MINISTRY OF EDUCATION,
YOUTH AND SPORTS

EVALUATION REPORT FOR EVALUATION OF RESEARCH ORGANIZATION IN THE SEGMENT OF HIGHER EDUCATION INSTITUTIONS IN YEAR 2025

HIGHER EDUCATION INSTITUTION NAME: České vysoké učení technické v Praze – Czech Technical University in Prague

COMPANY REGISTRATION NUMBER (CRN): 68407700

THE LIST OF EVALUATION UNITS IN MODULE 3:

Faculty of Civil Engineering
Faculty of Mechanical Engineering
Faculty of Electrical Engineering
Faculty of Nuclear and Physical Engineering
Faculty of Architecture
Faculty of Transportation Sciences
Faculty of Biomedical Engineering
Faculty of Information Technology
Klokner Institute
MIAS School of Business
University Centre for Energy Effective Buildings
Czech Institute for Informatics, Robotics and Cybernetics
Institute of Experimental and Applied Physics

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Jozsef Kovecses	**Member**	**Professor**
Paulo Lorenzo	**Member**	**Professor**
Khosrow Mottaghy	**Member**	**Professor**
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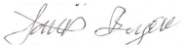
Date of on-site visit of higher education institution: June 23-27, 2025

In__New York_____date_October 26, 2025_____Signature ___  _____

(IEP chairperson)

OVERALL EVALUATION IN MODULES 1 TO 5

OVERALL EVALUATION

Provide a summary evaluation of the HEI as a whole across all five modules. Justify your evaluation and highlight the main strengths and/or weaknesses of the evaluated HEI. The overall grade is determined according to the rules of the "Methodology VŠ2025+".

MODULE	MODULE WEIGHT	GRADE [A–D]
MODULE 1 and 2	50 %	**A**
MODULE 3	30 %	**A**
MODULE 4	10 %	**A**
MODULE 5	10 %	**A**
OVERALL RATING		**A – Excellent**

Qualitative assessment:

CTU is an overall excellent university with strong commitment to research, teaching, and serving the broader community. It has made great progress in m any areas even since the last evaluation and is on its way from to become from a regional leader to a key player on the European scene. The university has outstanding leadership with a clear vision, a convincing business model, and an overall great faculty. Focusing on the few problematic areas will help accomplish the rise to the rank of an outstanding European technical university.

Recommendations:

Overall, keep up the good work. In order to increase the international standing of CTU, the problem of MIAS has to be dealt with. We made the specific recommendations at the end of the M3 Module, here we merely summarize them. Transform MIAS into a teaching department (Faculty?), possibly under the supervision of one of the Vice-Rectors with the mission to teach courses on social and ethical issues of engineering and to develop an MBA degree specializing in in engineering aspects of business administration. To a lesser extent the problem of FIT has also to be addressed. It should move from a mostly software producing and teaching faculty to a modern, research-oriented unit, addressing current issues of modern computer science. Some of our other recommendations pertain to the length of the PhD studies. We acknowledge the progress made in this area since the last evaluation period, but the length of the studies should be further shortened, optimally to no more than five years, on average. Some of the lesser issues are the strengthening of the international component of the faculties and plcing more focus on the societal and gender related issues. Finally, currently there is no or very little incentive to promotion from associate to full professor. Increasing the number full professors, by introducing new incentives, would contribute to the standing of the faculty overall.

SUMMARY RATING IN MODULE 3

MODULE 3 – SUMMARY RATING

After evaluating the individual units, please provide a summary evaluation of social relevance in Module 3 for the HEI as a whole. Please assess the balance of the evaluated units, how they contribute to the mission and vision of the HEI and describe the strengths and weaknesses of the HEI assessed in Module 3.

The summary rating is determined in accordance with the rules of the Methodology HEI2025+ as the average of the grades of the individual units, weighted by their size in terms of FTE staff.

EVALUATED UNIT	Grade [A–D]
Faculty of Mechanical Engineering	**A**
Faculty of Architecture	**B**
Faculty of Nuclear Sciences and Physical Engineering	**A**
Faculty of Information Technology	**C**
Faculty of Biomedical Engineering	**A**
Faculty of Civil Engineering	**A**
Faculty of Electrical Engineering	**A**
Faculty of Transportation Sciences	**B**
Klokner Institute	**B**
Czech Institute of Informatics, Robotics and Cybernetics	**A**
University Centre for Energy Efficient Buildings	**B**
Institute of Experimental and Applied Physics	**A**
Masaryk Institute of Advanced Studies	**C**
Summary grade	**A**

Summary quality assessment:

Out of the 13 evaluated units 7 earned a grade od A and 4 a grade of B. This is a tremendous achievement and makes CTU overall excellent. Keep up the good work.

Summary recommendation:

The units that earned a grade of B should focus on the components that brought down their respective grade and improve in those areas that are relatively weaker than most others. FIT should move from a mostly software producing and teaching faculty to a modern, research-oriented unit, addressing current issues of modern computer science. The main problem is with MIAS. It is not a research institute in its current form, and the panel does not see a streamlined approach to transform it into one. Therefore, our recommendation is to transform MIAS into a teaching department from a research institute, possibly directly under the supervision of one of the Vice-Rectors. Its main mission could be teaching courses related to social and ethical issues of engineering and, in the long-term, developing an MBA degree specializing in in engineering aspects of business administration.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Civil Engineering

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.

Commentary:

FCE is a very large unit with more than 3000 students, about 350 professors and almost 30 departments. FCE is proud of its 300 years history and fulfils an important mission, as the built environment is essential to human development and the quality of life of populations. Civil engineering and the building sector contribute decisively to improving comfort, mobility, health, and longevity, so the unit fulfils an important mission.

The drop-out ratio in all levels of study is very high, reaching extreme levels for PhD and BSc studies, which seem common at national level. Actions to reduce abandonment are important for the mission of the unit. The percentage of graduate students (MSC + PhD) completing the degree is quite high (over 50%), but the same percentage in terms of first year students could be increased (about 30%). The number of PhD students that complete the degree is low for the number of full and associate professors (a minimum of 0.5 PhD completed / faculty member, i.e. about 75 awarded PhDs per year should be aimed at). PhD students are critical for R&D&I success. The number of first year BSc students had an important drop but the situation if now very favourable. The ability of attracting MSc students did not follow the same trend and seems to require attention.

The ratio of professors to students (below 1:10) is beneficial, while the percentage of full and associated professors in total of professors (about 40%) is low, compared to other international contexts, but seems appropriate at national level. The percentage of Full Professors may also increase, ideally, to a minimum of 25%, also hiring internationally. The number of female academics is low, including for the lower age range, which is less expected given the fact that in lifelong learning courses female participation is high.

The number of departments is relatively high and, seemingly, with rather different performance. It could be beneficial to reflect on the benefit of a more agile structure and the need of attracting a few international professors who excels in specific fields of knowledge.

FCE states that the education delivered is top notch and the graduates have promising careers. It would be important in futures exercises to provide complementary information on distinguished alumni, nationally and internationally, in addition to other evidence, such as salary level, unemployed alumni, time to find the first job after graduation, and global student satisfaction. Similarly, to professors, how are the pedagogical skills enhanced through active implementation and training to ensure best practices and a vibrant educational environment?

FCE states the deep commitment with scientific research, development, innovation, as well as artistic and creative endeavours. How are innovation, creative thinking, presentation, leadership and other skills effectively managed for professors and students?

The key long-term research directions presented are relevant and tackle major challenges, even if there is less evidence of alignment with the existing departments, e.g. with reference to building physics and comfort, geotechnics, or transportation infrastructures.

Non-governmental funding is important (almost 40%), but there is room for increase. A combination of basic, applied and contractual research is present, with ample and solid industrial cooperation, which is capital for an engineering faculty. There is room for improvement and further excellence in bibliometric indicators and rankings. How well FCE compares with competitors here? Why choosing one ranking over others, in terms of subject area? Where would FCE like to be in the near and long future (is on par sufficient or what is the target)? What measures may be considered? What signs of excellence need to be targeted (e.g. ERC projects, MSCA fellows, Editors of leading international journals, or other)?

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community

Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).

Rating [1–5]:	**4 - Very good**

Qualitative assessment:[1]

FCE has several faculty members with distinguished international positions and awards (e.g. fib, ECCS, SSMGE and ISPRS), which is commendable. International conference organization is present and active but there is room for improvement, namely by attracting major international conferences to Prague. This activity is very positive in terms of recognition by the international research community.

The database on creep is likely to be an important contribution but to may not be receiving sufficient attention from the community. The Civil Engineering Journal is an important achievement as an WoS ESCI journal, but the impact is relatively low, possibly requiring further actions to improve the outreach and value for FCE.

Presence in Editorial Boards of international journals is diverse and very good. It would be beneficial if FCE would be able to have one Editor of a leading international WoS journal in the next evaluation period.

Invited lectures as keynotes in international conferences are present but could be stronger. International review activity is also present.

Recommendations:

International exposure of FCE is very good but may be expanded by e.g. joint PhD students supervised with leading international scholars (and a minimum of 6 month stay in the supervisor institution), cotutelle PhD students supervised with leading international scholars (and a minimum of 12 month stay in the supervisor institution), sabbatical leaves of faculty members in leading research institutions internationally (and a minimum of 6 month stay in such institutions), by further

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

active participation in international technical, scientific, standardization or cooperation actions (such as COST, CEN, ISO and others), joint international training and graduate programmes, and further participation in international research projects.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The selected research projects/activities are impressive with 4(?) EC funded projects, 3 nationally funded projects and 3 contracts. This encompasses a wide scope of topics and typologies, including namely one international coordination on CDW management, one very large multidisciplinary project (1.4 M€) from the Czech Science Foundation with impressive results in terms of placement, follow-up funding and an integrative new group, one innovation / demonstration / award-winning project on Autonomous Robotic Construction System and impressive cooperation with national authorities in cultural heritage, radioactive waste, and transportation infrastructure.

Funding level is excellent with large oscillations yearly as beneficiary for public funds, relatively constant in the period of evaluation as another participant and some oscillation in terms of contracted research. The global number of projects is impressive.

Recommendations:

The effort on attracting funding should be maintained. The level of international competitive funding has room to increase, being seemingly only about 15%. It is also essential that the high level of funding results in awarded PhD degrees and high-level publications.

From the reporting point of view, it would be beneficial that small projects (e.g. less than 50 k€ for public funding and 25 k€ for contracted research) would not be reported and would be lumped in other category with total amount of small projects. FCE may also reflect whether very small contracts or contracts with lower technological development are part of its effort or represent a dispersion for the academic members.

Finally, given the size, wide scope and, seemingly, relative performance of different departments and people, FCE may reflect on a strategy to have more performing groups nurturing less performing groups and / or define a strategy to hire new leading early career or established professors.

3.4 Research results with existing or prospective impact on society

Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

It is interesting that FCE is hardly linking Section 3.4 with 3.3, which is recommended in the original form. Still, it is possible that strongest research projects do not necessarily have the highest impact in society, be it in the shorter or in the longer term.

Clearly, the fields of cultural heritage and steel structures were selected as the most impactful in society. For cultural heritage, the results address the historical landscape around the Vltava River, the Czech historical atlas, 20th century architecture, industrial heritage bridge structures and Stone Prague. These are all much relevant contributions. Cultural heritage is a field fundamental Europe, considering, among many other aspects, the identitarian and economical relevance. Still, only the Czech historical atlas has reached a level of outstanding nature, due to its maturity and uniqueness.

For steel structures, a bridge design guide for weathering steel, issued by ECCS, and a book on benchmarking results for the component method for steel connections, issued by CTU Publishing House, are presented. These are also valuable contributions.

OOFEM is a major endeavour, certainly complex to maintain and operate. It seems less known than competing tools and the latest release is not much recent. The methodology for protecting soil from erosion is certainly relevant but its impact is not much evident. The data standard for BIM in transport infrastructure is part of the, possibly, most topical field in the building sector today, and its relevance is clearly demonstrated.

Recommendations:

Is FCE actively involved in organizations such as ICOMOS or DOCOMOMO? This is not clearly evident from the documents. Can the relevance of its work—reflected in contracts and societal impact—also be demonstrated through scientific publications, exhibitions, seminars, training activities, and similar outputs? In this context, closer collaboration between FCE and the Faculty of Architecture (FA) is highly recommended, particularly on topics such as architectural history and heritage. Both faculties inherently share these subject areas and offer complementary expertise, which could significantly strengthen their joint project portfolios.

Books published internationally by leading publishers would be more impactful. Is there a multiyear strategy to have some educational or technical books edited? Niche areas of knowledge are still in much need of this type of publications.

In general, it would be valuable that a stronger link between research excellence and impact in society could be demonstrated. This interaction may help in guiding research, attracting top students and ensuring to close the loop between pedagogical and scientific activities.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The funding from gifts (mostly student oriented) is low, still considered above average. The funding from licensing is very low, still considered above average. The activity from accredited laboratory testing and expert assessment is much relevant in terms of funding and response to a societal demand. Even if not stated in the report, as stated in the presentation there is close cooperation with UCEEB and Klokner Institute, where transfer of results into practice and industry are stronger.	
Recommendations: Transferring results into practice is a complex topic in civil engineering, often regarded as a traditional (weakly innovative and digitized, and lower productivity) and overregulated industrial sector. Still, the sector has changed greatly in the last decades. It is also usual that creating value from patenting is complex in similar conditions. It would be desirable that the largest and most impactful research projects are linked to some transfer to practice. The activity from accredited laboratory testing and expert assessment should keep the level but may be a double-edged sword, on the positive side it provides a relevant continuous flow of income, on the other side it may divert FCE from its core mission of research (and education). It would be desirable to ensure that the knowledge, namely in terms of forensics and court expertise focus on very large and complex problems, not in recurring less challenging work, which should be performed by private consultants. It is essential to ensure that lab accreditation requirements and work does not negatively affect research and educational activities. Ideally, the creation of spin-offs from faculty members or students should be targeted.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: This is an area where the activity of FCE is outstanding, with a demonstration of continuous care. The Hall of the Year and the National Construction Centre are particularly noteworthy as demonstrated in the YouTube channels and websites.	

The engagement with secondary schools is essential to ensure a regular flow of students (and here the trend for BSc level is excellent), either in their facilities and in FCE facilities (e.g. related to the Water Management Experimental Centre, Josef Underground Laboratory and upcoming Robotics Lab). The engagement with active ageing programs as an increasing part of the University mission and societal requirements.
Recommendations: Keep on the successful work and the multiple activities, several initiated many years ago. The impact on media (TV and newspapers) may, seemingly, be increased.

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: FCE has responded carefully to the recommendations of the previous evaluation, particularly with respect to EU funding (in terms of number of projects, funding amount and coordination role), with an impressive growth. The initiatives to address this recommendation were valuable and their partial adoption at CTU level are notable. The recommendation regarding a clearer research profile and foci, and closer links to the respective industry, was, seemingly, addressed in a very general way. Regarding licensing and spin-offs no major changes were observed, even if a technology transfer unit was implemented at CTU. It is recognized that this is complex and difficult to address, in comparable conditions. International networking, duration of PhD studies and project administration has been addressed positively. As for the future, the momentum regarding international funding must be continued. Regarding a clearer research profile, it is recognised that this is difficult to achieve with existing human resources, but a stronger effort is recommended to address the recommendation on e.g. defining research topics of excellence and a related strategic plan, reducing departmental structure, defining informal groups / clusters with a common research goal and sufficient critical mass, and hiring international competitive professors addressing the research vision. Ideally, spin-offs and the revenues from non-public sources, excluding lab testing and expert assessment, should be increased. Regarding PhD duration, measures must also be implemented to address PhD dropout (this may be partly solved by the new salaries approved by the government). Without compromising quality, a target duration of 4 years and a dropout ratio of 10% within the 6-year maximum period should be targeted.	
Recommendations: None.	

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**4 - Very good**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

The Faculty of Civil Engineering (FCE) demonstrates strong international engagement through its faculty's participation in prestigious organizations (e.g., fib, ECCS, SSMGE, ISPRS) and its involvement in editorial boards of international journals. While keynote lectures and peer review activities are present, there is room for stronger presence at international conferences—particularly by hosting major events in Prague and aiming for editorial leadership in top WoS journals.

The Civil Engineering Journal, indexed in WoS ESCI, is a noteworthy institutional achievement, though its limited impact suggests a need for improved outreach. The creep database holds valuable potential, though it may be underrecognized by the research community.

FCE has an impressive research portfolio, including multiple EU-funded projects, national projects, and contractual projects. These span diverse areas such as circular demolition waste (CDW) management, a large multidisciplinary Czech Science Foundation project (€1.4M), award-winning robotic construction systems, and collaborations with public authorities in cultural heritage, waste management, and infrastructure. The level of research funding is excellent, albeit variable annually. However, stronger integration between the description of research projects (section 3.3) and their societal impact (section 3.4) is recommended.

The fields of cultural heritage and steel structures were identified as having the highest societal impact. In cultural heritage, significant outputs include research on the Vltava River's historical landscape, the Czech historical atlas (noted for its maturity and uniqueness), and studies on 20th-century architecture and industrial heritage. In steel structures, FCE contributed a design guide on weathering steel (via ECCS) and a benchmarking publication on steel connections.

Technical tools and innovations such as OOFEM, erosion protection methods, and BIM data standards for transport infrastructure are relevant contributions, though their visibility or impact varies. OOFEM, while significant, appears less known than competitor software. The BIM standard, however, stands out as a timely and highly relevant innovation.

Non-traditional funding sources such as donations and licensing remain low but still above average. Accredited laboratory testing and expert assessments represent a significant source of funding and

societal engagement. FCE collaborates closely with UCEEB and the Klokner Institute, strengthening applied research and technology transfer.

FCE's societal outreach is particularly strong. Initiatives such as the Hall of the Year and the National Construction Centre (publicized via YouTube and websites) reflect ongoing community engagement. Partnerships with secondary schools and support for active ageing align with broader university missions and societal needs. The increasing number of BSc-level students signals the success of such outreach.

FCE has actively responded to prior evaluation recommendations, particularly in securing EU funding and enhancing project coordination. Progress has been made in international networking, PhD program structure, and administrative support. However, responses to recommendations on research profiling, industry links, and commercialization (e.g., spin-offs and licensing) remain limited despite the establishment of a CTU technology transfer unit.

Overall, FCE exhibits outstanding research and societal engagement, with some areas showing potential for further strategic development and visibility enhancement. In the grading for the current evaluation period were duly considered the grade of the previous evaluation and the improvements made in several aspects. Room for improvement remains present.

Summary recommendations:

FCE demonstrates strong international exposure, which could be further enhanced through joint and cotutelle PhD programs with leading global scholars, faculty sabbaticals at top research institutions, and increased participation in international networks and standardization bodies (e.g., COST, CEN, ISO). Expanding joint international training and research programs would also contribute to deeper global integration.

While FCE's efforts in securing funding are commendable, the share of international competitive funding remains relatively low (approx. 15%) and should be increased. Importantly, high levels of funding should result in tangible academic outcomes, such as completed PhDs and high-quality publications. Reporting practices could be improved by aggregating small-scale projects, allowing focus on more impactful initiatives. FCE should also assess whether small, low-tech contracts align with academic priorities or contribute to strategic dilution.

Given the size and variability in departmental performance, FCE might consider strategies for high-performing groups to support others and recruit new leading academics to strengthen its research profile. Clearer engagement in organizations like ICOMOS or DOCOMOMO is recommended, as is closer collaboration with the Faculty of Architecture on heritage-related topics. Publishing educational or technical books with major international publishers, especially in niche fields, would boost academic visibility.

Stronger alignment between research excellence and societal impact is encouraged, helping to attract students and integrate scientific and teaching missions. Translating research into practice remains challenging in the civil engineering sector, but efforts should be made to link impactful projects with real-world application. While accredited lab testing and expert assessments generate steady income, care must be taken that they do not divert focus from research and education. Forensic and expert work should be limited to complex, high-value cases.

FCE is encouraged to support spin-off creation and increase non-public revenues outside of testing services. Continued momentum in international funding is vital. Defining strategic research priorities, forming interdisciplinary research clusters, reducing structural fragmentation, and hiring internationally competitive faculty are key steps forward. Finally, improving PhD outcomes by reducing dropout rates and targeting a 4-year completion time—supported by recent salary increases—should remain a priority.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Mechanical Engineering

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: The Faculty of Mechanical Engineering at the Czech Technical University in Prague is one of the oldest, most important, and most performing units of the university. It has clearly formulated mission and vision that drives the work at the FME. The Faculty demonstrates that it completely fulfils its mission and vision. It has created excellent infrastructure and ecosystem for R&D&I. The FME is organized into 17 departments that includes 216 academics (full, associate, and assistant professors), 309 Ph.D. students, 494 Master's students, and 955 undergraduate students. It offers the main Mechanical Engineering bachelor program with 16 focus concentrations, 13 Master's study programs, and 5 Ph.D. programs both in Czech and English. Through its research and teaching programs the FME makes significant contributions to the Czech society and economy, and also worldwide.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**4 - Very good**
Qualitative assessment:[1] The Faculty generally has an excellent worldwide reputation. This is evidenced by numerous, prestigious awards, membership on editorial boards of top-tier journals. Staff members of the Faculty were also invited and gave various lectures and seminars worldwide. The Faculty also hosted a number of recognized international scientists from all over the world.	
Recommendations: The performance is very good in general. It can perhaps be recommended that the Faculty takes an initiative in encouraging faculty members, particularly younger ones, to pursue membership on editorial boards of international journals of their areas of research, and participate in organizing	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

international conferences. It is also recommended to establish an international seminars series in which the Faculty would invite leading international researchers every month. It may also be useful to establish a distinguished scholar award given by the Faculty to well-known scholars to visit CTU for two-three weeks to give a seminar and establish closer links with CTU faculty members. International visibility also depends on publication output. It is recommended to make every to maintain the journal publication record in top-tier journals at a high level.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The Faculty remains very active and continues to have a large number of excellent, cutting edge research projects, both publicly funded and contract research. The potential for practical applications is excellent. Many of the projects represent a high degree of interdisciplinarity and collaboration with other units. The contract research is really strong with an extensive list of research projects with many Czech companies and also international ones. This also demonstrates the high level of practical applicability of the research carried out at the Faculty of Mechanical Engineering.

Recommendations:

The performance is excellent. The quantity, quality and range of research projects is very impressive. The FME should keep up this work. One recommendation can be to possibly further increase the number of internationally funded projects. It is also recommended to increase the number of interdisciplinary projects and publications with other units such as biomedical engineering. An excellent and laudable example of such interdisciplinary efforts is the Solar Air Water Earth Resource (S.A.W.E.R) system developed in collaboration between the FME and other units at CTU. It is recommended to follow this example, carry out similar projects that will give professors from different units the opportunity to interact, share ideas, and produce results together.

3.4 Research results with existing or prospective impact on society

Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The Faculty shows outstanding results in this field. The list and breadth of projects with existing and prospective impact on society is very impressive and outstanding. Some projects also led to results and intellectual property protected by EU and US patents. A broad range of results represent a strong emphasis on production system optimization, control, and manufacturing. These areas have had significant impact on society and also hold great potential of prospective impact for the coming years. A large part of the research results are related to aerospace applications. These are very innovative and impactful and already has demonstrated impact on society. These play a central role of establishing the Czech Republic as a significant contributor to the aerospace sector.

Several market-specific innovative solutions also emerged from the research results. A novel chimney system already resulted in considerable market success and it is highly profitable. The innovative heat recovery ventilation unit can have significant impact on new solutions for the ventilation of indoor inhabited spaces.

Recommendations:

Performance is very impressive in general. Further expansion may be possible by exploring the applicability of fundamental research results in different application areas. For example, the modular software platform mentioned is primarily intended for process control of heating and melting furnaces and rolling. But, it includes some general elements that may also find use in certain robotics applications as well.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice

Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The Faculty demonstrates excellent performance in transferring results into practice. The FME is actively taking initiative and leadership in technology and intellectual property transfer into practice. Technology transfer activities are well-planned and organized. The composition of the users and the way of commercialization of the R&D&I results are completely aligned with the nature of the results and the mission and vision of the FME. The unit directly interacts with and transfers results to leading Czech and international industrial partners.

The FME has an outstanding record of obtaining funds from non-public, non-grant sources. The transfer of results has demonstrated, significant commercial applications worldwide. It is very laudable that income derived from technology transfer is also used to support research activities of students.

Recommendations:

Overall, the Faculty has excellent performance in transferring the research results into practice. It can be recommended to maintain this level, and further intensify with possibly exploring the possibilities for more international patents. In the past 10 years, the leadership of the Faculty made very significant efforts to develop and maintain a world class academic unit. It is recommended to follow the directions set by these activities and policies for the coming years.

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The FME remains very active, efficient and successful in popularizing and promoting its R&D&I work to the public. The Faculty is making and excellent effort using all possible ways to popularize its research and communicate with the public. It is present everywhere in TV programs, Youtube channels, popularizing magazines, science fairs, museum events, etc. A range of these outreach activities are aimed at primary and secondary school students, which is excellent. It is notable that regular seminars are organized for secondary school teachers to keep them up to date on scientific progress and developments so that they can also keep their teaching at state of the art levels to different age groups.	
Recommendations: Continue to keep up the excellent work.	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The recommendations from the previous evaluation were completely considered and implemented.	
Recommendations: None.	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**

3.2 Recognition by the research community	**4 - Very good**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**5 - Outstanding**
3.5 Transfer of results into practice	**5 - Outstanding**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

The Faculty of Mechanical Engineering continues to show excellent performance in all categories. It took into consideration of the recommendations from the previous evaluation cycle and implemented the necessary elements. The research projects, results, the transfer of research results into practice, the outreach and popularization activities are all outstanding and very impressive.

Summary recommendations:

These are summarized above for each point. For most points, it is recommended to keep up the high level of work that exists now. It is recommended to increase the international networking activities to further increase the international visibility of FME faculty members and their research activities. One element for this can be the regular invitation of renowned scholars from abroad to give seminars and form closer ties with CTU FME.

The Faculty has outstanding records in research projects and contract research. It made significant steps to broaden the range of projects funded internationally. It can be recommended to maintain this and make efforts to further expand the number of such projects.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Electrical Engineering

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: Mission and vision clear, training is accredited and performed with optimum performance, research & technological development is getting support from several sources, including industrial grants, National and European projects and technology transfer actions. However, there is still the possibility of advancing performance and become a leader in European technological institutes by means of: 1. Expanding collaboration of mutual interest regarding new opportunities with other Faculties at CTU 2. Applying for ambitious projects in Horizon, EIC, ERC etc. and trying to enhance and establish collaboration with important industries in all over the world 3. Enhancing the human resources and infrastructure in critical fields, as well as trying to publish in D1 and Q1 journals

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**4 - Very good**
Qualitative assessment:[1] The recognition of FEL by the research community is already high by means of: • Relatively high number of hetero-citations of the Staff members • Invitation of staff members in important conferences and meetings • Recognition of the research results in various areas worldwide	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

However, international recognition can further be improved by means of attracting full time or part time engineers and scientists from abroad, EU and other countries, with excellent CV and/or research and development ideas. Such attraction can be based on:

- The collaborative environment of the Faculty
- The existence of important enterprises at the vicinity of the Faculty and Prague
- The ability to independently run projects with industry and Academia

Recommendations:

Keep working like now. However, international recognition can be improved indeed. It can be achieved by:

- Publishing in D1 and Q1 journals and organize a proper research dissemination network

This is an important challenge that must be an every day policy at FEL, since the quality of the published papers do deserve high ranking papers

- Attracting new staff members of high H-index and relations with industry, society, etc.

As above mentioned new staff members from EU and other countries can be obtained, because of the large amount of companies at the vicinity of Prague that need technology transfer

- Enhancing the dissemination effort of successful projects

Participation of key-important conferences, where the good work will be disseminated properly. Apart from that, the organization of local small conferences with the experts in the field, will allow the scientific community to understand the validity of the work done at FEL.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

FEL has a variety of European and National projects, as well as direct contracts with industry. These results are important. We can give two distinct examples. The first example is related to the autonomous vehicles presented in demo during evaluation of the Faculty, illustrating ability of operation in different conditions. The second example is related to the development of fluxgate magnetometers that are able to achieve sensitivity as low as 1 $pTHz^{-1/2}$, thus being able to properly operate in biomedical applications.

However, European projects and direct contracts with industry are not so many. The Faculty should also focus on this issue by means of preparing successful proposals for Horizon, EIC, ERC etc. This way, the budget of the Faculty will substantially increase.

Recommendations:

FEL is capable of:

- Successfully applying in Horizon, EIC and ERC Calls
- Organizing direct collaboration with industry concerning new products & services
- Performing services to the industry (tests etc.) under the ISO 17025

These two previously mentioned examples offer a good basis for such a discussion: the drones can be used in significant dual applications, while their technology can serve for the development of drones with several applications. The use of the magnetometers developed at FEL may also serve for several applications, including biomedical engineering, underwater investigations and civil applications like road traffic monitoring etc.

These projects, as well as several others, may well be the basis for Horizon proposals, thus enhancing the budget, visibility and impact of FEL. Such a work may also be significant for dissemination, exploitation and life cycle analysis reasons, connected with other Faculties of CTU.

3.4 Research results with existing or prospective impact on society

Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

FEL has already transferred research results to the industry and the Society. Some examples are again the new types of autonomous vehicles, as well as new types of sensors and actuators, including new technology platforms based on artificial intelligence and machine learning. The nature of current actions of FEL aids for this scope. For example, the dissemination of orthogonal fluxgates to biomedical applications, allowed for contracting with a major US-based pharmaceutical company for corresponding fluxgate applications with a sensitivity of 1 pT/sqrtHz.

However, there are several other aspects allowing for further advances in this aspect that can be achieved in many different fields of applications, concerning public services and municipalities, as well as industry and services.

Recommendations:

FEL can enhance collaboration with society, based on existing outcomes of research projects, aiding improvement of goods and services:

- National public authorities in all fields of the Faculty

Interesting examples are the implementation and use of sensors and measuring instruments in Observatories, the use of autonomous vehicles in town & road monitoring etc.

- Industrial entities within Czech Republic and abroad

The large amount of industries, like automobile industries is an important field of applications. Although FEL is already somehow facilitating the collaboration with the local industry, there is still a vast amount of collaboration that can be expanded, including European projects

- NGOs around the World

Serveral of the research results of FEL can also be implemented in international NGO activities like UNESCO, UN etc.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: FEL has already transferred results into practice by means of performing technology transfer for a number of industries. Distinguished examples are robots and sensors. The examples presented above are some of those. Other examples refer to applications of artificial intelligence, automated systems, sub-systems for the automobile industry etc. However, things can be improved, by means of exploiting all possible research outcomes, achieved by now. It is of course up to the experience of the FEL Staff to prioritise their research outcomes, but there are certain examples for that, given in Section 3.4.	
Recommendations: FEL can actually improve the technology transfer to several sectors in Czech Republic and the World: • Public services Public services like Ministries, the Army, Observatories, Hospitals etc. can be the public entities that can initially host the results outcomes of the research realized at FEL • Industries Several FEL research outcomes, already demonstrated to the evaluation panelists can be transferred to the industry. For example, sensors and autonomous vehicles can be the basis for the technology transfer in automobile industry. Several other applications also exist • Important international organizations Several international research organizations can be benefited from the research outcomes at FEL. Possible examples are the large research facilities at CERN and ITER.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment:	

FEL has already publicized its activities in training, research and services. The visits of schools at FEL, the dissemination of the research outcomes in public and the means of public dissemination, like videos etc. is already a reality at FEL. However, this “popularization” can be improved.
Recommendations: Methods of improving “popularization” can be: • Videos illustrating new products developed at FEL These videos can explain in simple words the socially useful applications of the research outcomes at FEL. They can also serve as communication tools with possible end users of these results • Life-long learning (LLL) in all aspects of FEL LLL is important in many aspects, starting from public services and industry with seminars on the new state of the art in different engineering sectors, continuing till LLL in the agricultural sector targeting the optimization of productivity and quality of agricultural products. • Open days to attract selected pupils from the high schools in Prague and not only Open days, like the Researchers Night, must be emphatically used in order to attract the most genious minds of Prague and Czechia at FEL.

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: FEL has addressed the comments of the previous evaluation, as good as possible. However, advancing the already very good status can be enhanced by the comments presented in the previous 5 judgements.	
None.	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**4 - Very good**

3.3 Research projects	**4 - Very good**
3.4 Research results with existing or prospective impact on society	**5 - Outstanding**
3.5 Transfer of results into practice	**5 - Outstanding**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

FEL is doing very well in all aspects of its activities. It is an example for the rest of Faculties.

However, “Better is the enemy of Good”. The main recommendations have been given before and are also summarized below.

Summary recommendations:

The most important recommendations, following the previous sections are:

- Energize the existing staff for Horizon projects, to publish in D1 and Q1 journals, and to organize a proper research dissemination network
- Attracting new staff members of high H-index and relations with industry, society, etc., from EU and the rest of the world.
- Organizing the optimum dissemination of successful projects
- Successfully applying in Horizon, EIC and ERC Calls
- Organizing direct collaboration with industry concerning new products & services
- Performing services to the industry (tests etc.) under the ISO 17025
- Collaboration with national public authorities in all fields of the Faculty
- Collaboration with industrial entities within Czech Republic and abroad
- Collaboration with NGOs around the World
- Life-long learning (LLL) in all aspects of FEL

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Nuclear Sciences and Physical Engineering

FORD: 1 - Natural sciences

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.

Commentary:

The Faculty of Nuclear Sciences and Physical Engineering is one out of eight faculties at CTU and was founded in 1955 to educate nuclear engineers in Czech Republic (former Czechoslovakia). Its mission is to foster and to contribute to the development of nuclear sciences, and to maintain this specific knowledge in the country. Although expanding since then their fields of activities to neighbouring areas of sciences and education, nuclear sciences is still a core expertise in the faculty. Nowadays, the mission of FNSE is to educate highly skilled professionals from Bachelor to PhD level, having an international competitive background in mathematics, physics and computer science. Therefore, FNSPE performs research and development as well as innovation in areas, such as the energy sector, quantum technologies, radiological physics and environmental monitoring. The faculty hosts 1300 students (of whom 200 graduate per year; about 34% female students), 200 academic staff members, and 250 research/technical staff members. For teaching and R&D activities, core facilities such as nuclear fission reactors (VR-1 and VR-2), the fusion reactor "GOLEM", a plasma lab and a fractographic lab, are available, just to highlight the outstanding ones. The publication output has substantially increased over the last 5 years, as well as the citation rate, indicating the high scientific performance of FNSPE. Even more, faculty members win regularly prizes and awards.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community

Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:[1]

The faculty is not only active in the field of fundamental, but also applied research, thus providing overall high international visibility. The range of R&D activities is quite large, spanning from novel mathematical algorithms, new physical methods of measurements, control and modelling to the development of new technologies for e.g. semiconductor lasers. The faculty collaborates with many

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

internationally renowned research organizations, such as CERN, Fermilab, or ITER, demonstrating their excellent integration into the worldwide research community. Furthermore, faculty members serve in various functions in international conferences, panels and committees. Scientific dissemination is performed through publications in high-level journals or prestigious conferences in the field, including invited talks. Finally, faculty members win prizes and awards, highlighting their excellent work.

Recommendations:

Despite the high level already achieved, the panel recommends to the faculty to strengthen their effort to increase their international visibility and recognition especially in the new R&D fields that emerged within the last years at FNSPE. One prominent field is related to quantum science and technology. Already five years ago, the faculty was recognized as among the leaders in this area. With a clear focus on some selected areas in this latter field, this approach will help to stimulate new funding opportunities, the transfer of results into practice, where a high demand is expected in the near future (see also item 3.5 and the summary recommendation), and as a further consequence, to attract more excellent (also foreign) students to the faculty, thus leveraging the impact on key performance indicators.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The faculty is embedded in a huge number of research projects, whereas large activities standout, such as the Center of Applied Sciences, the use of the VR-1 training reactor for research purposes, the collaboration with CERN, the participation in the Brookhaven National Laboratory. But, besides these highlighted activities, many (collaborative) projects are performed at FNSPE, supported by international (e.g. ESA, H2020) and national funding agencies as well as by direct cooperation with industrial partners (e.g. Skoda). Due to the competence and expertise of the members as well as due to their specific infrastructure and equipment the faculty attracts a high number of research grants.

Recommendations:

Overall, the capability of the faculty to attract research grants is regarded as excellent. However, the panel recommends focusing even more on high level grants, ideally on international level, to leverage the scientific output above the current level. Specifically, less attention should be paid to getting projects that focus predominantly on engineering tasks, especially when in addition these projects offer only a very limited budget size. In general, as most of the funding originates from national institutions, the panel wants to encourage FNSPE to apply for more European funded projects, based on their excellent network in the scientific community.

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: Overall, the faculty performs a lot of activities that have the potential to result in a sustainable and long-term impact on society, especially in the field of nuclear sciences. The list in the self-evaluation report appears to be of a very good level and represents relevant and timely activities.	
Recommendations: Without any doubt, the listed activities are within the core competence field of FNSPE. The faculty contribution is essential for reaching these ambitious goals and later on, for their successful implementation, with a potential impact on society in e.g. the energy sector. For the panel, however, it is challenging to estimate this potential impact given the information provided. Furthermore, the list comprises predominantly activities from the nuclear science field. The panel recommends to increase the effort in emerging fields at the faculty, such as quantum science and technology.	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The faculty is active in transferring research results from fundamental, as well as applied projects into practical and in further consequence, commercial use. This effort is demonstrated by patent applications support by CTUs Technology Transfer Office, or by direct cooperation with industrial partners.	
Recommendations: Due to their mission for high-level scientific research, the overall transfer rate of results into industrial applications is regarded as moderate. The panel encourages the faculty to increase their efforts to protect their IP by patents and to stimulate the initiation of spin-offs. The panel, however, admits that this challenge needs to be supported by central units, such as the Technology Transfer Office, as the FSNPE alone will not manage to achieve this endeavour.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The faculty is continuously active in dissemination, popularization as well as communication with the public. The self-evaluation report lists a huge number of different public colloquia, lectures and open days, which FNSPE is organizing.	
Recommendations: The panel regards these activities exemplary and well balanced between the different types of activities (colloquia/lectures vs. open day activities and community outreach).	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The panel acknowledges that the faculty has accepted most of the recommendations from the last evaluation report. As an example, the publication output in high level journals was substantially increased. Overall, the panel recognizes that key output parameters are increasing continuously indicating the excellent performance of the faculty.	
Recommendations: None.	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**5 - Outstanding**
3.3 Research projects	**5 - Outstanding**

3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

This summary assessment is very similar to the one from the 2020 report. Overall, the faculty is active in a number of areas in fundamental and applied research, and innovation, spanning from established fields such as nuclear science, via mathematics to quantum science and technology, and performing well in all aspects that were evaluated. The panel acknowledges the excellent performance of the faculty with a clear mission statement on research and teaching. The work of the faculty leads to considerable benefits to society.Even more, educating generations of nuclear engineers certainly secures the long-term stability of the energy sector in the Czech Republic. On the fundamental side, high-level, long-term, and very successful collaboration with CERN and Brookhaven National Laboratory speaks for itself. Already five years ago, the faculty performes outstanding research in the area of Quantum Technology, especially in the area of quantum networks. In the current evaluation period, it has further strengthend its lead in these areas. The faculty appears to be among the strongest ones at CTU and is certainly on the right track. This is demonstrated by a publication output that was already in the last evaluation on a high level, but was increased continuously over the last years.

Summary recommendations:

Although having reached this high-level performance, the panel, however, recommends more effort in attracting high level, international grants such as ERC, and by that, more excellent students. Furthermore, the protection of IP by patents is regarded as important even for a fundamental research unit such as FNSPE, which might lead to enhanced spin-off activities out of the faculty in the next years.

Overall, we recommend keeping up the good work. The only area where significant improvement is needed concerns item 3.5: Transfer of results into practice. In this area the performance is uneven, stronger in the nuclear engineering area and weaker in the fundamental areas. The increase of patents and securing high-profile, internationally competitive grants is a desirable and achievable goal for the near-term future.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Architecture

FORD: 6 - Humanities and the arts

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.

Commentary:

The Faculty of Architecture (FA) at the Czech Technical University (CTU) in Prague is the oldest and most prestigious architecture school in the Czech Republic. It is unique in its integration of three disciplines: architecture and urban planning, landscape architecture, and design. With almost 40% of all Czech architects and landscape architects graduating from the faculty, it plays a vital role in shaping the country's architectural education and professional practice.

The FA offers a studio-based learning approach in which students work closely with Czech and international architects, theorists, and designers. A hallmark of the faculty is its guest/visiting professor studio, which has hosted renowned international figures such as the Dutch architect Winy Maas and the Vienna-based team querkraft. Renowned representatives of landscape architecture include Till Rehwaldt and Valerio Morabito. In addition, a studio for young architects promotes innovation and supports young talent. The success of this model is reflected in the awards won by the faculty and the achievements of students in national and international competitions.

The FA supports a community of over 1,500 students and 180 staff and promotes an inclusive and respectful environment. Structures such as the ombudsman, the equality commission, and support services for students with special needs promote fairness and diversity. It is noteworthy that two-thirds of the students are women and that the faculty actively supports the academic advancement of women. From 2019 to 2023, the total number of students rose from 1,892 to 2,225 (+18%), while the number of full-time teaching staff increased only moderately. The increase in English-language programs—from 4 to 5 by 2023—signals a growing international focus, particularly in master's and doctoral programs, which is very significant.

The FA has an outstanding international reputation and ranks first in the Czech Republic in the QS World University Ranking in the fields of architecture and built environment. It maintains its global engagement through student mobility, double degree programs, and memberships in associations such as EAAE, AESOP, and DOCOMOMO. Since 2020, it has also been a partner in the EuroTeQ Engineering University project, which promotes international academic cooperation.

Overall, the FA is one of the most attractive and successful academic units at CTU, offering an excellent study and working environment, study programs, research activities, strong international profile, robust links to professional practice and society, and vigorous leadership.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:[1]

The FA is a national leader in the fields of architecture, design, and landscape architecture, which is largely confirmed by the data. Renowned awards (Table 3.2.1), participation in editorial boards (3.2.2), and guest lectures at leading institutions worldwide (3.2.3) underscore the faculty's strong academic and professional presence, as well as ambitious international positioning. The combination of research, design, and public engagement, including collaboration with local authorities and industry, underscores the FA's dynamic contribution to this field.

A key strength lies in the integration of theory and practice, particularly through the work of practicing architects, whose design and construction projects and applied results enhance the FA's national and international visibility. However, these successes are concentrated among a few experienced individuals, pointing to a potential risk of dependency and the need for broader institutional development.

Although international engagement is clearly active, it remains largely individual and not fully embedded in program structures, joint research, or curriculum development. The listed results and activities also lack prominent global themes such as sustainability, digital transformation, and social justice.

Overall, the FA has achieved outstanding results and recognition, but faces the challenge of transitioning from an individually driven success to a more institutionalized, inclusive, and strategically internationalized model. Ensuring generational change, structural integration, and thematic innovation will be crucial to maintaining and expanding its leading position.

Recommendations:

In order to remain attractive in the long term, the FA should expand academic recognition beyond a small circle of senior staff. Mentoring and support programs should help younger academics gain visibility through publications, competitions, and international networks.

The FA should also move more explicitly to structural internationalization and to build long-term partnerships through joint degrees, research collaborations, and joint academic activities. These should be supported by formal coordination functions and institutional support and with the necessary resources.

At the same time, the FA would benefit from greater engagement with global challenges such as sustainability, digital innovation, and social change. These topics should be reflected in both research and teaching in order to align them with important funding programs and the interests of students.

Interdisciplinary collaboration between the FA departments should be strengthened to stimulate innovation, for example by linking cultural heritage and technology or design and ecology. Internal research clusters and interdisciplinary studios can drive this integration forward. Synergies with

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

other CTU faculties should also be sought, where it is meaningful - with the support of the university management - in research and teaching.

To ensure continuity, FA must eliminate generational and gender imbalances by investing in the recruitment and professional development of young talent. An inclusive development policy will help retain talent and diversify research outcomes.

Finally, international lectures and guest events should be used strategically—not just as one-off events, but as a starting point for ongoing collaboration, including joint supervision, mobility, and publications. By strengthening its solid foundation with these structural measures, the FA can develop into a more resilient, inclusive, and globally positioned faculty.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

The FA is actively attracting research grants in some of their departments. Many of the activities are at the interface between research and design, accordingly with very high application potential of the project. The international component and the interdisciplinary integration are excellent, as expressed in the strong ties in the international representation of academic staff at the faculty. Faculty members are well recognized internationally by collecting prestigious awards and by taking roles in organizations and editorial boards. Collaborations in CTU seem to be established mostly with the Klokner institute.

The project funding in total (average per year) sums up to 550 k€ from public funding and 50 k€ service contracts. For about 30 Professors and Associate Professors (under the age of 70), the research funding per professor is, thus, relatively low, which means that apparently not all professors contribute to research funding acquisition.

Recommendations:

Strengthening of professors, particularly young professors who do not yet receive research grants. Track and balance teaching load and research output.

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: Various projects illustrate the very high impact of the FA on society. Certified design methodology supports public administration entities, designers and architects. The use of the results leads to better planning and decision-making in the field of heritage-site care and urban development at large including all specifics of the built environment. Apart from core-architectural design, interdisciplinary activities such as a sculpture concept were created as result of cooperation between the Faculty of Physics, the Faculty of Engineering and the Faculty of Physics of CTU, for example.	
Recommendations: Help to establish a “built environment platform” at CTU where faculties and institutes involved can meet and discuss future joint activities, particularly large-scale projects. With this kind of concentration point the public can better understand the core mission of CTU meeting global and national needs for the future.	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The FA operates in a domain where knowledge transfer is largely non-commercial and oriented toward long-term cultural and societal impact. Instead of spin-offs or patents, research outcomes are applied through exhibitions, expert surveys, public interventions, and methodological tools, often aimed at municipalities, heritage institutions, or the professional community. Revenue from non-public sources remains relatively modest, which reflects the fact that most outputs are not designed for commercialisation. However, one notable exception is the FA’s strong engagement in design-build projects and collaborations with manufacturers, where students and staff create 1:1 prototypes and explore innovative materials, such as recycled plastics or mycelium. These activities, while not profit-driven, offer valuable real-world testing, innovation, and visibility. The FA’s leading position in the Register of Artistic Outputs underlines its central role in Czech architectural culture. Overall, FA’s strength lies in shaping spatial and societal values through	

practice-based and interdisciplinary research, rather than commercial return—a model well suited to its field.

Recommendations:

To strengthen its impact, the FA should continue to develop and communicate its distinct model of knowledge transfer, which emphasizes societal, spatial, and cultural value over commercial outcomes. A clear framework to capture and present these impacts—target audiences, tools used, and benefits—would support both external communication and internal strategy.

Applied projects, particularly design-build initiatives and material innovation, should be given greater visibility through exhibitions, open databases, and outreach formats. This would help demonstrate their relevance to municipalities, manufacturers, and the public. Given the administrative limits on project-based income, FA could explore new formats for practice-oriented work, such as framework agreements or collaborative studios with public partners. These can enable long-term engagement without compromising the university's legal structure. Collaboration with industry should remain focused on student experience, prototyping, and experimental design, while reinforcing innovation over profitability.

Finally, as mentioned before, the FA is well placed to take a leading role in establishing a "built environment platform" at CTU—a space where relevant faculties and institutes can jointly discuss and coordinate outreach and applied research activities, especially in areas like sustainable construction, public space, and urban planning. Such a platform would enhance interdisciplinary visibility and economic cooperation across the university.

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public

Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

In recent years, the FA has significantly expanded its efforts in the popularisation of research and public communication, with a strong media presence and a growing variety of outreach activities. The FA's website, newsletters, and social media effectively present current research, events, and publications in a format that balances accessibility and academic integrity. Print materials like the Alfa bulletin and the bilingual yearbook reinforce this strong visibility.

Nearly 600 media mentions between 2019–2023—including coverage by Czech Television and Czech Radio—reflect strong public interest in FA's work. Staff are regularly invited to speak in public forums, and projects like Iconic Ruins or Reborn Design have successfully bridged scholarly content and societal relevance.

However, popularisation remains concentrated around a core group of staff and projects, with less systematic involvement of early-career researchers or departments beyond the most visible ones. While the quality is high, public engagement would benefit from a more inclusive and strategic structure that ensures continuity, broader participation, and use of new media formats to reach diverse audiences and be more impactful.

Recommendations: To enhance its public communication, the FA should institutionalize outreach by creating a dedicated role or team to coordinate popularisation across departments and support academic staff in media engagement. The FA should also diversify its target audiences and formats, developing short videos, podcasts, or interactive exhibits to reach broader publics, including youth and civic communities. Public engagement should be more deeply integrated into research projects, with communication plans, public outputs, and training for staff and students encouraged or required in project design and evaluation. To broaden the faculty's public face, more early-career researchers and underrepresented voices should be involved in outreach, helping reflect the full diversity of FA's expertise. Finally, the FA should monitor and evaluate its communication impact, using media tracking and audience feedback to improve strategies and ensure that its outreach remains effective, inclusive, and forward-looking.

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Recommendations: None	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**5 - Outstanding**
3.3 Research projects	**4 - Very good**
3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**4 - Very good**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**

Average rating [1–5]:	4 - Very good
Grade [A–D]:	B

Summary assessment:

The FA is a leader in the Register of Artistic Outputs, a national assessment tool for artistic achievements. It also actively shares its theoretical knowledge with the public and professionals through renowned events such as the November Talks (supported by the Sto Foundation), the Památky (Monuments) lecture series with ICOMOS, and the reVize Typologie conference on current topics in architecture and urban planning.

The strong focus on practical experience is reflected in the 1:1 laboratory, where students implement their designs together with their teachers. These design-build projects frequently win awards, such as the Czech Architecture Awards and the Grand Prix of the Chamber of Architects.

Research is deeply embedded in the structure of the FA and works closely with ministries, authorities, and cities. Specialized institutes include the Research Center for Industrial Heritage, which focuses on industrial sites and urban planning, and the Department of Building Technology, which deals with inclusive design, sustainable living, and accessibility. The Department of Theory and History of Architecture publishes important works and curates exhibitions, including those specifically tailored to visually impaired visitors.

The FA‘s staffing figures for the period 2019 to 2023 show significant progress in promoting gender parity, particularly at the mid-career level. The proportion of women among associate professors has increased significantly (from 22% to 34%), and the ratio of assistant professors remains relatively balanced at around 40%. These results reflect the faculty's strong and commendable commitment to inclusion in recruitment and promotion. However, gender equality remains a challenge at the senior faculty level (a challenge shared by many technical universities and several other architecture faculties in Europe specialized in applied research and practice-based teaching). Only 9% of professorships are held by women, and this figure has little changed in the last five years. Due to the university's pension regulations, it is difficult to estimate when and how changes might occur here. Upcoming retirements could provide important opportunities to improve gender parity and attract new academic leaders—provided that active succession planning and fair recruitment procedures are in place.

The situation among young researchers deserves more concern. The proportion of women has declined sharply, from 40% to 18%, indicating a serious pipeline issue. This group – probably in their late twenties or early thirties – appears to have limited long-term prospects. Without targeted support such as mentoring, bridge financing, and flexible conditions, the faculty runs the risk of losing future talent and undermining its own renewal. This also appears to be a general problem at the CTU.

Other categories show mixed trends. Research and development staff remain predominantly female, but are declining overall. Technical and economic staff remain inclusive and stable; consistent succession planning is required. In contrast, researchers in undefined categories are increasingly male-dominated – a sign of structural exclusion that requires immediate attention.

Gender-specific measures have been effective in parts of the academic hierarchy, but the lack of targeted age-related data and strategies on the part of the university limits the faculty's ability to plan for generational change. Sustainable development requires a broader perspective that integrates gender equality into the strategic renewal of university staff. To maintain its leadership role in inclusive academic development, the faculty should expand its focus beyond gender metrics to include long-term career security, clearer role structures, and age-conscious staffing strategies.

This will ensure that today's progress translates into a diverse, dynamic, and resilient faculty of the future, and will require appropriate resources.

While the ratio of students to teachers has remained relatively stable, the expansion of study formats (especially English-language and LLL programs) combined with high expectations for individual support and international activities means that qualitative pressure is increasing, even if the numerical ratio appears manageable. This requires additional resources and strategic planning.

The growing number of students and the expanded range of programs are placing a strain on human resources and require strategic personnel development in order to maintain academic quality, support capacities, and international competitiveness. The growth in English-language master's and doctoral programs and increased participation in LLL reflect a clear international orientation that is exemplary for CTU and of great importance for the international positioning of FA. However, internationalization also places higher demands on staff: language skills, intercultural competence, global curriculum orientation, and administrative coordination.

Summary recommendations:

Support of younger academics: In order to remain attractive in the long term, the FA should expand academic recognition beyond a small circle of senior staff. Mentoring and support programs should help younger academics gain visibility through publications, competitions, and international networks. To broaden the faculty's public face, more early-career researchers and underrepresented voices should be involved in outreach, helping reflect the full diversity of FA's expertise. To ensure continuity, FA must eliminate generational and gender imbalances by investing in the recruitment and professional development of young talent. An inclusive development policy will help retain talent and diversify research outcomes.

Gender equality: The FA's staffing figures for the period 2019 to 2023 show significant progress in promoting gender parity, particularly at the mid-career level. The proportion of women among associate professors has increased significantly (from 22% to 34%), and the ratio of assistant professors remains relatively balanced at around 40%. These results reflect the faculty's strong and commendable commitment to inclusion in recruitment and promotion. However, gender equality remains a challenge at the senior faculty level (a challenge shared by many technical universities and several other architecture faculties in Europe specialized in applied research and practice-based teaching). Only 9% of professorships are held by women, and this figure has little changed in the last five years. Due to the university's pension regulations, it is difficult to estimate when and how changes might occur here. Upcoming retirements could provide important opportunities to improve gender parity and attract new academic leaders—provided that active succession planning and fair recruitment procedures are in place.

Internationalization: The FA should also move more explicitly to structural internationalization and to build long-term partnerships through joint degrees, research collaborations, and joint academic activities. These should be supported by formal coordination functions and institutional support and with the necessary resources. International lectures and guest events should be used strategically—not just as one-off events, but as a starting point for ongoing collaboration, including joint supervision, mobility, and publications.

Global challenges: At the same time, the FA would benefit from greater engagement with global challenges such as sustainability, digital innovation, and social change. These topics should be reflected in both research and teaching in order to align them with important funding programs and the interests of students.

Interdisciplinarity: Interdisciplinary collaboration between the FA departments should be strengthened to stimulate innovation, for example by linking cultural heritage and technology or design and ecology. Internal research clusters and interdisciplinary studios can drive this integration

forward. Synergies with other CTU faculties should also be sought, where it is meaningful - with the support of the university management - in research and teaching. Establish a “built environment platform” at CTU where faculties and institutes involved can meet and discuss future joint activities, particularly large-scale projects. With this kind of concentration point the public can better understand the core mission of CTU meeting global and national needs for the future.

Outreach: To enhance its public communication, the FA should institutionalize outreach by creating a dedicated role or team to coordinate popularisation across departments and support academic staff in media engagement. The faculty should also diversify its target audiences and formats, developing short videos, podcasts, or interactive exhibits to reach broader publics, including youth and civic communities. Public engagement should be more deeply integrated into research projects, with communication plans, public outputs, and training for staff and students encouraged or required in project design and evaluation. Finally, the FA should monitor and evaluate its communication impact, using media tracking and audience feedback to improve strategies and ensure that its outreach remains effective, inclusive, and forward-looking.

NAME OF EVALUATED UNIT: Faculty of Transportation Sciences

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: The level of scientific projects with emphasis on state-of-the-art technologies at European level is very high and is in a very good accordance and combination with teaching and interdisciplinary activities of the faculties. On the other hand, it is highly to recommend to build up closer contact with medical faculties, in order to develop new ideas for transport mobility of patients, in emergency medicine and accident ambulance. The diversity of present activities of the FTS is predestinated for these goals of mission and vision.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**4 - Very good**
Qualitative assessment:[1] The position of the Faculty of Transportation Sciences, as also indicated under 3.1, in the R&D&I community is high. Also, here by means of interdisciplinary activities, e.g. inside environmental sciences, are new avenues of approach opened in future for international research activities, such as combination of water winning from air (interdisciplinary cooperation inside CTU) and sophisticated transportation mobility methods, or special transportation mobility in countries outside of Europe with difficult accessible roads, also in cooperation with local Universities and students. This would also support the Exchange of scientists and students in this area.	
Recommendations None.	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**4-very good**
Qualitative assessment: The number of research projects is very good and majority of projects are innovative.	
Recommendations: For financing of the Projects as suggested above use sources in medical and environments Range.	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation. (oaf)	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The FTS has built a strong track of of applied, mission-oriented research with a clear social impact. Its portfolio of exemplary important results—including methodologies, software tools, prototypes, and utility models—demonstrates high relevance, regulatory significance, and acceptance in both industry and government. A particular strength is the involvement of application guarantors such as the Ministry of Transport and the Civil Aviation Authority, which ensure that research results are directly translated into legislation and infrastructure. For example, the "*Localization Infrastructure for Tunnels*" methodology has shaped technical frameworks and is expected to be incorporated into future standards, while the "*Air Transport Evaluation Methodology*" is used annually to evaluate national policy. Practical tools such as the "Aircraft Maintenance Planner" and the "FTA/FMEA Tool" illustrate the effective transfer from academic research to operational systems, thereby improving safety and efficiency in aviation. Similarly, the CTU Lions EVO 3.0 electric motorcycle and the Train Expert System underscore the faculty's role in innovation and rail automation. The FTS also contributes to public safety, for example through forensic tools such as the Vehicle Rollover Device and the GNSS Interference Methodology, which combine engineering, sensor systems, and cybersecurity. The STAMP-based Safety Oversight Methodology, which has been adopted by regulatory agencies such as Brazil's ANAC, is an example of its leadership in modernizing safety regulation. Overall, the results demonstrate a mature, scalable approach to applied research with tangible results that are aligned with national priorities and industry needs.	

Recommendations:

To improve the long-term impact and visibility of its applied research, the FTS should pursue a more systematic approach to the use and follow-up of its results. While many results—such as methods, software tools, and prototypes—have already found practical application, their potential can be further expanded through targeted institutional strategies. An important next step is to establish structured processes for implementation and impact monitoring, especially for results that are used in public policy and regulation (e.g., tunnel infrastructure, GNSS interference). These frameworks would ensure continuous relevance and improvement through feedback loops.

The FTS should also strengthen technology transfer and commercialization, especially for tools such as the Aircraft Maintenance Dashboard and the FTA/FMEA tool. Closer cooperation with the CTU's technology transfer office, IP protocols, and pilot projects for commercialization (e.g., licensing or spin-offs) is essential. At the same time, the impact of applied research needs to be better communicated. Although several results are used at the national level, they lack corresponding public visibility. Case studies, digital presentations, or an impact dashboard could improve reach and attract partnerships. Integrating applied results into education and doctoral programs would also enrich student learning and support talent development. Real-world tools used in aviation and mobility can serve as valuable teaching content and research platforms.

To promote innovation, the FTS should expand interdisciplinary collaboration within CTU—particularly with the faculties of informatics, engineering, architecture and urban planning and economics—and strengthen areas such as smart mobility and AI in transportation. Given its role in policy-relevant research, the FTS could further expand its influence on traffic control by joining EU working groups, publishing policy briefs, or organizing workshops on regulatory issues. Finally, the introduction of open or semi-open access models—such as simplified versions of certified methods or open-source tools—could promote broader acceptance and international cooperation. By combining commercialization, communication, education, and political engagement, the FTS can significantly expand the societal reach and strategic value of its applied research.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice

Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.

Rating [1–5]:	**3 - Average**

Qualitative assessment:

The FTS demonstrates efficiency in translating research results into practice, particularly through applied projects carried out in collaboration with partners from industry and public institutions. The research results are generally tailored to the specific challenges faced by cities, regions, and public authorities, particularly in the areas of transportation planning and infrastructure development. This close cooperation ensures that the results are directly implemented in practice and reflects the FTS's strong alignment with its social mission.

The composition of the user groups is fully in line with the nature of the research results and underlines the FTS's practical orientation. Although income from non-public, non-grant sources

during the evaluation period came mainly from contract research, it demonstrates the continuing demand for the faculty's expertise and its relevance to external stakeholders.

Recommendations:

The current structure of research funding—primarily through public grants—combined with contractual constraints on many project results, poses significant challenges for broader commercialization and limits the potential to generate licensing income or spin-off ventures. The fact that commercialization activities have been minimal to date – as evidenced by the sale of a single software license – underscores the need for further developments in this area. To improve the diversification of funding sources and increase the visibility and market potential of its innovations, the FTS should actively promote the strategic implementation of the university's commercialization and fundraising strategy.

The establishment of a Faculty Industry Advisory Board is a valuable initial step, which should be complemented by systematic processes for identifying commercially viable results, an adjusted intellectual property strategy, and stronger engagement in entrepreneurial partnerships (e.g. through licensing models or spin-offs). In the long term, this would allow the faculty to build a robust second pillar alongside its strong application-oriented impact.

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public

Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

Between 2019 and 2023, the FTS demonstrated a sustained and well-structured commitment to the popularisation of research, development, and innovation. The FTS successfully leveraged a diverse set of channels—including science festivals, education fairs, digital platforms, and conferences—to engage a wide spectrum of audiences, from the general public to policymakers and industry partners. Notable flagship events such as the Night of Scientists, VědaFest, and Gaudeamus provided highly interactive and accessible formats for showcasing research in areas such as intelligent transportation systems, aviation engineering, and traffic safety. These initiatives were further enriched by a strong student presence, particularly through the CTU Lions Racing Team, which helped highlight practical innovation and student involvement. The FTS also adapted proactively to the pandemic by transitioning major events to online formats, ensuring continuity in science communication. On the digital front, a growing and increasingly professionalised social media strategy significantly boosted visibility and engagement—particularly on Instagram and X—while maintaining steady interest through Facebook and expanding to new platforms like Threads. Additionally, the FTS enhanced its academic profile through the organisation of high-impact scientific conferences and by contributing to international outreach at events such as the World Road Congress. These activities, supported by improved communication materials and growing collaboration with media and institutional partners, reflect a coherent and comprehensive approach to research popularisation that aligns with both academic goals and societal impact.

Recommendations:

To build on the strong foundation established between 2019 and 2023, the FTS should consider developing a more systematic and outcomes-oriented evaluation framework for its popularisation efforts. Currently, success is mainly measured through audience size, social media reach, and event participation. However, assessing qualitative impact—such as changes in public understanding, influence on student enrollment decisions, or stakeholder feedback—would provide deeper insights into effectiveness and guide strategic refinement. Additionally, there is potential to enhance the visibility of individual researchers and research projects through more personal storytelling formats, such as video profiles, podcasts, or research diaries, which can humanise science and create sustained public interest. Strengthening links with schools through formal STEM outreach programs and teacher partnerships could help foster earlier engagement with transportation science among youth. Moreover, while the FTS's presence at international events is commendable, expanding bilingual or English-language content—particularly for digital materials and events—would increase accessibility and extend reach to non-Czech-speaking audiences and partners. Finally, closer integration of communication efforts with institutional research strategy—for example, by aligning public events with strategic research themes or project milestones—could further reinforce the FTS's identity as a leading innovator in smart mobility and transport systems.

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3

Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable.

If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The FTS has responded constructively to the recommendations from 2020 and implemented a number of targeted improvements. The issue of limited financial support was addressed through enhanced participation in major European initiatives such as Horizon Europe and EIT Urban Mobility, which has contributed to greater financial stability and long-term sustainability. In applied research, the FTS initiated interfaculty collaboration on projects like "Digital Twin for Transportation," involving key CTU faculties, thus addressing the recommendation for broader interdisciplinary engagement. Although FTS continues to manage a high number of small-scale projects, it acknowledges the need to streamline administrative processes and has taken steps toward greater efficiency. The concern regarding low income from non-public sources remains relevant. However, the FTS clarifies its orientation toward applied research with direct societal benefit, often in cooperation with public-sector partners. Strategic engagement with non-academic stakeholders has improved significantly, as evidenced by faculty representation in national and international expert bodies and advisory groups. This reflects increased visibility and influence in shaping transportation policy and innovation. Finally, FTS has taken action to encourage staff participation in international competitions and awards, supporting broader recognition and international outreach.

Recommendations:

While the FTS has made notable progress, further steps are needed to deepen the impact of these improvements. The efforts to stabilize funding should continue by targeting additional competitive European and industry-backed research programs. In applied research, interfaculty collaboration

should be institutionalized further, ideally involving more long-term joint initiatives and shared infrastructure. The continued prevalence of smaller projects calls for a clearer strategy—either to consolidate efforts into larger thematic programs or to introduce project clustering to reduce administrative overhead while preserving responsiveness to external partners. To improve the weak revenue stream from non-public sources, FTS could explore new models of contract research and intellectual property exploitation, including licensing, start-up creation, and long-term partnerships with industry. Strategic positioning in advisory bodies is commendable, but FTS should also develop a coordinated communication strategy to more clearly link its research outputs to public decision-making processes and societal impact. Finally, the international visibility of the FTS could be further enhanced through targeted recruitment of internationally recognized researchers, stronger incentives for high-impact publishing, and a structured strategy for participation in global awards and networks in transportation science.

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**4 - Very good**
3.3 Research projects	**4 - Very good**
3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**3 - Average**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**4 - Very good**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**4 - Very good**
Grade [A–D]:	**B**

Summary assessment:

The FTS has developed a strong international profile in applied transport research. In recent years, faculty members have received several national awards reflecting the unit's activities in areas such as infrastructure, smart cities, and transport safety.

The research staff contribute to international research through their work on the editorial boards of professional journals. These roles demonstrate their international commitment and expertise.

Faculty members are also regularly invited to give lectures at international institutions, particularly in areas such as automated mobility, aerospace safety, and urban transportation systems.

The FTS hosts international researchers from various fields, including aerodynamics, deep learning, and airline management, thereby promoting academic exchange and interdisciplinary impetus. These activities improve collaboration and provide students with insights into international research trends.

Faculty members participate in the evaluation and steering of research at the national and European levels. These functions demonstrate the recognition of the unit's expertise and its involvement in shaping research agendas and funding decisions. The unit also organizes and participates in academic events such as the Smart Cities Symposium Prague and the European Transport Congress. These forums promote dialogue between researchers, industry, and public actors and contribute to the unit's visibility in the fields of urban mobility and innovation.

International collaborations with institutions promote research mobility, joint research activities, and curriculum development. These partnerships contribute to the unit's internationalization strategy and academic development.

Summary recommendations:

The FTS has made progress in applied research but has further potential to strengthen its international reach, impact, and visibility. While research results such as software tools and prototypes have already found practical application, there is a need for more systematic follow-up and structured implementation strategies. This includes the development of frameworks for impact monitoring, especially for results that have an influence on regulation and public policy.

The level of scientific projects, especially those focusing on cutting-edge technologies at the European level, is very high and well aligned with the teaching and interdisciplinary activities of the various faculties. However, further enhance its societal relevance, it is strongly recommended that the FTS establish closer cooperation with the medical faculties. This would support the development of new approaches in the fields of patient transport, emergency medicine, and accident assistance. The existing diversity of FTS activities provides a solid foundation for these cross-sectoral initiatives, which are well aligned with the faculty's mission and vision.

Technology transfer should be developed further. Although several tools and software applications show potential for commercialization, they have not yet found broad market acceptance. Closer collaboration with the university's technology transfer office, clearer strategies for protecting intellectual property, and structured pathways to commercialization—such as licensing or spin-offs—are recommended. To improve visibility, applied results should be communicated more effectively through case studies, digital platforms, or an impact dashboard. Integrating these results into teaching and doctoral programs could also improve knowledge transfer and talent development.

Interdisciplinary collaboration within the university should be further expanded, particularly with the faculties of computer science, engineering, architecture and urban planning, economics, and, as already mentioned, medicine. This would strengthen innovation in the areas of intelligent mobility, AI in transportation, and health-related transportation solutions. FTS could also expand its role in policy-relevant research by participating in EU working groups, publishing policy briefs, and organizing thematic workshops. Freely accessible or simplified tools and methods could support broader accessibility and international collaboration.

Current project funding is heavily dependent on public funding, and contractual requirements limit commercialization opportunities. Diversification of funding is crucial, including tapping into medical and environmental areas. The faculty should drive forward the implementation of the university's commercialization and fundraising strategy, supported by a faculty advisory board from industry. This should be complemented by systematic processes to identify commercially exploitable results, update IP strategies, and improve entrepreneurial partnerships.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Biomedical Engineering

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: The Faculty of Biomedical Engineering (FBME) at CTU is an important centre of interdisciplinary education, research, development, and innovation, with recognized results nationally and internationally. It focuses on future-oriented fields—technical, natural sciences, healthcare, management, and security—responding to high societal demand, especially in non-medical health professions and the integrated rescue system. Through interdisciplinary work in biomedical engineering, informatics, healthcare, and crisis management, it addresses societal challenges to improve quality of life and population protection. FBME targets projects with strong societal relevance and strives to be a reliable partner in addressing regional, national and global challenges. The Faculty carefully followed the recommendations from the previous evaluation report and implemented all the individual recommendations.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**4 - Very good**
Qualitative assessment:[1] The list of facts presented in Section 3.2 demonstrates a wide range of activities and awards received across various areas of biomedical engineering. It clearly shows that students are actively involved in research, development, and innovation (R&D&I), making a significant contribution to the overall quality and reputation of the Faculty. FBME has hosted a number of impactful lectures delivered by highly respected scientists, enriching the academic environment and providing valuable insights to both students and staff. These	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

interactions underscore the faculty's strong commitment to fostering a dynamic and intellectually stimulating academic community.

In addition to their research and teaching responsibilities, Faculty members play a vital role in the broader scientific community. They are actively involved in evaluating national and European research projects and program calls, demonstrating both their expertise and influence in shaping future scientific directions. Moreover, their participation on the editorial boards of numerous international scientific journals reflects their recognized standing and important contributions to the dissemination of cutting-edge research in biomedical engineering. This deep level of engagement ensures that FBME remains at the forefront of the field, in both knowledge creation and critical evaluation.

Recommendations:

Review and improve PhD study regulations: Analyze current rules to identify areas that hinder timely completion.

Facilitate timely PhD completion: Implement changes that streamline the PhD process and help students finish their studies on schedule.

Increase PhD student success rates: Introduce measures to enhance the overall success of PhD students, recognizing their importance as members of scientific teams and international organizations

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The faculty's scientific projects, thoroughly documented in the self-evaluation report, receive substantial support from both European Union grants (H2020, COST, Erasmus+, Euramet) and national grant providers. These projects span various topics within biomedical engineering. From 2019 to 2023, the Faculty of Biomedical Engineering (FBME) successfully completed contract research projects primarily focused on developing and constructing new biomedical devices, creating advanced diagnostic algorithms, and integrating novel telemedicine methods into clinical practice.

As an excellent example, the "Technology for eHealth on CTU" project (Prague the capital, UH0834, 2019-2021), led by Assoc. Prof. Ing. Karel Hána, Ph.D., and with a budget of 25,319 thousand CZK (approximately 998,777 EUR), represents a highly interdisciplinary and collaborative initiative. This project successfully facilitated the transfer of CTU's technology and knowledge into Prague's social and healthcare sectors. It evaluated two innovative concepts: a Telemedicine System for Pediatric Diabetes Treatment, which included a mobile app and an interactive Furby for children with type 1 diabetes, and Enhanced Home Care for Seniors, designed to improve remote medication management and provide 24/7 assistance. Both technologies underwent thorough testing for user-

friendliness and efficiency before their commercial implementation at the Institute of Health and Social Services, ultimately validating their significant contribution to enhancing healthcare and social service quality.

Recommendations:

Prioritize research generating original scientific data: Focus on projects that involve original measurements and generate new, unique datasets.

Strengthen clinical collaborations: Actively seek and maintain extended collaborations with clinics, specifically for conducting original physiological experiments and measurements

3.4 Research results with existing or prospective impact on society

Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

An exemplary research project with a huge impact on society was the development of the CoroVent lung ventilator used in hospitals to ventilate patients during the COVID-19 pandemic. This project helped bridge a difficult period of shortages of lung ventilators in Czech hospitals. The research team from FBME CTU was one of the few in the world to develop such a ventilator and deploy it in regular clinical operation, mainly thanks to its unique solution, which is protected by a Czech patent from the Industrial Property Office and described in detail in the prestigious international scientific journal Scientific Reports. CoroVent was approved by the US Food and Drug Administration and by the Ministry of Health of the Czech Republic. CoroVent ventilators were distributed to 27 Czech hospitals and CoroVent's clinical performance and usability were confirmed by an analysis of medical data from patients ventilated with CoroVent. The huge interest of the population in CoroVent was underlined by a public collection, during which 12.5 million CZK were collected in just 18 hours on the website donio.cz/CoroVent.cz. The CoroVent lung ventilator has also received several significant awards, such as second place at the prestigious hackathon "HACK THE CRISIS CZECH REPUBLIC", or the award of the head of the development team, Prof. Roubík, among the top 20 innovators of 2020 in the Czech Republic.

Another research aimed at development of a compact, automated, and cleanroom-compatible system for tissue decellularization has a significant potential for biomedical applications and commercial use. Results of a project aimed at research of gas exchange and survival of snow avalanche victims were already included in the Recommendations for rescue (issued by The Medical Commission of the International Commission of Alpine Rescue ICAR) and the project also brings enormous publicity to research at FBME. Many other research projects have a strong impact on society.

Recommendations:

The research of FBME teams should also focus on projects with high societal impact, practical applications and projects which bring much needed publicity to FBME and build its reputation as a major research institution. Such projects include, for example, tissue engineering, research on gas exchange and survival of avalanche victims, telemedicine and biolab methods.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: Transfer of results and the commercialization of R&D&I results are well documented, containing outstanding results. The most important five examples are the Czech patent for the invention CoroVent, System for automated decellularization of tissues, Sensor Subsystem for Sensing Selected Biological Quantities, development of the TonaPulse electroporator and the establishment of the spin-off Tonagena. Except for expanding activities of already existing FBME's spin-off company CleverTech, a new spin-off company Tonagena s.r.o. was established. It is the first ever spin-off company at CTU with a commercial share of CTU according to the new framework of the Department for Technology Transfer and Fundraising. Recently, two other spin-offs from FBME are being established. The amount of funding received from non-public, non-grant sources was over 157 thousand EUR.	
Recommendations: Future research at the Faculty of Biomedical Engineering (FBME) should prioritize close collaboration with hospitals and public insurance companies. This focus aims to enhance patient benefits and reduce the overall burden on the healthcare system	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: FBME activities in the field of popularization of R&D&I and communication with the public have two main topics. The first is the appearance of FBME experts in various Czech media programmes, where they present the results of their research or comment on new or future trends and technologies. Between 2019 and 2023, FBME experts were invited to Czech Television and Czech Radio. Documentaries produced by Czech Television about research at FBME were broadcast in prime time and official news. Interviews with experts and their projects have been featured in major Czech press titles. The second topic of the popularisation of R&D&I and communication with the public is the systematic organisation of activities aimed at promoting R&D&I at FBME to different target groups. FBME has organised a number of such events. FBME is also well known for its very popular Science	

Café series of lectures and expert evenings, which is not only appreciated by the participants themselves but also attracts media interest.
Recommendations: To increase an international impact of the FBME deepen cooperation within the Erasmus programme and other international collaborations, promoting biomedical engineering in collaboration with low-income countries to improve the quality of life of their citizens. In topic of HTA optimise healthcare using big data, e.g., from insurance companies regarding healthcare costs. These topics have a high popularization potential.

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The Faculty carefully followed the recommendations from previous evaluation report and implemented the individual recommendations. In more details: **A. Increase publications in prestigious international scientific journals and intensify scientific activities in international journals.** The proportion of prestigious publications in journals from the 1st and 2nd quartiles (Web of Science, IF) has increased from 46.9% to 70.1%, number of publications in the first decile was doubled. Total number of) publications is doubled as well. A new and very efficient „Motivation System“providing transparent rewards for R&D publications was created and introduced. **B. Expand cardiovascular research.** Eight teams started and/or intensified research in this field; they established research cooperation with clinical institutions and one private company from Ireland; real patients are involved in the clinical studies. Another team started research in this field using electrical impedance tomography recently. **C. focus on fewer topics such as cardiovascular system, lung, sensors and telemedicine.** FBME currently has a total of 17 research teams with significant specializations. FBME started to coordinate research of the teams in several main topics (cardiovascular, fluid mechanics, telemedicine and data processing). **D. Expand activities to other research topics and recruit new staff for this purpose.** FBME continuously adds staff according to the current needs. This is supported by the implementation of a staffing strategy at CTU based on the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers. In general, CTU in 2019 received the prestigious "HR Excellence in Research Award" from the European Commission. We recommend to follow up on the fulfilment of point D to further expand international cooperation in research of topical and medially attractive research projects	

E. Encourage the creation of spin-off companies. A new framework for the establishment of spin-off companies with the financial participation of the CTU was adopted. The first company was established (Tonagena) by FBME in the monitored period, while two other spin-off companies of FBME have been established recently.

F. intensify FBME research cooperation in the EU. Faculty employees cooperate in COST projects. Participation in COST projects provides an ideal opportunity for submitting joint Horizon 2020/Horizon Europe projects (H2020 Fast Track to Innovation (2019–2022): development of innovative cardiac implant; In 2024 FBME employees participated in preparation of a new COST Action EM-based medical technologies to advance the technology and accelerate their translation (EMBRACE), which has been under evaluation since 10/2024. Among others three new international projects have been accepted recently.

G. Intensify collaboration with other faculties of CTU in the field of non-Newtonian fluids and advanced turbulent flow modelling for cardiovascular modelling. Cooperation started with colleagues from the Faculty of Mechanical Engineering on modeling of blood flow in human heart, cooperation with the industrial design studios of the Faculty of Architecture began in 2023. Students in 2024 and 2025 are working on their final theses on the design of medical devices.

Recommendations: None.

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**4 - Very good**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**5 - Outstanding**
3.5 Transfer of results into practice	**5 - Outstanding**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**4 - Very good**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

Biomedical engineering has a significant impact on society in both economic and non-economic areas. It plays a crucial role in improving healthcare quality through the development of advanced medical technologies, diagnostic tools, and therapeutic devices. By enabling earlier detection and more effective treatment of diseases, it contributes to longer, healthier lives and reduces the burden on healthcare systems. Economically, it supports innovation, creates high-skilled jobs, and drives growth in the medical technology sector. The field is also essential for addressing current and future

challenges, such as aging populations, chronic diseases, and personalized medicine. All of these areas are covered by research and innovation projects of FBME.

FBME has been dynamically developing in all areas of scientific, research, creative, and educational activities. During the current evaluation period, FBME achieved significant successes, including a doubling of high impact factor publications, a tripling of research grant funding, a substantial increase in the number of students and successful PhD graduates, and a multiple expansion of international cooperation. FBME has also achieved significant results in the area of the commercialisation of science and research results, including the establishment of spin-off companies.

FBME carefully and most effective implemented the recommendations from the previous evaluation report, which significantly contributed to the faculty's development, research excellence, reputation, and visibility.

Summary recommendations:

Besides Individual recommendations listed in the respective sections above, we would like to recommend: The organization of joint international interdisciplinary workshops in CTU, organized together with medical and biological colleagues or other related fields. The special topics such as artificial organs, hemocompatibility, biomaterials and more can be then presented. These activities support the close contact of participants, chairpersons and participants, especially students, for an effective international scientific exchange.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Information Technology

FORD: 2: Engineering and TechnologyZvolte položku.

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: FIT is well positioned to contribute in terms of social benefits. This has been achieved only minimally, perhaps in programming languages and security but less in AI, data science. They publish papers in very small area such as cryptography by Fischer and two papers are in NEuriPs in 2023. The faculty is disconnected from the AI, Machine learning community at large. Since the faculty by and large acts like a software consulting group, their influence on the Czech society is limited, note withstanding in Europe, Asia or America.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**2 - Below average**
Qualitative assessment:[1] The problem selections are mostly industrial, project driven applications. There should be much higher expectations for the lead technical university in Czechia, that is to address some foundational questions of knowledge representation, how to organize the data bases which are used for training in the machine learning context.	
Recommendations: Pick every year one or two associate professors, give them sabbaticals and ask them to find a place either Europe or Canada/USA top universities where they can learn what research problems people are addressing and what are they teaching. Examples are University of Illinois Urbana Champaign and U of Toronto, UPENN has a AI special track for MS, UC Berkeley, or in one of the EuroTech partner universities Europe such as TU Munich or EPFL.	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**3 - Average**
Qualitative assessment: The efforts to substantively collaborate with the industry are convincing. However, the disproportion in comparisons with basic, foundational work is striking.	
Recommendations: During the last review you received recommendation to 3.2,3.3 and 3.4 The observation that the faculty is not too well-connected to overall scientific community is still valid. The recommendation of sending the Associate Professors selectively every year to different university for sabbatical will help to remove this isolation. Of course this can supplement by invited lecture series.	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**2 - Below average**
Qualitative assessment: Not much has changed from the last evaluation**.**	
Recommendations: The leadership of the department and the university should evaluate the performance of the full professors especial in age category above 60. This is not unique to CVUT. It is a sensitive issue but for the good of the institution it can be handled.	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: Not much has changed from the last evaluation. The competition in this area is stiff but in the faculty are some smart people who could do better.	
Recommendations: As in the last report, it was suggested to publish some of these transfer results in Journals such as 'Computer magazine', and other reviews where the readership is interested exactly in these technological transfer activities.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: This is where you excel but could add more! Invent some new games of this kind.	
Recommendations: Enrich your repertoire for high school students to be attractive.	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The value of communication with the public is well understood by the faculty.	
Recommendations:	

Build a virtual environment where you bring young people to interact and experience the value of IT.

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**2 - Below average**
3.3 Research projects	**3 - Average**
3.4 Research results with existing or prospective impact on society	**2 - Below average**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**4 - Very good**
Average rating [1–5]:	**3 - Average**
Grade [A–D]:	**C**
Summary assessment: The FIT faculty and their performance are more appropriate for a software consulting group than an academically alive group.	
Summary recommendations: The FIT faculty need rejuvenation, exposure to first rate FIT departments in the world.	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Klokner Institute

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.

Commentary:

The Klokner Institute is one out of three institutes at CTU and was founded in 1921. The mission of the institute comprises research, teaching and standardization in the fields of building materials and structural systems, popularization of actual R&D results, as well as to support industry. Furthermore, it serves as forensic expert institute. The institute has four technical departments, namely Structural Reliability, Mechanics, Building Materials and Chemistry and Experimental Methods, plus supporting groups. In applied research, Klokner Institute is active in selected areas of civil engineering, including material and chemical engineering. Basic research areas comprise predominantly mathematics (e.g. statistics, numerical methods), theoretical mechanics and chemical sciences. Main research activities are in structural reliability and in risk assessment of new and existing structures including diagnosis, technology of specific cementitious materials (e.g. UHPC, 3D printing), design guidelines for structures made from UHPC and 3D printing, and the corrosion of metals and their protection. For that purpose, an accredited testing laboratory is available. Klokner Institute has 66 to 72 FTEs in the period from 2019-2023, whereas about 45% are 40 years old or younger. At the institute, an accredited PhD programme (about 30 PhD students) is offered plus lifelong learning courses. About 40 reports per annum are provided by the forensic engineering department within its consultancy activities. Klokner Institute is embedded in an international network of collaborations ranging from academia, research organisations to companies.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community

Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).

Rating [1–5]:	**4 - Very good**

Qualitative assessment:[1]

The Klokner Institute is not only active in the field of applied, but also fundamental research. Overall, the range of R&D activities is regarded as large, whereas the two topics “Ultra-high performance concrete (UHPC)” and “3D printing in civil engineering and architecture” are core competences.

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

Institute members serve in various functions in international conferences, panels and committees. Scientific dissemination is performed through publications in international journals or conferences in the field, including invited talks. Finally, faculty members win prizes and awards.
Recommendations: Despite the very good level already achieved, the international recognition is regarded as limited, given the size of the Institute as well as its over 100 year-history. The panel, however, recognizes that the national recognition in Czech Republic is excellent. Therefore, the panel advices to increase the effort in attracting international research grants, best together with the large international network in which the Klokner Institute is embedded. Furthermore, it is recommended to put the focus more on fundamental research activities, that allow to publish in high-level journals (Q1 or even D1., i.e. ranked in the first decile), while keeping the applied or contractual research together with industry as a valuable income source and national recognition, to increase substantially international visibility. With this approach, it is also expected that also more international and excellent students may find it attractive to do their MSc/PhD at Klokner Institute.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: Due to the competence and expertise of the institute members and due to the specific infrastructure and equipment a huge number of research projects are performed at Klokner Institute. Most of these projects, however, are financed/co-financed by Czech funding agencies or by direct cooperation with an industrial partner. The project topics are regarded as attractive and timely. Even more, all have a clear application-oriented goal, even when financed from GACR, the national science foundation.	
Recommendations: Overall, the capability of the Klokner Institute to attract research grants is regarded as excellent. The panel, however, recommends to increase the effort in attracting more high-level grants, ideally on international level, to increase the scientific output. In detail, less attention should be paid in getting projects that focus predominantly on engineering tasks, especially when in addition these projects offer only a limited or moderate budget size. But the panel agreed and appreciated that Klokner Institute is, namely at national level, serving as well-respected consulting unit and accredited laboratory for different authorities as well as for the government in their fields of expertise.	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: Many activities are performed at Klokner Institute that have the potential to result in a sustainable impact on society, especially in the field of civil engineering. The list in the self-evaluation report appears on a very good level and represent relevant and timely activities.	
Recommendations: The listed output is within the core competence fields of the Klokner Institute. Therefore, the expertise of the institutes member is essential for achieving these results and their successful implementation. For the panel, however, it is challenging to estimate their potential impact given the limited information provided. Furthermore, the list comprises predominantly activities from topics that are already well established. The panel recommends to increase the effort in addressing new, emerging fields for civil engineering, such as machine learning or artificial intelligence.	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The Institute is very active in transferring results from fundamental, as well as applied research projects into practical and in further consequence, commercial use, due to their strong cooperation with industry over many decades. This effort is demonstrated by a high amount of contractual research projects as well as their consultancy/advisory activities.	
Recommendations: Due to their strong cooperation with industry, the overall transfer rate of results into industrial applications is regarded as high. But the panel encourages the institute to increase their efforts to protect their IP by patents and to stimulate, in further consequence, the initiation of spin-offs. Especially the number of patents or patent applications are regarded as low given the high share of applied research activities. The panel agreed that this challenge needs to be strongly supported by central units of CTU, such as the Technology Transfer Office.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The Klokner Institute is continuously active in dissemination, popularization as well as communication with the public. The self-evaluation report lists a huge number of different activities in e.g. television, social media, children`s university summer camp (together with Faculty of Civil Engineering and Faculty of Architecture) colloquia, just to highlight a few.	
Recommendations: The panel regards these activities exemplary and well balanced between the different types of activities spanning from new media to in-presence events.	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The panel acknowledges that the Klokner Institute has addressed most of the recommendations from the last evaluation report. As an example, the research fields have been sharpened and narrowed to increase visibility on these active topics. Furthermore, the panel acknowledges that the institute takes actions to integrated young researches for improving the age structure.	
Recommendations: **None.**	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**4 - Very good**
3.3 Research projects	**4 - Very good**

3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**4 - Very good**
Average rating [1–5]:	**4 - Very good**
Grade [A–D]:	**B**

Summary assessment:

The Klokner Institute (KI) pursues research, teaching, and standardization in building materials and structural systems. Its mission also includes disseminating research results, supporting industry, and serving as a forensic expert body. The institute comprises four technical departments (Structural Reliability, Mechanics, Building Materials and Chemistry, and Experimental Methods). Its research portfolio spans both applied and basic work. Applied research focuses on civil engineering, particularly material and chemical engineering, while basic research centres on mathematics, theoretical mechanics, and chemical sciences. Key areas include structural reliability, risk assessment of structures, cementitious materials, related design guidelines, corrosion of metals, and protective measures. Facilities include an accredited testing laboratory. KI maintains about 70 full-time equivalents (FTEs), with about 45% under 40 years old. It offers an accredited PhD program (around 30 students) and lifelong learning courses. Its forensic engineering department issues roughly 40 reports annually. KI is also embedded in a broad international network of academic, research, and industrial partners.

Faculty and staff contribute to international conferences, panels, and committees, with outputs including journal publications, invited talks, and prize-winning work. Research projects are numerous and generally application-oriented, mostly funding through Czech agencies and direct industrial collaboration. The institute's activities have significant societal impact, by translating both fundamental and applied research into practical and commercial applications. Contractual research and consultancy are major strengths. Popularization of R&D&I is quite active e.g. in television, social media and academic events.

KI has implemented most recommendations from the previous review. Research topics have been refined and efforts were made to integrate young researchers. Overall, the institute has a valuable research agenda, strong industrial cooperation, international engagement, and dissemination, ensuring its relevance and impact in civil engineering.

Summary recommendations:

The evaluation panel values the strong cooperation with industry, and high transfer rate of research results into industrial applications. However, KI's international visibility remains limited and efforts to obtain high-level international research grants should be made, benefiting from the Institute global network. A stronger focus on fundamental research, while keeping the applied projects is advised to enable publications in top journals (Q1 and, ideally, D1). This will enhance international reputation and contribute to attract top MSc and PhD students.

The panel encourages prioritizing projects with higher scientific impact and larger budgets, particularly on an international scale, to complement smaller, engineering-focused contracts. Expanding the activity into emerging fields, such as machine learning and artificial intelligence, will be beneficial to remain competitive in civil engineering research.

The protection of intellectual property is a key improvement area, with the number of patents considered low for such an applied research-oriented institution. Greater collaboration with CTU's Technology Transfer Office is recommended to strengthen patenting efforts and foster spin-off companies.

Despite the progress made compared to the last evaluation report, the panel recommends a continuous and even increased effort to attract high-level, international grants and by that, more excellent staff members. Furthermore, more publications in Q1 or even D1 journals need to get more into the focus. The protection of IP by patents is regarded as essential, especially for such an applied research-oriented institute like Klokner. This, in turn, should lead to enhanced efforts to stimulate spin-off activities out of Klokner Institute in the next years.

In conclusion, the panel advises sustained and increased focus on high-impact international grants, top publications, IP protection, and spin-off creation, ensuring KI strengthens its global position while maintaining its strong national recognition.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: CZECH INSTITUTE OF INFORMATICS, ROBOTICS AND CYBERNETICS

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: **As stated in their self-assessment CIIRC is the youngest Institute at CTU. This gives them an opportunity to be creative and forward planning of these highly fast-growing fields: Informatics and Cybernetics, all important for the future of Europe and CTU. They have the correct goal of linking excellence with technology transfer.**

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment:[1] **We applaud to the leadership success of bringing back excellent, renowned Czech researchers to the Institute. These people brought not only their own scientific reputation but connections to the international scientific community. They have connected the CTU younger faculty via ERC programs with the European and worldwide scientific community. The recognition of CIIRC by the international research community is excellent.**	
Recommendations: **It is recommended that for future planning, the senior faculty plans to send the associate and assistant professors periodically for sabbatical year to distinguished international groups.** **The university support is at 4% is too low. The faculty members and researchers need more support that will enable them to think about open foundational problems that are not necessary for the solution of concrete application problems. The creative people need time to think about impossible or at least hard problems, which will lead to further innovation.**	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: **Considering the duration of their time of existence, they have accomplished a great deal. Their research projects are outstanding.**	
Recommendations: **The researchers are too much tied to the applications and are not selecting their own challenges. In this regard, the top universities are looking for new ideas in cybernetics, such as how to model in a principled way evolution and growth. In the area of manufacturing, there can be more studies coming from operation research and economics, efficiency, and similar areas. In transportation, there are new challenges of robots interacting with new environments as in the air, flying and in the water, swimming.**	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: **Excellent research results are achieved with both existing and prospective impact. The capacity of the Institute to accomplish this is excellent. It can be expanded further to broader group of basic academic research and applications.**	
Recommendations: **There could be a more balanced transfer of technology based on the customer desire and what current science enables. The researchers at the university could also teach what the current possibilities are for industrial clients.**	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: **The Institute demonstrates very impressive achievements in transferring results into practice. There is a broad range of outstanding projects where significant transfer of results took place.**	
Recommendations: Focus on the basic nature of the problem you are trying to solve. **It is recommended to increase the number of seminars, perhaps on a bi-weekly basis inviting top researchers and also industry practitioners. This can result in multiple benefits. For example, the staff of the Institute will learn about a broad range of state of the art research and industrial activities, and it is also a good advertisement for the Institute.**	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: **The Institute has a well-structured outreach and popularization program with impressive results.**	
Recommendations: **It is recommended to keep up the good work. It is also encouraged to further develop programs to facilitate exchange of ideas among different groups at all levels.**	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment:	

The recommendations from the previous evaluation were taken into account and the programs and activities at the Institute were directed accordingly.
Recommendations: None.

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**5 - Outstanding**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**5 - Outstanding**
3.5 Transfer of results into practice	**5 - Outstanding**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**5 - Outstanding**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**
Summary assessment: **The CIIRC is an outstanding institute, it is a flagship unit of CTU. They are applauded in all aspects.**	
Summary recommendations: **It is recommended to keep up the work at the high level. The university should increase its financial contribution to the institute so that CIIRC would not completely depend on contracts, but researchers would also have the chance to think about fundamental problems the solution of which can be beneficial on the longer term. Other recommendations are summarized under each point above.**	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: University Centre for Energy Efficient Buildings

FORD: 2 - Engineering and technology

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation

Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.

Commentary:

UCEEB brings "innovations for a sustainable future, focusing on buildings, cities, energy, and the environment" or, according to the presentation provided "innovative solutions for future buildings and cities that are energy efficient, sustainable, and provide a healthy and safe environment". In that respect, its name seems not to reflect the broader scope of activities. Possibly, a name change may be considered in the future. UCEEB was officially started in 2014 as a joint venture from the Faculties of Civil, Mechanical, Electrical and Biomedical Engineering. It is somewhat unexpected that the Faculty of Architecture is not a founding member, despite being currently with individual involvement in the Centre. R&D&I capacities are about ½ based in civil engineering and ¾ based in civil and environmental engineering. A broader scope of capacities could be beneficial and demonstrate a more integrated unit.

UCEEB may be perceived as a technological centre with a focus on applied research, technology transfer and innovation, centred on the built environment. The topics of research are relevant from the societal and economy points of view, even if too broad. Still, it is not clear if several current hot topics in the construction sector, e.g. Building Information Modelling, automation, modular construction, green material or the New European Bauhaus receive sufficient attention at UCEEB. Despite the long-term goals include urban innovations and digitalization in construction, this is not evident in the report submitted and past achievements.

Seemingly, contract research is only 15% of the budget, which may pose future challenges once Czechia is no longer classified as low research and innovation (R&I) performing countries, and structural funds are reduced and / or no longer accessible. Ideally, contracted research, licenses, and internal product development, should increase to a minimum of 40% in the next 5-10 years. It is also recommended that contracts do not erode capacity for strategic or exploratory research, and direct contracts are used partly to fund internal innovation infrastructure, not only to provide deliverables. Seemingly, the average free-budget margin (or profit) is quite low, which may impair strategic actions.

The six research departments seem not clearly aligned with the long-term goals, and some of the areas identified in the departments seem to overlap. It would be beneficial to revise this structure, possibly informal to some extent to better align with goals, existing capacities and integration of knowledge.

Better information should be reported and accounted as "every year dozens of students" requires review. MSc and PhD students' involvement is valuable, as UCEEB in integrated in CTU and is not an

independent external unit. The number of students with a relevant participation in the centre, e.g. larger than 30% of their time or work, should be clearly accounted has an outcome, ideally with one supervisor integrated in the centre.

There was an impressive increase of participants in training courses in 2023. Specialized continuing education courses and IPR are important missions of UCEEB, so they need to be considered for discussion in the long-term goals.

The number of FTE staff has been relatively constant, even if there was an important decrease of "technical and economic staff" in the last years. Some justification would be expected. Also, the number of "early career researchers" had an important decrease in 2023. Still, there seems to be a need for more space, and a future expansion is in now in the planning phase.

An aspect that may need to be considered in a SWOT analysis is the financial autonomy and public contracts regulations, which seemingly are not important constraints currently. Future political and legislation changes may have a critical impact in the activity of UCEEB.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community

Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).

Rating [1–5]:	**3 - Average**

Qualitative assessment:[1]

UCEEB most impressive achievements are the: international collaboration, demonstrated by the large participation in EU funded projects (to be duly considered in Section 3.3), including coordination, and involvement in scientific and technical organizations (e.g. COST, fib, or IEA); awards for projects (such as S.A.W.E.R., Energy retrofitting project and RESINDUSTRY).

Presence in Editorial Boards of leading international journals is limited. Invited lectures as keynotes in international conferences are present but could be stronger. Review activity is also present, but it is mostly national. The report could be stronger in addressing recognition by the research community.

Recommendations:

International exposure of UCEEB is very good but needs to be expanded by e.g. formal joint PhD hosting and secondments in leading research institutions internationally, attraction of leading international conferences, and leadership in technical / scientific committees.

Being a part of CTU, the presence in Editorial Boards of leading international journals, international review activity, and demonstration of top scientific activity is needed (e.g. how do the UCEEB members excel in bibliometric indicators, such as h index or impactful publications?).

It is also necessary that relevance for contracted research (and professional value) is balanced with scientific leadership. What measures will UCEEB implement for this purpose?

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The selected research projects/activities are impressive with diverse funded projects. This encompasses a wide scope of topics and typologies, including namely the core project to create UCEEB and the National Competence Centres project, and other large funding projects such as the S.A.W.E.R. project (seemingly funded by the Exhibition Organizing Company) and Czech Standardization Agency. Funding level is excellent with, the period of evaluation, some reduction as beneficiary for public funds, some increase as another participant, and some oscillation in terms of contracted research. The global number of projects is impressive.	
Recommendations: The effort on attracting funding should be maintained. The level of international competitive funding has room to increase, being seemingly moderate. It is also essential that the high level of funding results in awarded PhD degrees at CTU or externally, high-level publications, patents, licensing, spin-offs and other innovation measurable deliverables. From the reporting point of view, it would be beneficial that small projects (e.g. less than 50 k€ for public funding and 25 k€ for contracted research) would not be reported and would be lumped in other category with a total amount of small projects. UCEEB may also reflect whether very small contracts or contracts with lower technological development are part of its effort or represent a dispersion for the academic members.	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The selected projects, several being presented and demonstrated in the site visit (such as MoistureGuard and water production from arid desert air) are impressive. There is a wide scope of results including namely patents, licensing, prototypes and standardization. The projects are also in line with the mission and vision of the unit.	

The strongest focus is the economic impact by creating value, which is also linked to Section 3.5. The quantification provided regarding MoistureGuard and smart battery control are appreciated. The impact in society at large could be demonstrated more strongly as the text is often too general. Regarding e.g. envilop, despite the successful pilot application, the plans for commercialization and effective dissemination could be clearer. It is also likely that a contractor may not be the best path for success as traditional Design-Bid-Build contracts may remain the most popular for small and medium size projects. Regarding e.g. SBToolCZ, despite the seemingly successful training courses, it compares no so well with leading international tool such as LEED/BREEAM, particularly in private non-residential buildings. A roadmap to increase the value of the tool at national level seems needed. Regarding e.g. Wave, is biomass competitive and should UCEEB further invest? Are there sustainability concerns and competition from cheaper and easier to use technologies?
Recommendations: Should UCEEB aim at leading some international standards or technical committees, in addition to national standardization where a big contract was obtained? If this is the case, what actions need to be planned? Should UCEEB aim at additional hot topics for the building industry, such as BIM, automation and modular construction? Again, if this the case, what actions need to be planned and are organizational arrangements needed? Should UCEEB increase actions in continuing education / training? Again, if this the case, what actions need to be planned?

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The funding licensing is low, but above average and increasing significantly in the evaluation period. The activity from laboratory testing and expert assessment is not reported, which may be important in terms of funding and response to a societal demand. Alternatively, the latter may not be the focus of UCEEB, as it is more within FCE and Klokner Institute. Seemingly, there is a fair amount of repetition in Sections 3.4 and 3.5. The provided report is quite generic, and the site visit was stronger than the reporting.	
Recommendations: It would be desirable that the largest and most impactful research projects are linked to some transfer to practice. Transferring results into practice is a complex topic in civil engineering, and UCEEB is successful in terms of licensing (and prospects). Still, the creation of spin-offs should be targeted. Having a	

participation in innovative companies from members of UCEEB or UCEEB itself (if allowed by legal constraints) would be beneficial.

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: UCEEB has a wide scope of popularization activities, even if they do not seem part of a major plan with regular and long-term organization of events. This may also be due to the unit being relatively young. The engagement with high schools is essential to attract students for CTU but also to promote an innovation culture. Quantitative and more concrete information would be welcome. Participation in different fairs are present, and this is much valued.	
Recommendations: Keep on the successful work and the multiple activities, particularly the one related to innovation *fora* (e.g. fairs). Define a quantifiable target and plan for engagement of high schools. The impact on media (TV and newspapers) may, seemingly, be increased. Possibly, a few long-term successful actions may be planned for industrial involvement (e.g. open-days around specific topics or professional seminars involving also industrial speakers)	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: UCEEB has responded well to the recommendations of the previous evaluation. The actions regarding internationalization are valuable with concrete results. The 1/3 international funding is very good, seemingly in terms of project, but not in terms of funding (17% only in 2023, despite the enormous increase), and the actions for involvement in international organizations also. The response to a clearer research profile and directions, was, seemingly, addressed in a very general way. Some current hot topics in sustainability and energy in the built environment seem less tackled. Despite some previous recommendation against, the number of patents is quite good and should be considered very positively. Regarding spin-offs no major changes were observed yet, even	

if a technology transfer unit was implemented at CTU. It is recognized that this is complex and difficult to address, in comparable conditions, but a must for UCEEB. International awards in innovation are present, but research visibility externally has room for development.
Recommendations: None.

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**3 - Average**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**4 - Very good**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**4 - Very good**
3.7 Implementation of the recommendations in Module	**4 - Very good**
Average rating [1–5]:	**4 - Very good**
Grade [A–D]:	**B**

Summary assessment:

The University Centre for Energy Efficient Buildings (UCEEB) was officially started in 2014 as a joint venture from the Faculties of Civil, Mechanical, Electrical and Biomedical Engineering. R&D&I capacities are about ½ based in civil engineering and ¾ based in civil and environmental engineering.

UCEEB has a focus on applied research, technology transfer and innovation, centred on the built environment. The topics of research are relevant from the societal and economy points of view, even if too broad. The research departments seem not clearly aligned with the long-term goals, and some of the areas identified in the departments seem to overlap.

The number of FTE staff has been relatively constant, but there seems to be a need for more space, and a future expansion is in now in the planning phase. Ideally, contracted research, licenses, and internal product development, should increase to a minimum of 40% in the next 5-10 years.

UCEEB demonstrates strong international engagement and some involvement in editorial boards of international journals. While keynote lectures and peer review activities are present, there is room for stronger presence at international conferences, also by hosting major events in Prague and aiming for editorial leadership in top WoS journals.

UCEEB has a very good research portfolio, including diverse funded projects. This encompasses a wide scope of topics and typologies. Funding level is excellent with a strong focus is the economic impact by creating value. The selected projects, several being presented and demonstrated in the

site visit (such as MoistureGuard and water production from arid desert air) are impressive. There is a wide scope of results including namely patents, licensing, prototypes and standardization. The projects are also in line with the mission and vision of the unit. Clarification of MSc and PhD students involved, with some level of formalization, is needed.

UCEEB has a wide scope of popularization activities, even if they do not seem part of a major plan with regular and long-term organization of events. Participation in different fairs are present, and this is much valued.

UCEEB has responded well to the recommendations of the previous evaluation. The actions regarding internationalization are valuable with concrete results. The response to a clearer research profile and directions, was, seemingly, addressed in a very general way. International awards in innovation are present, but research visibility externally has room for development. Ideally, spin-offs and the revenues from non-public sources should be increased.

Overall, the unit exhibits very good research and innovation engagement. Several current hot topics for the built environment are less clearly identified in the activities, and the unit's name seems less aligned with the long-term goals. Possibly, a name change may be considered in the future. Reporting was sometimes, too generic, and better quantification and detailing would have been beneficial. An aspect that may need to be considered in a SWOT analysis is the financial autonomy and possible future political and legislation changes.

Summary recommendations:

UCEEB International exposure is very good but needs to be expanded by e.g. formal joint PhD hosting and secondments in leading research institutions internationally, attraction of leading international conferences, and leadership in technical / scientific committees. Being a part of CTU, the presence in Editorial Boards of leading international journals, international review activity, and demonstration of top scientific activity is needed.

Regarding a clearer profile, it is recognised that this is difficult to achieve, but a stronger effort is recommended to address the recommendation on e.g. defining research topics of excellence and a related strategic plan, evaluating current needs and trends in the industry, reducing departmental structure, redefining informal groups / clusters with a common research goal and sufficient critical mass, and allocating funding from contracting for strategic hiring.

Ideally, spin-offs and the revenues from non-public sources should be increased.

The momentum regarding international funding and visibility must be continued. A target of a minimum of 30% of international funding in terms of budget should be aimed at.

It is also essential that the high level of funding results in awarded PhD degrees at CTU or externally, high-level publications, patents, licensing, spin-offs and other innovation measurable deliverables.

A revision of internal organization and research focus could be beneficial. Possibly, additional hot topics for the built environment conveniently covered, such as BIM, automation and modular construction, need to be more clearly addressed.

Training activities may need to be expanded to other topics, wither the SBTool, also reflecting sector needs. Effective measures addressing the creation of spin-offs should be implemented.

UCEEB has a wide scope of popularization activities but a long-term plan, involving e.g. high schools and industrial involvement would be beneficial.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Institute of Experimental and Applied Physics (IAEP, in short)

FORD: 1 - Natural sciences

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: IEAP is a university research institute of CTU with the aim of covering a broad range of fundamental and applied research from particle physics to astrophysics, as well as biomedical physics. It was established in 2002 as a scientific and educational Institute of CTU and transformed into a self-standing University Institute in 2018. The number of employees is 98 (2023 data). Research activities include collaboration with industry, including best practices such as significant support with facilities to the institute from the industry, participation in projects with significant partners like ESA, NASA, CERN, JINR etc., as well as recruitment of researchers in the Czech Republic. Apart from all these, IEAP is also involved with professional education including MSc and PhD courses, as well as preparation of educational kits.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment:[1] The recognition of the activities of IAEP is quite impressive, both at the international, as well as the national level. Researchers have been awarded major international prizes. Five members of the unit serve as editors and six members regularly serve as peer reviewers for leading international journals. A large number of invited talks were presented at major conferences and leading academic institutions. In return, many international guest speakers from leading institutions presented a invited lectures at IAEP. Members also regularly serve on international and national evaluation panels, often in high-level or key positions.	
Recommendations:	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

IAEP came a long way and now it is firmly established as a leading center for applied and experimental research in many areas of physics. If there is one area where we can recommend improvement, it is the involvement of young researchers in the peer review process. It provides a steep learning curve and a fast pathway to cutting edge research. Perhaps the more senior researchers, who play a supervisory role and are already peer reviewers, could introduce their junior colleagues to the process. Closely related, the institutional policies do not actively encourage taking up editorial roles. We believe this policy should be reconsidered. It is a great service to the broader physics community, and, in addition, it is also very insightful providing first hand information about broader trends in the field.

RESEARCH PROJECTS

3.3 Research projects

Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

IEAP received 21 projects as the main applicant, a further 19 as co-applicant, and 4 contract research projects within the current 5-year evaluation period of 2019-2023. 33 of them have been supported by the Czech Republic (CR) and 7 of them from abroad. There is a significant increase in the level of funding compared to the previous five year period.

Among them, the space research project, funded by ESA continues the sucess story of CR in space projects, capitalizing on the smart scpecialization of CTU in sensors and detectors. Other significant projects include ongoing collaboration with CERN, focusing on detector technologies, underground research, mostly focusing on neutrino physics, biomedical and materiál research (imaging), the general area of research and development of state-of-art detectors. Apart from these, IEAP collaborated with other CR research institutions for safety and security projects. IEAP also worked in CERN-collaborating projects, targeting the education of young experts. Finally, the institute has also supported companies to extend collaboration with EU countries; however, the budget for the institute was minimum for these cases.

Recommendations:

The addition of a theory department has clearly enhanced the capabilities of IAEP. The collaboration between theory and experiment should be strengthened further. Theory should be involved in the experimental projects, providing interpretation and guidance toward future directions. Otherwise, the number of projects is about right, maybe even a bit too much, given the size of the Institute. The funding level, however, should be steadily increased. The funding level from local, i.e., Czech, source is adequate but the funding from international sources should be increased.

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: During the evaluation period four patents (1 US, 2 EU, and 1 CR) were obtained, 11 software packages were developed, alongside with 1 utility patter and 35 functional samples. Establishing the Center for the support of the population in case of actual or suspected occurrence of extraordinary nuclear and radiation events should also be mentioned in this context, as an activity with high impact on the society. The project supports preparedness of CR for response to a nuclear accident. Research focuses on behaviour of the population in risk of panic (using the analogy of COVID pandemic and radiation emergency), esp. on coping risks and on identification of mechanisms eliminating fear development and propagation.	
Recommendations: The Panel acknowledges that IAEP is doing a significant amount of research activity with strong impact on the society. We recommend strengthening the activities in two areas: one is related to a more balanced approach to gender issues and the other to strengthen to sustainability/ environmental research component.	

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: IEAP has established a clear and stable system for transferring research results into practical applications. The initial step, if the novelty criteria is met, involves applying for a patent in Czechia after which a decision is made on further patent applications in the USA or EU. The second step in the process is the identification of potential users of the results. Experience shows that direct cooperation with companies through common projects or activities is an effective way to meet the R&D&I needs of the market. A part of strategy also includes presenting results at international conferences, PR activities, articles in refereed journals, and international collaborations.	
Recommendations: IAEP has developed a streamlined process to transfer their results to practice, targeting several groups of potential customers. The process is efficient, reaches the target audience. Keep it going.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: IEAP is committed to the popularization of their research achievements and engaging with the interested public. This is done through various channels, including popular articles, TV and radio interviews, educational videos featuring pixel detectors, and field trips to their research infrastructure, most prominently the VdG accelerator. They also implemented an outreach program for high school students. They offer talented students long-term summer internships at IEAP, which often continue into their university studies and can eventually develop into employment relationships. In addition, IEAP organizes regular public visits under the theme “Science and Art.” The walls of the institute are transformed into an exhibition space, showcasing paintings and other artworks. In 2021, they held two such public events, highlighting the connections between scientific research in mathematics, physics, life sciences and the world of art.	
Recommendations: In the area of popularization of scientific research, its connection to the society, and engaging the wider public in discussions on the interconnectedness of science, art, and society is carried out in an exemplary manner, making good use of various means of media. These activities are very important since, for most of the activities of IAEP and, indeed, scientific research in general, public money is the main resource, so it is vital for the research that public understand and agree to the use of these resources. Continue this valuable work also in the future.	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: The Institute has addressed most recommendations from the previous evaluation report in a satisfactory manner. Increase in funding, building an international research staff, obtaining high-profile, in many cases international, awards are commendable achievements.	
Recommendations: None.	

EVALUATED UNIT RATING

Evaluation of unit Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**5 - Outstanding**
3.3 Research projects	**5 - Outstanding**
3.4 Research results with existing or prospective impact on society	**4 - Very good**
3.5 Transfer of results into practice	**5 - Outstanding**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**5 - Outstanding**
3.7 Implementation of the recommendations in Module	**4 - Very good**
Average rating [1–5]:	**5 - Outstanding**
Grade [A–D]:	**A**

Summary assessment:

The Institute is on the right track, came a long way since its foundation more than twenty years ago. It is now well funded, developed its own niche R&D&I (detectors, in general), achieved international visibility, and boasts the work of many award-winning researchers.

Summary recommendations:

The funding level should and could be increased further. In addition, an overwhelmingly large portion of the funds is public money. The portion of non-public money should be increased, by increasing the number of projects in contract research, commercialization of products, and more collaboration with private industry, and attracting international funds, like e.g., prestigious ERC grants.

The international visibility of the Institute should be increased further, via increasing the number of international collaborations, organizing and/or attending highly specialized international conferences. IEAP substantially increased the number of application results, from 22 in the previous period to 58 in the current one. This trend should continue.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Masaryk Institute of Advanced Studies (MIAS)

FORD: 5 - Social sciences

SOCIAL CONTRIBUTION OF THE EVALUATED UNIT

3.1 Introductory information about the unit under evaluation
Indicator 3.1 is a non-evaluated indicator that provides basic information about the evaluated unit such as its mission and vision, organizational structure, size and staffing, or R&D&I capacities.
Commentary: The Masaryk Institute of Advanced Studies (MIAS) is an institution that intends to meet the social-scientific challenges of technological change and reflects them in research and education, to be at the forefront of promoting innovations; to ensure qualification of graduates by understanding of current technological trends, awareness of social responsibility (responsible research and innovation, RRI), and Dissemination – Exploitation – Life Cycle Analysis (DELCA) and an awareness of the need for lifelong learning. These goals are highly relevant for a university of technology. The organizational structure in staff and resources and R&D&I capabilities, however, do not fit to this mission. The institute acts as a school in pedagogy and economy.

RECOGNITION BY THE RESEARCH COMMUNITY

3.2 Recognition by the research community	
Evaluate the position of the evaluated unit in the R&D&I research community based on the facts presented in indicator 3.2 and its annexed tables (3.2.1 to 3.2.5).	
Rating [1–5]:	**1 - Inadequate**
Qualitative assessment:[1] The recognition in the international community is below average. The strongest activities are in pedagogy and the highest recognition is reached by very few individuals, mainly on national level. The situation, however, improved significantly in the current evaluation period. The international network and the integration of the institute in international research consortia is growing. Improvements are clearly visible in comparison with the previous evaluation, however, still on a low level. The high teaching load, the concentration on pedagogy, and the lack of opportunities for young and international young researchers are barriers on the way to meet the requirements to cover the items listed in the mission.	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

DELCA and also Ethics and Responsibility in Research and Innovation (RRI) are poorly represented, if at all. It seems that the other faculties tend to find collaboration elsewhere but not with MIAS. This is unacceptable.
Recommendations: Reach out to other faculties and institutes, establish a permanent platform for bilateral communication and strategic planning across CTU.

RESEARCH PROJECTS

3.3 Research projects	
Evaluate the most important research projects of the evaluated unit, especially regarding the results achieved and the application potential of the project, the proportionality with respect to the R&D&I capacities of the evaluated unit, the degree of interdisciplinarity and collaboration with other parts of the evaluated HEI, and the consistency with the declared mission and vision of the evaluated unit. Use the data from the full list of research projects and contract research activities in Tables 3.3.1 and 3.3.2 to supplement the evaluation.	
Rating [1–5]:	**2 - Below average**
Qualitative assessment: The projects are mostly in the field of pedagogy, some in civil engineering and some in IT-related topics. The funding is marginal due to the very low number of research staff in the institute. Apart from that the planning for research proposals is below average, with the economics part of the Institute not being seriously involved in it.	
Recommendations: Increase the number of research staff on professors' level with focus on the not yet existing areas of philosophy, psychology and sociology. Apart from that professors related to DELCA are needed in MIAS to coordinate and work on DELCA issues of the CTU projects. This can be done by a 20% work of existing CTU staff at MIAS (one day per week), aiding to the preparation of DELCA issues in European and National proposals. Apart from that, a chair in this (DELCA) field should also be sought.	

3.4 Research results with existing or prospective impact on society	
Evaluate the research results already applied in practice or intended to be applied in practice. When evaluating, consider whether the results are proportionate to the R&D&I capacities of the evaluated unit, how they contribute to the fulfilment of the mission and vision of the evaluated unit and, if stated in the self-evaluation, how the results take into account the gender dimension and sustainability. Use the data from the full results summary in Table 3.4.1 to supplement the evaluation.	
Rating [1–5]:	**2 - Below average**
Qualitative assessment: Mainly the same projects as listed above are listed in the self-assessment, as they all have large impact on society.	
Recommendations:	

Increase the number of research staff on professors' level with focus on the not yet existing areas of philosophy, psychology and sociology. The same issue of involving staff from existing faculties concerning DELCA, as well as a new chair in DELCA may be additionally needed.

TRANSFER OF RESULTS INTO PRACTICE

3.5 Transfer of results into practice	
Evaluate the effectiveness of the transfer of results into practice by the unit being evaluated. Pay attention to whether the composition of the stated users of the results or the way the R&D&I results are commercialised (if stated) is consistent with the R&D&I results produced and the mission and vision of the evaluated unit and how successful the evaluated unit is in its activities, such as attracting new users of the results, commercialising the R&D&I results and obtaining funding from non-public, non-grant sources.	
Rating [1–5]:	**3 - Average**
Qualitative assessment: Four transfer projects were acquired in the recent year, which is a big success. Otherwise, the income from transfer is given by lifelong learning modules with a significant amount. Whether this is supposed to be transfer of results into practice, remains unclear.	
Recommendations: Continue on this path. Establish not only teaching modules but also online interactive teaching systems. MIAS is also capable of providing Life-Long Learning courses to the topics where MIAS and the rest of CTU Faculties have an important and sufficient know-how. This will increase the impact of MIAS and CTU to the Czech (and not only) Society.	

POPULARIZATION OF VAVAI

3.6 The most important activities in the field of popularization of R&D&I and communication with the public	
Evaluate how active and successful the evaluated unit is in the field of popularisation of R&D&I and communication with the public.	
Rating [1–5]:	**3 - Average**
Qualitative assessment: Much better representation of MIAS in the media. Public lectures and public events also contributed to better visibility of the institute.	
Recommendations: Continue on this path.	

IMPLEMENTATION OF RECOMMENDATIONS

3.7 Implementation of the recommendations in Module 3	
Evaluate how the evaluated unit has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the evaluated unit has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: It is good to see the progress in improvements and strategic planning. But this is too slow because it is not sufficiently supported by other faculties and institutes and by CTU leadership. The goal and mission do not fit with the actual situation.	
Recommendations: None.	

EVALUATED UNIT RATING

Evaluation of unit	
Having evaluated the individual criteria of module M3, please summarise your evaluation in the context of the module, describing and justifying the strengths and weaknesses of the unit being evaluated.	
3.1 Introductory information about the unit under evaluation	**NOT RATED**
3.2 Recognition by the research community	**1 - Inadequate**
3.3 Research projects	**2 - Below average**
3.4 Research results with existing or prospective impact on society	**2 - Below average**
3.5 Transfer of results into practice	**3 - Average**
3.6 The most important activities in the field of popularization of R&D&I and communication with the public	**3 - Average**
3.7 Implementation of the recommendations in Module	**4 - Very good**
Average rating [1–5]:	**3 - Average**
Grade [A–D]:	**C**
Summary assessment: The Masaryk Institute of Advanced Studies (MIAS) is an institution that intends to meet the social-scientific challenges of technological change and reflects them in research and education. These goals are highly relevant for a university of technology. The recognition in the national and international community and particularly inside CTU must be much higher. The strongest activities are in pedagogy and the highest recognition is reached by very few individuals, mainly on national level. The situation, however, improved significantly in the current evaluation period. The international network and the integration of the institute in international research consortia is growing. The high teaching load, the concentration on pedagogy, and the lack of opportunities for	

young and international young researchers are barriers on the way to meet the requirements to cover the items listed in the mission.

Although its role in pedagogy is quite clear, its role as higher educational institute in economy, by means of R&D&I activities, as well as in Dissemination – Exploitation – Life Cycle Analysis (DELCA) is not discussed at all. In fact, this part of the job description of MIAS, especially DELCA, may allow for an enhanced activity in research projects, provided that some staff from other, research-active, faculties could participate in MIAS. This way, MIAS could undertake the responsibility of DELCA in all CTU projects, regarding EU and National projects, even industrial contracts.

Summary recommendations:

Structure and mission research: Reach out to other faculties and institutes, establish a permanent platform for bilateral communication and strategic planning across CTU. Increase the number of research staff on professors' level with focus on the not yet existing areas of philosophy, psychology and sociology.

Transfer and dissemination: Continue on this path. Establish not only teaching modules but also online interactive teaching systems.

Continue the actions taken, but emphasize the role that MIAS should have in CTU: an expanded unit with increased research participation and own research that includes all humanities disciplines (philosophy, psychology, sociology), with full professorships in each of these areas to offer DELCA, RRI, LLL, and other cross-cutting aspects of engineering and science.

EVALUATION REPORT FOR MODULES 4 & 5

HIGHER EDUCATION INSTITUTION NAME: České vysoké učení technické v Praze – Czech Technical University in Prague

COMPANY REGISTRATION NUMBER (CRN): 68407700

MODULE 4 – VIABILITY

ORGANISATION AND MANAGEMENT OF R&D&I

4.1 Organisation and management of R&D&I Evaluate the organizational structure and setup of the R&D&I management system in relation to the size and type of the university and its mission and vision. Also consider comparisons with foreign universities of similar size and focus.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment:[1] CTU is a large university, consisting of 8 Faculties and 6 University Institutes and offers a rich tradition with more than three-hundred-year-old history. The management of the university is governed by law and by the Statute of CTU, approved by the Ministry of Education, Youth and Sports. Its organizational and managerial structure reflects a long historical evolution and follows models comparable to those of leading universities of similar size and importance, such as the Technical University of Munich and others. This ensures a well-balanced distribution of responsibilities and a reliable system of governance, tested and refined over decades. The Rector's Office is responsible for contacts and contracts with the "outside world." It also provides information, guidance, and best practices to the faculties and institutes, and carries out internal auditing and control activities. In addition, the Rector's Office oversees large-scale projects of strategic importance, which strengthen the cohesion of the institution and ensure that university-wide goals are met in a consistent and coordinated way. The faculties are responsible for the scientific research and teaching conducted within their labs, institutes, and departments. The faculty statutes specify the internal structures and the rules of operation within the faculties, under which the Dean's Offices support and control the research within their faculty. This system allows the structures to reflect the broad scope of CTU and the fact that the scientific outputs of each of the four oldest CTU faculties are sufficient to exceed the scientific outputs of many other universities. The high degree of independence of the faculties is justified by the significance of their work and, at the same time, embedded within a stable and coherent governance framework that ensures the efficiency and continuity of the whole university. The managerial structure of the CTU is clearly up to the task. It provides proper guidance while at the same time it is flexible enough to respond to novel challenges and accommodate changes that arise from natural evolution.	

[1] Provide verbal assessment of the indicator and briefly comment on the reasons for awarding the specific rating. Follow a similar procedure for the other indicators.

Recommendations: Arising topics such as quantum or novel medical technologies may require broad cooperation among different topics and teams. Despite good level of cooperation between various units, CTU management should foster an even superior one. In this context, it is proposed to design and initiate a Master Study in "Biomedical and Environmental Engineering" in English language. It should be interdisciplinary under participation of several faculties of CTU and other universities in Prague. Among others: Biomedical, Mechanical and Electrical Engineering, Transportation Sciences, the autonomous unit S.A.W.E.R., Medical faculty (CU) and UCT in Prague. The number of students may be limited to 30 or 40, and the Bachelor students can come from all above faculties. The first semester is a preparatory one to adapt the different proficiencies. This would still enhance the international and interdisciplinary cooperation, activities and reputation.

R&D&I QUALITY MANAGEMENT AND SUPPORT SYSTEM

4.2 System of support for a quality R&D&I environment and incentive measures for quality science Evaluate the systems/measures/tools described to stimulate high-quality science at the HEI being evaluated. In your evaluation, consider the documented effectiveness of the measures described, their impact on achieving the mission and vision of the HEI being evaluated, the realization of excellent science and the possible absence of key systems/measures/tools.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: CTU provides a comprehensive system of support for researchers throughout the entire life cycle of R&D&I projects that has been improved and expanded recently. Prior to submission, the ANLUPA system – jointly developed by CTU and the University of Chemistry and Technology Prague – informs prospective applicants about relevant grant calls. This bilingual platform, now licensed to more than 40 research organizations across the Czech Republic, ensures that researchers are well-prepared and timely informed. The Rector's Office complements this tool by preparing selected parts of applications, issuing required certificates, and organizing seminars for prospective applicants. During the implementation phase, CTU provides researchers with professional advice in areas such as accounting and reporting, as well as access to tools for financial and project management. Post-project support includes assistance with audits and compliance procedures, thereby ensuring high-quality execution and transparency. New initiatives have also been introduced to encourage project development and peer feedback. For example, the monthly "My Future Project" meetings create a platform where researchers present their ideas to experienced colleagues, receive constructive feedback. This approach stimulates innovative ideas. CTU also places strong emphasis on supporting the next generation of researchers. The Student Grant Competition, open to Master's and doctoral students, provides financial support for high-quality research projects. The bilingual in-house application system ensures smooth processes for submission, evaluation, management, and reporting. In addition support student scientific conferences, giving young researchers the opportunity to experience the complete project cycle in practice. These measures significantly increase the competitiveness of early-career researchers in external grant schemes. International cooperation and motivation mechanisms further strengthen CTU's R&D&I environment. As an active member of networks such as C.E.L.S.A. and CROWDHELIX, CTU creates opportunities for international partnerships and joint projects. Targeted seed funding has been used to initiate collaborations, for instance with NTUST and NTU in Taiwan, which have since expanded	

into broader agreements with universities, authorities, and industry. Incentive structures, such as annual Rector's Prizes and targeted rewards for highly cited publications, ensure that outstanding achievements are recognized at both senior and junior levels.

Over the last five years, CTU has strategically concentrated on developing these supportive and motivational tools. Their impact is evident in the significantly increased number of successful grant applications, the growing number of high-quality applications, the growing number of high-quality publications, and the strengthening of international scientific collaborations.

Recommendations: Focus shift from quantitative to qualitative measures in evaluation/rewarding excellent scientists and/or teams is acknowledged. This trend should be kept to improve excellence. At the same time young researchers should be evaluated and rewarded separately to improve their motivation. Pilot project supporting ERC applications should be broadened. The CTU's ANLUPA system for becoming a standard information channel is to acknowledge; it might be useful to check whether e-mails can be replaced by some social media delivering content to mobile phones.

4.3 Quality control system for R&D&I environment

Evaluate the described internal and external evaluation system in terms of its quality, effectiveness and suitability for the HEI.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

CTU has a well-designed quality control system in place for R&D&I activities with the Internal Evaluation Board and Scientific Council being at the core of the system. The International Advisory Board is generally available for consultation to provide advice on directing the R&D&I programs. The quality control is also carried out at the level of the individual faculties by their own scientific boards. The Code of Ethics, the Ethics Commission, and Committee for Ethics in Research make sure that high ethics standards are maintained across the board.

Recommendations:

The system is well-established and supports an excellent R&D&I environment. It is recommended to maintain this good work. The International Advisory Board can also be consulted as frequently as needed to help guiding the programs.

4.4 Sustainability and resilience of R&D&I

Evaluate the described system of measures for sustainability and resilience of R&D&I in terms of their quality, effectiveness or possible absence of key measures.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

CTU has an excellent framework of measures for sustainability and resilience of R&D&I. CTU's Sustainable Development Strategy creates the general guidance. The Sustainable Development Office is responsible for the execution of the program set by the policies. It is notable that the

sustainability is also incorporated in the education, so students learn about it as an integral part of their programs. The IP protection and technology transfer are important parts of the CTU's research mission. The administrative system to support this is very well-structured to promote innovation, commercialization of research results, provide incubator support to nurture start-up companies and spin-offs. CTU's information and digital data management system is also exemplary in providing a resilient data eco-system to support the mission of the university.
Recommendations: The overall recommendation is to maintain the excellent work in this area.

PERSONEL POLICY

4.5 Structure of human resources	
Evaluate the described structure of human resources at the evaluated HEI in terms of age composition, degree of internationalization, distribution by job classification, and gender balance. For the assessment, use the data from the annexed tables 4.5.1 and 4.5.2; it is also possible to draw on the more detailed staffing data presented in indicator 3.1 of the self-evaluation reports for the evaluated units.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: It is of utmost importance for the success of a university that the scientific staff is well balanced in important key parameters, such as age structure, gender aspects as well as internationalization. This is especially true for associate as well as full professorships as they are regarded to be the most visible representatives for their university and in their individual scientific communities. But, based on the numbers provided within the self-evaluation report, the percentage of women in these last two career stages is very low, although increasing at lower career stages down to the category “assistant”, typically for a “leaky pipeline”. Even more, the number of international staff members from assistant level up to full professorship is with <5% in each category very low. The panel, however, found that the latter key parameter was substantially increased for “Early career researcher” and “Researcher in other categories”. But, besides these two categories, the numbers stayed on the same level within the last 5 years. For full and associate professors, the age structure is regarded as unbalanced and dominated by faculty members who are 60 years or older.	
Recommendations: The panel acknowledged all activities of CTU to improve the three human resources related key parameters mentioned above. The panel, however, found that this effort needs to be intensified as the progress in improving e.g. age structure, gender balance as well as internationalization especially for associate as well as full professors is regarded as very moderate. The panel advice to stimulate the promotion from associate to full professorship by an attractive career perspective. Furthermore, qualified younger full professors need to be supported for accepting important faculty duties. To improve the attractiveness the panel also recommends providing a selected number of positions within each faculty for high-level (international) post-docs so that they might get promoted to a tenure-track position as assistant professor, based on a rigorous evaluation process of an international board. This approach might help most qualified (international) candidates to concentrate more on high-level grants and, in further consequence, on high-level scientific output, rather than focusing on attracting grants, to first cover their salary. Besides these aspects, these young, high-level candidates should contribute to rejuvenate the academic staff.	

4.6 Academic and Research Careers	
Evaluate the described system for the recruitment and career development of academic and research staff. Evaluate the system in terms of its quality and effectiveness, as well as the potential absence of key elements.	
Rating [1–5]:	**4 - Very good**
Qualitative assessment: CTU runs well established processes for HR recruitment including equal opportunity rules. Additional standard HR related activities include publicly available career rules plus the corresponding regulations. All this information is made accessible to CTU employees via intranet and via public announcements for open positions (in Czech and English language). Even more, CTU provides a transparent habilitation as well as appointment procedure for senior research positions and for professorships, just to highlight some further important aspects. Parental leave is taken into account in the career development and CTU offers on campus short- and full daycare including an elementary school. In 2025, CTU opened a welcome office.	
Recommendations: The panel acknowledges that, overall, the HR procedures of CTU are on an international level including measures to support students/employees with e.g. short-/full daycare for their children as well as a welcome centre. The panel, however, advice to increase the effort for attracting especially international high-level candidates with the potential to get promoted to associate as well as full professor level. To increase CTUs international attractiveness, measures like a starting package (which has to be negotiated with each candidate individually) are recommend stimulating their research activities. This could include PhD and/or Post-doc positions paid by CTU at least for a certain starting phase, specific infrastructure/equipment/rooms, a starting budget or dual career opportunities for partners.	

4.7 Gender equality measures	
Evaluate the gender equality measures described in self-evaluation. Evaluate the measures in terms of their quality and effectiveness, as well as the potential absence of key measures.	
Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The CTU has made significant progress in institutionalizing gender equality through its revised Equality Plan 2025–2029, increased policy transparency, and alignment with the HR Excellence in Research Award. Supportive measures—such as flexible working arrangements, recognition of parental leave, and on-campus childcare—reflect a sincere commitment to promoting an inclusive academic environment.

Filling half of the university's leadership positions with women is an important step toward achieving gender balance at the central level. However, significant gender inequalities remain in the faculties and research units. The proportion of female professors is still below 10%, and all eight deans are male. While women are better represented in the areas of early-career professionals and assistant professors (around 21–24%), advancement into senior academic ranks remains slow.

The CTU has rightly recognized that achieving gender parity in research, development, and innovation, especially in STEM subjects, is a long-term challenge. Data at the faculty level shows significant differences: the situation is better in biomedical engineering and architecture, while in faculties such as mechanical engineering and nuclear engineering, the proportion of women is minimal. This underscores the need for faculty-specific strategies alongside university-wide efforts.

Although more women are entering academia, age-structured data confirm ongoing vertical segregation. The transition from entry-level positions to leadership positions is limited, posing a risk to CTU's goals of academic renewal and competitiveness.

While gender-sensitive concepts exist in selected projects (e.g., “Human-Compatible AI”), such approaches are not yet widespread. Institutional mechanisms are in place to prevent misconduct in the workplace, but these suffer from a lack of visibility and transparency in follow-up.

In summary, CTU has established a solid foundation and is committed to improvement. The next phase must focus on translating policy measures into concrete change—particularly in the areas of hiring, retention, and promotion—to ensure structural progress and foster a more inclusive research culture, especially in technical disciplines.

Recommendations:

The CTU must now move from political commitments to implementation, focusing on consistent application and accountability at the faculty level. While frameworks such as the Equality Plan and the Career Guide exist, the continuing gender imbalance in leadership and senior academic positions makes it clear that more targeted measures are needed.

Gender equality should become a core task of academic leadership. The rectorate and deans must actively monitor progress, define targets, and support leadership training to embed inclusive practices in recruitment and evaluation. Inequalities at faculty level—particularly in STEM subjects—require tailored action plans supported by data and institutional support.

Robust, gender-disaggregated data collection is essential for transparency and informed decision-making. Reporting on hiring, career development, funding, and mobility by gender and faculty will support both strategic planning and accountability. Career development measures should include

mentoring, training, and re-entry assistance for employees returning from parental leave or career breaks.

Barriers to mobility—particularly for caregivers—must be removed through more flexible formats, family support options, and inclusive partnership agreements. CTU's mobility policies should reflect gender-sensitive planning to ensure equitable access to international opportunities.

The CTU should also improve its mechanisms for combating harassment and discrimination. This includes clear reporting procedures, mandatory training, independent oversight, and anonymized annual disclosures to build trust and transparency.

Finally, gender equality should be integrated into research content and curricula, particularly in engineering and AI. This would reposition gender equality not only as part of human resources policy, but also as part of academic excellence. CTU is well positioned to take a leading role in national and European gender equality networks and should actively adopt and promote best practices.

Through these measures, CTU can move from fundamental commitments to institutional transformation and promote gender equality as a cornerstone of its excellence in research, teaching, and innovation.

4.8 Mobility of academic and research staff (including sectoral and inter-sectoral mobility)

Evaluate the described mobility of academic and researcher staff. Pay attention to whether the evaluated HEI achieves the set objectives, whether the mobility objectives are appropriately set for the HEI and whether the strategies in place lead to their achievement or help remove existing barriers to mobility.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

There are three components to this particular question. The first concerns the mobility of the students, both at the undergraduate and the graduate (PhD) level, and is primariliy, about international mobility. The second concerns the international mobility of the academic faculty and is focused on the international mobility of the CTU faculty and staff but it also addresses the question whether CTU can attract international talent to its ranks. Finally, there is the question of the upward mobility of the faculty and staff through the academic ranks.

The education rules for students at CTU promote stay abroad periods for PhD students and Habilitation candidates. The number of cooperating countries is high. In our last report we recommended that this opportunity be offered to master and bachelor students and that there should be more participation in European mobility programs such as ERASMUS. There is great progress in this area which is gladly acknowledged by the panel. The panel is also very impressed by the composition of the PhD student body where international students cmake up about 40% of the entire graduate student populastion.

The international mobility of the academic faculty is also at a similarly high level, in forms of international collaborations, exchange programs, grants, visiting positions, etc. Perhaps something like the equivalent of the US sabbatical year should be introduced, where after every sixth year a six-month or a one-year sabbatical leave should be granted and paid for by the university. It is the best way to get recharged and be part of the international mainstream. The panel is particularly impressed by the examples listed for international collaborations, especially those in the USA and the UK.

The last issue is the upward mobility. There are clear rules for the entry level, how to get promoted from postdoc to assistant professor and from assistant professor to associate professor. However, that is where the buck stops. There is not enough motivation to get promoted from associate to full professor and this does not reflect well on the intermediate level faculty.
Recommendations: Somewhat more should be done to attract international scholars to the faculty ranks. Most importantly, clear incentives should be established for promotion from the associate to the full professor rank, such that the promotion should be attractive, desirable and encouraged. Finally, the introduction of a sabbatical leave should be considered.

RESEARCH INFRASTRUCTURE

4.9 Research infrastructure	
Evaluate the system described for the acquisition/optimisation of core facilities and other equipment and their renewal. Evaluate the system in terms of its effectiveness and suitability for the HEI. Also consider the system for sharing instruments and equipment, including core facilities and equipment of evaluated units. Use the data in Annex Table 4.9.1 to support your evaluation.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The provided text description is rather short and excessively focused on Large Research Infrastructures. One fission reactor and the tokamak seem to be somewhat aged and mostly used for teaching, training and science popularization. The VR-2 recent subcritical reactor is, seemingly, also mostly for training. These are valuable, with an impressive site visit provided to the panel members, but less relevant for excellence in science. The Van de Graaff particle accelerator is valuable research-wise, being also in CZ RI roadmap since 2012 with open access, seemingly. Participation of CZ teams in major international research facilities occurs but it is unclear if this is a centralized national action, or CTU plays an important role in funding and coordinating activities. The testbed for Industry 4.0 at CIIRC CTU is certainly a top and impressive facility, which was also visited. It is very recent and integrated within an international network. Table 4.9.1 is somewhat disappointing, as non-justified: most boxes are zero; an important exception is Year 1 in “Other intangible fixed assets”; the total investment in research infrastructure and equipment is mostly small fixed assets for R&D&I, which is less than 2 M€/year, with the cost for repair and maintenance being about 10% of this value. Without the site visit, with the information provided in the self-assessment document, the applicable rating would be only Very Good. The positive impression from the site visit, allows a better rating, with recent and valuable equipment present.	
Recommendations: Top level research requires access to expensive and modern laboratories, as well as computing facilities. While the latter may be party resolved by a nation-wide super-computer, cloud-computing or fast inexpensive servers, the former are needed. The site visit allowed to observe very modern facilities (mostly), combined with outdated ones (some). It was also understood that the organization of CTU relies more on the units’ strategy (faculties and research centres, i.e. organizational units) than a global University decision.	

In this context, the following recommendations are made:

- Better reporting and integration of information on CTU's research infrastructure.
- Ensuring that advanced very expensive facilities such as high-end SEM, HPC or GC–MS are present in CTU and available for general use.
- Ensure that the different faculties are aware of recent expensive general-purpose equipment available in other faculties, such as TGA, UTM, DSC, etc., also avoiding duplication of equipment.
- Ensure that the different faculties are aware of recent expensive general-purpose software available in other faculties, such ABAQUS, ANSYS, etc.

Ensure that units are active in applying for funds for equipment renewal and that existing equipment is operational, calibrated and maintained. Allow that some organizational units borrow funds from other units for strategic equipment replacement, in justified cases.

FINANCES

4.10 Budget and structure of financial resources

Evaluate the budget and financial resource structure of the evaluated HEI in terms of its suitability for the HEI, i.e. whether the financial resource structure is appropriate for the size and type of the evaluated HEI. You should also pay attention to the ability of the evaluated HEI to attract prestigious research projects. Use the data in the annexed tables 4.10.1 to 4.10.5 to support your evaluation.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

It appears that important changes are present in Czechia with some budget cuts. The global CZ investment in R&D is below EU average but most countries in EU rank below CZ. In 2024, CTU did extremely well with the funding from Grant Agency of the Czech Republic.

The percentage of public funding in the Czech Republic (Table 4.10.1) is very high in most organisational units (and globally), with a notable exception of the Klokner Institute in terms of funding from other sources. In terms of public funding from abroad, the Faculty of Transportation Sciences is a very positive outlier. The totals seem to be missing in Tables 4.10.3 and 4.10.4.

It is stated that „More than half of the income for science came from project funding. The ratio of project funding to institutional funding is increasing over time." This is quite good.

Table 4.10.2 is somewhat unexpected as "Basic research" seems too low and "Experimental development and innovation" seems too high. This may have to do with reporting decisions and national classification of funds. Values in the range of 50%, 30%, 20% for basic, applied and development + innovation could be expected. Without basic (or fundamental) research, scientific recognition is likely to be impossible.

The international projects selected include two European coordinated and one Teaming, which are signs of research excellence. These are certainly important, prestigious and topical. There is also one ERC AdG in AI and one MSCA-DN in WSNs, which are signs of true excellence. These top prestigious projects may be increased.

Recommendations:

The successful track of external funding must continue to be sought. Globally, there is room for improvement in terms of public funding from abroad and funding from other sources. A strategic

plan with concrete actions should be prepared from organisational units having more than 90% of their budget from public funding in the Czech Republic.

Ideally funding from abroad should globally increase, reducing dependence on the country classification as low research and innovation (R&I) performing, structural funds and national government politics.

Actions should be implemented at central level or organisational units to increase the number of highly prestigious grants in Europe, namely ERC, MSCA-DN and MSCA Fellows. CUT should reflect on a strategy to have more organisational units nurturing less performing units and defining topic-selected new leading early career or established professors to be hired at international level, in order to increase external scientific recognition and ensure success in the most prestigious funding calls. Prague and the current national funding possibilities create an attractive environment to attract leading international scholars, as long as proper local induction is established and an English working language working framework is present.

4.11 Rules for the use of institutional support for the LCDRO

Evaluate the strategy described and the rules for the use of institutional support for the LCDRO. In your evaluation, consider the effectiveness of the implemented strategy and policies and whether they contribute to the mission and vision of the HEI.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The Long-Term Conceptual Development of Research Organization strategy is at a properly good level:

- Relation with high class universities has been addressed with well-established deliverables and actions through different types of projects
- Collaboration with important industries and service companies has also been addressed with projects and already existing results
- Dissemination and exploitation of already achieved scientific results with public services, industry and related service-based companies

However, LCDRO is missing excellence due to the:

- Non balanced development of all Faculties and Institutes, by means of proper evaluation of scientific outcomes and corresponding actions
- Non optimum collaboration between Faculties and Institutes, by means of taking advantage of their given ability and future potential
- Non optimum collaboration with public services, local and European Industry, as well as international NGOs

The actual score is 3,5

Recommendations:

The main recommendations to improve LCDRO are:

- Change the status of MIAS, as suggested in the corresponding evaluation report, in order to host the dissemination, exploitation and life cycle analysis of all CTU projects
- Connect somehow all information and computer activities of different CTU Faculties and Institutes: splitting does not offer power

Support the collaboration between Faculties & Institutes with public services & entities, local industry (automobile and other), as well international organizations, by setting well established rules and privileges to the Staff Members, Labs and Faculties-Institutes acting this way

NATIONAL AND INTERNATIONAL COOPERATION

4.12 Significant collaborations in R&D

Evaluate listed examples of significant R&D&I collaborations with respect to the effectiveness of the collaborations established, their proportionality and appropriateness to the type of HEI and its mission and vision.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

CTU is actually performing significant collaborations in research and development, with the following most characteristics examples:

- Collaboration of FEL with an important biomedical enterprise to provide sensitive magnetometers for biomedical tests: unique action with very interesting outcomes for FEL
- Collaboration of the Faculty of Nuclear Sciences and Physical Engineering with large and important international organizations like CERN
- Collaboration of various Faculties and Institutes with the local automobile industry with well described targets and deliverables

Apart from that, CTU is closely collaborating with significant Technology University, like the University of Taiwan, allowing for the realization of research work which could not be realized at CTU due to the high cost of durables, in the order of several billions of Euros.

However, these outcomes could be better if CTU adds the following items in its R&D strategy:

- Targeting important industries in all over the world, related to the existing achievements of labs, Faculties and Institutes, and organize a systematic and proper approach to persuade them for a long-term collaboration. This will provide an additional budget to the CTU, including financial and scientific merits for the Staff Members acting this way.
- Being connected with some of the most significant Universities and Research Centres in all over the world, preferably those being in the first position of the international ranking. Along the same lines, CTU should attract important researchers and professors from all over the world to have somehow a relation with CTU. Nobel Prize and other high-level scientists can be the attracted in the basis of collaboration with industry.

Establish a relation with the decision makers in the field of research and development; this relation should be professional and organized and not individual, based only on the personal relations of Staff Members.

Recommendations:

The specific suggestions to enhance collaboration in R&D are:

- Establish an enhanced collaboration with the local automobile industry (Skoda), offering and realizing industrial products for them; along these lines, CTU should try the organized and professional correlation with high class industries in the EU (such as Airbus) US (such as Mask Industries)
- Organize a professional and central collaboration with Stanford, Harvard, Oxbridge and MIT, as well as other US, UK and EU Universities to establish bilateral degrees in all levels

(BSc, MSc, PhD), offering technologically and scientifically important ideas and projects; hosting should be for both sides

Organize an initially small office in Brussels to be connected with the decision makers in Horizon, EIC, ERC and other Frames.

4.13 Doctoral studies

Evaluate the described organisation of doctoral studies. Pay attention to the setup and quality of the processes, as well as their effectiveness through basic statistics, such as drop-out rate or data on the future career of graduates.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

1556 PhD students are enrolled in 82 Ph.D. programs. The variety of programs was consolidated between offers in Czech and in English. Some are in collaboration with the Czech Academy of Sciences in an umbrella agreement on joint Ph.D. Education (since 1998).

The doctoral programs are in the responsibility and authority of the faculties and the Klokner Institute. This separation into disciplines is a very similar situation as in other universities all over the world, also the options of a monography or a cumulated thesis. The reason why Klokner has an own Ph.D. program but other institutes do not, remains unclear. The maximum duration of the Ph.D. procedure was reduced from 7 years to 6 years.

Due to the financial structure underlying the Ph.D. positions including Ph.D. “student” status, most of the research topics are focused on applied research and development rather than on basic research. It is emphasized by CTU that only the Faculty of Nuclear Sciences and Physical Engineering is focusing on pure science.

In the on-site visit, it became clear that it is easy to get a Ph.D. position as there are various funding opportunities. The funding per person, however, is low. The challenge seems to be to keep the Ph.D. students onboard until graduation. A relatively large number, compared with other European universities, cancel their Ph.D. studies for financial reasons. The overall workload depends on involvement in teaching. Social, economic, and language skills can be achieved but often on personal initiative, as only some softskills’ courses are offered. Mentioned are courses in cooperation with the National Technical Library on scientific writing. But not the whole bunch of social, didactic, economic, philosophical (ethics) softskills is not yet covered in the Ph.D. programs. Also, it seems that overarching structures where Ph.D. student can meet and discuss across faculties don’t exist. On the other hand, the opportunities to join one or two international conferences per year are very good and easy to get the travels funded.

Recommendations:

The rather high drop-out rate in the Ph.D. programs is a result of the strict separation of the Ph.D. student status (on relatively low salary) and the added project-based salary. These added projects distract the young researchers from basic research. CTU mentions explicitly that “Ph.D. students are seen as early-career researchers”, but in daily practice they seem to have mostly a role as students with less scientific freedom than in other Europeam universities. It is recommened to increase the number of Ph.D. projects in basic research also in other faculties, particularly in engineering sciences and in computer science and to give them more own responsibility.

The model example (Tomas Hodan) is an exception in many ways. This person is truly outstanding. It would be good to monitor the performance of individuals not only for best case but in a detailed statistical analysis: conference presentations and journal publications per year, impact, duration of the Ph.D. research vs. amount of teaching duties, and international integration, for example, in order to better understand the situation of the whole Ph.D. cohort.

The offers for softskills and interdisciplinary thinking could be extended. The existing structures for languages and scientific writing are rather distributed across Prague. CTU has a great opportunity

with the Masaryk Institute and with the membership in EuroTech to establish a unique softskill hub for young researchers with an overarching portfolio in all aspects of languages, ethics, and most importantly for responsible research and innovation.

IMPLEMENTATION OF RECOMMENDATIONS

4.14 Implementation of recommendations in Module 4	
Evaluate how the HEI has reflected the recommendations from the previous evaluation of the IEP, if applicable. If the HEI has not been evaluated before, the indicator will be marked as N/A – Not Applicable.	
Rating [1–5]:	**5 - Outstanding**
After 2020, CTU changed the regulations and shortened the maximum duration of a doctoral study from 7 to 6 years. The criteria for habilitation procedures have been amended to allow excellent candidates to apply earlier in their careers. Finally, a stronger cooperation between the supervisors in Ph.D. programs in faculties and institutes was improved.	
Recommendations: None	

MODULE 4 RATING

MODULE 4 – SUMMARY EVALUATION	
After evaluating each indicator, please provide an overall evaluation of Module 4. Assess the overall state of the research and institutional environment and the quality of the internal processes of the HEI. Consider whether and how the set processes contribute to the fulfilment of the HEI's mission and vision. The aggregate grade is determined in accordance with the rules of the Methodology HEI2025+ as a simple average of the scores for each indicator.	
INDICATOR	**RATING [1–5]**
4.1 Organisation and management of R&D&I	**5 - Outstanding**
4.2 System of support for a quality R&D&I environment and incentive measures for quality science	**5 - Outstanding**
4.3 Quality control system for R&D&I environment	**5 - Outstanding**
4.4 Sustainability and resilience of R&D&I	**5 - Outstanding**
4.5 Structure of human resources	**4 - Very good**
4.6 Academic and Research Careers	**4 - Very good**
4.7 Gender equality measures	**5 - Outstanding**
4.8 Mobility of academic and research staff (including sectoral and inter-sectoral mobility)	**4 - Very good**
4.9 Research infrastructure	**5 - Outstanding**
4.10 Budget and structure of financial resources	**5 - Outstanding**
4.11 Rules for the use of institutional support for the LCDRO	**5 - Outstanding**
4.12 Important collaborations in R&D&I	**4 - Very good**
4.13 Doctoral studies	**4 - Very good**
4.14 Implementation of recommendations in Module 4	**5 - Outstanding**
AVERAGE RATING	**5 - Outstanding**
GRADE [A–D]	**A**
Summary assessment: The CTU is a very good university, bordering excellence. It has an excellent support system for R&D&I, a very focused mission in securing nuclear safety, a good balance of fundamental and applied research, and many excellent Faculties. The panel also acknowledges the progress in implementing the recommendations from the previous report. It is the acknowledged leader in the East-Central European region.	
Summary recommendations: While it is clearly a tall order to be competitive with the leading Western European technical universities, like, e.g., the University of Delft, ETH Zurich, and the Technical University of Munich, it is also clear that next goal for the CTU must be to reach competitive status with the many higher-ranked technical universities of Western Europe. The IEP hopes that our recommendations in the areas of HR, gender and age distribution issues, societal and ethic concerns, the length of PhD	

studies, interfaculty and global collaborations, strengthening the global presence and, specifically, recommendations related to the status of MIAS, will help achieve the next level.

MODULE 5 – STRATEGY AND POLICIES

5.1 Mission and vision of the evaluated institution in R&D&I	
Evaluate the described vision and general mission of the university emphasizing R&D&I (in context of its educational function and the educational policy strategy of the state or the relevant ministry for higher education. Compare the defined mission with reality. The evaluation should consider how the mission and vision of the HEI has been fulfilled in the past five-year period and whether the vision for the next five-year period is adequately set and realistically achievable.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The CTU defines its mission as achieving international excellence in education, science, research, development, innovation, and technology transfer, with an emphasis on societal benefit, interdisciplinarity, and internationalization. Its vision is consistent with the Czech strategy for higher education and the political goals of the EU (e.g., Horizon Europe, RIS3). Over the past five years, CTU has invested in new research centers, digitalization, international partnerships, and the promotion of doctoral programs, thereby making significant progress in realizing its mission. The mission is very well formulated, but explicit references to ethics, responsibility, and societal engagement remain underrepresented.	
Recommendations: Expand the mission and vision to explicitly emphasize the importance of social engagement, ethics, and responsibility in education, research, development, innovation, and Innovation/knowledge transfer. This would strengthen the social dimension of CTU's strategic orientation and demonstrate a greater contribution to the common good.	

5.2 Research and development objectives	
Evaluate the set goals of the HEI in both the area of R&D&I and the development of the HEI as an institution. Consider whether the goals are adequately established in relation to the size and type of the HEI, as well as its mission and vision, and whether they are achievable within the proposed timeframe.	
Rating [1–5]:	**5 - Outstanding**
Qualitative assessment: The CTU's research and development objectives are clearly defined and achievable given the size and status of the university as the leading technical institution in the Czech Republic. The creation of large-scale research centers, the modernization of infrastructure, and integration into European university networks are concrete achievements. However, the strategy remains strongly Eurocentric, with only limited articulation of a broader global perspective. A notable weakness concerns the doctoral program, where the average duration of study is too long, which reduces competitiveness compared to leading international universities. A stronger culture of cross-faculty dialogue and interdisciplinary idea generation is desirable, as this would contribute to strengthening the university's profile.	
Recommendations:	

Continue to focus on large research centers, and add further measures to strengthen the doctoral program with the aim of achieving an average duration of study of 4–5 years. Establish sustainable mechanisms for cross-faculty dialogue and new platforms to generate initiatives, and expand the strategic focus beyond Europe to a global level. Greater appreciation of internal communication and work culture among researchers, academics, and administrators—the "culture of CTU"—should also be addressed more openly and rigorously.

5.3 Institutional instruments and measures for the implementation of the research and development strategy

Evaluate the described institutional and strategic instruments for the fulfilment of the research and development objectives regarding how they will contribute to the fulfilment of these objectives. In your evaluation, also pay attention to the possible absence of key instruments or measures.

Rating [1–5]:	**5 - Outstanding**

Qualitative assessment:

The CTU has developed strong institutional instruments, including quality management systems, new guidelines for intellectual property and commercialization, and structures such as the ServiceHub for technology transfer and fundraising. These instruments are well suited to support the achievement of strategic goals and promote innovation. The commercialization and fundraising strategy (2023–2030) effectively complements the institutional framework. Nevertheless, the balance between central administration and faculty autonomy remains an issue: the high degree of faculty independence sometimes limits interdisciplinary collaboration and slows the implementation of university-wide initiatives.

Recommendations:

Clarify the relationship between faculty autonomy and central coordination to improve consistency in strategy implementation. Introduce targeted incentives for interdisciplinary and cross-faculty research initiatives to ensure that current research topics requiring broad collaboration are systematically addressed. Additionally, address challenges related to an aging workforce and the promotion of young researchers.

5.4 Implementation of recommendations in Module 5

Evaluate how the HEI has reflected the recommendations from the previous evaluation of the IEP, if applicable.

If the HEI has not been evaluated before, the indicator will be marked as N/A – Not Applicable.

Rating [1–5]:	**4 - Very good**

Qualitative assessment:

Since the last evaluation (2020), the CTU has taken important steps to implement the recommendations, particularly in the areas of commercialization, competitiveness, and the establishment of research centers. However, some issues have not yet been fully resolved. The mission has not been significantly expanded to include ethics and social outreach. The doctoral program remains lengthy, with no clear reform plan. The strategic orientation continues to be primarily European, with limited global reach. Interdisciplinary research is not yet fully promoted, and the integration of the humanities and social sciences into research, development, and innovation must be strengthened.

Recommendations:

Prioritize unresolved recommendations from the last evaluation: integrate ethical and social responsibility into the mission statement, reform doctoral studies with measurable graduation goals, broaden the global perspective, and create stronger incentives for interdisciplinarity and for the inclusion of the humanities and social sciences in research. Strategic partnerships at both local and global levels should also be expanded.

MODULE 5 RATING

MODULE 5 – SUMMARY EVALUATION

After evaluating each indicator, please provide an overall evaluation of Module 5. Evaluate the overall setting of the HEI's strategic objectives and development plan.

The aggregate grade is determined in accordance with the rules of the Methodology HEI2025+ as a simple average of the scores for each indicator.

INDICATOR	RATING [1–5]
5.1 Mission and vision of the evaluated institution in R&D&I	**5 - Outstanding**
5.2 Research and development objectives	**5 - Outstanding**
5.3 Institutional instruments and measures for the implementation of the research and development strategy	**5 - Outstanding**
5.4 Implementation of recommendations in Module 5	**4 - Very good**
AVERAGE RATING	**5 - Outstanding**
GRADE [A–D]	**A**

Summary assessment:

Prioritize unresolved recommendations from the last evaluation: integrate ethical and social responsibility into the mission statement, reform doctoral studies with measurable graduation goals, broaden the global perspective, and create stronger incentives for interdisciplinarity and for the inclusion of the humanities and social sciences in research. Strategic partnerships at both local and global levels should also be expanded.

Summary recommendations:

The CTU should consolidate its strengths while addressing unresolved challenges: reforming doctoral training, developing a stronger global presence and defning its own unique research profile by finding niche opportunities, like the existing ones in detector technologies. It has to aim at further strengthening interdisciplinary cooperation between faculties, and linking research, development, and innovation more clearly with ethics, responsibility, and societal benefits.

The early career development from Ph.D. to PostDoc to Assistant Professor can be supported even more, also to attract more candidates from other European countries. This includes the gender dimension. First steps in this direction are acknowledged but it is recommended to extend the efforts.

It is acknowledged that the habilitation procedures are improved. The perspectives for Associate Professors, however, are still difficult, as the positions of full professors are occupied. Quite unusual is also the small ratio between professors with strong R&D activities and the total number of

professors. It is recommended to actively attract international professors and particularly hire them to fill gaps in the basic research portfolio defined by the faculties and institutes in a strategic plan.

An even stronger cooperation across the units of CTU is recommended. The communication and strategic planning of interdisciplinary research should be enhanced, including more flexibility in interdisciplinary Ph.D.s. This requires more than arbitrary contacts between individuals. Instead of arbitrary contacts, a CTU-wide communication platform across the faculties and institutes seems to open great opportunities, for example by organizing a series of overarching “theme days” (“Health and Engineering”, “Mobility”, “Smart City”, “Sustainable Energy”, “Communication”, “AI”, etc.) on a high level of abstraction where researchers can meet and discuss and find project partners from bilateral projects to very large consortia.