfilled.

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.*

The evaluated institution benefits from a computerized PhD Student management program (IT system) that was presented with live demonstration and also in printed documents. It seems to be an adequate program that allows continuous and efficient monitoring of PhD Students.

Recommendations:

- It is recommended to complete the student management informatic (IT) system in order to include an electronic signature system, and so achieve almost complete digitalization of the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA. As a goal, reaching a level of "paperless university" by 2026 can be considered.

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.*

The evaluated institution proved the use of one of the best plagiarism check (percentage of similarity) softwares (TURNITIN). All PhD theses are checked and the percentage of similarity is mentioned in each of the thesis supported. The use of a plagiarism check software and the inclusion of the percentage of similarity within each PhD Thesis defended is considered to be sufficient to fulfill this indicator.

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.

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.*

According to the documents provided, the assessed institution benefits of a total of 17 Grants (16 at SDSA and 1 at SDIALA) obtained by doctoral thesis advisors operating in the evaluated domain within the past 5 years. This is considered to be a high number of grants, exceeding by far the minimum requirements to fulfill this Performance Indicator.

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%.*

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 16 out of 56 enrolled students. The percentage is equal to 28,6%, therefore fulfilling this Performance Indicator.

> *Recommendations:*
> - The evaluated institution should develop strategies to attract additional funding sources besides government funding and further increase this ratio within next five years.

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.).*

The evaluated institution was able to provide data exclusively at IOSUD level and not

for the specific Doctoral Domain under evaluation. According to this data, the percentage 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 varied from 4.06% in 2016 to 32.67% in 2019, with an average of 21.24% among the 5 evaluated years. Last year, the percentage was 22.12%.

The indicator is fulfilled.

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.*

Research facilities available for PhD Students at Doctoral Domain Physics are truly remarkable, as they fulfill all recent requirements in terms of space distribution, allocated spaces, available complementary services, etc. In terms of research infrastructure, facilities are extremely well equipped with state-of-the art equipment that can clearly help and motivate students to properly engage in their research activities.

PhD Students have access to UPB Central Library, a facility of 18000sqm built area, equipped with more than 1,300,000 volumes and 6 reading rooms, all with Internet access. All resources of the library are available online through the ALEPH application. The institution also offers free online access to scientific databases through the ANELIS-Plus project.

The research infrastructure and the provision of research services are presented to the public through specific online (website) platforms.

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[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.

A great part of the research facilities and/or research equipment was either built or acquired in the last 5 years, which proves the continuous effort of the evaluated institution to provide its students with the best resources for the proper development of their PhD Thesis.

The indicator is fulfilled.

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.*

For this specific domain, there are 16 doctoral supervisors (12 at SDSA and 4 at SDIALA) and 11 (68.75%) 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.

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.*

For the evaluated Doctoral Domain, 11 out 16 PhD Advisors (68,75%) advisors have a full-time employment contract for an indefinite period with the IOSUD (6 tenure holders at UPB and 5 full-time employment at IFIN-HH (in consortium with UPB).

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.*

All 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 PhD 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.

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 programs[3] does not exceed 20%.*

For the evaluated Doctoral Domain only 2 out 16 PhD Advisors (12,5%) coordinate more than 8 doctoral students, but no more than 12, who are themselves studying in doctoral programs.

The indicator is fulfilled.

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 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.*

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[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.

For the evaluated Doctoral Domain 85%of PhD supervisors have a significantly number of publication (higher than 5) in Clarivate Web of Science in the last 5 years, and also international visibility. Several 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

The indicator is 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.*

For the evaluated Doctoral Domain 11 out 16 (68.75%) PhD supervisors 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.

The indicator is fulfilled.

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.*

According to provided documents, 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 was as follows: 0.68 in 2016, 0.55 in 2018, 0.85 in 2018, 0.42 in 2019 and 0.25 in 2020. The average over the evaluated period is 0.55.

Although the indicator is clearly fulfilled, here a possible threat is identified, as the number or candidates from other higher education institutions decreased in the last two years. This might be explained by the particular situation that we went through in the past year, but the evaluated institution should keep an eye on the evolution if this indicator.

Recommendations:
- Develop functional strategies to attract graduates of masters' programs of other higher education institutions, national or foreign, especially taking into account the state-of-the art research facilities available.

The indicator is fulfilled.

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.*

Based on the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, it was ascertained that admission to doctoral study programs is based on selection criteria including: previous academic, research and professional performance, their interest for scientific research, publications in the domain and a proposal for a research subject. Compulsory interviewing with the candidate is also part of the admission procedure.

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 admission[4] does not exceed 30%.*

According to the documents provided, the expelling rate, including renouncement / dropping out of doctoral students 3, respectively 4 years after admission, is of 13.82% at SDSA and 23% at SDIALA. In neither case exceeds 30%. Therefore, this performance indicator is considered to be fulfilled.

The indicator is fulfilled.

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.*

Currently, there are 3 disciplines (courses) proposed for PhD Students at SDSA and SDIALA: Methodology of Research and Authorship; Ethics and Project Management. One of the proposed disciplines is intended to study in-depth the research methodology.

Recommendations:
Although students highly appreciated the training program, they were not fully satisfied with the contents of the available courses. Therefore, this Evaluator recommends the following:

- To include within the Training Program of the PhD Students new courses that include information on how to effectively present research output, how to make better presentations, how to speak in public and how to properly communicate a scientific message, among others. Furthermore, it is highly recommended to personalize these courses, as far as possible, for each specific doctoral domain.

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.*

Currently, there are 3 disciplines (courses) proposed for PhD Students at SDSA and SDIALA: Methodology of Research and Authorship; Ethics and Project Management. One of the proposed disciplines is dedicated to Ethics and Intellectual Property in scientific research.

The indicator is fulfilled.

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[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.2.1.3. 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 activities[5].

According to the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, the IOSUD has proven to have 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 activities

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.

Along the duration of their doctoral training, Phd Students in the evaluated domain receive counselling/guidance from a mixed guidance commission, which is formed by three persons. The written guidance and feedback are periodically analyzed in accordance with the SD and IOSUD regulations.

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.

For the Doctoral Domain evaluated, the ratio between the number of doctoral students and the number of teaching staff/researchers providing doctoral guidance are 1.43 (43/30) for SDSA and 0.58 (10/17) for SDIALA, far from the 3:1 threshold ratio.
The indicator is fulfilled.

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[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.

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.*

The evaluated institution provided a list of significant works of PhD students who have obtained the title of doctor in the last 5 years as well as one representative article per student. This reviewer randomly selected 5 papers and all of them contained significant original contributions in the respective domain. In fact, after briefly consulting the list of provided contributions, I was pleasantly surprised by the quality and relevance of almost all contributions. This clearly reflects the high-quality of the research carried out at the evaluated institution.

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.*

According to the documents provided, for the Doctoral Domain evaluated, 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) was 8.1 (162/20), exceeding by far the recommended threshold. Even when only Conference presentations were considered, the ratio was 2.65.

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.
      *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.*

      For theses coordinated by the same doctoral thesis advisor, the number of doctoral theses allocated to one specialist coming from a higher education institution, other than the evaluated IOSUD did not exceed two (2) in a year in any case.

Recommendations:
- The evaluated institution is encouraged to increase the percentage of foreign (international) participants within PhD Committees. As a possible target, a recommendation would be that 50% of PhD Committees should benefit from the presence of an international reviewer

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.*

      According to the findings from the assessed institution's documents, 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 did not exceed 0.3, considering the past five years.

The indicator is fulfilled.

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.

The quality assurance management is a real strength of the evaluated institution and it follows closely the European Standards and Guidelines. At the level of the Doctoral Schools, an analysis is carried out on the evaluation of PhD supervisors, taking into account the outcome of their evaluation at the level of the department and the evaluation by the students. The necessary measures are established, which are variable according to the provisions of the Doctoral Studies Regulations of the doctoral school. The Physics PhD Domain is subject annually to the evaluation process in accordance with the procedures developed at the level of the Doctoral School and IOSUD. The scientific work of PhD supervisors is analyzed on the basis of the complete and detailed data reported in the annual self-assessment sheets of the teaching and scientific activity that are archived both within the secretariat and reported at the higher level. The evaluation sheets of the scientific activity of the Doctoral students and the monitoring of the doctoral student's work by the PhD Supervisor were made available for evaluation. The results of the evaluations are centralised and analysed. The training program based on advanced university studies of PhD students is monitored by completing the catalogues of each doctoral student kept at the secretariat of the doctoral school.

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.*

The evaluated institution has tools and mechanisms in place to identify the needs and satisfaction of students through specific questionnaires. These questionnaires allow for a permanent analysis and feedback mechanism for students on how training methods are perceived, how the evaluation is assessed in final examinations, the skills of students, the quantification of hours spent in SD on the PPA-DS curriculum, accessible facilities and the relationship with academic and administrative staff. The questionnaires are dedicated to both the evaluation of Specialty Disciplines –at SD level and General Disciplines (at IOSUD level) for the Advanced Training Program and the Scientific Research Program.

However, it was truly concerning that PhD students were largely unaware of the existence of a student satisfaction questionnaire and it was not clear evidence that an action plan was drafted and implemented based on answers of the aforementioned questionnaires.

Recommendations:
- In order to create a real climate of quality culture, the institution is encouraged to promote the purpose and benefits of quality assurance procedures among both staff and students. The student satisfaction questionnaires should be filled at least once a year by the majority of PhD Students. Consequently, the evaluation results should be considered for strategic decision- making. Both the results as well as the consequences are highly recommended to be made publicly available (as for example, on the institutional website).
- The evaluated institution is encouraged to try to motivate students to take more responsibility and ownership for the development of both SDSA and SDIALA.

The indicator is fulfilled.

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.

According to the description of the facts, the findings from the assessed institution's documents, the consulted websites and the evaluation visit itself it can be concluded that the IOSUD publishes, in compliance with the general regulations on data protection, on several websites related with the Doctoral domain evaluated:

http://www.physics.pub.ro/Scoala_Doctorala_FSA/ROM /index.htm#; http://www.nipne.ro/sdiala/legislatie.php:

https://upb.ro/doctorat/teze-de-doctorat relevant information on:

- the Doctoral School regulation;

- the admission regulation;

- the doctoral studies contract;

- the study completion regulation including the procedure for the public presentation of the thesis;

- the content of training program based on advanced academic studies;

- the academic and scientific profile, thematic areas/research themes of the Doctoral advisors within the domain, as well as their institutional contact data;

- the list of doctoral students within the domain with necessary information (year of registration; advisor);

- information on the standards for developing the doctoral thesis;

- 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.

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.

*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.*

All PhD Students are granted access to the University Main Library, with 18000

sqm built area and equipped with more than 1,300,000 volumes and 6 reading rooms with Internet access. Thanks to computerization efforts, UPB Central Library (BC-UPB) resources are available online through the ALEPH application. The Polytechnic University of Bucharest benefits through the ANELIS Plus 2020 National Project of online access to scientific electronic resources (databases/platforms of scientific journals with full text and bibliographic and bibliometric databases) in order to support research, education, innovation and stimulate scientific production at national level.

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.*

   The evaluated institution proved the use of one of the best plagiarism check (percentage of similarity) softwares (TURNITIN). This grants access to each PhD Student to an electronic system for verifying the degree of similarity with other existing scientific or artistic works.

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.*

   After analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself it was verified that there are internal regulations that ensure that PhD students have access to all research laboratories in the Faculty of Applied Sciences under the supervision of PhD Supervisor. According to the collaboration protocol between different research institutes, such as IFIN-HH, INCDFLPR, INCDFM and the Politechnica University, PhD students can access also the laboratory located at these institution and research centers.

The indicator is fulfilled.

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.

Different types of international mobility agreements were concluded for IOSUD-UPB PhD Students, which included two types of mobility: study mobility and placement mobility, respectively. However, there was not clear evidence on the number and timeframes of *mobility periods abroad of PhD Students for the evaluated Doctoral* Domain. According to the documents presented, 78% of the PhD Students have attended international scientific conferences. Still, it seems that IOSUD drafts and applies policies and measures aiming at increasing the number of doctoral students participating at mobility periods abroad.

Recommendations:
- Increase the number of students' research training and internships in external institutions (mobility period abroad). It is highly recommended for each student to perform a research internship of at least three months outside the evaluated institution during his/hers PhD Thesis development.

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.*

According to the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, it was clear that within the evaluated Doctoral Domain – Physics - from SDSA and SDIALA there is an international opening related to the co-opting of foreign students and for the organization of doctorates in international co-tutelage. Also, SD Directors and Council members showed a continuing concern regarding the invitation of leading experts and specialists for lectures of interest for PhD students.

Nevertheless, for the evaluated period, the number of leading experts in different fields of research (from both within and outside Romania) to give lectures to PhD students enrolled at the SD was low. The same applies to doctorates in co-tutelage with both national and international institutions. However, this indicator does not asses number of invited experts or PhD thesis co-tutelage; it evaluates if proper support for these activities is granted. In this sense, the Performance Indicator is considered to be fulfilled.

Recommendations:
- The evaluated institution is encouraged to increase the percentage of foreign (international) participants within PhD Committees. As a possible target, a recommendation would be that 50% of PhD Committees should benefit from

the presence of an international reviewer.

- The evaluated institution should increase its collaborative effort into realizing a higher number of doctorates in co-tutelage with both national and international institutions.
- It is recommended to invite more leading experts in different fields of research (from both within and outside Romania) to give lectures to PhD students enrolled at the SD. The current number is small and, apparently, most of them are organised jointly for all educational cycles (Bachelor, Master, PhD) and not exclusively for PhD students, which can negatively affect the content of those lectures;

The indicator is fulfilled.

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.).*

According to the analysis of the facts, the findings from the assessed institution's documents and the evaluation visit itself, the internationalization of activities carried out during the doctoral studies is supported by IOSUD mostly by participating in educational fairs to attract international doctoral students, and to some extent by including international experts in guidance committees or doctoral committees.

This evaluator considers that the number of international experts in guidance committees or doctoral committees should be dramatically increased in the next 5 years.

Recommendations:
- The evaluated institution is encouraged to increase the percentage of international experts in guidance committees or doctoral committees as close as possibly to 50% within next 5 years.

The indicator is fulfilled.

IV.SWOT Analysis

Strengths:	Weaknesses:
The Doctoral Domain Physics at UPB benefits of the following: - Highly qualified PhD Supervisors, with significantly number of publication and international visibility; - Low ratio of PhD Students / PhD Supervisor; - High number of research output (research articles, meeting abstracts, conference papers, etc.) / PhD Student. - Research facilities are truly remarkable, as they fulfill all recent requirements in terms of space distribution, allocated spaces, available complementary services, etc. In terms of research infrastructure, research facilities are extremely well equipped with state-of-the art equipment that can clearly help and motivate students to properly engage in their research activities; - The strong link, in terms of collaboration at educational level as well as posterior employment of PhD Students, between the evaluated SD and several research institutes.	1. The very high number of international partners and/or international collaborators is not mirrored by the participation of these collaborators in the diverse activities that are typical of a doctoral school (PhD committees, co-tutelage, joint research grants, etc.). It seems that the evaluated institution does not have a precise strategy when deciding international partners. This seems more likely as a strategy of accumulation rather than a collaborative effort towards a common goal. **Recommendation:** To engage more of the international collaborators in diverse activities that are typical of a doctoral school (PhD committees, co-tutelage, joint research grants, etc.), as well as consider developing a strategic policy in this area and develop partnership based on shared research interest, similar future plans or even a shared past. 2. The evaluated institution has tools and mechanisms in place to identify the needs and satisfaction of students through specific questionnaires. However, it was truly concerning that PhD students were largely unaware of the existence of a student satisfaction questionnaire and it was not clear evidence that an action plan was drafted and implemented based on answers of the aforementioned questionnaires. **Recommendation:** In order to create a real climate of quality culture, the institution is encouraged to promote actively the purpose and benefits of quality assurance procedures among both staff and students. The student

	satisfaction questionnaires should be filled at least once a year by the majority of PhD Students. Consequently, the evaluation results should be considered for strategic decision-making. Both the results as well as the consequences are highly
	recommended to be made publicly available (as for example, on the institutional website). The evaluated institution is encouraged to try to motivate students to take more responsibility and ownership for the development of both SDSA and SDIALA

Opportunities:	Threats:
- In the near future, when ELI-NP will be fully operational, the two SD (but specially SDIALA) should benefit greatly and attract a considerable amount of both PhD Students and PhD Supervisors. - Increasing the number of co-tutelage doctorate might be a way of attracting more students towards Physics Doctoral Domain at both SDSA and SDIALA.	1. The number of students admitted to the doctoral program is showing a decreasing trend in the last 3 years. **Recommendation:** The evaluated institution should be more proactive on identifying and recruiting possible PhD candidates and to ensure that they have available, in an accessible and prompt manner, as much information as possible on all relevant aspects of the institution. 2. The majority of the employers of former graduates are closely linked with the SD (meaning that it is either the University of one of the affiliated research institutes). **Recommendation:** The institution should try to develop closer links with diverse potential employers of their graduates, by perhaps meeting on regular basis and consult, this way developing stronger real partnerships for future mutual benefit. 3. The bureaucratic flow within IOSUD and subsequently SDSA and SDIALA, in terms of student management informatic (IT) system is not yet fully digital. This process of complete digitalization is even more relevant if we take into account the very complicated period we have been through and all the restrictions in terms of mobility that this has entailed. In addition, full digitization saves considerable resources and time for both sides involved. **Recommendation:** To complete the student management informatic (IT) system in order to include an electronic signature system, and so achieve almost complete digitalization of the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA.

V. Overview of judgments awarded and of the recommendations

No.	Type of indicator (*, C)	Performance indicator	Judgment	Recommendations
1		*Performance Indicator A.1.1.1.*	**Fulfilled**	
2		*Performance Indicator A.1.1.2.*	**Fulfilled**	
3		*Performance Indicator A.1.2.1*	**Fulfilled**	It is recommended to complete the student management informatic (IT) system in order to include an electronic signature system, and so achieve almost complete digitalization of the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA. As a goal, reaching a level of "paperless university" by 2026 can be considered.
4		*Performance Indicator A.1.2.2.*	**Fulfilled**	
5		*Performance Indicator A.1.3.1.*	**Fulfilled**	
6	*	*Performance Indicator *A.1.3.2*	**Fulfilled**	The evaluated institution should develop strategies to attract additional funding sources besides government funding and further increase this ratio within next five years
7	*	*Performance Indicator *A.1.3.3*	**Fulfilled**	
8	C	*Performance Indicator A.2.1.1*	**Fulfilled**	
9	C	*Performance Indicator A.3.1.1.*	**Fulfilled**	
10	*	*Performance Indicator *A.3.1.2.*	**Fulfilled**	
11		*Performance Indicator A.3.1.3.*	**Fulfilled**	
12		*Performance Indicator *A.3.1.4.*	**Fulfilled**	
13	C	*Performance Indicator A.3.2.1.*	**Fulfilled**	

14	*	*Performance Indicator *A.3.2.2.*	**Fulfilled**	
15	*	*Performance Indicator *B.1.1.1.*	**Fulfilled**	Develop functional strategies to attract graduates of masters' programs of other higher education institutions, national or foreign, especially taking into account the state-of-the art research facilities available.
16	*	*Performance Indicator *B.1.2.1.*	**Fulfilled**	
17		*Performance Indicator B.1.2.2.*	**Fulfilled**	
18		*Performance Indicator B.2.1.1.*	**Fulfilled**	To include within the Training Program of the PhD Students new courses that include information on how to effectively present research output, how to make better presentations, how to speak in public and how to properly communicate a scientific message, among others. Furthermore, it is highly recommended to personalize these courses, as far as possible, for each specific doctoral domain
19		*Performance Indicator B.2.1.2.*	**Fulfilled**	
20		*Performance Indicator B.2.1.3.*	**Fulfilled**	
21		*Performance Indicator B.2.1.4.*	**Fulfilled**	
22	C	*Performance Indicator B.2.1.5.*	**Fulfilled**	
23	C	*Performance Indicator B.3.1.1.*	**Fulfilled**	
24	*	*Performance Indicator *B.3.1.2.*	**Fulfilled**	
25	*	*Performance Indicator *B.3.2.1.*	**Fulfilled**	The evaluated institution is encouraged to increase the percentage of foreign (international) participants within PhD Committees. As a possible target, a recommendation would be that 50% of PhD Committees should benefit from the presence of an international reviewer
26	*	*Performance Indicator *B.3.2.2.*	**Fulfilled**	

27		*Performance Indicator C.1.1.1.*	**Fulfilled**	
28	*	*Performance Indicator *C.1.1.2.*	**Fulfilled**	In order to create a real climate of quality culture, the institution is encouraged to promote the purpose and benefits of quality assurance procedures among both staff and students. The student satisfaction questionnaires should be filled at least once a year by the majority of PhD Students. Consequently, the evaluation results should be considered for strategic decision-making. Both the results as well as the consequences are highly recommended to be made publicly available (as for example, on the institutional website) The evaluated institution is encouraged to try to motivate students to take more responsibility and ownership for the development of both SDSA and SDIALA
29	C	*Performance Indicator C.2.1.1.*	**Fulfilled**	
30		*Performance Indicator C.2.2.1.*	**Fulfilled**	
31		*Performance Indicator C.2.2.2.*	**Fulfilled**	
32		*Performance Indicator C.2.2.3.*	**Fulfilled**	
33	*	*Performance Indicator *C.3.1.1.*	**Fulfilled**	Increase the number of students' research training and internships in external institutions (mobility period abroad). It is highly recommended for each student to perform a research internship of at least three months outside the evaluated institution during his/hers PhD Thesis development.
34		*Performance Indicator C.3.1.2.*	**Fulfilled**	The evaluated institution is encouraged to increase the percentage of foreign (international) participants within PhD Committees. As a possible target, a recommendation would be that 50% of PhD Committees should benefit from the presence of an international reviewer. The evaluated institution should increase its collaborative effort into realizing a higher number of doctorates in co-tutelage with both national and international institutions. It is recommended to invite more leading experts in different fields of research (from both within and outside Romania) to give lectures to PhD students enrolled at the SD. The current number is small and, apparently, most of them are

				organised jointly for all educational cycles (Bachelor, Master, PhD) and not exclusively for PhD students, which can negatively affect the content of those lectures;
35		*Performance Indicator C.3.1.3.*	**Fulfilled**	The evaluated institution is encouraged to increase the percentage of international experts in guidance committees or doctoral committees as close as possibly to 50% within next 5 years.

VI. Conclusions and general recommendations

Beyond any doubt, the Doctoral Study Domain Physics within IOSUD Polytehnica University Bucuresti (UPB) is of remarkable quality and benefits of highly qualified PhD Supervisors, with significantly number of publication and international visibility; a low ratio of PhD Students / PhD Supervisor and a high number of research output (research articles, meeting abstracts, conference papers, etc.) / PhD Student. A separate mention has to be made on the research facilities, which are truly remarkable, as they fulfill all recent requirements in terms of space distribution, allocated spaces, available complementary services, etc. In terms of research infrastructure, research facilities are extremely well equipped with state-of-the art equipment that can clearly help and motivate students to properly engage in their research activities. A great part of the research facilities and/or research equipment was either built or acquired in the last 5 years, which proves the continuous effort of the evaluated institution to provide its students with the best resources for the proper development of their PhD Thesis.

Some weaknesses have also been identified, such as the low participation of international collaborators in the diverse activities that are typical of a doctoral school (PhD committees, co-tutelage, joint research grants, etc.). Also, it seems that the evaluated institution does not have a precise strategy when deciding international partners. Furthermore, although the evaluated institution has tools and mechanisms in place to identify the needs and satisfaction of students through specific questionnaires, it was truly concerning that PhD students were largely unaware of the existence of a student satisfaction questionnaire and it was not clear evidence that an action plan was drafted and implemented based on answers of the aforementioned questionnaires. Finally, the evaluated institution should be more proactive on identifying and recruiting possible PhD candidates as well as to develop closer links with diverse potential employers of their graduates, by perhaps meeting on regular basis and consult, this way developing stronger real partnerships for future mutual benefit. Lastly, the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA, in terms of student management informatic (IT) system is not yet fully digital. This process of complete digitalization is even more relevant if we take into account the very complicated period we have been through and all the restrictions in terms of mobility that this has entailed. In addition, full digitization saves considerable resources and time for both sides involved. In this sense, the institution is

encouraged to complete the student management informatic (IT) system in order to include an electronic signature system, and so achieve almost complete digitalization of the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA.

I will resume below all the recommendations (majority of them already mentioned in previous Chapters; others not) that I will address to the evaluated institution to further improve the quality of the Doctoral Domain as well as to meet requirements and needs of the different agents that are involved or may be somehow impacted by the educational and formative process that they provide.

List of Recommendations:

Student related:

- Consider including within the Training Program of the PhD Students new courses that include information on how to effectively present research output, how to make better presentations, how to speak in public and how to properly communicate a scientific message, among others. Furthermore, it is highly recommended to personalize these courses, as far as possible, for each specific doctoral domain.
- Consider increasing both the number as well as the value (quantity) of the scholarships and financial allocations available to PhD Students, especially those from SDSA.
- Consider increasing the number of scientific communication sessions for PhD students. There has been only one in the last 5 years (2106-2021). It is recommended to organize one session every 2 years (oral presentations, poster sessions, 3 minutes thesis, etc.).
- It is recommended to involve PhD students in scientific dissemination activities (apparently, this is not done now).

Quality Assurance:

- In order to create a real climate of quality culture, the institution is encouraged to promote actively the purpose and benefits of quality assurance procedures among both staff and students. The student satisfaction questionnaires should be filled at least once a year by the majority of PhD Students. Consequently, the evaluation results should be considered for strategic decision- making. Both the results as well as the consequences are highly recommended to be made publicly available (as for example, on the institutional website).
- The evaluated institution is encouraged to try to motivate students to take more responsibility and ownership for the development of both SDSA and SDIALA.

Employer related:

- To develop closer links with potential employers of their graduates, by perhaps

meeting on regular basis and consult, this way developing stronger real partnerships for future mutual benefit.

Internationalization:

- Develop functional strategies to attract foreign PhD Students, especially taking into account the state-of-the art research facilities available.
- Increase the percentage of international experts in guidance committees or doctoral committees as close as possibly to 50% within next 5 years.
- Increase the collaborative effort into realizing a higher number of doctorates in co-tutelage with national and international institutions.

- It is recommended to invite more leading experts in different fields of research (from both within and outside Romania) to give lectures to PhD students enrolled at the SD. The current number is small and, apparently, most of them are organised jointly for all educational cycles (Bachelor, Master, PhD) and not exclusively for PhD students, which can negatively affect the content of those lectures;
- To engage more of the international collaborators in diverse activities that are typical of a doctoral school (PhD committees, co-tutelage, joint research grants, etc.), as well as consider developing a strategic policy in this area and develop partnership based on shared research interest, similar future plans or even a shared past.
- Increase the number of students' research training and internships in external institutions (mobility period abroad). It is highly recommended for each student to perform a research internship of at least three months outside the evaluated institution during his/hers PhD Thesis development.

Digitalization:

- It is recommended to complete the student management informatic system in order to include an electronic signature system, and so achieve almost complete digitalization of the bureaucratic flow within IOSUD and subsequently SDSA and SDIALA. As a goal, reaching a level of "paperless university" by 2026 can be considered.

Ethics (at IOSUD level):

- Try to modify regulation of the Ethics Commission in order to also consider anonymous complaints. Also, it would be beneficial to include within this Commission, if possible, members that do not belong to the University.

Granada 9th of July, 2021

RAZVAN IONUT GHINEA, PhD

VII. Annexes

- *The detailed schedule of the evaluation visit – MANDATORY.*

ÎNTÂLNIRI PRELIMINARE / PRELIMINARY MEETING

Vizita de evaluare instituțională - IOSUD / domenii de studii universitare de doctorat a
Universității Politehnica București
The institutional evaluation visit - IOSUD / doctoral study domains of the
Politehnica University of Bucharest

Data/ora Date/hour (Bucharest time)	Activitate / *Activity*	Participanți / *Participants*	Observații/ Responsabil *Observations/ Responsible*
EVALUAREA STUDIILOR UNIVERSITARE DE DOCTORAT / DOCTORAL STUDIES EVALUATION			
10 of June, 17:00 – 19:00	Întâlnirea echipei de evaluare pentru discutarea principalelor aspecte metodologice legate de activitatea de evaluare a studiilor universitare de doctorat *Meeting of panel members for discussing main methodological aspects related to the evaluation of doctoral studies*	**Toți membrii echipei de evaluare** All evaluation panel members	platforma **ARACIS Ciscowebex/ZOOM** *ARACIS Ciscowebex /ZOOMplatform*

Programul[6] vizitei de evaluare instituțională - IOSUD / domenii de studii universitare de doctorat a
Universității Politehnica București
The timetable of the institutional evaluation visit - IOSUD / doctoral study domains at the
Politehnica University of Bucharest

Perioada de derulare a vizitei: 14.06.2021 – 25.06.2021
The evaluation period: 14.06.2021 - 25.06.2021

Evaluarea Externă Periodică aIOSUD

Periodical External Evaluation of the Institution Organising Doctoral Study Programs (IOSUD)

Intervalul orar / *Hour*	Activitate / *Activity*	Participanți / *Participants*	Observații/ Responsabil *Comments/ Responsible*
Marti/ *Tuesday*, 15.06.2021			
09:00-09:45	Întâlnire preliminară online pentru pregătirea și armonizarea etapelor de evaluare, în modul mixt, la nivel de domenii de doctorat și IOSUD *Online preliminary meeting for the preparation and harmonization of evaluation steps, in hybrid mode, of doctoral study domains and IOSUD*	**Comisia de evaluare IOSUD/domenii** *IOSUD evaluation panel* - **toți membrii echipei de evaluare** *all evaluation panel members*	Înregistrare audio-video/ platforma **ARAC IS Ciscowebex/ZOOM** *Audio-video recording /ARACIS Ciscowebex / ZOOM platform*
10:00-10:45	Întâlnirea online a comisiei de experți evaluatori cu reprezentanții conducerii universității și ai CSUD *Online meeting with representatives of the institution and of the Council for Academic Doctoral Studies (CSUD)*	**Comisia de evaluare IOSUD/domenii** *IOSUD/domains evaluation panel* - **toți membrii echipei de evaluare** *all evaluation panel members* - reprezentanți ai conducerii *representatives of the University's management* - reprezentanți ai CSUD și ai școlii/școlilor doctorale	Înregistrare audio-video/ **platforma** *Audio-video recording / platform Zoom* Join Zoom Meeting: https://bit.ly/3gjHIbw *Meeting ID: 938 4137 4697 Passcode: 687829*

[6] În perioada vizitei, pot fi solicitate și alte întâlniri, pentru eventuale clarificări.
During the visit, other meetings may be requested for possible clarifications.

Intervalul orar / *Hour*	Activitate / *Activity*	Participanți / *Participants*	Observații/ Responsabil *Comments/ Responsible*
		representatives of the CSUD and of the Doctoral School /Schools - persoana de contact IOSUD/domenii *the contact person for IOSUD / doctoral domains*	
11:30-12:30	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire online a comisiei de experți evaluatori cu directorul CSUD/directorii școlilor doctorale din IOSUD supus procesului de evaluare și cu echipa care a realizat raportul de evaluare internă *IOSUD: Online meeting with the director of CSUD /directors of doctoral schools and the team who drafted the internal evaluation report*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *members of IOSUD evaluation panel* - reprezentanți ai CSUD și ai școlii/școlilor doctorale/ IOSUD *representatives of CSUD and of doctoral school(s)/IOSUD*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* Join Zoom Meeting https://bit.ly/3xfRFMw Meeting ID: 992 0800 4872 Passcode: 409077
15:00 – 16:00	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire online a comisiei de experți evaluatori cu personalul didactic aferent școlilor doctorale din IOSUD *IOSUD: Online meeting with IOSUD academic staff*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *Members of IOSUD evaluation panel* - cadre didactice cu titlul de conducător de doctorat *Doctoral coordinators*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* **Join Zoom Meeting https://bit.ly/2SpH9Uv** **Meeting ID: 944 0923 3783 Passcode: 594870**
17:00-18:00	Continuarea activităților de evaluare a domeniilor de studii universitare de doctorat și IOSUD *Continuation of the doctoral study domain and IOSUD evaluation activities*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD *at IOSUD level* - la nivel de domenii de doctorat	**Se lucrează separat.**[7] *Independent evaluation activities.*

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[7] În cazul în care se organizează întâlniri suplimentare cu reprezentanții instituției de învățământ superior sau cu alte părți interesate, acestea se vor organiza în format online, după caz, de către instituția evaluată sau de către echipa de evaluare, iar înregistrările se vor încărca în *cloud-ul* ARACIS. Daca sunt întâlniri între membrii echipei de evaluare, nu este necesară încărcarea înregistrărilor. Se pot organiza și vizite la fața locului, de

comun acord cu persoana de contact de la domeniul evaluat. *If additional meetings are organized with the representatives of the higher education institution or with other interested parties, they will be organized in online format, as the case may be, by the evaluated institution or by the evaluation team, and the records will be uploaded to ARACIS' cloud. If there are meetings between the members of the evaluation team, it is not necessary to upload the records. On-site visits may also be arranged, in agreement with the contact person of the evaluated domain.*

Intervalul orar / *Hour*	Activitate / *Activity*	Participanți / *Participants*	Observații/ Responsabil *Comments/ Responsible*
		at doctoral study domain level	
Miercuri/ *Wednesday*, 16.06.2021			
09:00-11:00	Continuarea activităților de evaluare a domeniilor de studii universitare de doctorat și IOSUD *Continuation of the doctoral study domain and IOSUD evaluation activities*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD *at IOSUD level* - la nivel de domenii de doctorat *at doctoral study domain level*	**Se lucrează separat.** *Independent evaluation activities.*
11:00– 12:00	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire online a comisiei de evaluare cu studenții doctoranzi *IOSUD: Online meeting with PhD students*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *members of IOSUD evaluation panel* - studenții doctoranzi *PhD students*	Înregistrare audio-video/ platforma **ARACIS Ciscowebex / ZOOM** *Audio-video recording /ARACIS Ciscowebex / ZOOM platform*
12:00-13:00	Continuarea activităților de evaluare a domeniilor de studii universitare de doctorat și IOSUD *Continuation of the doctoral study domain and IOSUD evaluation activities*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD *at IOSUD level* - la nivel de domenii de doctorat *at doctoral study domain level*	**Se lucrează separat.** *Independent evaluation activities.*

Intervalul orar / Hour	Activitate / Activity	Participanți / Participants	Observații/ Responsabil Comments/ Responsible
16:00–17:00	Întâlnire online cu membrii Comisiei de Etică a universității *Online meeting with the members of the Ethics Commission*	**Comisia de evaluare IOSUD/domenii** *IOSUD/domains evaluation panel* **- toți membrii echipei de evaluare** *all evaluation panel members* -membrii Comisiei de Etică *Ethics Commission members*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* **Join Zoom Meeting** **https://bit.ly/3xkayxZ** **Meeting ID: 918 6158 8647 Passcode: 300116**
17:00-18:00	Continuarea activităților de evaluare a domeniilor de studii universitare de doctorat și IOSUD	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD *at IOSUD level*	**Se lucrează separat.** *Independent evaluation activities.*
Intervalul orar / Hour	**Activitate / Activity**	**Participanți / Participants**	**Observații/ Responsabil** *Comments/ Responsible*
	Continuation of the doctoral study domain and IOSUD evaluation activities	- la nivel de domenii de doctorat *at doctoral study domain level*	
Joi / *Thursday*, **17.06.2021**			
09:00-10:30	Activități de evaluare *Evaluation activities* Întâlnire online cu membrii Comisiei pentru Evaluarea și Asigurarea Calității (CEAC) / Departamentul de asigurare a calității *Online meeting with the Commission for Quality Evaluation and Assurance (CEAC) members / Quality Assurance Department*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* **- toți membrii echipei de evaluare** *all evaluation panel members* - reprezentanți ai CEAC/Departament AC *representatives of Commission for Quality Evaluation and Assurance (CEAC) / Quality Assurance Department*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* **Join Zoom Meeting** https://bit.ly/3gsAAd3 Meeting ID: 927 6878 6869 Passcode: 531103

Intervalul orar / Hour	Activitate / Activity	Participanți / Participants	Observații/ Responsabil Comments/ Responsible
12:00 – 13:00	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire online cu directorii/responsabilii centrelor/laboratoarelor de cercetare IOSUD *IOSUD: Online meeting with the Directors/ persons in charge of the research centers/laboratories within IOSUD*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *members of IOSUD evaluation panel* - directorii centrelor /laboratoarelor de cercetare *Directors of the research centers/laboratories*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* **Join Zoom Meeting** **https://bit.ly/3pZRKl m** **Meeting ID: 997 0444 9612** **Passcode: 568477**
15:00 – 16:00	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire cu membrii Consiliului Studiilor Universitare de Doctorat al IOSUD *IOSUD: Online meeting with Doctoral University Studies Council (CSUD) members*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *members of IOSUD evaluation panel* - membrii CSUD *CSUD's members*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* Join Zoom Meeting: https://bit.ly/2RVLhv 6 Meeting ID: 992 7659 8042 Passcode: 851899
17:30-18:30	Activități de evaluare *Evaluation activities* IOSUD: Întâlnire online a comisiei de evaluare cu reprezentanți ai angajatorilor absolvenților	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - membrii comisiei de experți evaluatori IOSUD *members of IOSUD evaluation panel*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform* *Join Zoom Meting* *https://bit.ly/3zpm3W S*
Intervalul orar / Hour	**Activitate / Activity**	**Participanți / Participants**	**Observații/ Responsabil** *Comments/ Responsible*
	IOSUD: Online meeting with employers of doctoral graduates	- reprezentanți ai angajatorilor *employers' representatives*	*Meeting ID: 980 9934 4468 Passcode: 523577*
Vineri/ *Friday*, 18.06.2021			

09:00-10:30	Întâlnire tehnică online, pentru identificarea aspectelor specifice care trebuie clarificate, dacă este cazul, pe parcursul vizitei la fața locului *Online technical meeting to identify specific issues that needto be clarified, if necessary, during the on-site visit*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - **toți membrii echipei de vizită** *all evaluation panel members*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform*
11:00-13:00	Continuarea activităților de evaluare a domeniilor de studii universitare de doctorat și IOSUD *Continuation of the doctoral study domain and IOSUD evaluation activities*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD *at IOSUD level* - la nivel de domenii de doctorat *at doctoral study domain level*	**Se lucrează separat.** *Independent evaluation activities.*
	Luni / *Monday*, 21.06.2021		
10:00-18:00	Reuniuni de lucru față în față[8], vizitarea bazei materiale didactice și de cercetare *Face-to-face working meetings, visiting the educational and research infrastructure*	- **directorul de misiune și coordonatorul, un student doctorand evaluator** *the Evaluation Director and the coordinator of the IOSUD evaluation panel, one student* - reprezentanți ai universității *university's representatives*	Vizită UNIVERSITATE *Site visit to the university*
	Vineri / *Friday,* 25.06.2021		
09:00-11:30	Finalizarea documentelor *Completion of the evaluation documents*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - la nivel de IOSUD	**Se lucrează separat.** *Independent evaluation activities.*

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[8] Experții evaluatori la nivelul domeniilor de studii universitare de doctorat pot stabili independent programul vizitei la fața locului, de comun acord cu persoana de contact de la domeniul evaluat și respectând programul întâlnirilor comune cu restul membrilor echipei de evaluare. *The evaluators at doctoral study domain level can independently establish the program of the on-site visit, in agreement with the contact person for the evaluated domain and respecting the schedule of joint meetings with the rest of the evaluation panel members.*

Intervalul orar / *Hour*	Activitate / *Activity*	Participanți / *Participants*	Observații/ Responsabil *Comments/ Responsible*
		at IOSUD level	
11:45-12:45	Întâlnire online pentru concluzii *Online meeting for conclusions*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - **toți membrii echipei de evaluare** *all evaluation panel members*	Înregistrare audio-video/ platforma **ARACIS Ciscowebex/ ZOOM** *Audio-video recording /ARACIS Ciscowebex / ZOOM platform*
13:00-14:00	Întâlnire finală online în vederea prezentării principalelor constatări rezultate în urma evaluării IOSUD și a recomandărilor de îmbunătățire a calității *Meeting with representatives of the institution under review to discuss on the conclusions of the evaluation process and the main reccomandations*	**Comisia de evaluare IOSUD** *IOSUD evaluation panel* - **toți membrii echipei de evaluare** *all evaluation panel members* - reprezentanți i universității *university's representatives*	Înregistrare audio-video/ **platforma** *Audio-video recording / …. platform*