

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

HIGHER EDUCATION INSTITUTION NAME: Brno University of Technology

COMPANY REGISTRATION NUMBER (CRN): 00216305

THE LIST OF EVALUATION UNITS IN MODULE 3:

a) Faculties

- Faculty of Architecture (FA)
- Faculty of Business and Management (FBM)
- Faculty of Chemistry (FCH)
- Faculty of Civil Engineering (FCE)
- Faculty of Electrical Engineering and Communication (FEEC)
- Faculty of Fine Arts (FFA)
- Faculty of Information Technology (FIT)
- Faculty of Mechanical Engineering (FME)

b) University Institutes

- Central European Institute of Technology (CEITEC)
- Institute of Forensic Engineering (IFE)

CHAIRPERSON OF INTERNATIONAL EVALUATION PANEL

Name and surname: prof. Ing. Petr Noskievič, CSc.

Phone number: [REDACTED]

E-mail: [REDACTED]

LIST OF INTERNATIONAL EVALUATION PANEL MEMBERS		
Name and surname	Position in IEP	Current position
Prof. Ing. Petr Noskievič, CSc.	Chair	Full-time professor at the Department of Control Systems and Instrumentation, Faculty of Mechanical Engineering, Technical University of Ostrava, Czechia; Member of the Council of the National Accreditation Bureau for Higher Education

Prof. Dr.-Ing. Christiane Fülcher	Member	Professor of architectural history, theory and monument preservation, Vice Dean at the Faculty of Architecture, University of Applied Sciences and Arts Dortmund
Prof. Dr. Dr. Aylin Yildirim Tschoepe	Member	Professor of Design Anthropology at the Basel Academy of Art and Design FHNW, Head of Research ICDP, Head of metalLAB (at) Basel
Prof. Dr.-Ing. Harald Garrecht	Member	Professor – Retired, Institute of Construction Materials, University Stuttgart President of WTA International Association for Science and Technology of Building Maintenance and Monument Preservation
Prof. Dr. Polona Žnidaršič Plazl	Member	Full Professor at the Chair of Chemical Process, Environmental and Biochemical Engineering and Chair of Micro Process Engineering and Technology, Faculty of Chemistry and Chemical Technology, University of Ljubljana
Prof. Dr. oec. Elīna Gaile-Sarkane	Member	Vice-Rector for Academic Affairs at Riga Technical University
Prof. DDI Dr. Robert Schürhuber	Member	Head of Institute of Electrical Power Systems, Graz University of Technology
Prof. Alan Chalmers	Member	Professor of Visualisation at WMG, University of Warwick, UK; former Vice-President of ACM SIGGRAPH
Prof. Ing. Jozef Zajac, CSc.	Member	Dean of the Faculty of Manufacturing Technologies at the Technical University of Kosice, Slovakia
Prof. Salvador Pané i Vidal	Member	Co-director of the Multi-Scale Robotics Lab Institute of Robotics and Intelligent Systems (IRIS) Swiss Federal Institute of Technology (ETH) Zurich
Prof. Davor Dujak, PhD	Member	Full-time professor at the Department of Marketing at the Faculty of Economics and Business in Osijek, Josip Juraj Strossmayer University of Osijek, Croatia; Member of a sub-sectoral working group

		"Commerce" at the Ministry of Science and Education of the Republic of Croatia
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PROVIDERS METHODOLOGIST

Name and surname: Mgr. Michal Vávra

Phone number: [REDACTED]

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Date of on-site visit of higher education institution: 9. – 12. 6. 2025

In _____ date _____

Signature _____
(IEP chairperson)

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Architecture (FA)

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 Brno University of Technology (BUT) is a vibrant, interdisciplinary, yet traditional institution for architectural studies founded in 1919. It is one of the smallest faculties at BUT, but is one of the renowned architecture faculties in the Czech Republic, achieving constantly a score of 201-260 in the QS World University Rankings. The faculty offers Bachelor, Master, Doctoral study programmes in Architecture and Urban Design, which are attended by 640 students in total. Both Bachelor's and Master's programmes are offered in Czech and English, the doctoral programme only in Czech. The number of BA-students increased from 2019 to 2023 from less than 300 to almost 400, while number of MA- and PhD-students remained stable. There is a high level of international student mobility and a significant number of international cooperation in short-time workshops as the FA maintains numerous international partnerships via EUList Alliance, CEEPUS ABCD NETWORK, EAAE, AESOP, Erasmus+ etc.

FA is divided into eight departments covering the areas of Theory, Monument Care, Engineering, Drawing, Design, Urban Design, Spatial Design and Experimental Design. The staff of 76 in 2023 includes 6 full-time professors, 9 associate professors and 11 assistant professors. Their median age is above average. Compared to most other faculties at BUT, the percentage of women among employees and students is high, although only a few women occupy higher positions. Many members of the teaching staff work in architecture or design practice and participate successfully in building projects, competitions and exhibitions. Although the member's expertise lies primarily in artistic or architectural outcome, compared to other architecture faculties internationally, the number of lecturers holding a PhD is above average. Nevertheless, the main focus of scientific research is on the history and theory of architecture, followed by a wide margin by civil engineering and social and economic geography. Research in this area is exceptional and has an international impact. In the period under review from 2019 to 2023 FA has significantly expanded its activities in the area of contract research and interdisciplinary methodology in line with its 'vision to be one of the leading institutions in European context in terms of excellence in research and artistic output'.

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 international success and reputation of FA is based on research in the fields of architectural history and theory as well as monument preservation on the one hand and on the artistic results in architectural design on the other. The continuous research on Czech modernist architecture is remarkable and outstanding, recognised internationally by prizes such as the Jean Tschumi Award 2023 or Bene merentibus 2021. The architects have also received international awards such as the International Design Award IDA 2021 and nominations for the prestigious Mies van der Rohe Award. At national level, they have been honoured several times with the Grand Prix of Architects, the award of the Building of the Year, the Czech Architecture Award and others. In these cases, too, the results the artistic outcome is competitive on an international level.

Memberships in international professional organisations and committees, particularly in the field of architectural theory and cultural heritage, such as ICOMOS World Heritage Unit, the European Heritage Label, or national architectural associations in the USA, Great Britain, Germany, Italy and other countries, have to be highlighted. Other members of academic staff were involved as jurors in national architectural competitions organised by the Czech Chamber of Architects.

Even though, international peer reviewed journals are rare in the field of architectural studies, five faculty members are participating the editorial boards or the scientific committee of at least nine scientific journals. In addition, five other members contributed to the editorial board of four other architecture magazines and online platforms.

During the reporting period, the FA regularly invited well-known foreign scientists and architects to give guest lectures. In view of the size of the faculty, these activities could be expanded. This also applies to the impressive number of lectures given abroad by only two faculty members in the field of architecture theory and monument preservation. There are no reports on international conferences at the Faculty of Architecture, but up to 2023 the FA hosted the Czech Annual PhD Conference on Architecture and Urbanism to enable young researchers to present and discuss their research on a national level.

Recommendations:

To maintain or even increase the faculty's recognition in the international research community, it is necessary to expand the circle of persons who are internationally active. Encourage staff to use existing international contacts and funding to present the research, artistic outcome, and achievements of faculty members at all academic levels to a wider academic audience abroad. It is recommended to organise international conferences at the FA to address existing research questions to a larger community. It is strongly advised to continue the format of the PhD annual conference in addition to the AESOP PhD workshop to be held in 2026, as the conference format gives the young scientists a good platform to present their research beyond Brno. A structured PhD programme for architects is still not the norm, as graduates usually go into practice and do not require a PhD. However, the support of young scientists embodies great potential for the visibility of research at FA.

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:

While the last evaluation criticised the limitation of research to the field of architectural history and theory, the FA was able to broaden the scope and to generate additional scientific research projects in the fields of heritage conservation, engineering and urban planning. In the period under review, there were eight scientific projects funded by Technology Agency of the Czech Republic, Ministry of Culture of the Czech Republic and Czech Science Foundation. The FA is listed as a partner in most of the projects, with the 'Historic Houses of Jihlava' project being the largest project with the FA respectively BUT as a beneficiary. Applications for Horizon, Czech Science Foundation Junior Star and Cost Alliance are still being evaluated. In addition, there were several artistic projects in the form of exhibitions, workshops and studios supported by the Ministry of Culture of the Czech Republic. Moreover, the FA has been conducting contract research since 2021, which is seen by the department as an instrument of knowledge transfer. On all these projects, the FA works together with municipalities and local authorities, which means that the third-party funds obtained are modest. Nevertheless, an increasing trend is recognisable.

Since the last evaluation, the faculty has obviously made impressive efforts to put scientific and artistic research on a broader footing. Furthermore, as recommended, FA has entered into co-operations with other universities. However, there is still a lack of strategy and leadership to achieve the mentioned vision of 'being one of the leading institutions in the European context in terms of excellence in research and artistic output'. The intended orientation towards the agenda of the European New Bauhaus is also not yet apparent.

Currently, the high number of PhD candidates is not considered an asset. However, they are the ones with whom the targets can be achieved. It is necessary to improve their research environment (e.g. by involving them in research projects or providing workspaces). And there is a lack of a support system for women, special programmes to attract and retain them in science. This requires greater efforts.

Recommendations:

The positive trend should be continued. It is recommended to initiate independent projects, act as a beneficiary, and increase the general scope of research. The development of a strategy is also key to both broadening research and focussing on key topics like agenda of the European New Bauhaus that will help attract more funding for long-term planning. Find collaborative partnerships with other faculties within BUT to obtain contract research with industry or companies in the construction sector. It is also proposed that the number of early career researchers and female researchers be increased in line with the ratio of male to female students. As well more financial as well infrastructural support for early career researchers is needed. Encourage PhD-candidates to apply for research funds on a smaller scale or involve them in larger projects.

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:

With regard to the impact on society the FA expanded the presentation of its research expertise with projects such as realised architectural projects, exhibitions and other artistic approaches. Partly taken into account by the National Register of Artistic Outputs (RUV), realised architectural projects demonstrate the breadth of its interdisciplinary approach and the multi-layered possibilities for generating social impact. The conversion of a historic factory building in accordance with its listed status, the integration of a monastery wall into new public buildings, the extension of a presbytery to include a primary school and the reuse of building materials for the construction of a new residential building not only demonstrate an intensive analysis of the local historical conditions and their significance for the local community, but also express a multifaceted awareness of sustainability. Inclusivity and accessibility are one of the key ideas of the long-term project of a newbuilt church.

These factors can also be used as a benchmark for the applied project on educational programme on comprehensible architecture and a specialised map of the values of the historical centre of Jihlava. The exhibitions on Jože Plečnik and Prague as well as on Czech and Slovak architecture, curated by the head of the theoretical department, linked cultural identity with architecture and met with an extraordinary response from the national and international public.

All projects have a national dimension. It would be valuable if, analogous to scientific research, generalised results could be generated from the applied projects, which could then be transferred to other contexts, including international ones.

FA apparently sees its strength in terms of impact on society primarily in its artistic outcomes, although this is also present in the research projects declared as scientific under 3.3. This can be seen, for example, at PUTM project in the public accessibility of information, in the Passportisation of Theatres and Venues for Theatre Making project in the sustainable dissemination of information, in the Earth Buildings and Clay for People projects through the reuse of traditional but sustainable materials, in the influence of the type and location of the urban structure on the sustainable spatial development project in the approach of future-oriented sustainable urban development.

Recommendations:

In all research projects, whether scientific or artistic, the results of the social impact should be systematically documented and analysed with regard to their general validity and applicability. The four pillars of sustainability – gender equality, accessibility and inclusion – are fundamental societal aspects that should be considered in all projects. In accordance with the policy of European New Bauhaus, key indicators for the measurable recording of effectiveness should be determined and fixed. Besides, the presentation and communication of the diverse projects, methods and approaches should be expanded to an international level. Currently, communication to the public is limited, many projects are invisible.

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 strength of the department with regard to the transfer of results into practice clearly lies in architectural design and the realisation of proposed projects. The members of FA are very successful in this area, which is also reflected in the respective categorisation of the projects in the National Register of Artistic Outputs (RUV). Beyond professional architectural design, the faculty identifies four additional dimensions for knowledge transfer: 1. applied research, 2. contract research, non-contractual collaboration and institutional funding, 3. the creation of spin-offs, and 4. the sale of licences, expertise and donations. Effectiveness and commercialisation diverge widely in these categories and the projects realised. Under applied research, FA lists its great, but not financially significant project of the capsule for the Czech Antarctic Programme. The contract research category includes mainly study projects that deal with specific issues that support local authorities in developing strategies. However, these student projects also form the basis for interventions in cooperation with cultural institutions and private companies. These national projects with the predominantly public sector offer great opportunities to introduce students to challenges (research-based learning). The results provide instructions for the transfer into practice or are even implemented in the built environment but only little to generate additional income. With BIOM, FA was able to establish a spin-off in cooperation with the Faculty of Civil Engineering, the realisation of a prototype appears to be demanding in terms of financial resources. In addition, a patent on a wooden prefabricated floor element was developed. Nevertheless, there is no clear traceability of the real transfer into practice. There is a lack of fixed measurability parameters that are applied to all projects - even beyond those mentioned above.

To provide greater support for knowledge transfer, FA created the positions of Knowledge Transfer Manager and Knowledge Transfer Officer in 2023. The coming years will show whether these efforts will increase the measurability of transfer into praxis. It is to be expected that a clear methodology will be developed according to which the type and scope of transfer into practice can be analysed. In addition, the projects mentioned in 3.3 and 3.4 could then also be tested and categorised in terms of their effectiveness in practice.

Recommendations:

In all research projects, whether scientific or artistic, the results should be systematically documented and analysed with regard to knowledge transfer into practice. Key factors of interaction with the public, knowledge transfer should be seen as a task to achieve measurable and comparable results. This also facilitates the presentation of the results achieved. In addition, further areas of knowledge transfer should be identified. It would be valuable to systematically involve alumni not only in final presentations, but also in terms of multiplier knowledge transfer. For example, it is worth asking how many buildings in Brno were built by FA graduates in order to identify the FA legacy in the city of Brno. Co-operation partnerships with other faculties within the BUT should be strengthened and expanded to ensure success in the area of contract research with industry.

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 range of activities of the faculty with and for the public is broad. In addition to the impact of built architecture, publications, activities with students in public spaces and the large internationally recognised exhibitions mentioned under 3.2, the FA also carries out many small interventions to present its results to the public. Noteworthy are several exhibitions at the Gallery of Architecture Brno, the support of Gallery 45000I, but above all the establishment of Gallery Mini as a semi-public exhibition venue in its own premises and a platform for the constant presentation of FA's own special work results. Faculty members also give public lectures, organise workshops with the public and host two lecture series. FA is likewise involved in public events such as the Day of Architecture or the Pecha Kucha nights.

The range of activities is extraordinary, but is not easily recognisable as such. There are some publications and brochures showing a glimpse of results, but there is no evidence of targeted public relations work. For example, the department's website was not up to date in the weeks prior to the evaluation and there does not appear to be a strategy for presenting the results via social media. There is also a lack of parameters on the extent to which individual projects are recognised by the public, such as counting the number of visitors, the number of accesses to the website, the reception of lectures, exhibitions and campaigns in the press or similar.

Recommendations:

In order to adequately present the wide range of activities, a strategy for publicising the results needs to be developed that takes into account the individual cultures and characteristics of the different formats. FA should analyse which forms of media are most likely to reach the public or specific target groups. The website should always be up to date, and social media such as Facebook and Instagram could be an appropriate way to present outcomes fast and continuous.

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:

Since the last evaluation, the FA has taken impressive efforts to implement most of the recommendations made. The faculty has created infrastructures to promote research and significantly increased the number of national and international research projects, research areas, as well as cooperation with other universities. In most research projects, however, the FA is merely a partner and not the main applicant.

Collaboration with other BUT faculties was enhanced to a much lesser extent. Cooperation with other BUT faculties could be of particular interest to the FA in terms of contract research, a field in which the faculty has taken initial steps but is not yet able to utilise its full potential with its target group of the public sector.

Then again, efforts to increase internationalisation have led to more participation in cross-border projects. The international mobility of teaching staff and students has been strengthened, for example, by the establishment of several summer schools.

Recommendations:

It is recommended that the positive trend be continued. Efforts to broaden international cooperation and the exchange of ideas, views and personnel should be maintained. Here in particular, the FA should proactively introduce and promote its own project ideas; this also applies to collaborations within the university.

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	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:

Since the last evaluation, the Faculty of Architecture at BUT has embraced the challenge of expanding its intrinsic interdisciplinarity in research as well. FA has undertaken impressive activities in setting up and adapting environments to foster research on a national and international level and to exhaust the various research possibilities. Initial successes have already been achieved and more are expected for the next evaluation period. The faculty will subsequently be able to develop its interdisciplinarity into a strength. The expansion of the research fields should be continued, also with regard to the objectives of the European New Bauhaus, but a targeted research strategy is required to avoid getting lost in too many small topics. There is room for improvement in public relations work respectively the communication of the faculty's large number of achievements and activities. The international partnerships are not yet sufficiently exploited to expand the lecture opportunities of faculty members abroad or to invite international guests to give lectures.

Summary recommendations:

The positive trend should be continued and enhanced by the following points:

- Develop a strategy to expand research areas and focus on key themes.
- Find co-operation partnerships with other faculties within BUT to obtain contract research.
- Initiate more independent projects and claim the position of project leader.
- Systematically document and analyse the social impact and knowledge transfer outcomes of all research projects.
- Identify key factors to achieve measurable and comparable results.
- Increase the number of female faculty members in higher positions in line with the gender ratio of students.
- Support early career researchers more in terms of research environment.

- Involve PhD candidates in research projects or support them to apply for research funding on a smaller scale.
- Reinstate the annual PhD conference.
- Expand intentional activities of faculty members.
- Invite more international partners/guests to attend conferences or give talks.
- Develop a strategy to publicise the results of activities via internet and social media.
- Involve alumni as multipliers for knowledge transfer.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Business and Management (FBM)

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 Faculty of Business and Management (FBM) at Brno University of Technology (BUT) is a dynamic faculty with a mission to conduct scientific research addressing the needs of regional and global economies and to educate socially responsible, broad-minded graduates.

FBM employs 165 staff, including 104 academic staff of whom 15 are Professors and 33 Associate Professors, with approximately 35 to 40 FTE systematically engaged in R&D&I. The faculty research capacity is primarily focused on FORD 5.2 Economics and Business (about 84%), with complementary contributions from ICT, engineering, and law. Key R&D&I areas include digital transformation of SMEs (tools used by more than 1000 companies), family business succession, tax law and transfer pricing, energy market modelling, sustainable investment, and digital transformation. FBM demonstrates strong national and growing international impact through certified methodologies, active knowledge transfer, increasing Q1/Q2 journal publications (from 48.15% to 57.52%) and a 63.67% growth in citations. The faculty attracts funding from national agencies, the Visegrad Fund, and contract research, with expansion into EU competitive funding identified as a strategic priority.

All recommendations from the previous evaluation period are taken into account and there are major improvements in creation of relationship with industry, attracting business experts to the educational process, strengthen entrepreneurial competence of the faculty (ContriBUTe, etc.) impact on valorisation, student involvement, cross disciplinary researches with multidimensional effects, FBM (BUT) is a member of EFMD, number of publications in journals ranked in SCImago (<https://www.scimagojr.com>) including number of publications in WoS and Scopus has increased.

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:²

In research projects FBM since last evaluation has showed excellent growth trajectory (publications, citations, international collaboration), including:

² 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.

- Recognized individual academic quality (Fulbright, prestigious national awards). balanced applied and basic research focus (very relevant for business and management field),
- Strong connection with industry and practice (certified methodologies applied in >1000 companies),
- Strong involvement in regional innovation ecosystems (ContriBUTe, family businesses, digital transformation),
- Well-positioned within the national and European research community and is gaining visibility internationally, especially in fields such as economics, management, tax law, business innovation, and digital transformation.

As very good results should be mentioned recognition through awards – 5 (five) prestigious awards are excellent for FBM size and profile. FBM has high level editorial board participation. FBM can be proud of frequent invited lectures abroad and ability to attract foreign scholars as 70 (seventy) invited lectures at foreign institutions – this is really solid number, but mostly in Central Europe and selective US cases. FBM academical staff has high participation in evaluation panels, increasing quality and impact of publications as well as active membership in international societies and networks. Good participation in national and Visegrad Fund projects.

FBM is doing very well as a faculty at a technical university in Central Europe and could be named as good regional player. Its R&D&I position is strong and improving within the Czech and V4 region (the project „Transfer Pricing in V4 Countries; International Visegrad Fund, 2/2019-4/2020; participants from the Czech Republic, Slovakia, Poland and Hungary”) and growing in Europe.

As areas for improvement could be mentioned:

- Absolute research volume and citation impact should be increased;
- More presence in top-tier global conferences should be beneficial for the faculty and overall research results (for example, Academy of Management, International Management Education Conference (IMEC), Academy of International Business (AIB) Annual Meeting, etc.);

Leadership roles in EU-wide policy and funding programs should be increased (there are no ERC, EIC, Horizon Europe leadership projects mentioned in the report).

Recommendations:

Engage more in EU-wide research programs. There is good participation in national and Visegrad Fund projects, but no mention of participation in Horizon Europe, ERC, Marie Skłodowska-Curie, EIT KICs what is a key for European scientific positioning. It is recommended to proactively join European research consortia in business and innovation topics for example: Green Deal, Digital Europe, Future of Work etc.

Strengthen recognition in global academic awards - 5 (five) prestigious awards are excellent for size and profile of FBM, but no mention of global field-leading awards e.g. Strategic Management Society awards, AOM best paper awards, EU innovation prizes.

Broaden and deepen interdisciplinarity. There are solid collaborations inside BUT and with some external partners like energy markets, tax law, sustainability, digital transformation. At the same time compared to best technical universities in the world FBM has less participation in large-scale, interdisciplinary, cross-faculty projects. It is recommended to join European interdisciplinary initiatives (for example, AI for Business, Industry 5.0, Digital Twins, ESG & Data Science).

Membership in 26 (twenty six) societies is very good, but there is a recommendation to increase leadership in international scientific societies.

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:

Based on evaluation of the report and interviews conducted it could be concluded that FBM project portfolio is highly consistent with its mission and vision and has practical relevance, SME and industry focus, are devoted to innovation, digital transformation, and all projects are on responsibility for business and sustainability. Compared to similar faculties in Europe's top technical universities, FBM has strong applied impact and practical transfer and is efficient with its capacities. At the same time as areas for improvement should be mentioned - lack of international scientific leadership, lack of participation in large-scale interdisciplinary EU research, and publishing top-tier academic outputs linked to projects.

As overall strength of the project portfolio is strong applied research orientation, highly aligned with FBM's mission: *"Conduct scientific research that pursues the latest theoretical and practical solutions with respect to the needs of regional and global economies."* It should be noticed that FBM has very good industry relevance, as there are several projects with Technology Agency of the Czech Republic, Ministry of the Interior, Visegrad Fund as well as multiple contract research activities with companies.

It should be noticed that FBM has an active role in knowledge transfer, including certified methodologies in digital transformation, family business valuation, sustainable investment, energy market prediction, transfer pricing etc. Good interdisciplinarity in selected projects should be mentioned as the energy markets project in cooperation with Faculty of Electrical Engineering and Communication (FEEC) and distributed sensor systems (technical + economic aspects).

FBM optimally leverages its capacity ($\frac{1}{3}$ research staff) relative to its size. Projects demonstrate balance between basic and applied research (Tables 3.1.6 and 3.3) and focus on FORD 5.2 Economics and Business (84% of capacity), with smaller inputs from engineering, ICT, and law. It should be admitted that funding is well diversified: national agencies, Visegrad Fund, EU (smaller scale), contract research. Proportionality is appropriate and efficient for FBM profile and size.

Recommendations:

Research relevance has excellent SME focus, including tax law, energy markets, but stronger link to global agendas (SDGs, Horizon Europe) is needed. In interdisciplinary, there is good progress on energy, sensors, digital transformation etc., but FBM lacks large cross-faculty (at university level) or multi-partner EU projects. No flagship EU H2020 / Horizon Europe leadership seen.

Faculty has strong certified methods, contract research with large firms, but there is a place for implement on large-scale public-private partnerships (PPPs). Scientific ambition has high societal impact, but the administration of FBM should push for more high-impact scientific publications linked to projects. There are good web tools and certified methods developed by FBM at the same time there is a space to increase open-access datasets, global dissemination and citations.

Overall recommendations:

- Increase participation in Horizon Europe and EU innovation programs.
- Strengthen large-scale interdisciplinary projects inside BUT. Current collaboration with FEEC is a model, it should expand to data science, cybersecurity, circular economy, AI in business or other areas according to the overall strategy of the university and FBM.

- Build systematic international partnerships. Move from regional (V4: Czech Republic, Slovakia, Poland and Hungary) and bilateral (US Fulbright) to permanent partnerships with top EU business schools or technical universities.
- Enhance scientific ambition and dissemination. For each applied project aim for at least one top-tier journal publication + participation in global conferences.

Target leadership in global R&D&I networks. Engage more in EU-level standard setting (for example, ESG investing, digital business models).

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:

FBM R&D&I capacity is about 1/3 of staff, about 84% focus on Economics and Business (FORD 5.2), modest capacity in engineering, law, ICT (FORD 1.1, 1.2, 2.2, 5.5). FBM has delivered 6 highly practical methodologies/tools over the evaluation period (2019–2023), several with certification and direct industry use. In overall FBM has proportionate and highly efficient use of capacity as they have strong application focus per mission and balance across business innovation, regulatory compliance, digitalization and ESG.

As for alignment with mission and vision should be emphasized that all results are strongly aligned with practical applicability and impact on society/business. Results support competitiveness of SMEs, digital transformation, sustainability, tax fairness, digitalization etc. Knowledge transfer and practical tools align with FBM's vision of serving business and public sector needs.

Gender dimension and sustainability are mentioned explicitly only in Family Business valuation, so there is an opportunity for FBM to systematically address gender and diversity in future results across all areas. Sustainability could improve by more systematic linkage to UN SDGs / ESG frameworks in all projects and communication.

As positive aspects should be mentioned, excellent practical impact as many results are certified, used by public bodies and companies. Strong in SME support, digital transformation, regulatory frameworks are the main research results. Considering all indicators, at FBM are efficient use of limited R&D&I capacity.

Practical impact should be oriented towards high, often global impact, stronger presence in EU policy circles. For business research focus could be suggested more visibility at EU and global level. Systematically should be addressed most outputs in line with gender and diversity plans as integral to projects.

In conclusion it should be admitted that FBM is highly relevant and impactful, especially for SMEs, public sector, and sustainability. It's efficiently delivered within given the R&D&I capacity and FBM research results are well aligned with the faculty's mission and vision.

Recommendations:

Areas to improve - gender dimension not systematically addressed across all outputs. Limited evidence of systematic SDG alignment or explicit sustainability reporting in several projects. Most application impact is national/regional, e.g. limited European/global application visibility so far. No clear global branding or showcasing of success stories beyond the Czech and V4 (Czech Republic, Slovakia, Poland and Hungary) region. Limited public communication of these successes in popular formats or international channels.

Recommendations:

- Make sustainability alignment explicit (SDGs, ESG) in all applied results and public communication.
- Systematically include gender dimension and sustainability impact statements in all R&D&I project designs and dissemination.

Build institutional support team for EU project participation (Horizon Europe, EIT, Digital Europe).

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:

FBM is very well aligned with its mission and performs well on socially relevant, impactful transfer, however, leading EU technical universities achieve greater commercial returns and systematic scaling of tools, as FBM can progress toward this level.

FBM success should be evaluated as high in public value creation, alignment with mission and vision, but readiness for commercialization as moderate. FBM has good starting point, but substantial potential for more structured, scalable monetization. Also, it should be admitted that the user base is strong nationally and to become a global player FBM can grow more internationally. As a weakness should be mentioned lack of non-public funding - this is area what needs strategic improvement.

Recommendations:

- Introduce a commercialization training program for researchers about IP, licensing, spinouts, business models.
- Partner with EU business networks (Digital Innovation Hubs, European clusters) for scaling and EU industry platforms.
- Systematically track and report non-public revenue growth by setting KPI targets.
- Establish a faculty-level Innovation & Impact Lab to support development, scaling, and commercialization.
- More contractual work.

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:

Based on report evidence and interviews should be concluded that FBM is highly active in targeted popularization towards business, SMEs, regulators what is well aligned with its mission. As for evaluation as very high should be mentioned engagement with companies & SMEs as more than 1000 SMEs reached through Digital Transformation project alone. As with a high impact should be

noticed in public lectures and events and in volume of public-facing tools and resources. Policy engagement and influence could be evaluated as good, but media and online presence - moderate. FBM has excellent open access web tools, as a strong example should be mentioned a lot of public workshops.

Direct activities are web-based tools and methodologies for public/SME use, workshops and dissemination events, international monograph freely available (promoted on ResearchGate with >2700 views and 342 reads), certified methodologies used by companies and public bodies (regulators), accompanied by public dissemination and training activities, public lectures and open events as well as media presence and awards communication.

As key strengths could be mentioned - practical business-facing R&D&I communication (SMEs, tools, regulators), real societal impact (digital transformation, tax law, family business) and strong academic-level visibility (workshops, conferences, visiting scholars).

At the same time there is a lack of systematic general public outreach (schools, science festivals, mainstream media), limited use of modern digital communication formats (video, podcasts, online courses), no visible global media strategy or integration with EU-wide popularization efforts, limited visibility of R&D&I success stories on international level and no structured training of staff in public communication techniques.

It was not mentioned in the report but clearly indicated in interviews – about 80% of researchers has accounts in ResearchGate, Academia, LinkedIn etc. where scientific and overall professional communication takes place and all research results are communicated globally. Additionally, in the last 2 years new communication tools with research community have been used such as podcasts, YouTube videos etc. This underlines efforts to communicate the most important activities in the field of R&D&I with the public and despite the lack of this information in the report underlines positive trends of development at this sector for FBM.

Overall evaluation: compared to similar faculties at leading European technical/technological universities FBM is very strong in business-facing popularization but as an opportunity for development - science communication in general public could be improved.

Recommendations:

For popularization of R&D&I and communication with the public for FBM it is recommended to:

- Broaden target audience by going beyond business/professionals and communicate key R&D&I findings to general public, high schools, etc.
- Enhance media strategy by developing partnerships with national and EU media. Promote award-winning research and societal impact more visibly (not only in academic/professional channels).
- Leverage video and online formats by developing short videos, podcasts, or MOOCs on topics like family business succession, digital business, sustainable investing.

To keep this – outstanding communication, it is recommended to participate in national/international science festivals - FBM should present its R&D&I outcomes in events like “Researchers' Night”, “Science Weeks”, “Science Cafés” etc.

To be in line with the TOP university similar faculties, the following aspects should be considered:

- FBM should have been strong, often multilingual, highly integrated with EU platforms and corporate alliances,
- To provide frequent coverage in international press (FT, The Economist, Reuters, national TV).

To engage with public policymakers should be not only on national but EU level, it is recommended to become leaders in national/EU policy working groups; contribute to EU Green Deal, Industry 5.0, etc.

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:

All recommendations from the previous evaluation period are taken into account and there are major improvements in creation of relationship with industry, attracting business experts to the educational process, strengthen entrepreneurial competence of the faculty (ContriBUTe, etc.) impact on valorisation, student involvement, cross disciplinary researches with multidimensional effects, FBM (BUT) is a member of EFMD, number of publications in journals ranked in SCImago (<https://www.scimagojr.com>) including number of publications in WoS and Scopus has increased.

In details:

- Recommendation to increase the share of publications in top-ranked (Q1/Q2) journals is successfully implemented as proportion of Q1/Q2 publications increased from 48.15% to 57.52%, number of total publications in high-impact journals rose by 67.8% and citation count increased by 63.67%.
- Recommendations to strengthen international collaboration in research have been substantially implemented as there is a significant growth in invited lectures abroad and hosting foreign scholars (70 invited lectures delivered abroad and 95 foreign scholars hosted at FBM). Faculty has membership in 26 international scientific societies and the number of joint publications with international partners increased.
- Recommendation to increase participation in EU-wide competitive research projects is partly implemented as there are Visegrad Fund projects and bilateral cooperation. Also, collaboration with national bodies and ministries is strong, but Horizon Europe / ERC participation is not yet fully developed.
- Recommendations to strengthen the transfer of research results into practice is successfully implemented as there are very strong applications of research in practice. Certified methodologies in digital transformation and family business valuation are developed, practical tools used by more than 1000 companies. Also, it should be mentioned that cooperation with tax authorities, utilities on cybersecurity, and ESG investment tools is very successful.
- Recommendation to Increase non-public, non-grant funding is partially implemented. Early positive signs, however, systematic development of commercialization strategy is still needed.

Recommendations:

The positive changes implemented during the 2019–2023 period underscore FBM's ambition and capacity for growth. **It is therefore recommended that the faculty continues along this developmental path, with a strategic aim to elevate its position from a leading institution in the V4 region to a recognized global player in business and management education.**

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	5 - Outstanding
Average rating [1–5]:	4 - Very good
Grade [A–D]:	B
Summary assessment: FBM at BUT has demonstrated significant progress since the previous evaluation period. Key recommendations from that review have been effectively addressed, resulting in substantial improvements. These include the development of strong industry relationships, increased involvement of business professionals in the educational process, and the enhancement of faculty entrepreneurial competencies through initiatives such as ContriBUTe. Moreover, the faculty has made notable strides in areas such as research valorisation, student engagement, and cross-disciplinary research with multidimensional impact. FBM's membership in EFMD further highlights its commitment to international standards in management education. Importantly, the number of publications in high-quality journals indexed in SCImago, Web of Science, and Scopus have shown a marked increase, reflecting an upward trend in academic output and research visibility.	
Summary recommendations: – Strengthening participation in EU competitive research programs. Mainly - build capacity to apply for Horizon Europe, ERC, EIT, and Digital Europe projects. It could be done by identifying and supporting project leaders among faculty members and providing internal mentoring. – Develop a structured commercialization strategy, set commercialization targets (licensing, consulting revenue, spinouts) and track progress. – Enhance global visibility and international positioning. – Develop a professional communication strategy. – Systematically integrate gender and sustainability dimensions in the research projects. – Leverage internal interdisciplinarity. – Broaden international research collaboration.	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Chemistry (FCH)

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 Chemistry (FCH) at Brno University of Technology (BUT) is one of the smallest chemistry faculties in the Czech Republic and also one of the smallest faculties within BUT, representing about 7% of this university. Despite its size, the FCH has a strong research profile, with an average of 87 FTE researchers (38% of whom are women) actively engaged in scientific work.

FCH pursues an ambitious mission closely aligned with pressing societal challenges. Its research focuses on advanced materials, biotechnological valorisation of food and agricultural waste, plastic recycling and processing, sustainable energy solutions (e.g., third-generation solar cells and hydrogen production), greenhouse gas reduction, environmental protection, and food quality and authenticity. It also contributes to cultural heritage preservation and national security.

FCH's research is primarily basic in nature, leading to high-quality scientific publications. The faculty carries out over 30 research projects annually, regularly securing mostly national, but also EU funding, and often acts as a project coordinator in collaboration with leading international universities. Strong links to industry are maintained through applied research and partnerships with over 100 industrial companies, aligning education and research with real-world needs.

The faculty comprises four institutes:

- Institute of Physical and Applied Chemistry
- Institute of Materials Science
- Institute of Food Science and Biotechnology
- Institute of Chemistry and Technology of Environmental Protection

In addition to the four institutes, the FCH hosts the Materials Research Centre, which manages key research infrastructure and supports project acquisition and administration.

Despite the overall decline in STEM enrolment, the number of students across all three study levels remains steady. Each year, between 130 and 160 PhD students enrol in five doctoral study programs.

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:³

FCH researchers are internationally recognized experts actively engaged in numerous professional associations, editorial boards, and scientific committees. 6 members of academic staff were active in editorial boards of international scientific journals and several of them are members of scientific committees of international scientific conferences (more than 10 per year). The faculty organizes the triennial international conference *Chemistry and Life*, which attracts leading global scientists and regularly hosts invited lectures and collaborations with top experts.

Each year, FCH welcomes around 40 visiting scientists from nearly 20 countries, while its researchers undertake approximately 40 international research secondments. Strong long-term exchanges with renowned institutions further reflect the faculty's global standing. This excellence is also demonstrated by several awards earned by both staff and students such as TAČR 2022 Award, Karel Velek Award, and Josef Hlávka Award.

More than 90% of FCH publications from 2019 to 2023 have appeared in high-impact journals (Q1 and Q2), with a significant doubling of top-tier publications compared to the previous evaluation period. FCH members also delivered invited lectures at various workshops, symposia and conferences. The faculty's role as a regional and international research hub was confirmed by peer reviews from the International Scientific Council (2023) and an international evaluation panel (2024), covering the 2019–2023 period.

Recommendations:

To further enhance the faculty's recognition in the international research community, the following steps are recommended:

- **Maintain high-quality publication standards**
Continue systematic tracking and support for publications in leading international journals (Q1 and Q2), ensuring the faculty's research consistently meets global quality benchmarks. Emphasize open access and visibility to increase the impact of Czech research.
- **Implement sabbatical opportunities for leading researchers**
Establish formal sabbatical programs to allow top researchers to engage in extended international collaborations, enhancing their expertise and networks. Concurrently, consider hiring additional pedagogical staff to sustain teaching excellence during sabbaticals and accommodate high student numbers.
- **Enhance international collaboration and study programs**
Foster closer ties with foreign universities through joint research projects and formal alliances. Develop or participate in international study programs and dual degrees to attract high-quality students and raise the faculty's international profile.
- **Increase participation in professional societies**
Promote active involvement of faculty members in prominent professional societies such as EuChemS, EFCE, ESBES, and ESAB. Encourage holding leadership positions within these organizations to strengthen the Czech Republic's visibility and influence in European and global scientific communities.
- **Nominate faculty for international expert panels**

³ 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.

Proactively nominate researchers to serve on evaluation panels and advisory boards related to major funding schemes, including Horizon Europe and Interreg. Such participation will enhance the faculty's reputation, facilitate access to funding, and align Czech research priorities with European initiatives.

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:

FCH actively links education with applied research and industrial needs. Students at all 3 study levels are involved in project-based theses that reflect real-world challenges, creating strong ties between academic training and industry. This collaboration continues beyond graduation, as alumni often return to FCH to address industrial R&D problems in their workplaces.

Research plays a vital role in the faculty's operations, accounting for 33–42% of its total budget during the review period. On average, FCH conducted 60 research projects annually, supported by roughly the same number of full-time academic staff—indicating high engagement and productivity. FCH secures funding from national and international sources. Domestically, support comes from GAČR, TAČR, MPO, and several ministries. Internationally, the faculty participates in EU programs like HORIZON 2020, INTER EXCELLENCE, INTERREG, and OP VVV.

Selected EU Projects:

- Geodust (HORIZON 2020, 2017–2022): Addressed cement kiln dust waste by transforming it into geopolymers meeting EU standards. FCH collaborated with academic and industrial partners to develop sustainable materials for construction.
- BioSupPack (HORIZON 2020 – BBI, 2021–2025): Develops bio-based packaging from brewery waste using microbial polyesters (PHA). FCH contributes plasma technologies and supports enzymatic recycling, enhancing the sustainability and functionality of packaging materials.

Besides, several TAČR and GAČR-funded projects were carried out during the evaluation period, including *Permanent protection of touch screens to prevent the deposition of organic pollutants on their surface*, *Means for ballistic protection enhancement of vehicles and critical infrastructure*, *Biological functions and dynamics of PHA cycle in Rhodospirillum rubrum, as well as the related biotechnological consequences (BioPHArm)*, *Molecular energy harvesting materials: towards breaking the limits*, *Novel perovskites for hybrid photonic devices*, and 2 projects of the National Centre of Competence, namely *Polymer Materials and Technologies for the 21st Century (POLY-ENVI21)* and *Future Electronics for Industry 4.0 and Medical 4.0 (FEIM)*.

FCH's research activities demonstrate a strong commitment to innovation, societal relevance, and industrial cooperation on both national and international scales. While the FCH demonstrates strong research engagement and a commendable track record in securing competitive funding, the current portfolio notably lacks participation in Horizon Europe research and innovation framework.

Recommendations:

Active participation in Horizon Europe is essential to maintaining international competitiveness and to aligning with Europe's evolving research priorities in sustainability, digitalisation, and green innovation.

To strengthen its international profile and research excellence, it is recommended that FCH:

- Actively pursue participation in Horizon Europe calls, particularly through collaborative consortia targeting thematic clusters aligned with the faculty's expertise.
- Encourage and support applications for prestigious European Research Council (ERC) grants, which provide significant opportunities for frontier research and global visibility.
- Expand international collaboration by submitting more bilateral and multilateral research proposals, especially with strategic partners in Europe and beyond. This would not only diversify funding sources but also strengthen global research networks and promote mobility.

These steps will help FCH build on its solid foundation and further enhance its role as a leading institution in applied and industrially relevant research.

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 FCH at BUT is primarily focused on natural sciences, which account for approximately 60% of its research activity, with the remaining 40% is dedicated to applied disciplines such as engineering and technology. Measured by scientific output, the ratio of basic to applied research at FCH is approximately 75:25. Despite this strong orientation toward fundamental science, FCH maintains an active and impactful engagement with industry and society.

A central part of FCH's mission is to conduct research that addresses current societal challenges. This is reflected in the faculty's long-standing commitment to topics such as the circular economy, recycling, the sustainable use of secondary raw materials, environmental protection, and security. In addition to academic excellence, FCH aims to create tangible benefits for the public through knowledge transfer and innovation.

In the period under review, FCH concluded more than 340 contractual research projects with industry, amounting to nearly CZK 42 million (over EUR 1.6 million). These collaborations involved dozens of companies, including many in key Czech industrial sectors, and contributed directly to solving practical problems, fostering innovation, and supporting long-term development. Given the faculty's relatively small size—averaging just 87 full-time research staff—this level of activity represents a significant contribution to national and regional innovation capacity.

FCH's applied research outcomes demonstrate clear societal relevance. These include the development of technologies for environmental protection, waste valorisation, materials recycling, and public safety, as well as health-related innovations. Five of these outputs have resulted in patents, utility models, or in verified technology. A number of these technologies are already being implemented, while others are in the process of commercialisation or technology transfer.

In line with its strategic vision, FCH prioritises sustainable development, innovation for societal resilience, and high-quality partnerships with both public and private sectors. The faculty also plays

a key role in education and human capital development by training students and researchers with skills applicable in high-tech and industrial settings. Strong connections to industrial partners ensure that FCH remains attuned to real-world challenges and opportunities.

In summary, FCH demonstrates a well-balanced approach that integrates fundamental research with applied innovation. Its focused contributions to circular economy solutions, renewable and recyclable materials, and national security applications illustrate the faculty's commitment to addressing complex societal needs. The volume and quality of industrial collaboration, combined with impactful scientific results, position FCH as a key player in Czech science and technology, with growing relevance at the European level.

Recommendations:

To strengthen the societal impact of its research, FCH can leverage several strategic measures focused on interdisciplinary collaboration, institutional integration, and innovation transfer:

- **Foster interdisciplinary research initiatives**
FCH should expand collaboration by systematically engaging with experts in materials and environmental science, biotechnology, data science and engineering. Interdisciplinary research clusters or thematic groups can accelerate innovation with real-world applications. This approach can also facilitate access to broader funding opportunities under Horizon Europe and national missions.
- **Deepen cooperation within BUT**
Joint projects in molecular diagnostics, advanced materials, nanotechnologies, and biotechnologies can help translate basic research into applied outputs with commercial or clinical potential. Establishing shared PhD positions or postdoctoral fellowships between FCH and e.g. CEITEC could further enhance cross-pollination of ideas and skills.
- **Enhance innovation management and technology transfer**
Strengthening ties with the university's technology transfer office and CEITEC's innovation ecosystem can increase the likelihood of societal uptake. Encouraging early-stage patenting, engaging with spin-off creation, and supporting staff in navigating IP protection and licensing are key for maximizing impact.

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:

FCH continues to translate scientific research into impactful industrial applications through active commercialization and strategic partnerships. These activities span a wide range of sectors, including biotechnology, waste management, energy, materials science, and analytical instrumentation.

Recent commercial success includes the biotechnological valorisation of waste glycerol, developed with Algae Farm. The process, based on years of fundamental research at FCH, enables large-scale production of enriched yeast biomass and is now being used in industrial production. Another applied achievement is the development of a recycling line for photovoltaic panels in collaboration with VIA ALTA. This line addresses growing legislative pressure for solar panel recycling and is expected to be showcased in 2025 as part of commercialization efforts.

FCH's knowledge transfer success is further demonstrated by its collaborations with leading industrial users:

- ČEZ Energetické produkty s.r.o.: A long-standing partner in energy raw materials and recycling, with commercial contract research exceeding EUR 6 million in value.
- TOP-CORE s.r.o.: Partner in developing eco-friendly adhesives, combining joint grant-funded projects (valued at EUR 473,000) and ongoing license-based compensation.
- Heidelberg Materials, Cemex, and other cement producers: Collaborating on emission reduction, alternative fuels, and materials, with annual contract volumes of EUR 20–40,000.
- Thermo Fisher Scientific Brno s.r.o.: Contract research focused on developing standards for analytical instruments, with regular annual project volume of EUR 40–80,000.
- PLASMAMETAL spol. s r.o.: Joint development of hot spray coatings, tested and refined at FCH, generating up to EUR 40,000 annually in contract research.

These examples highlight the growing societal and industrial impact of FCH's applied research. They also reflect the faculty's proactive approach to knowledge transfer—ensuring research outcomes move beyond the lab to support innovation, sustainability, and competitiveness in Czech and European industry.

FCH remains committed to expanding its collaboration base, including through CEITEC and interdisciplinary research networks, with the goal of amplifying the real-world impact of its scientific expertise.

Recommendations:

Recommendations to improve technology transfer at FCH:

- Strengthen collaboration with CEITEC and internal partners
Initiate small-scale joint projects with CEITEC in areas with natural overlap (e.g. advanced materials, sensors, biotechnology). Exchange expertise and infrastructure through shared seminars, guest researchers, or access to specialized equipment and characterization tools.
- Focus on high-potential technologies
Prioritize selected, mature research results with clear application potential (TRL 5–7) for further development and licensing. Allocate internal support for developing proof-of-concept prototypes for 2–3 promising technologies per year.
- Support researchers with simple, practical tools
Develop a brief technology disclosure form to streamline the early identification of commercially viable results. Provide researchers with basic IP and commercialization guidelines (e.g. checklists or one-pagers) for reference during project work.
- Improve visibility of available technologies
Maintain and update a clear, concise technology portfolio (1–2 pages per result) on the FCH website in both Czech and English. Share FCH success stories (e.g. licensing, applied research, industrial use cases) at faculty and university events to encourage participation.
- Deepen industry relations with targeted efforts
Strengthen ties with existing partners (e.g. TopCore, VIA ALTA, Fortes) through regular check-ins, feedback sessions, or joint workshops. Consider hosting a yearly industry breakfast or roundtable (low-cost, informal) to showcase selected research and hear current industrial needs.
- Clarify internal procedures and roles

Ensure that all researchers understand the role of the Knowledge Transfer Manager and how to engage early in the process. Regularly review and update the internal FCH directive on knowledge transfer to keep it aligned with current practices and university-wide policies.

- Encourage practical use of research
Promote contract research and expert consulting as equally valuable forms of knowledge transfer—not just patents and licenses. Recognize successful collaboration with industry (e.g. through internal awards or mentions in faculty meetings) to motivate further activity.

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:

FCH recognises the vital role universities play not only in advancing knowledge and expertise but also in shaping societal values, fostering communication, and building resistance to misinformation. Faculty members are committed to actively communicate the significance, content, and outcomes of its research to both the professional community and the broader public, thereby fulfilling FCH's mission to promote scientific literacy and societal progress.

FCH engages in a wide array of outreach activities tailored to diverse audiences, ranging from the general public to primary and secondary school students, as well as professionals and its own academic community. Public engagement includes participation in large-scale events such as the *Science Playground*, *Majáles*, and the *Science and Technology Festival* in Brno, where FCH presents chemistry as a crucial discipline that underpins technological innovation and addresses global challenges. These activities are complemented by dynamic multimedia content—videos, photo presentations, and social media posts—distributed via popular platforms like YouTube, Facebook, Instagram, and X, broadening the Faculty's reach and accessibility.

Among the many innovative outreach efforts, the *Chemical (Mini) Opera*, launched in 2023, stands out as a unique and pioneering initiative. This project creatively merges the worlds of science and opera, presenting scientific concepts through the medium of musical theatre. Written by a doctoral student to commemorate the 125th anniversary of BUT, the opera features active participation from FCH staff and students both as performers and contributors, with the performance filmed on the Faculty premises. This initiative exemplifies FCH's commitment to innovative science communication by transcending traditional formats, engaging audiences emotionally and intellectually, and offering an inspiring model for integrating arts and science. The opera not only raises awareness of chemical sciences but also enhances public appreciation of research through an accessible, culturally rich format.

In addition to general public activities, FCH strongly focuses on nurturing the next generation of scientists. Through the organisation of student scientific conferences, laboratory workshops, lectures, and hosting national rounds of the *Chemistry Olympiad*, FCH provides opportunities for gifted school pupils and university students to deepen their knowledge, showcase research, and stimulate interest in STEM fields. These educational programs are designed to foster curiosity, encourage research skills, and support academic excellence from early stages.

FCH also actively cultivates international professional networks by hosting major scientific conferences, such as the triennial *Chemistry and Life* and the *European Symposium on Biopolymers* (ESBP), which gather experts from academia and industry across multiple disciplines. These events

serve as vital platforms for knowledge exchange, partnership building, and industry-academia collaboration, thereby strengthening the impact of FCH research on both science and society.

Recommendations:

- Prioritize signature events and digital content
Concentrate efforts on maintaining and improving key outreach activities like the *Chemical Opera* and *Researchers Night*, while using YouTube and social media channels to regularly share engaging, easy-to-produce content highlighting research and events.
- Engage students as ambassadors
Involve enthusiastic students in outreach activities to help organize events, create content, and interact with the public—this spreads the workload and builds valuable skills.
- Build strong local school partnerships
Maintain a few simple, high-quality workshops and lectures for nearby primary and secondary schools to spark interest in chemistry, focusing on depth and relationship-building.

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:

Following the previous evaluation period (2014–2018), in which FCH received the highest rating of “5 – Excellent,” the Faculty management took seriously the constructive recommendations and fully incorporated them into the 2021–2030 Strategic plan. These recommendations have been implemented across multiple domains, from strategic research focus and infrastructure development to internationalisation and knowledge transfer.

Performance-based budgeting now rewards high-quality scientific publications and project engagement. Support systems for doctoral students, postdocs, and early-career researchers have been reinforced through new development funds and recognition schemes such as the Dean’s Award.

Infrastructure investments exceeded EUR 3 million, representing a 40% increase, and a new incentive system for PhD students and staff was introduced. The faculty has successfully attracted international researchers and strengthened outgoing mobility to top institutions, fostering long-term collaborations.

Applied research and commercialization are actively supported through partnerships with industry (e.g., Nafigate, Athex Technology), patent licensing, and public exhibitions. The FCH also transformed its knowledge transfer system, aligning with national research evaluation methods.

Strategic research areas such as waste valorisation, biotechnological innovation, advanced materials, and security have been further developed, with targeted partnerships in semiconductors and defence sectors. FCH continues to increase its international visibility and actively contributes to addressing global and European challenges.

Recommendations:

- Apply for high-ranking international funding
Encourage and support research teams to apply for prestigious grants (e.g., ERC, Horizon Europe) to enhance visibility and competitiveness.

- Strengthen strategic international partnerships
Deepen cooperation with leading global research institutions to foster high-quality outputs and long-term joint initiatives.
- Promote commercialisation and societal impact
Support translational research, spin-offs, and partnerships with industry, particularly in fields with societal and environmental relevance.
- Invest in talent development
Prioritize career support for young researchers, including competitive postdoctoral opportunities and international exposure.

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	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: • FCH demonstrates <i>outstanding performance</i> in nearly all areas of Module 3, achieving the highest rating (5 – Outstanding) in five out of six evaluated criteria. • FCH is recognized for its strong scientific profile, with a high proportion of Q1 and Q2 publications and active engagement in international scientific communities. • The faculty effectively integrates basic and applied research, with significant industrial collaborations and societal impact, including verified technologies, patents, and commercialization success. • Research activities are highly productive and well-aligned with FCH’s mission in sustainability, environmental protection, and technological innovation. • Popularization and outreach efforts are creative and impactful, exemplified by unique initiatives such as the <i>Chemical Mini Opera</i>. • FCH demonstrates strategic implementation of previous recommendations, showing strong leadership and a forward-looking research agenda. • While Horizon Europe participation is currently limited, the faculty has a solid foundation for deeper international engagement and funding competitiveness.	
Summary recommendations: • Enhance Horizon Europe engagement: ○ Actively pursue collaborative Horizon Europe projects and ERC grants.	

- Build strategic international partnerships:
 - Deepen alliances with high-performing global institutions for joint project proposals research, and publications.
- Promote interdisciplinary research:
 - Facilitate joint research clusters across materials, biotechnology, and environmental sciences.
 - Encourage cooperation with CEITEC and other faculties within BUT.
- Invest in talent development:
 - Expand career development opportunities for young researchers and postdocs, with emphasis on mobility and international exposure.
- Formalize sabbatical programs:
 - Introduce structured sabbaticals for senior researchers to foster long-term international collaboration.
 - Ensure teaching continuity through additional staff support.
- Strengthen innovation and tech transfer:
 - Focus on advancing promising TRL 5–7 technologies with dedicated internal support.
 - Improve visibility and internal procedures for technology transfer and commercialization.
- Improve internal communication of best practices:
 - Share success stories and clarify knowledge transfer pathways to motivate broader staff participation.
- Sustain and innovate outreach:
 - Maintain key public engagement efforts while increasing student involvement and digital content dissemination.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Civil Engineering (FCE)

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:

With its self-evaluation report and the presentations and discussions with the faculty board that accompanied the review, the FCE faculty scientists, and doctoral students, the FCE faculty has impressively demonstrated that it is not only the largest faculty at BUT and the second-largest civil engineering faculty in the Czech Republic in terms of numbers, but that it also competes very successfully at the national and international level with other research-intensive scientific institutions in the field of civil engineering in all relevant areas of civil engineering, from basic scientific research to knowledge transfer. Compared to the findings of the 2020 evaluation report, the faculty was able to convincingly demonstrate that it has not only established itself actively in socially relevant fields of research, but that in recent years it has also proactively taken on the necessary global challenges of promoting sustainable construction, climate protection, and resource conservation. The faculty intends to contribute to the necessary transformation processes by consistently exploiting the potential of digitalization, networking, and interdisciplinary collaboration. With its outstanding experimental environment at the ADMAS Center, the faculty offers its students, doctoral candidates, and researchers a unique research environment in which to advance the future of construction in conjunction with fundamental theoretical work. The faculty succeeds in bringing science and construction practice together in all relevant areas of civil engineering. The exceptional publication success during the evaluation period, with 120 publications per year in the Q1-Q3 quartiles according to WoS Article Influence Score, also demonstrates that the faculty's research is of a high scientific standard. Compared to the 2020 evaluation, it can be said that the faculty has significantly expanded its performance and national and international competitiveness and is now one of the best civil engineering faculties. This is also demonstrated by the close partnership and cooperation in research and teaching with other leading European 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]:

5 - Outstanding

Qualitative assessment:⁴

In its self-evaluation report, the faculty documents that it has developed into a major player in the international research community in the field of civil engineering with great success. This promotes the recruitment of young scientists and the acquisition of research funding. Attractive research fields, which are served by the various institutes of the Civil Engineering Faculty and in which close cooperation with other national, European, and international universities and scientific institutions is established, are also key to the faculty's ability to boast a number of members who have received prestigious awards. The awards received by individual outstanding scientists and by disciplinary and interdisciplinary teams of scientists are proof of the faculty's achievements. Ultimately, the faculty's scientists are also increasingly involved in the editorial work of renowned scientific journals. Faculty members also participate in international professional associations and committees. Ultimately, this enables the faculty to present the scientific work of not only its top scientists but also its young scientists at international conferences, where they can discuss their findings with experts in the field. It is also gratifying that the faculty itself organizes a number of scientific conferences to showcase its scientific and application-oriented research capabilities to the national and international professional community. Thanks to the diverse experimental opportunities at the ADMAS Center, the faculty has been able to actively establish and develop various scientific collaborations since the last evaluation in 2020. In addition to cooperation with companies and institutions from the construction industry, these collaborations increasingly enable cooperation with scientific institutions in the field of basic construction research.

Recommendations:

The scientists and researchers at the FCE are well connected and respected in international professional circles. As a result, the number of high-profile publications and participation in conferences to present their own scientific work has increased significantly. The faculty is encouraged to enable scientists to do the same in the newer fields of research, such as digital construction, resource conservation, and climate protection in the context of their impact on construction, housing, and living. The successes achieved to date in scientific exchange within the framework of international research stays should also be supported and further promoted. After all, the expansion of cooperation in the various research fields of civil engineering offers enormous potential not only to maintain the number of publications in highly ranked journals, but also to increase it further. This would have the welcome consequence of further increasing the faculty's international visibility and attractiveness for scientists wishing to pursue a career in research.

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 faculty undertook a wide range of research activities during the evaluation period in order to fulfil its mission and long-term goals. Thanks to its outstanding experimental facilities and

⁴ 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.

theoretical focus, the faculty was able to establish itself in the fields of sustainable and future-oriented building materials, optimization of building structures, digitization of construction, and sustainability and circularity in construction. The ongoing research is reflected in numerous research projects that combine fundamental theoretical knowledge with practical implementation in construction. Comprehensive research in the field of building materials aims to make more efficient use of raw materials and avoid construction waste. Energy-efficient manufacturing, CO₂-avoiding production, and maximizing durability are important aspects of ongoing research, which is being advanced in collaboration with industry partners. With regard to building structures, ongoing research is focusing on structural optimization, increasing durability, and extending service life. In particular, the fatigue of highly stressed reinforced concrete structures is an important focus of research, which is being conducted in cooperation with RWTH Aachen University, one of the most renowned institutes in this field, with the aim of significantly improving the performance and service life of infrastructure structures. Another key area of focus for the faculty is the effective management of construction projects. Cost optimization and reduction of environmental impact are among the main areas of investigation. However, questions about the effects of human intervention on river systems and flood risk areas are also the focus of research that is currently particularly relevant to society. The faculty's future-oriented work also includes research into the ecological improvement of mining by promoting the recycling of mining waste. Digitalization, robotization, and 3D printing of components and building structures also offer great potential for the future, which is why the faculty sees this as another interdisciplinary focus area to be promoted in cooperation with other BUT faculties. Topics such as fire protection, energy efficiency, evacuation, and disaster control are further areas of focus that will be researched and optimized using digital models. Consequently, research is also being conducted in cooperation with the relevant authorities on the safety of nuclear power plants, the assessment of the integrity of containment vessels, and the evaluation of complex accident scenarios. The analysis and strategic development of the requirements for port infrastructure in the Port of Hamburg, which provides the Czech economy with access to international maritime trade, is also proving interesting. All of this research can be classified as extremely relevant to society and demonstrates the faculty's exceptional research activity. The current focus is still very much on application-oriented research. However, cooperation with RWTH Aachen University, TU Wien, BOKU Vienna, and other European technical universities shows that the faculty is also increasingly engaging in basic research in the field of civil engineering.

Recommendations:

Fortunately, research activities have increased significantly since the last evaluation in 2020. Thanks to the diverse experimental research opportunities at the ADMAS Center and other laboratories within the faculty, interesting fields of research have been opened up in all areas of civil engineering, in which scientists and doctoral students have achieved numerous results that have led to new projects and numerous publications. However, application-oriented research dominates, but this provides an excellent basis for fundamental research. It is recommended that the faculty create targeted incentives to encourage scientists to acquire further basic research projects in the already established fields, both within the framework of existing collaborations and with new research partners from the international scientific community. This effort should be rewarded with a further increase in the number of publications in highly recognized journals.

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 has taken up the recommendations from the last evaluation round in 2020 and significantly expanded its comprehensive activities in the field of applied research and research commissioned by the construction industry. During the period covered by the self-evaluation report, it filed a number of patents relevant to construction, most of which also have interesting prospects for commercialization. In addition, the faculty's scientists are successfully involved in important and rule-setting national and international committees in various key areas of construction, enabling them to contribute their high-level perspectives to the emerging guidelines, standards, and regulations. This attracts considerable interest from the local, regional, and national construction industry, as the faculty's various institutes, particularly the ADMAS Center, have optimal access to application-oriented research and development as well as to the certification of construction products and methods. Thanks to this high level of attractiveness for the construction industry, the faculty has succeeded in stabilizing its high share of third-party funding from the construction industry.

Recommendations:

It is recommended to leverage the faculty's active research fields of digital construction, resource conservation, and climate protection and to promote them even more strongly to the local, regional, and national construction industry. The expertise available in these fields within the faculty can open up considerable growth potential for the Czech construction industry, which would also result in an increase in third-party funding for the faculty. In addition, the authorities can benefit from the extensive experience and findings of the research in order to take the relevant developments into account at an early stage in the necessary regulations. However, the faculty is on an extremely successful path, which can be further stabilized with the recommendations.

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:

While the 2020 evaluation results focused on the limited success of patent licenses in this area, the current evaluation report must emphasize that both the self-evaluation report and the recent presentation by the faculty board impressively demonstrated that the faculty has succeeded across the entire spectrum of its R&D services in successfully contribute its outstanding interdisciplinary expertise and its multifaceted scientific and application-oriented experience to transfer projects with companies from the construction industry, with public authorities, and with a wide range of stakeholders in society. Both in the written self-evaluation and in the presentation by the faculty

board, as well as in the discussion with scientific staff and doctoral students, it was impressively conveyed how committed the various disciplines within the faculty are to working together to leverage the interdisciplinary potential of the faculty, as well as the interfaculty expertise and experience, in order to achieve greater visibility at both the national and European level. This is a successful path that must be further developed in the coming years.

Recommendations:

It is impressive how many R&D projects commissioned by the construction industry, Czech authorities and institutions, as well as contract research from other third parties, are being carried out by the faculty. Regardless of this, it would be advantageous if the project work, which is mostly institutionally oriented towards a single unit, could be broadened across the various disciplines of the faculty or even across faculties. Finally, with greater expertise across the faculty or even the university, it would be possible to develop a wider range of services and establish them in the construction industry, which currently exist only sporadically in the Czech Republic and Europe, and at best in the form of disciplinary problem-solving. This would enable the faculty and the university as a whole to significantly improve their position in national and European comparisons.

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:

It is extremely impressive to see the elements and concepts that the FCE faculty developed and tested during the evaluation period in order to bring faculty-related R&D&I closer to interested institutes and partners. The main activities included the establishment of innovative offerings and programs that attracted not only interested experts but also the general public to the faculty. Examples include technical kindergarten programs, so-called research nights and excursions, a knowledge Olympics organized by the Guild of Heating and Sanitary Technicians, the Brno Phenomenon Lesná, LNG, and the establishment of a vaccination centre in Brno.

Recommendations:

Keep up the exceptional work and continued success...

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 provides a convincing account of how it intends to disseminate the results of its research and development to society at large. It is noteworthy that during the period under review, the faculty placed greater emphasis on international projects than in the previous evaluation period. In addition, the faculty continued its efforts to increase contract research and non-public research funding overall. The internationalization of its own patent policy was successfully advanced and the

attractiveness of founding spin-off companies was increased. It is also interesting to note that greater efforts were made to obtain international academic awards. Another major achievement is that the faculty has adapted its internal evaluation and financing system in order to better promote and support outstanding performance by its employees. In addition, the faculty succeeded in fundamentally reforming the criteria for awarding the title of professor. Guidelines for knowledge transfer were also introduced, taking into account aspects of patenting. As a result, project and transfer funding was doubled. As a further measure, an international scientific advisory board was established within the faculty to monitor the implementation of the recommendations of the evaluation report.

Recommendations:

The faculty is encouraged to continue and further develop its dedicated measures to increase performance in science and applied research. The faculty's commitment to promoting its scientists and doctoral candidates is impressive. This guarantees that the faculty will be able to demonstrate further development and improvement of its excellence in the next evaluation round by continuing to increase the characteristic figures for national and international recognition in the form of publications, third-party funding, doctorates, patents, and awards for the work of its scientists.

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	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:

Overall, the Faculty of Civil Engineering is considered an extremely successful and innovative faculty with a considerable number of internationally renowned researchers. The faculty conducts research on all areas of civil engineering, focusing on highly topical issues, and encourages its scientists to engage in interdisciplinary and interfaculty cooperation. A decisive factor in this regard is the faculty's excellent infrastructure for conducting experiments. Particularly noteworthy is the ADMAS Center, in which many of the faculty's institutes are actively involved. The faculty generates considerable income from basic and application-oriented projects. This provides a solid foundation for further expanding the faculty's research capabilities. The high number of publications in prestigious journals is also noteworthy. In addition, the faculty is promoting international cooperation with recognized universities, which should open up even more opportunities to acquire funding from European joint projects in the future. This will also increase the chances of successfully obtaining ERC grants, for example. In addition to international projects, the faculty is also proactively promoting cooperation with industry. Whereas in the past it was mainly smaller industrial projects that were successfully acquired, attempts were made during the evaluation period to win

increasingly larger projects in order to secure longer-term funding. Compared to the 2020 evaluation, the faculty was able to demonstrate that the rather fragmented contract research has been developed into a structured research strategy in which contract research can also form a nucleus for subsequent basic research projects. This should also enable the faculty to attract more and more research in the field of excellent basic research. This endeavour also helps to reduce the high administrative costs associated with contract research. The research conducted at the faculty is of great social importance. It addresses topics such as sustainability, resource conservation, climate protection, and digitalization, which are already having a decisive impact on the construction industry and the building sector. Particularly noteworthy are the faculty's numerous activities aimed at communicating its research capabilities to the public in an attractive manner. Last but not least, the various programs for cooperation with schools offer opportunities to spark greater interest in studying civil engineering. This is the only way to attract the young scientists needed to carry out research.

Summary recommendations:

- Increase the share of contract research in the faculty budget and focus more on fewer, but more extensive projects
- Promotion of international cooperation
- Offer of solid funding for doctoral students to complete their studies so that they can concentrate fully on their research topic
- Encouraging more researchers to apply for prestigious awards
- Further expanding support for scientists to increase publication output in the faculty
- Continuing and expanding invitations to visiting scientists

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Electrical Engineering and Communication (FEEC)

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:

In accordance with its mission and vision, as well as its organisational and scientific capacities, the faculty meets high international standards and is therefore, in my opinion, ideally equipped to carry out high-quality research work.

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:⁵

The researchers and teachers at FEEC are well connected and respected in international communities. This is also evident from the tables provided, with particular emphasis on the increase in publications in Q1 and Q2 journals in recent years and the dedicated organization of international conferences.

Recommendations:

Scientific exchange in the context of international research visits could be promoted further. This has the additional advantage that joint publications can be developed, which increases the international visibility of both institutions.

⁵ 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 results of the documented research projects can be considered successful and are well aligned with the FEEC's mission statement. Some of the research projects are highly interdisciplinary in nature. However, it should be noted that although the FEEC is extremely successful in obtaining national funding, it receives only comparatively small support from international grants.	
Recommendations: Efforts could be increased to initiate international research projects or to cooperate in such projects.	

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: Firstly, it should be noted that the FEEC's research focuses on topics such as the energy transition and the creation of devices and tools for digitalisation. These areas are inherently of the utmost importance for today's society. The projects presented in more detail in the table can all be classified as having an existing impact on society, with the practical relevance and direct applicability of the results being particularly positive.	
Recommendations: The listed projects date from 2022 or earlier, so it is recommended that efforts be continued on socially and practically relevant projects.	

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 transfer of knowledge and innovations from FEEC into practice can be rated as good, and there are many activities to promote this important branch. Meanwhile, the scope of contract research	

from industry is relatively small, and there are only a few research projects that are extensive enough to provide real funding for researchers.

Recommendations:

For contract research, it would be helpful that projects have a larger financial scope, as this would facilitate external funding for PhD positions and improve the focus of research activities on core competencies.

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 commitment to activities that bring FEEC research closer to the public is impressive. The projects with schools are particularly positive, as they are undoubtedly shaping the future of society.

Recommendations:

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 FEEC has endeavoured to address the points of criticism raised in the last evaluation and has implemented a number of measures for improvement. It should be noted here that COVID-19 made it very difficult to promote international activities and industry cooperation for a period of almost two years.

Recommendations:

-

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	5 - Outstanding
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: Overall, the evaluator considers the FEEC to be an extremely successful and innovative faculty with internationally renowned researchers. The FEEC conducts research in a highly topical and broad area with an excellent infrastructure, which certainly is an important factor for success. The income is very solid and good basis for the future. In the context of internationalisation, opportunities are still available in terms of both academic cooperation and the acquisition of funding. The financing of the FEEC is largely based on national funding. Unfortunately, changes to the national framework conditions are always possible, so it is recommended that financing be placed on a broader basis. In addition to international projects, cooperation with industry is also an option, whereby the focus should be on longer-term funding. The current contract research is very fragmented, which can prevent research from being focused and produce world-class research and in any case involves a great deal of administrative work. The research conducted at FEEC is of utmost social importance. It deals with topics such as the energy transition and digitalisation, which are significantly shaping our lives today. The faculty's many activities to bring research closer to the public are particularly noteworthy, especially its cooperation with schools.	
Summary recommendations: • Promotion of international cooperation • In contract research focus more strongly on fewer, but more extensive projects. • Offer PhD students solid funding until they graduate, allowing them to focus on their core research topic in the best possible way.	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Fine Arts (FFA)

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:

Looking at the Faculty of Fine Arts (FFA) at Brno University of Technology, several aspects stand out. The faculty demonstrates remarkable growth while maintaining both academic excellence and social responsibility. Their mission integrating art education with research on contemporary challenges like climate change and gender inequality shows leadership dedicated to current topics of high societal relevancy.

The establishment of the Research Centre in 2023 and post-doc programme reveals strategic research capacity building. With 387 students across six programmes and highly selective admissions (second most selective in the Czech Republic), FFA upholds rigorous standards. While FFA achieves above-average gender representation across students, staff, and leadership, the ratio of women is higher mainly in the academic mid-level- assistant, and tech positions, and less women in leadership.

Most noteworthy is their strong international positioning through ELIA and Society for Artistic Research memberships, combined with an interdisciplinary approach that co-creates a dialogue between art, design, architecture, technology, humanities and social sciences. Their commitment to open research exemplifies contemporary arts education that shows academic rigor with public engagement and social impact.

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:⁶

FFA has established solid recognition within the arts research community, balancing creative excellence with scholarly engagement. Their interdisciplinary approach and commitment to socially relevant research positions them well for continued growth.

The faculty shows high performance in artistic outputs, ranking best nation-wide in fine art and design according to the National Register of Artistic Outputs (RUV). Faculty members have received prestigious international awards including the Jindřich Chalupecký Award, Oskár Čepan Award, Red

⁶ 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.

Dot Design Award, and recognition at The Most Beautiful Czech Books competition - indicating high-quality creative work with international resonance.

Editorial board participation is notable, with faculty members serving on respected journals including the Scopus-indexed "Notebook for Art, Theory and Related Zones" or "Umění/Art" from the Czech Academy of Sciences. International lectures span venues from University of Basel to Virginia Tech, demonstrating global academic recognition.

The faculty actively engages in evaluation processes for national and European research programs, with members serving on grant committees and expert councils. Their participation various international networks show integration into broader research ecosystems.

Recommendations:

To leverage FFA's strong artistic recognition, the faculty should expand its reach by targeting high-impact interdisciplinary journals that value artistic research methodologies, particularly in digital humanities, design studies, and cultural studies. Building on existing excellence, FFA should actively pursue international collaborations through major funding opportunities like Horizon Europe and partnerships with globally visible and leading institutions. The faculty's interdisciplinary strengths in technology and social impact research provide excellent foundations for engaging broader academic communities and establishing FFA in contemporary arts research internationally.

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:

FFA demonstrates research project diversity and strategic growth in securing competitive grants across Technology Agency, Ministry of Culture, and internal BUT funding sources. The portfolio exhibits strong interdisciplinary character with direct societal relevance.

Key projects exemplify this approach effectively, such as the "Institute of Forensic Interdisciplinary Research," which combines design, anthropology, law, and social work to address segregation issues, while the "Serious Educational Game about Roma Position in Society" integrates game development, social sciences, and pedagogy - demonstrating FFA's commitment to using creative methodologies for social impact.

Collaboration patterns are particularly strong. Projects involve partnerships with Masaryk University faculties, European Roma Rights Centre, IQ Roma Servis, and the National Heritage Institute, indicating robust external engagement.

The research projects align excellently with FFA's declared mission of addressing contemporary challenges through interdisciplinary art and design research, with projects tackling social inequality, digital literacy, cultural heritage preservation, and sustainability directly reflecting the faculty's vision of art as catalyst for social dialogue and building resilient society through democratic participation. Contract research activities with the Masaryk Memorial Cancer Institute and National Heritage Institute demonstrate practical application potential, translating research into real-world solutions.

The project portfolio shows appropriate proportionality to FFA's capacity, with sufficient complexity to support doctoral training while remaining manageable for the faculty's research infrastructure.

Recommendations:

It is advisable to pursue larger-scale international funding through EU Horizon Europe and establish research clusters around key strengths. Building on successful partnerships, the faculty should develop strategic long-term collaborations that position FFA as a leader in arts-based social research methodologies. FFA could strengthen dissemination beyond academia through policy briefs and digital platforms, while continue and build on opportunities for innovations like their spinoffs (educational games and data visualization tools through spin-offs).

The consistent quality, strong mission alignment, meaningful collaborations, and clear societal impact represent very good performance.

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 FFA demonstrates robust research-to-practice translation with diverse results from Table 3.4.1 spanning 2020-2023, indicating consistent output proportionate to the faculty's R&D&I capacity. The results show clear evidence of both existing applications and prospective implementation potential.

Results already applied in practice include the "Mesto pre všetkých" publication, which enabled to set legal precedents for housing rights, and visibilized the precarity of women and children particularly. The Prague Integrated Transport visual identity serving 27 carriers across the Central Bohemian Region with daily impact on hundreds of thousands of users. The Matter Recycling Center operates as a functioning facility, while the Archive of Radek Pilař provides accessible cultural heritage resources for researchers and the public.

Results intended to be applied in practice include also the THX data sharing system, which offers solutions for digital privacy concerns, as well as AI-related initiatives through the HUMAIN platform and La Contextressa project that explore artificial intelligence applications in arts and design contexts, engaging artistic research and providing open-source information. The educational game development brings application potential in education settings and has a great value for science-with-public exchange.

The results are proportionate to FFA's capacities, effectively leveraging the faculty's interdisciplinary approach and technical university environment to generate meaningful outputs across multiple domains. Results consistently contribute to the fulfilment of FFA's mission and vision, using art as catalyst for social dialogue and building a resilient society, while addressing contemporary challenges such as housing inequality, digital privacy, cultural preservation, and environmental sustainability.

Attention to the gender dimension is explicitly integrated in research, for example, recognizing women's heightened vulnerability in eviction processes, while sustainability is systematically addressed through circular economy models and environmental consciousness promotion initiatives. FFA's commendable research-to-practice achievements provide an excellent foundation for scaling impact. The main recommendation is that the faculty should develop frameworks for impact measurement and systematic impact tracking mechanisms to document long-term outcomes of successful initiatives. This will help to strengthen evidence for future major funding applications.

Recommendations:

Building on proven innovations, FFA could explore further international expansion opportunities - the educational game platform shows strong potential for adaptation, while the Matter Recycling model could serve as a template for further institutions.

The faculty's pioneering AI-related work through HUMAIN and La Contextressa positions FFA well to establish strategic partnerships with technology companies and/or digital humanities centres, accelerating development and expanding reach.

FFA's impressive portfolio of practical applications warrants enhanced commercialization support through clearer intellectual property strategies and technology transfer mechanisms, particularly for digital tools and methodological innovations.

Most importantly, the FFA could develop in the next step comprehensive frameworks for measuring societal impact that capture the full scope of their remarkable contributions, including longitudinal studies and community engagement assessments that demonstrate research value to diverse stakeholders. This positions the faculty as a leader in socially engaged arts and design research – beyond the institution but should also find recognition at TU Brno (stronger collaboration with 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:

FFA demonstrates effective transfer of results into practice through a well-structured system that aligns closely with its interdisciplinary mission and social impact vision. The faculty has identified four distinct user categories - government bodies/non-profits, scientific/research/cultural institutions, municipalities, and commercial/creative industries - which directly correspond to their research outputs and societal engagement goals.

The transfer mechanisms are mission-appropriate: Government partnerships through projects like the Roma segregation research have produced policy-relevant publications used in advocacy and legal proceedings, while collaborations with institutions like the National Heritage Institute and Masaryk Memorial Cancer Institute. Municipal partnerships demonstrate research-to-policy application.

Commercialization approaches balance mission alignment with sustainability. The faculty pursues licensing for digital models, operates the Ateliér duchů spin-off for game development, and provides specialized scanning/printing services. Revenue streams from non-public sources show steady growth and indicate successful diversification beyond traditional academic funding.

The transfer system leverages FFA's technical university environment through inter-faculty collaborations while maintaining focus on socially relevant applications. User engagement spans from local NGOs to international cultural institutions, demonstrating broad impact reach.

Recommendations:

Similarly to the recommendations for 3.4, FFA should enhance systematic tracking and scaling mechanisms for successful transfer initiatives and create more robust frameworks for measuring transfer and user/community engagement to demonstrate value to potential partners and funding bodies. The scale of commercial activities remains modest relative to the potential of expanding

some of the projects internationally. The faculty shows a strong foundation in transfer effectiveness and could enhance systematic approaches to scaling successful innovations and developing intellectual property strategies. The consistent quality of transfer mechanisms and clear alignment with stated mission represent very good performance with clear pathways for growth.

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:

FFA demonstrates exceptional commitment and effectiveness in R&D&I popularization through diverse, high-quality public engagement activities. The faculty operates multiple platforms for public communication, including the FFA Gallery as a professional presentation space, comprehensive publishing program producing peer-reviewed works in multiple languages, and active participation in cultural organizations and festivals.

The breadth of popularization activities is impressive, spanning international conferences (Datatata.info, Queering Czech History, Synthesizing Knowledge), specialized festivals (PAF Animation, Festival of Naked Forms, LEKTVAR student games), and innovative platforms like HUMAIN for AI research communication. The faculty's publishing activities extend beyond academia through partnerships with established publishers, achieving both commercial success and critical acclaim.

Public engagement demonstrates clear mission alignment, with activities addressing contemporary social issues through accessible formats. The Videogram lecture series, architectural walking tours, and advocacy work for cultural heritage preservation show systematic commitment to knowledge transfer beyond academic audiences. The establishment of Vasulka Kitchen Brno creates unique international networks bridging academic and non-academic spheres.

Staff members actively contribute to professional-popularizing publications, media appearances, and public policy discussions, while student-led initiatives like Open Studios introduce broader public to creative processes. The faculty's approach combines traditional academic dissemination with innovative digital platforms and participatory methods.

In this category, the FFA shows exceptional breadth, quality, and innovation demonstrated in the FFA's popularization activities. The faculty operates across multiple high-impact platforms simultaneously - from international conferences and specialized festivals to innovative AI research communication and cultural heritage advocacy.

The integration of popularization with mission fulfilment is exemplary, addressing contemporary social issues through accessible formats while maintaining academic rigor.

Staff members show systematic commitment beyond typical academic obligations, contributing to policy discussions, media appearances, and professional publications, while student-led initiatives create authentic community connections. The publishing program achieves both commercial success and critical acclaim internationally.

Most significantly, FFA's popularization activities directly contribute to societal change - from legal precedent-setting publications to cultural heritage preservation advocacy - demonstrating that public engagement translates into measurable impact rather than merely raising awareness.

The combination of diversity, quality, innovation, mission alignment, and demonstrated societal impact represents outstanding performance in R&D&I popularization that exceeds typical

expectations for a faculty of this size and establishes FFA as a leader in publicly engaged arts research.

Recommendations:

Possible next steps: Systematic evaluation of public engagement impact could be strengthened. International reach in popularization, though growing through partnerships and publications, could be expanded to match the faculty's research quality and social relevance.

Building on the strong foundation of domestic engagement, the faculty could pursue international partnerships, potentially through European cultural networks or digital humanities platforms, to extend global reach of formats like the HUMAIN platform.

The faculty could explore digital innovation in public communication, leveraging its technological expertise to create interactive online platforms that could scale successful local initiatives like walking tours and workshops for international audiences while maintaining the high quality and social relevance that characterizes current efforts.

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:

FFA has demonstrated exceptional response to previous evaluation recommendations, transforming areas of weakness into significant strengths. The faculty directly addressed the core 2014-2018 recommendation for enhanced cooperation partnerships, contract research, and non-public revenue generation.

Where previous evaluation scored contract research and non-public revenues as "Inadequate," FFA now shows contract activities with Masaryk Memorial Cancer Institute and National Heritage Institute.

Applied research results transformed dramatically from "Inadequate" economic impact to clear practical applications including legal precedent-setting publications and major urban infrastructure projects. The faculty developed systematic technology transfer approaches and intellectual property protection, establishing spin-off activities and licensing strategies.

FFA maintained excellence in previously strong areas - non-academic interactions, international recognition, and popularization - while expanding scope and impact. The strategic response demonstrates sophisticated understanding of evaluation feedback and successful systematic improvements.

The comprehensive transformation from predominantly academic focus to robust applied research engagement while maintaining scholarly excellence represents exemplary institutional development that fully addresses previous concerns and establishes FFA as a model for arts faculty evolution within technical university environments.

The nature of improvements is comprehensive, combined with sustained excellence in strong areas and clear evidence of continued strategic development.

Recommendations:

FFA should continue building on its remarkable transformation by further developing systematic frameworks for measuring long-term impact of applied research initiatives to demonstrate sustained value of implemented improvements.

While the faculty has successfully addressed previous evaluation concerns, international expansion remains a point for continued development. FFA should leverage its proven domestic success in partnerships and commercialization to pursue strategic international collaborations, particularly through EU research networks and cultural exchange programs.

The recommended cooperation partnerships were successfully established, but yet have to be implemented across TU Brno faculties, particularly with (Information) Technology and (Mechanical) Engineering, visibilizing also the student projects, for example, during showcasing of excellent student work.

The faculty should document and share its successful transformation model with other arts faculties, potentially positioning FFA as a consulting partner for institutions seeking to enhance applied research capabilities within humanities contexts.

Building on established momentum, FFA should explore scaling successful innovations internationally while maintaining the strong foundation of domestic partnerships and revenue diversification that has proven effective in addressing previous evaluation recommendations.

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	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 Fine Arts demonstrates very good to exceptional performance across evaluated criteria, earning an outstanding overall rating. The faculty has established solid recognition within the arts research community, ranking among the best nation-wide in fine art and design, with international awards and global academic engagement. Research projects show strong interdisciplinary character with direct societal relevance, addressing contemporary challenges through partnerships with diverse institutions and communities. The faculty translates research into practice through well-structured transfer mechanisms spanning government bodies, cultural institutions, communities, and commercial sectors. Most notably, FFA excels in R&D&I popularization through diverse high-quality public engagement activities, including international conferences, specialized festivals, and innovative digital platforms. The faculty's exceptional response to previous evaluation recommendations transformed areas of weakness into strengths, particularly in contract research and applied research impact. With a clear mission alignment and demonstrated societal impact, the FFA also positions itself as a leader in publicly engaged research in art and design.	

Summary recommendations:

In the next phase, the FFA should pursue larger-scale international funding, for example, through EU Horizon Europe programs, and establish strategic collaborations. Building on domestic success, FFA should further expand international reach through European and international networks and platforms.

The faculty should develop comprehensive frameworks for measuring long-term societal impact, using, for example, systematic tracking mechanisms and longitudinal studies. Enhanced intellectual property strategies and technology transfer mechanisms could accelerate commercialization of digital innovations.

Stronger collaboration across TU Brno faculties, particularly with technology and engineering, should enable interdisciplinary student work and foster the potential of the FFA in contributing to a university-wide STEAM approach (integrating Art + design in STEM), and thereby leveraging their strength in societal collaboration and impact for other fields. The faculty should document its successful approach for other arts institutions while scaling successful innovations internationally. These developments will strengthen FFA's position as a model within technical university environments.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Information Technology (FIT)

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 introductory information is very well articulated. FIT clearly express their vision to be a key part of BUT and “to use the opportunities of this dynamic field to contribute to the development of technology in the modern world”. They also detail their desire to be outstanding in education and research. FIT describe very well their ambition to pro-actively engage with industry and the public. The Faculty has made considerable efforts to contribute to major world leading companies and institutions and have achieved some significant awards and outstanding projects during the period under review. Their undergraduate intake has increased by an admirable 21% and the PhD enrolment has remained stable. The ratio of women to men is though low, 1:8.7, but they are seeking to improve this ratio. Their four departments: Department of Information Systems, Department of Intelligent Systems, Department of Computer Graphics and Multimedia, and Department of Computer Systems, offer wide coverage across the field of IT and thus they are in a strong position to play a key role in helping to address the IT challenges of the future.

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:⁷

FIT clearly has an international reputation. The Faculty received more than 20 outstanding awards during the review period, including the highly prestigious “Medal of Josef Hlávka” which was given by the Hlávka Foundation to Professor Honzík, and an Honorary Doctorate from a university in Finland being awarded to Professor Zemčík. The Faculty has clearly endeavoured to ensure that recognition by the international research community is an important part of their mission, and a number of staff play leading editorial roles in top journals and also by acting as evaluators, for example for Czech Science Foundation, Technology Agency of the Czech Republic and the European Research Council.

⁷ 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.

Furthermore, there have been a number of important visiting speakers, including from Google Research and Academia Sinica, while staff members have giving talks at top international universities, such as Purdue University (US) and IIT Madras (India).

Recommendations:

The Faculty could benefit from a more structured approach towards invited speakers, perhaps with a regular “distinguished invited speaker” series. More staff and student should be encouraged to give talks when they are visiting other institutions, and Alumni could be invited back to give their experiences after leaving FIT. This will help to further raise the profile of FIT and BUT as a whole.

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:

FIT has a very impressive total of 67 grant projects for which they are PIs and an additional 80 grant projects in which they participate. In addition, they are involved in 59 contractual research projects. The projects address many critical fields in IT, including Cybersecurity and Artificial Intelligence, as well as other important topics, such as Healthcare and Technologies for the Future. It is very good to see that funding has come from a variety of sources, including the Ministry of the Interior of the Czech Republic, Ministry of Education, Youth and Sports of the Czech Republic, the Horizon Europe Pathfinder program, the ERC-CZ program, and Horizon 2020. Contract research has been with a wide range of companies, including some important international companies and institutions, such as Ericsson AB, Honeywell International, NTT Corporation, European Space Agency, Skoda and Tescan.

Recommendations:

The recommendation is to keep applying for major awards, and to also apply again for ERC grants. Some of the contract research was quite short term, so, where possible, try to develop longer relationships with companies.

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:

FIT’s research is certainly impactful, but it is not that clear in the self-evaluation what the direct impact on society is. For example, SpeakerBeam is highly innovative and is capable of separating the voice of a known speaker from other noises in the environment, but the self-evaluation could make clearer what some real uses of this might be, and why these would be impactful on society. Similarly,

the description of the project with Adobe for generating immersive trip photograph visualisations could benefit from some more explanation as to why this output would be beneficial to society.

Recommendations:

The projects described are clearly outstanding, but their actual impact on society is not that clear. Rather than simply describing what the project does, it would have been useful to give some examples of what actual uses of the results could be and how these would directly benefit society.

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:

It is very good to see FIT collaborating with other parts of BUT, such as the Faculties of Business and Management, Electrical Engineering, Mechanical Engineering, as well as CEITEC, to transfer their results into practice.

The well-established Star(t)up@FIT plays a key role in supporting start-ups and spin offs and the commercialisation of FIT's outputs from both students and staff. This is further supported through the JIC (South Moravian Innovation) which helps with further product development, investment, etc.

FIT's contractual research plays an important role in the commercialisation of their research. In particular, their close work with international companies, such as Honeywell, Skoda and Tescan, local companies, including Camea, Phonexia, and international companies and agencies, such as DARPA, IARPA, NTT, etc, provides important "routes to market". FIT has also had success with Spin out companies, e.g. INVEA-TECH and BrnoLogic, and licencing agreements, such as that with Phonexia. They have also had significant research donations, including \$50,000 from TENCENT and other major companies, such as Google, Skoda, Oracle, etc.

Recommendations:

FIT's transfer of results is excellent, the only recommendation is to "keep doing more of the same".

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:

Dedicated staff have been employed to maintain a steady flow of public information on a variety of social media platforms, including FIT's webpages, LinkedIn, Facebook, etc. Each of these platforms has a good number of followers. Over 100 press releases have been issued, and a newsletter is distributed to over 3000 subscribers.

Staff and students from FIT also participate in dedicated “science communication events”, such as the European Researchers' Night, and other events, such as “national AI days”, and Open Days at the Faculty.

FIT even have a “Museum of Computer Technology”, showcasing computer equipment from the 1950s to the 1990s. It would be useful to provide the number of visitors to this museum e.g. annually, as well as more details as to how often it is open, is it by invitation only, etc. Are there plans to keep adding to the museum as the field continues to move forward rapidly?

A key initiative to attempt to address the gender imbalance in the field is the annual (F)IT Summer School for Girls which provides girls with an opportunity to learn about the opportunities IT has to offer.

Recommendations:

The efforts to address the gender imbalance could be strengthened by offering summer schools and open days to girls more often. Furthermore, these events should consider engaging with even younger girls, e.g. in the ages 7+ to encourage early more young women into the field.

The “Museum of Computer Technology” is a good asset which could be better utilised to attract interest in FIT (although this would require staff/student effort).

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:

FIT have carefully considered all the previous recommendations and should be highly commended for the dedicated way they have approached this. They have acknowledged that sometimes it has simply not been possible to implement some of the recommendations. For example, one of the recommendations was to explore more equipment donations from companies with whom they are working. This has not been possible on many occasions as it is not common in the Czech Republic for companies to donate equipment in this manner.

One good example of implementation of the previous recommendations “bearing fruit” is the recommendation for closer collaboration with the Technology Transfer Office at BUT. This has led to a significant improvement in the commercialisation of their research results through licensing, and start-up/spin-off companies, including the successful BrnoLogic company. There is also now a closer partnership with the Faculty of Business and Management through courses and other activities which are playing an important role in improving FIT’s staff and students’ entrepreneurial skills.

Recommendations:

FIT should continue doing “more of the same”. One thing they could consider is to engage more closely with the Alumni, many of whom, I suspect, are in leading positions in local and international companies. Making these Alumni feel very welcome at FIT could provide a large source of knowledgeable speakers to inspire the current generation of students, as well as the opportunity to establish new links with industry.

The gender imbalance is still high, compared to many IT departments across Europe, and indeed the world. Although summer schools and open days are helping, FIT could strive harder to reduce this imbalance, with a more pro-active attitude and more events focussed on attracting especially young girls into the field.

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	5 - Outstanding
Average rating [1–5]:	5 - Outstanding
Grade [A–D]:	A
Summary assessment: In the last review FIT obtained the top mark (5=Excellent). They have continued with their very strong performance in the current review period, and indeed, having carefully followed all the recommendations from last time, where possible, have an even stronger performance this time.	
Summary recommendations: There are a number of points that could be improved. 1) Keep applying for top grants, including ERCs. 2) Articulate better the societal impact of the results of their research. For example, as mentioned in section 3.4, the work undertaken with Adobe is undoubtedly highly innovative and will allow the viewer to experience the space where the pictures were taken, but the question is: “So what”? Why is this important, what are the really novel applications of this result which will open up more opportunities for society? I am sure these exist, but they are not well articulated in the self-evaluation. 3) Engage more closely with Alumni and use these contacts to provide inspiring speakers for current students (and staff) and to establish new links with companies and other institutions. 4) Be more pro-active in addressing the gender imbalance. Although this will require effort, the results will undoubtedly benefit not only FIT but the whole field of IT in the country.	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Faculty of Mechanical Engineering (FME)

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 (FME) at Brno University of Technology (BUT) is the largest mechanical engineering faculty not only in the Czech Republic but in the Slovak Republic as well. FME's mission is to provide high-quality education by integrating multidisciplinary learning and research, addressing societal challenges, and positioning itself as a key contributor to science and technology in Central Europe. The faculty's ambition is to be internationally recognized for its modern teaching methods, student-friendly environment, top-quality research, and close cooperation with major industry players.

FME is home to over 5,000 students and offers a wide range of programs, including undergraduate, graduate, and PhD degrees. The faculty consists of 13 institutes and specialized laboratories, with a strong focus on research, development and innovation. Notably, FME established the NETME Centre (New Technologies for Mechanical Engineering) to enhance research collaboration across its units. Additionally, the faculty played a key role in founding the Central European Institute of Technology (CEITEC), a world-class research facility in nanotechnology and advanced materials.

FME's research activities span diverse fields such as advanced manufacturing, artificial intelligence, aerospace technology, automotive engineering, renewable energy and biomedical engineering, aligning with strategic research areas at BUT. The faculty has consistently received recognition for its publications, with numerous highly cited papers and awards for young researchers. Its collaboration with industry is integral, as students engage in real-world problem-solving, enhancing their practical skills.

The faculty's contributions to the Czech economy, particularly in automotive, aerospace, and energy sectors, emphasize the societal impact of its research, which drives technological advancements and supports industrial growth. FME's long-term goal is to continue producing graduates and research outputs that address the evolving needs of society and the global economy.

Currently, there are 3,517 students enrolled at the faculty across all three levels of higher education (Undergraduate: 8/1, Master's: 17/4, Doctoral: 7/5), of which 364 are women. The teaching staff consists of 35.6 professors, 79.4 associate professors, 162.4 assistant professors, 44.2 assistants, and other staff members, with a total of 557.1 full-time equivalents. 52% of the staff are research-oriented towards mechanical engineering.

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:⁸

FME researchers maintain robust publication output, exceeding 350 peer-reviewed articles annually, with a large share published in Q1-ranked journals, demonstrating both productivity and quality. Particularly noteworthy is the fact that 17 of these papers rank in the top 1% most cited in Engineering across the Czech Republic, and two are in the top 0.1% globally, signalling outstanding scholarly impact. The repeated inclusion of Professor Jiří Jaromír Klemeš on the Highly Cited Researchers list (2020, 2022, 2023) further reflects individual excellence that enhances the faculty's global standing.

The faculty's academic staff hold 53 editorial board positions, gave 152 invited lectures abroad, and earned 32 elected memberships in international scientific societies, indicating strong integration into the global academic community. Moreover, their roles in key national and European research bodies (e.g., Czech Science Foundation, European Commission, COST Actions) confirm high levels of trust and leadership in policy and funding environments.

FME's tradition of organizing high-profile international conferences including SPIL, AGACSE, Engineering Mechanics, and others reinforces its reputation as a hub of scientific exchange. These events regularly attract international experts and promote collaboration in specialized and interdisciplinary fields, from sustainability and space technologies to biomechanics and tribology.

The faculty's receipt of prestigious awards such as the Red Dot Design Award and various distinctions for best publications and presentations reflects external validation of excellence, not only in research but also in innovation and communication

Recommendations:

To build upon its already strong foundation of international recognition and scientific reputation by:

1. While FME is already well integrated into the global academic community, establishing long-term institutional partnerships (e.g., joint laboratories, dual-degree programs, or co-funded research centres) with top global universities could deepen collaboration and enhance visibility on a global scale.
2. Use FME-organized international conferences (e.g., SPIL, Engineering Mechanics) as branding tools. Introduce strategic themes tied to global challenges (e.g., green engineering, AI in manufacturing) to attract broader participation and recognition beyond the immediate research community.
3. Encourage more academic staff to participate in international standards organizations and global policy-making panels (e.g., ISO, UNEP initiatives), thereby influencing global engineering practices and boosting institutional prestige.
4. Improve conditions for the engagement of young researchers, actively lower the average age of academic staff, and create an inclusive work environment that supports women and other underrepresented groups.

⁸ 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:

During the evaluation period, researchers from FME participated in 21 international EU-funded projects including Horizon 2020, Horizon Europe, and ESA programs. They also engaged in 54 projects supported by the Czech Science Foundation, 159 from the Technology Agency of the Czech Republic, and others supported by national ministries. These include both fundamental and applied research, with notable excellence projects such as MEBioSys (biological and bio-inspired systems) and several National Centres of Competence (e.g., MESTEC, Aeronautics and Space, CEVOOH).

FME ranks as a national leader among mechanical engineering faculties in terms of contract research funding, with strong collaborations with major industry players like Škoda Auto, AUDI, and Continental. The MEBioSys project (2023–2028) focuses on bioinspired mechatronic and biomedical systems, while MESTEC and its successor MESTEC2 enhance multidisciplinary research in smart technologies.

In the aerospace sector, FME coordinates the National Competence Centre for Aeronautics and Space and participates in international projects like BAANG, focused on smart aircraft structures. In automotive research, FME contributes to the Božek Vehicle Engineering Centre, addressing vehicle noise, vibrations, and propulsion efficiency.

Sustainability-focused initiatives include the Sustainable Process Integration Laboratory (SPIL) and CEVOOH, advancing circular economy and environmental monitoring. In energy engineering, FME has developed advanced computational models for low-emission technologies. In the space sector, the Miniaturized Heat Switch project for ESA demonstrates leadership in applied thermal engineering.

Projects like PETER and SINNCE reflect FME's strong international research reputation, combining scientific excellence with real-world applications. These efforts significantly contribute to FME's mission: advancing global research collaboration, sustainability, and innovation-driven education through project-based learning and technology transfer.

Recommendations:

To maintain and further strengthen its leading position in research excellence and international recognition, the Faculty of Mechanical Engineering (FME) at BUT is encouraged to:

1. Continue strategic support for publishing in top-tier journals and fostering interdisciplinary research with high citation potential. Incentivizing collaborative work across departments and with international partners could further enhance visibility.
2. Expand mentoring programs to support early-career researchers in publishing, grant acquisition, and international networking. Encouraging their inclusion on editorial boards and conference organizing committees will ensure long-term sustainability of the faculty's research prestige.
3. Build on existing partnerships by establishing formal research alliances and joint doctoral programs with globally renowned institutions. These efforts can lead to co-authored publications, shared infrastructure, and greater global impact.
4. Systematically nominate faculty members and projects for prestigious national and international awards. Highlighting such achievements in public communications will strengthen the faculty's brand and attract top talent and funding.

5. Continue investing in research facilities, administrative support for grant writing, and platforms for data sharing and research impact tracking. These elements are critical for maintaining productivity and excellence.

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 of Mechanical Engineering (FME) at Brno University of Technology clearly demonstrates a strong commitment to social responsibility, inclusivity, and real-world impact in its research and innovation portfolio. The projects presented illustrate not only technological advancement but also a deliberate alignment with societal needs, sustainability goals, and inclusivity principles.

The development of practical tools and devices such as the CaviPlasma water treatment device and the Popelka waste optimization system show how FME's research contributes directly to environmental protection and sustainable urban development. These solutions are applicable across sectors, from municipal services to industrial applications, and reflect a conscious integration of research into public good.

Furthermore, innovations like the personalized knee implant and magnetorheological damper highlight attention to user diversity, such as physical condition and safety requirements. The rail tribometer and accident analysis for the Ještěd cable car demonstrate FME's responsiveness to transportation safety and regulatory needs, reinforcing its relevance to national and community-level infrastructure.

Particularly commendable is the explicit emphasis on inclusivity, ensuring no discrimination based on gender or physical limitations. This shows that FME's work is not only technologically sound but also ethically and socially conscious a key aspect of excellence in modern academic practice.

Recommendations:

To further enhance its impact on society and inclusivity, the Faculty of Mechanical Engineering (FME) at BUT is encouraged to consider the following actions:

1. Systematically involve end-users, including vulnerable groups and underrepresented communities, in the early stages of research and design. This will ensure that innovations are not only inclusive in theory but also meet real-world needs in practice.
2. Develop and adopt tools to quantitatively and qualitatively assess the societal and environmental impact of research projects. Structured feedback from users, municipalities, and industry partners can help refine solutions and guide future efforts.

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 a well-structured and increasingly successful approach to transferring research, development, and innovation (R&D&I) results into practice. The existence of a systematic transfer framework managed in coordination with the university's Department of Knowledge Transfer ensures that innovation pathways are not left to chance but are actively supported through clear stages, from initial contact with industry to long-term collaboration.

The four-stage commercialization pipeline (collaboration → contract research → extended research → long-term partnerships) provides a scalable, flexible approach that meets both academic and industrial needs. Strategic use of events like the MSV International Engineering Fair and support from the South Moravian Innovation Center (JIC) further bolster FME's outreach and commercialization efforts.

The quantitative success of this strategy is evident: a 15-fold increase in commercialization revenue between 2019 and 2023 driven by licensing and industry co-financing demonstrates both growing capacity and external demand for FME's innovations. This success is further supported by well-targeted financial incentives for researchers, encouraging greater academic participation in technology transfer.

FME's commercialization achievements are highly notable:

The **UHV SEM/SPM Microscope**, developed with TESCAN and the Czech Academy of Sciences, reflects successful licensing of complex, high-tech equipment.

The **Route Optimization Software** and **Ballistic Recovery Systems** for UAVs show how applied research in logistics and aerospace has found direct industrial uptake.

The **Optical Tribometer**, licensed internationally, represents both scientific and financial impact, with strong potential for spin-off formation currently under review.

FME's technology transfer outcomes spanning multiple sectors and backed by concrete licensing figures demonstrate a high level of maturity and effectiveness in bridging research with industry. The rating of Very Good to Excellent is fully justified. With continued scaling, especially in spin-off development and international tech licensing, this could easily solidify as Excellent across all dimensions.

Recommendations:

To further enhance its strong performance in the commercialization and practical application of research results, the Faculty of Mechanical Engineering (FME) at BUT is encouraged to consider the following strategic recommendations:

1. While several technologies have commercial potential, more emphasis could be placed on spin-off creation and scaling. Establish dedicated incubator programs or mentoring schemes for academic entrepreneurs in collaboration with the South Moravian Innovation Center (JIC) and private investors.
2. The existing financial incentives have clearly had a positive impact. Consider developing a more formalized and transparent framework that rewards not only licensing and sales but also prototype development, patent filings, and industrial collaborations.

3. Offer targeted workshops or micro-courses on intellectual property management, entrepreneurship, and market validation for researchers and graduate students. These can foster a more innovation-minded culture and increase the number of viable commercial outcomes.

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 of Mechanical Engineering (FME) at Brno University of Technology has shown a clear and sustained commitment to public engagement and science communication. The variety and consistency of outreach initiatives between 2019 and 2023 reflect a strategic effort to increase scientific literacy, public visibility, and interest in engineering.

FME effectively leveraged multiple communication channels, including traditional media, institutional websites, and social media, to disseminate research outcomes and promote events. This multimedia strategy helped expand reach across general and targeted audiences.

Participation in major national events like Researchers' Night, Maker Faire, Science Slam, and the International Engineering Fair demonstrates the faculty's active role in public science promotion. The Gold Medals awarded at the Engineering Fair for innovations such as Sparker Aircraft and CaviPlasma technology not only validate the faculty's innovation capacity but also offer accessible, high-impact stories for public engagement.

In addition to participating in large-scale events, FME organized its own dedicated outreach programs, such as:

- Space Week 2022, highlighting emerging technologies and Czech contributions to the space sector,
- Open Days and popular science lectures, which welcomed the public into the academic space,
- Summer schools for high school students, and programs like BUT Junior, which foster early interest in STEM.

Competitions such as MATHING and Roboti@FSI encouraged active learning and creativity among youth, bridging the gap between education and innovation

Recommendations:

To further enhance its already strong public outreach efforts, the Faculty of Mechanical Engineering (FME) at BUT is encouraged to consider the following strategic actions:

1. Introduce feedback tools and performance metrics (e.g., attendance data, audience surveys, media reach analytics) to assess the effectiveness and audience engagement of events. This will allow for data-driven improvement and stronger justification in reporting and funding applications.
2. Promote FME's outreach initiatives and innovations in international science communication platforms and at global science festivals or fairs. This would not only raise FME's global profile but also attract international students and collaborators.
3. Engage successful alumni and industry collaborators as role models and guest speakers in outreach events. Their real-world experiences and success stories can inspire younger audiences and strengthen the connection between academia, industry, and society.

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 of Mechanical Engineering (FME) at Brno University of Technology has taken concrete and strategic action in response to criticisms raised in the previous evaluation, particularly around commercialization, patent utilization, and spin-off company development. These were previously identified as underdeveloped areas, but recent efforts show clear improvement and measurable progress, justifying an Excellent rating for this indicator.

The integration of targeted tasks in the FME 2021+ Strategic Plan specifically aimed at increasing awareness of the M17+ methodology, strengthening patent activity, and formalizing contractual relations—represents a proactive and systemic response. By doing so, FME has raised internal awareness of the importance of applied research valorisation, encouraging a cultural shift within the faculty.

Key actions that support this improved assessment include:

- Doubling commercialization income between 2021–2022 compared to the previous period.
- A 15-fold increase in commercialization revenue by 2023, exceeding €400,000, thanks in part to new financial incentives built into the faculty budget.
- Structural enhancement of the technology transfer department, with expanded competencies and roles focused on consultancy, negotiation, and spin-off support.
- FME also demonstrated success in start-up and spin-off formation:
- The establishment of 3Deposition, focusing on additive manufacturing and sustainable 3D printing.
- The launch of Grixi s.r.o. in 2024, targeting eco-friendly transport applications.

Additional spin-offs (Lightigo, CactuX) founded by dual-affiliated FME–CEITEC researchers show increasing interdisciplinary entrepreneurship.

Moreover, advanced commercialization-ready technologies such as CaviPlasma reflect strong innovation potential with real-world environmental impact. Its ability to deactivate cyanobacteria and reduce pharmaceutical residues from water by over 90% shows FME’s applied research not only holds market potential but also serves pressing societal needs.

Recommendations:

To maintain and accelerate its progress in technology transfer and entrepreneurial activity, the Faculty of Mechanical Engineering (FME) at BUT should consider the following targeted recommendations:

1. Create a structured “Spin-off Accelerator” within the faculty or in collaboration with the South Moravian Innovation Centre (JIC). This program should include business mentoring, legal support, IP strategy, investor matchmaking, and prototype-to-market guidance for early-stage ventures.
2. While awareness has improved, formalize IP education programs for faculty, postdocs, and PhD students. Offer short courses or workshops on patent strategy, licensing models, freedom-to-operate analysis, and entrepreneurship basics.
3. Continue improving the efficiency of IP protection and contract negotiation workflows. Introduce clear timelines, templates, and guidance documents to help researchers navigate administrative procedures with greater ease and speed.

4. Engage industrial partners in issuing targeted research challenges or innovation calls that can lead to commercialization-oriented projects and joint ventures. These can stimulate spin-off potential from early development stages.

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 Faculty of Mechanical Engineering (FME) at Brno University of Technology (BUT) has demonstrated substantial progress across key indicators of research excellence, international recognition, commercialization, and public engagement. These achievements reflect a strategic commitment to continuous improvement, particularly in areas previously identified as underperforming. FME's research output remains robust, with over 350 peer-reviewed publications annually, a significant portion appearing in Q1 journals. Its global reputation is further reinforced by 17 papers ranking in the top 1% by citations in Engineering and multiple listings of faculty members, among Highly Cited Researchers. Academic staff actively participate in international editorial boards, scientific societies, and major evaluation bodies, underscoring FME's standing within the global research community. The faculty has made impressive strides in knowledge transfer and commercialization. In response to earlier criticisms, it implemented strategic reforms that significantly increased commercialization income by a factor of 15 over previous periods and led to the creation of promising spin-offs such as 3Ddeposition and Grixi. The structured support from FME's technology transfer office, enhanced internal processes, and financial incentives have been instrumental in this progress. Public engagement activities have also expanded meaningfully. FME regularly participates in high-profile national and international science events, while organizing its own outreach initiatives including Space Week, summer schools, and student competitions. These efforts support STEM education, foster societal dialogue, and improve the public's perception of engineering research. Despite these strengths, continued emphasis on structured support for spin-off development, IP training, and performance tracking is recommended to sustain and scale current successes. Similarly, greater internationalization of public engagement and broader access for underrepresented groups could enhance the faculty's impact. Overall, FME demonstrates a strong trajectory toward excellence, with effective responses to past evaluations and a clear vision for advancing its role as a leader in engineering research, innovation, and societal engagement.	

Summary recommendations:

The Faculty of Mechanical Engineering at BUT (FME) should continue strengthening its development through several targeted measures. In the area of commercialization and spin-off support, it is recommended to establish a formal accelerator or incubator program that offers researchers systematic guidance in founding companies, including access to pre-seed and seed funding. At the same time, continued use of external experts for consultancy and the implementation of a system to monitor spin-off performance are advised. In the field of intellectual property protection, training offerings focused on patent strategies, licensing, and research commercialization should be expanded. It is also recommended to streamline administrative processes related to technology transfer and licensing, ensuring they are efficient, transparent, and user-friendly.

In terms of internationalization, the faculty should deepen global research partnerships, establish joint research centres, and actively promote its achievements and technologies in international forums. Regarding public outreach, measurable impact indicators (e.g., attendance, feedback, media reach) should be introduced, and popularization activities should be extended to underrepresented regions and groups. At the same time, motivating staff participation in these activities through training and incentives is encouraged.

Finally, it is recommended that the faculty's strategic plan be regularly reviewed to ensure alignment with current national evaluation methodologies, evolving development trends, and funding priorities. These measures will further strengthen FME's position as an innovation hub with international reach and strong societal impact.

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: CEITEC

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:

CEITEC BUT is one of the largest independent members of the CEITEC Consortium in Brno, Czech Republic, comprising four universities and two research institutes. Since its founding in 2011 with €80M of a €210M investment, it has become a national leader in life sciences, advanced materials, and nanotechnologies. Guided by four strategic pillars, Research & Innovation, Education, Community & People, and Services & Infrastructure, its mission is to advance knowledge with global impact and societal relevance.

The institute employs over 490 staff, runs 52 research groups, and manages 13 core facilities. Its materials research focuses on nanotechnologies, advanced materials, and industrial cybernetics. CEITEC BUT also hosts the country's first PhD School in Advanced Materials and Nanosciences, with 145+ students (55% international, 45% women) and 96 alumni to date.

CEITEC BUT publishes around 280 papers annually, mainly in top-tier journals, and has secured over 750 R&I projects, including 3 ERC grants. It collaborates with partners in 45+ countries and ranks among the top four Czech institutions in the Nature Index. With a €20M budget, it provides open-access infrastructure, including the Czech Republic's only 2,000 m² nanotechnology cleanroom, used both internally and externally.

The institute combines autonomy with collaborative governance, supports over 750 researchers, has created six spin-offs, and leads national infrastructure like the Czech Nanolab. CEITEC BUT is recognized for its scale, interdisciplinarity, and long-term commitment to excellence.

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:⁹

Between 2019 and 2023, CEITEC firmly established itself as a highly respected institution within the research, development, and innovation (R&D&I) landscape. This reputation is underpinned by a strong bibliometric performance, with 1,716 peer-reviewed publications—65% of which appeared in Q1 journals and 27.5% in Q2—marking a significant improvement over the previous evaluation

⁹ 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.

period. These publications attracted 26,000 citations, a 30% increase, while international collaborations rose by 68% and industrial co-authored papers increased fivefold. The share of papers in the top 10% of journals grew by 88%, and those in the top 1% by 44%, with the proportion of highly cited papers more than doubling. Beyond metrics, CEITEC researchers received over 27 prestigious awards, reflecting both individual and institutional excellence. Notable recognitions include Prof. Martin Pumera being named a Clarivate Highly Cited Researcher for three consecutive years, Prof. Miroslav Kolíbal receiving the Czech Best Business Idea Prize, and Prof. Karel Maca becoming the first Czech Fellow of the European Ceramic Society. Additional accolades, such as the Danubius Young Scientist Awards and the Werner von Siemens Award, further highlight CEITEC's scientific excellence, societal relevance, and the diversity of its research contributions.

CEITEC faculty also hold **editorial roles in 14 international journals**, often high-impact and field-defining. These include **ACS Nano**, **Small**, and **Materials Today** (Prof. Martin Pumera), **Scientific Data** (Prof. Jozef Kaiser), **Spectrochimica Acta Part B** (Doc. Pavel Pořízka), **Processing and Application of Ceramics** and **Science of Sintering** (Prof. Karel Maca), and **Engineering Failure Analysis** (Doc. Ladislav Čelko). These positions not only confer prestige but demonstrate the trust placed in CEITEC researchers to shape research agendas, uphold scientific quality, and steer academic discourse in their fields.

CEITEC's researchers have also been in demand as invited speakers, delivering **approximately 20 keynote or plenary talks** at high-profile institutions and international conferences. **Prof. Eric Glowacki** was invited to speak at **MIT** (NanoBio Seminar Series) and **Stanford University** (Neural Engineering Seminar Series) in 2022, addressing cutting-edge work on bioelectronics. **Prof. Martin Pumera** gave an invited lecture at the **Nature Conference on Microrobots and Nanorobots for Biotechnology** in Dresden (2021). Other major talks include **Prof. Jan Čechal** at the **Weizmann Institute of Science** (2020), **Prof. Karel Maca** at the **International Conference on Sintering** in Japan (2023), and **Assoc. Prof. Lenka Zajíčková** at the **30th International Toki Conference on Plasma and Fusion Research** (2021, plenary). These talks reflect the demand for CEITEC expertise on global stages.

Hosting external thought leaders is equally prioritized. Despite COVID-19 disruptions, CEITEC continued its **longstanding Seminar Series**, organizing **43 invited lectures** between 2019 and 2023. Esteemed guests included **Prof. Satoshi Hamaguchi** (Osaka University) on plasma-surface interactions for atomic layer processing, **Prof. Josef Michl** (University of Colorado) on porphene synthesis, and **Prof. Ludvik Martinu** (École Polytechnique Montreal) on multifunctional coatings for optics and energy. Other international speakers came from institutions such as **Seoul National University**, **Imperial College London**, and **Stockholm University**, enriching the CEITEC research environment and fostering global knowledge exchange.

CEITEC's scientific standing is further validated by its staff's **active role in evaluating major national and European R&D&I programmes**. This includes appointments to evaluation panels for the **European Research Council (ERC Starting Grants)**, **EIC Pathfinder**, **FET-OPEN**, **Marie Skłodowska-Curie Actions (MSCA)**, and various **Horizon Europe** funding schemes. Examples include **Prof. Martin Pumera** (ERC-StG PE4 panelist, 2020), **Dr. Ladislav Čelko** and **Dr. Pavel Pořízka** (EIC Pathfinder), and **Assoc. Prof. Lenka Zajíčková** (multiple MSCA and EIC Pathfinder evaluations, 2021–2023). This level of participation confirms that CEITEC scientists are trusted to assess research quality and innovation at the highest European level.

Additional contributions include **scientific society leadership**, **conference organization**, and consistent participation in collaborative programmes, showing CEITEC's commitment to shaping the scientific landscape beyond its own outputs. CEITEC has also made significant strides in international co-authorship and joint industrial research, further underlining its integrative approach.

Taken together, these achievements (international awards, high-impact editorial roles, frequent keynote addresses, active seminar hosting, and involvement in top-tier funding evaluations) makes **CEITEC a dynamically evolving and increasingly influential research centre**.

Recommendations:

- Continue expanding CEITEC in high-impact international venues by encouraging strategic collaborations and co-authorships with globally recognised teams.
- Strengthen visibility through targeted dissemination strategies (e.g., open access, conference leadership, special issues).
- Encourage more staff to engage in editorial roles, peer-review activities, or scientific boards to further reinforce institutional credibility.
- Continue supporting early-career researchers in building their reputation, including mentoring for conference invitations or grant success.

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:

CEITEC's research project portfolio is strongly aligned with its mission to advance excellence in life and material sciences. The portfolio emphasizes strategic themes such as advanced instrumentation (e.g., ESR/NMR systems), nanomaterials, bioelectronics, and Industry 4.0, reinforcing the unit's long-term focus.

Several projects demonstrate strong research outcomes and competitive success. Notably, the OPTEL-MED ERC grant (Prof. Glowacki) has produced promising bioelectronic neural interfaces with commercialization potential. THz-FRaScan-ESR (Dr. Neugebauer) delivered world-unique ESR instrumentation, placing CEITEC at the international forefront of spin resonance research. ToMe TuM (Prof. Adam) and EXPRO Pumera advanced fundamental cancer and electrochemistry research, respectively.

Project scale and scope are well-proportioned to CEITEC's capacity. The foundational CEITEC 2020 project stabilized research teams and infrastructure, enabling subsequent growth in competitive funding (e.g., ERC, FET Open). CEITEC has shown an ability to lead complex, multi-partner projects, such as PETER and RICAIP, the latter aiming to build a pan-European Industry 4.0 hub.

Interdisciplinarity is evident in projects combining fields like neuroscience and organic electronics (OPTEL-MED) or spectroscopy and biophysics (EXPRO Neugebauer). This reflects CEITEC's strategy of integrating scientific domains while maintaining core expertise.

Internal collaboration within the HEI is visible, especially in large consortia like CEITEC 2020 and RICAIP, although there is room to further deepen cross-faculty ties. External partnerships with industry and academia across Europe (e.g., GlaCerHub, DFKI, ZeMA) reinforce CEITEC's role in international research ecosystems.

In summary, CEITEC's portfolio demonstrates high-quality, relevant, and interdisciplinary research, with projects that support both scientific discovery and application. The alignment with strategic goals and the capacity for collaboration and leadership in EU-funded projects underline a robust and future-oriented research agenda.

Recommendations:

- Continue fostering internal collaboration across CEITEC partners; enhance it through joint PhD programs and interdisciplinary pilot projects.

- Maintain and expand application-driven research, building on successes like OPTEL-MED; strengthen technology transfer and support for spin-offs.
- Sustain strong engagement with EU funding schemes (e.g., ERC, FET Open); and broaden participation in Horizon Europe clusters and Partnerships.
- Continue strategic recruitment of top researchers, especially in interdisciplinary and emerging fields; support career development and retention.
- Sustain investment in cutting-edge research infrastructure; explore shared access models and affiliations with European research infrastructures (e.g., ERICs).
- Build on CEITEC's international visibility through benchmarking, strategic alliances, and hosting high-level international events.

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:

CEITEC has demonstrated a strong track record of translating research into real-world applications, with outcomes clearly proportionate to its R&D&I capacities and highly relevant to its mission. The unit's applied results span a diverse range of sectors, evidencing both scientific excellence and societal impact.

Key examples include the establishment of six spin-offs and start-ups (e.g. Lightigo, Cactux, Tricera), reflecting a healthy innovation pipeline. The atomic hydrogen source for SEM, developed with Thermo Fisher Scientific, has received national recognition and is moving toward global commercialization, representing a clear case of successful industry collaboration. The Orpheus-AC3 CBRN robot, developed with CEITEC's involvement, is actively deployed by the Czech Army and NATO forces.

In the biomedical field, CEITEC is advancing injectable bone adhesives and a total skin substitute, both undergoing preclinical trials in partnership with hospitals and research institutes. These innovations address urgent clinical needs such as fracture healing and treatment for severe burns. Industrial and technological applications are also evident, such as the temperature measurement system used by ABB and fail-operational motor control algorithms licensed to ZF Friedrichshafen AG for next-generation vehicles. Additionally, the nanofiber-based dermatological product, developed with Pardam Nano4Fibres, illustrates the successful transfer of materials research into consumer products.

The unit's embedded approach to gender equality and sustainability (treated as cross-cutting principles within its HR and strategic framework) ensures their consistent consideration across all activities, rather than as project-specific add-ons.

In summary, CEITEC has established itself as a mature and capable applied research institution, delivering high-quality outputs with tangible industrial, clinical, and societal value. The scale and diversity of these results reflect a well-developed strategy for practical impact and long-term relevance.

Recommendations:

- Continue strengthening commercialization pathways, especially for biomedical and instrumentation innovations.

- Support scale-up of spin-offs and start-ups through targeted mentoring, funding access, and strategic partnerships.
- Enhance visibility of applied outcomes in international arenas to attract industry and research collaborators.
- Maintain institutional focus on gender and sustainability
- Continue leveraging successful industry collaborations (e.g., ABB, ZF, Thermo Fisher) to expand CEITEC's applied R&D network.

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:

CEITEC has established a structured and impact-driven system for transferring research results into practice, with a strong emphasis on creating spin-offs, fostering industry collaborations, and supporting entrepreneurial initiatives. While licensing is used selectively, the primary commercialization strategy is focused on enabling researchers to bring innovations directly to market through start-up and spin-off companies. This approach is supported by dedicated instruments such as the CEITEC Innovation Accelerator Programme, the Director's Awards for entrepreneurship, and the JRGL Project, all of which offer financial and mentoring support. CEITEC's collaboration with the South Moravian Innovation Centre (JIC) further facilitates access to expert business guidance and investor networks. Notable examples of practical application include the development of an atomic hydrogen source for SEM, commercialized in partnership with Thermo Fisher Scientific, and the deployment of a CEITEC-developed temperature measurement system now in use at ABB production-testing lines. In the biomedical field, CEITEC's work with the University Hospital Brno on injectable bone glue and a single-step skin substitute is progressing through preclinical trials, with clear translational potential for human and veterinary medicine.

The spin-off ecosystem reflects the effectiveness of CEITEC's commercialization strategy. Companies such as CactuX s.r.o., Linacton s.r.o., and TriCera s.r.o. illustrate the successful transfer of CEITEC research into diverse sectors including imaging technology, non-destructive testing, and advanced ballistic protection. CactuX, for instance, has entered a strategic partnership with Rigaku Corporation to integrate its software tools into global product lines, while Linacton is establishing a high-energy CT center for industrial clients. TriCera is working with the Czech police to deliver next-generation mobile ballistic shields. Lightigo s.r.o. and its subsidiaries further extend CEITEC's reach into elemental analysis and optoelectronic systems. From 2019 to 2023, CEITEC generated additional income from non-public, non-grant sources, including approximately 172000 EUR in license sales and over 230000 EUR in donations, as well as revenues from consulting and training services.

Recommendations:

- Strengthen coordination of commercialization efforts by filling the Industrial Liaison Officer position.
- Expand support for scaling successful spin-offs into larger market operations.
- Continue leveraging partnerships with innovation hubs like JIC to identify new users and markets.
- Enhance visibility of industrial collaborations to attract additional strategic partners.

- Monitor and gradually increase license revenue where appropriate, while maintaining the spin-off-first strategy.

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:

CEITEC shows a strong dedication to the popularisation of research, development, and innovation (R&D&I) and to public engagement. Within the CEITEC consortium, it contributes 1.5 of the 4.5 full-time equivalent (FTE) staff dedicated to science communication and outreach. Its activities are broad, well-coordinated, and aimed at making scientific research accessible to a wide audience through both large-scale public events and focused educational programs.

One of CEITEC's most impactful initiatives is the annual Researchers' Night, drawing 200–500 visitors each year. The event offers interactive experiences such as cleanroom tours, demonstrations of X-ray computed tomography, laser-induced plasma spectroscopy (LIBS), smart sensors, and micro-nano robotics. The popular "Turn into a Scientist" competition allows participants hands-on access to research tools. Creative activities like coloring microscope images engage younger audiences and families.

Another key program is the CEITEC Student Talent Summer School, launched in 2021, which selects up to 30 high school students each summer to work on real research projects under the guidance of PhD mentors. The program concludes with student presentations to a jury including CEITEC representatives, city officials, industry sponsors, and innovation centres. The summer school has become increasingly competitive, with double the applications compared to available spots, and benefits from strong media coverage.

CEITEC also leads the Art in the Nanoscale exhibition, an interdisciplinary project combining science and art to explore nanotechnology through sculptures and light installations, culminating in a published monograph. Additionally, CEITEC contributes significantly to the Days of Electron Microscopy, an annual festival featuring lab tours, lectures, and interactive activities for both children and adults, as well as the Festival of Science and Technology at the Brno Exhibition Centre, which reaches thousands through demonstrations of cutting-edge research.

Educational outreach forms a key part of CEITEC's strategy. The BUT Junior program introduces middle school students to university life and nanotechnology. CEITEC BUT also provides annual hands-on training for high school STEM teachers, including activities like custom silicon wafer fabrication, equipping educators to inspire their students effectively. CEITEC's communication strategy includes an active and growing social media presence, with a 27% increase in LinkedIn followers in 2024 and gains on Facebook and Instagram. These digital efforts complement its physical outreach, expanding its visibility to wider audiences.

All these activities align with CEITEC BUT's mission to foster science literacy and public involvement in research while emphasizing inclusivity, sustainability, and advanced technology. The engagement strategy is well-structured and well-supported.

Recommendations:

- Build on existing visibility by introducing more systematic evaluation methods.
- Leverage current school and teacher programs to engage rural and minority communities more deeply.

- Extend beyond annual events with more frequent activities like online talks, workshops, or science content series.
- Build on current collaborations to further amplify outreach through local and national media.
- Expand successful initiatives like Art in the Nanoscale into a recurring, thematic series.
- Formalize the role of student and alumni ambassadors (especially female role models) in outreach, especially in youth and school engagement.

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 evaluated unit, CEITEC, has clearly addressed the recommendations from the previous evaluation under Module 3, reflecting a proactive approach to institutional improvement. Key recommendations, such as enhancing internationalization and better utilizing advanced facilities, have been met with concrete actions, including increased global engagement, stronger technology transfer, and improved research visibility. These efforts demonstrate CEITEC's responsiveness and strategic focus. Implementation is well underway, with thoughtful adaptations where needed. The changes are well aligned with CEITEC's mission and reinforce its role as a leader in excellence and innovation. Overall, CEITEC shows a mature attitude toward evaluation, with a clear commitment to growth and accountability.

Recommendations:

- Continue building structured processes for tracking, documenting, and reflecting on the implementation of external recommendations.
- Where recommendations were not adopted, clearly articulate the rationale and any alternative strategies pursued.
- Ensure that future strategic plans or self-evaluations explicitly reference past feedback and demonstrate progress over time.
- Encourage a culture of openness to external input by involving diverse stakeholders (e.g., early-career researchers, support staff) in follow-up discussions.

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: CEITEC has firmly established itself as an outstanding research and innovation centre in engineering, technology, and interdisciplinary sciences, consistently demonstrating excellence across all evaluation criteria of Module M3. With a strong international reputation underpinned by high-impact publications, prestigious awards, and influential editorial and evaluation roles, CEITEC has proven its leadership within the global R&D&I community. Its research projects are ambitious yet well-proportioned, combining scientific discovery with application potential, and supported by world-class infrastructure. The institute shows a mature innovation ecosystem, effectively translating results into practice through spin-offs, industrial partnerships, and biomedical applications, while also attracting significant non-grant revenues. Public engagement is robust and creative, enhancing science literacy through outreach events, student programs, and innovative cross-disciplinary initiatives. A cornerstone of CEITEC’s mission is doctoral education through its internationally recognized PhD School in Advanced Materials and Nanosciences, which attracts a highly diverse cohort and provides a structured, interdisciplinary training environment; securing full legal accreditation of this program remains a strategic priority to consolidate CEITEC’s role as a national leader in doctoral education. CEITEC has also demonstrated responsiveness to past recommendations, embedding continuous improvement in its strategic development. Overall, CEITEC stands out for its scale, interdisciplinarity, societal impact, and long-term commitment to excellence.	
Summary recommendations: - Enhance international visibility and collaboration by scaling existing partnerships, increasing leadership in global consortia, and expanding open-access and high-impact dissemination. - Deepen support for early-career researchers, building on current mentoring and grant success programs, with added focus on leadership development and international mobility. - Strengthen interdisciplinary integration by expanding joint PhD programs and launching more cross-cutting pilot projects across CEITEC’s research areas. - Scale commercialization efforts, especially in biomedical and instrumentation fields, by supporting spin-offs in reaching broader markets and increasing strategic licensing where appropriate. - Broaden and deepen industry engagement through targeted outreach, innovation hubs, and showcasing successful collaborations to attract new partners. - Sustain investment in infrastructure and talent, ensuring CEITEC remains at the forefront of emerging technologies and research excellence. - Expand public outreach and science communication, building on successful programs with more frequent, inclusive, and measurable engagement activities. - Formalize and scale internal processes for tracking and implementing external recommendations, ensuring transparency and continuous improvement. A strategic priority remains: - Secure legal approval for an accredited permanent PhD program, recognizing the PhD School as a foundational pillar of CEITEC. The current legal ambiguity must be addressed to ensure CEITEC’s doctoral training model is formally recognized and empowered to operate independently within the national education framework.	

EVALUATION REPORT IN MODULE 3

NAME OF EVALUATED UNIT: Institute of Forensic Engineering (IFE)

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 Institute of Forensic Engineering (IFE) at Brno University of Technology (BUT) is a unique, independent university institution established in 1965, originally as a department under BUT headquarters, and since 1970 functioning as a separate academic unit. It is not affiliated with any faculty, which gives it a distinct position within the university. IFE was created to meet the specialized needs of forensic engineering, focusing both on research and the education of expert witnesses and professionals in the field. From an organizational perspective, IFE consists of three expert departments and one support department: Department of Expertise in Construction and Real Estate Valuation; Department of Expertise in Engineering, Traffic Accident Analysis, and Motor Vehicle Valuation; Department of Risk Engineering, and Administrative and Economic Support Department.

IFE's mission is twofold: advancing forensic science through applied research and providing expert opinions in complex legal and technical cases, particularly for courts, police, and public authorities. It emphasizes a practice-oriented research approach, reinforced by strong cooperation with public stakeholders. The vision focuses on becoming a methodological and academic leader in forensic sciences nationally and internationally. In terms of academic activity, IFE delivers: 3 master's programmes (transportation and traffic, real estate, and risk engineering), 1 doctoral programme, the only PhD in forensic engineering in the Czech Republic, and lifelong education programmes tailored for expert witnesses and related professions. IFE's educational programmes are interdisciplinary, implemented in close collaboration with several BUT faculties (e.g. Civil, Mechanical, Chemistry, Electrical, and Information Technology), and externally with institutions like Masaryk University and the Transport Research Centre (CDV).

Research at IFE covers a wide spectrum, with emphases on crash analysis and simulation modelling, human factors in traffic, risk management in transport, industry, and infrastructure, real estate valuation and building material properties, development of expert standards and forensic methodologies

In terms of staffing, IFE had about 15 FTE academic personnel annually, and between 350 and 400 enrolled students across master's, doctoral, and lifelong learning programmes annually during the evaluated period.

As a national leader in forensic engineering, IFE serves not only academic purposes but also functions as a methodological authority, frequently contributing to the development of standards and being a key advisor in shaping legal frameworks for expert activities in the Czech Republic.

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:¹⁰

IFE merits the highest score for recognition by the research community. Its sustained record of national and international visibility, peer esteem, and academic service reflects a level of excellence and institutional maturity. IFE has built a robust and interdisciplinary reputation in the specialised field of forensic engineering, positioning itself not only as a key national methodological authority but also as a respected international player in the broader research and professional community.

Over the evaluation period, the institute's academic staff have received numerous prestigious awards, including the Honorary Badge of the Czech Association of Scientific and Technical Societies and recognitions from the Police of the Czech Republic and medical and forensic professional societies. IFE's role in co-organising WREX2023—the world's largest accident reconstruction conference—as the only Czech partner, demonstrates its leadership at the highest levels of professional discourse. Furthermore, staff members serve on editorial boards of international journals and are regularly invited to deliver lectures abroad, underscoring the institute's relevance and credibility across multiple domains.

Academic members from IFE actively contribute to the scientific ecosystem through expert evaluations of research funding schemes, including national programmes such as DOPRAVA 2020+, SIGMA, and Inter-Excell. This evaluator role further illustrates that IFE's expertise is not only respected but also influential in shaping national research agendas.

The quality achieved by IFE is characterised by its consistent integration of high-impact research, standard-setting activities, and real-world application. Its work is directly employed by courts, ministries, police, insurance agencies, and other stakeholders, confirming that recognition extends beyond academia into applied and policy-making environments. The institute's doctoral programme—unique in the Czech Republic—serves as a national pipeline for expert development, further strengthening IFE's standing and influence within the community.

In terms of academic recognition, IFE has shown steady productivity in publishing research in peer-reviewed journals, with increasing representation in indexed outlets (WoS, Scopus). While the majority of publications are in applied or regional journals, there is a visible effort to improve quality and citation reach.

Despite its numerous strengths, there are a few areas where growth is still possible. The gender imbalance among senior staff and award recipients remains noticeable, and the underrepresentation of early-career researchers may pose a risk to future capacity and renewal. Additionally, while IFE staff serve on editorial boards, these tend to be regional or field-specific journals; more consistent presence in high-impact international journals would further elevate the institute's academic profile. Moreover, although IFE's international collaborations are substantial, they are mostly concentrated in Central Europe and select Western partners — expanding recognition into Asia, Latin America, and Africa would enhance global visibility.

IFE demonstrates a level of professional and academic recognition that clearly justifies the highest possible score. Through sustained interdisciplinary engagement, policy relevance, and expert credibility, IFE not only shapes forensic science in the Czech Republic but also contributes meaningfully to international standards and debates. With continued strategic development, the

¹⁰ 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 is well-positioned to evolve from a European leader into a global reference centre for forensic engineering and applied forensic science.

Recommendations:

To further consolidate and expand its recognition, several strategic steps are recommended.

- Intensify efforts to publish in higher-impact international journals, especially in domains intersecting forensic engineering, risk management, and applied sciences.
- Strengthen international academic collaborations through joint research, mobility, and participation in EU consortia.
- Encourage researchers to assume leadership roles in international academic organizations and review boards.
- Consider targeted support for early-career researchers to build competitive CVs and international research presence.
- Expanding keynote participation in global conferences beyond Europe—particularly through the WREX network—would help IFE reach new audiences and cement its status as a global thought leader.
- Nominating staff for international research panels (e.g. Horizon Europe, CEN/ISO committees) would increase its strategic visibility and influence.

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:

IFE conducts a broad portfolio of applied research projects aligned with its mission to serve societal needs in forensic engineering. Projects cover traffic safety, vehicle damage analysis, real estate valuation, occupational health, and risk modelling. The institute has demonstrated interdisciplinary capacity, often linking civil engineering, transport, and health sciences.

Collaboration with other BUT units (e.g. Faculty of Civil Engineering, Faculty of Mechanical Engineering) and national agencies (e.g. Czech Police, Ministry of Transport) is a key strength of the Institute. However, most funding is from national public sources, with limited participation in international competitive projects (e.g. Horizon Europe).

The institute effectively uses its applied research capacity to develop tools and methodologies for practitioners, but basic research and exploratory projects are underrepresented.

Recommendations:

1. Target Horizon Europe, COST and NATO-SPS consortia to diversify funding sources, test methods in broader contexts and raise TRL readiness for European markets.
2. Broaden research scope toward cyber-forensic analytics, autonomous-vehicle incident reconstruction and climate-related damage assessment—fields that build naturally on existing risk-engineering expertise.

3. Institutionalise a spin-off and IP-accelerator path within the BUT Technology-Transfer Office, prioritising the LIBS brake-trace detector and AI-drone traffic-safety prototypes for venture funding.
4. Launch an internal seed-grant scheme for post-docs and doctoral candidates, fostering innovative, higher-risk ideas that can mature into external proposals.
5. Adopt systematic impact tracking: introduce post-project audits quantifying economic savings, safety gains or legal efficiencies, and feed these metrics into future calls and stakeholder dialogues.

By addressing these points, IFE can convert its already very strong project base into a truly world-class, internationally leveraged research programme.

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 research results presented and the accompanying narrative in the Self-Evaluation Report provide compelling evidence that IFE consistently develops outputs that are directly adopted by end-users across sectors such as policing, insurance, justice, infrastructure management, and environmental health.

One of the most striking indicators of IFE's societal impact is the formal adoption of its methodologies by public institutions. The *Methodology for Investigating the Scene of a Traffic Accident*, certified in 2022, has become an internal regulation of the Police of the Czech Republic. This represents not only the formal institutionalisation of research output, but also an operational improvement with immediate consequences for public safety and traffic flow — including reduced congestion and quicker scene clearance. Similarly, the *Road Traffic Accidents Reconstruction Standard* and *Expert Standard I/2022* have been adopted to guide expert witness procedures, increasing legal certainty and unifying practices in judicial contexts.

Moreover, several results demonstrate significant commercial and technological potential. The *Vehicle Damage Catalogue*, developed as a licensed database, is used to streamline insurance processes and reduce disputes. The *Capitalisation Rate Web Calculator* offers a highly functional tool for real estate valuation professionals, particularly in data-poor contexts — contributing directly to transparency and credibility in forensic valuations. These examples show how IFE effectively moves beyond theoretical research into the realm of tangible, useable tools.

Additionally, IFE has contributed to environmental protection through functional prototypes such as a LIBS-based device for detecting invisible brake traces, nanostructured materials for arsenic removal from water, and an active flue-gas stabilisation system to reduce fine particulate emissions. These outputs not only demonstrate innovation but also serve public health, environmental sustainability, and regulatory compliance — aligning closely with societal needs and United Nations Sustainable Development Goals.

Real-world application of their expertise and research is presented in hundreds of expert opinions and technical appraisals by IFE members.

The strengths of these research results lie not only in their real-world application but also in their strong alignment with IFE's mission and interdisciplinary approach. Outputs are not developed in disciplinary isolation but often emerge from collaborations involving engineers, psychologists, chemists, and economists. Furthermore, the inclusion of gender and sustainability dimensions, while not always fully formalised, is evident. For example, the occupational health methodology for environments with fine particles includes considerations of psychological well-being, and several teams are led or co-led by female researchers. The environmental outputs, in particular, show a clear commitment to sustainable innovation.

In conclusion, IFE's research has direct and visible impact on society, particularly in legal and safety domains. Key outputs include:

- Expert methodologies and standards used by courts, police, and ministries,
- Databases and calculation tools for accident reconstruction and property valuation,
- Real-world application in hundreds of expert opinions and technical appraisals,
- Contributions to policy implementation, including occupational safety and traffic legislation.

These outputs are result of relatively small group of researchers (15), and they are aligning well with the institute's mission.

Recommendations:

1. Pursue CEN/ISO or UNECE standard channels for the accident-scene methodology and reconstruction standard, elevating them from national to international best practice.
2. Create a spin-off acceleration pathway—in cooperation with BUT's Technology Transfer Office—to commercialise the LIBS detector and environmental prototypes, attracting venture funding and scaling manufacturing.
3. Embed life cycle and carbon-footprint analyses in all new technical outputs, ensuring that environmental benefits are quantified and visible to policymakers.
4. Develop bilingual open-access toolkits (code, datasets, manuals) for the Capitalisation-Rate Calculator and Vehicle Damage Catalogue to foster wider European adoption and collaborative refinement.

By extending its already impressive national successes into international arenas and formalising impact-tracking mechanisms, IFE can consolidate its position as a global reference point for forensic-engineering solutions with demonstrable societal value.

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 of Forensic Engineering (IFE) excels at moving research from the laboratory to real-world deployment, achieving a breadth of users, revenue growth and policy influence that is exceptional for a unit of roughly thirty academics. Its transfer system is anchored in a university-wide Knowledge-Transfer Department yet tailored to forensic engineering's unique stakeholder

landscape of police, ministries, courts, insurers and infrastructure operators. The evidence shows both scale and momentum: non-public revenues rose by 38 % between 2019 and 2023, topping CZK 4.9 million ($\approx$ €195 k) in the final year, while contract research from bodies such as the Road and Motorway Directorate, the Czech Insurers' Bureau and the Ministry of Defence regularly exceeds CZK 1 million per annum. Altogether, around 80% of IFE's income comes from commercial (market earned) sources which makes IFE almost a self-sustainable institution that simultaneously contributes to both the University and society as a whole.

Key strengths of IFE transfer of results into practice are:

- Direct alignment with users' core needs. Standards and tools target the daily pain-points of police investigators, road operators, insurers and valuers, ensuring near-automatic uptake.
- Demonstrated revenue growth. Rising non-grant income indicates healthy demand and an ability to price services credibly.
- Multi-tier commercialisation. IFE combines licences (Vehicle Damage Catalogue), publications (monograph *Vehicle Crush Investigation*), bespoke software (Cap-Rate Calculator) and high-value consultancy, creating several independent income channels
- Robust partner mix. Long-term ties with ministries, national directorates, international firms such as Škoda Auto and an emerging collaboration with drone-start-up RCE show that the Institute can serve both public and private innovation agendas
- Strategic oversight. An International Scientific Advisory Board (ISAB) guides commercial-impact strategy and has already spurred new revenue-sharing clauses in applied-research contracts

When it comes to some weakness, IFE needs to improve their global market reach. Licences and standards are highly successful domestically but only beginning to penetrate EU or wider markets. Additionally, impact metrics should be implemented - while revenue data are tracked, systematic measures of downstream economic savings (e.g., reduced congestion costs) or environmental gains are not yet embedded.

Finally, formal commercialization mechanisms (e.g. licensing, patents, spin-offs) are not developed enough. Impact is achieved more through service delivery than through structured innovation pipelines.

Recommendations:

1. Pursue EU-level standardisation and pan-European licensing for flagship outputs such as the accident-scene methodology and Vehicle Damage Catalogue, leveraging CEN/ISO channels and Horizon Europe networks.
2. Implement an impact-analytics dashboard capturing revenue, safety metrics, CO₂ savings and user-satisfaction data; feed these into annual strategy reviews with ISAB.
3. Launch a dedicated spin-off accelerator with BUT's Technology-Transfer Office to mature hardware prototypes and AI-safety platforms into investor-ready companies, using clear equity and IP policies.
4. Formalise tiered pricing and subscription models for software tools (e.g., Cap-Rate Calculator) to broaden the paying customer base beyond expert witnesses into mainstream real-estate and insurance markets.
5. Strengthen gender-responsive transfer activities by monitoring the diversity of licensees, expert clients and spin-off leadership, echoing IFE's commitment to inclusive innovation.

By expanding from a nationally dominant provider of forensic standards and services into a European commercial and entrepreneurial force, IFE can convert its exceptional practice-transfer

record into enduring economic and societal value, fully justifying an outstanding rating for this indicator.

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:

IFE engages in targeted professional dissemination, mainly through:

- Specialist conferences and symposia in forensic science,
- Training and workshops for legal professionals, engineers, and police,
- Contributions to standard-setting and public policy documents.

Popularization toward the general public is less prominent. Public communication (e.g. media, outreach events, online platforms) is not systematically implemented. The societal relevance of their work (e.g. accident prevention, expert evidence) has huge potential and could have broader public resonance if actively promoted.

Recommendations:

1. Create a public engagement plan focusing on digital content, media appearances, and community events.
2. Scale digital storytelling: launch a bilingual YouTube series explaining headline accident cases, backed by subtitles and short TikTok “forensic facts” clips to reach under-25 audiences.
3. Develop an annual communication plan with defined target groups, key messages and KPIs, aligned with BUT’s central media office for amplified reach.
4. Highlight real-world impact of IFE’s work in accident prevention, law, and public safety.
5. Encourage researchers to communicate science in accessible formats (e.g. blogs, podcasts, videos).

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:

Since the 2020 evaluation, the Institute of Forensic Engineering (IFE) has demonstrated meaningful progress in addressing several of the previously identified challenges. One of the most notable improvements is the articulation of a clearer strategic orientation. While earlier assessments pointed to a lack of defined long-term goals and institutional identity, the current self-evaluation presents a more coherent vision of IFE’s mission. It now emphasizes its unique position within the Czech higher education and R&D system as a centre of expertise in forensic science, applied

engineering, and expert support to the judiciary, insurance sector, and public authorities. This enhanced clarity is visible in both strategic documents and the alignment of research activities with societal needs.

IFE has also consolidated its position as a provider of research with strong societal impact. The institute has made considerable efforts to document and communicate how its work is applied in practice—through national standards, certified methodologies, technical tools, and expert reports. It continues to be deeply embedded in professional networks, particularly with government stakeholders such as the Ministry of the Interior, the Ministry of Justice, and the Czech Police. This confirms that the institute took seriously the earlier recommendation to articulate its societal relevance more effectively, transforming it from an implicit strength into a well-substantiated institutional asset.

Nevertheless, progress in other areas has been more limited. Internationalization remains an area of relative weakness. Although IFE has participated in some international professional associations and events, such as the EVU and WREX conferences, there is little evidence of systematic engagement in international research funding schemes like Horizon Europe. The institute has not introduced English-language doctoral programs or significantly increased its publication presence in high-impact international journals. As such, its international academic visibility remains constrained. Similarly, recommendations related to staffing strategy and talent development have yet to be fully addressed. The faculty's academic staff numbers have declined over the review period, and the gender imbalance at senior levels remains pronounced, with no female professors. There is also little indication of structured support for early-career researchers, such as postdoctoral positions, mentorship programs, or clear promotion pathways. The lack of generational renewal and diversity in academic staffing could become a strategic risk if not addressed.

Another area where the institute has not fully acted upon earlier feedback is the balance between applied and basic research. IFE remains predominantly oriented toward application-driven projects and expert activities, with limited emphasis on theoretical advancement or basic science. While this applied focus is part of its strength and societal mission, the absence of initiatives to explore foundational research questions may limit long-term academic impact and innovation.

Recommendations:

A key priority is the creation of a long-term HR strategy focused on generational renewal and diversity. Structured support for early-career researchers should be introduced through postdoctoral positions, mentoring, and seed funding for independent projects. Promotion criteria must reward both societal and academic performance. In parallel, IFE should address its gender imbalance, especially at senior levels, by implementing proactive recruitment and career support measures for women in research.

Internationalization also remains underdeveloped. IFE should define measurable targets for participation in EU-funded research (e.g. Horizon Europe, COST) and strengthen administrative support for grant applications. Establishing formal partnerships with foreign institutions—through joint PhD supervision or research centres—would enhance visibility. An English-language doctoral program would also help attract international talent and foster global collaboration.

To increase academic visibility, IFE should incentivize publications in high-impact journals and support exploratory or interdisciplinary research. This may include internal funding schemes or reduced teaching loads for research-active staff. Collaborations with other faculties at BUT should be further encouraged to broaden the research base.

The institute should also introduce a formal diversity and performance monitoring framework. Regular tracking of key indicators—such as international project involvement, staff composition, and funding sources—will support strategic planning. A diversity officer could help guide and sustain these efforts.

Finally, IFE should build on its strong societal impact by creating a public-facing digital repository of certified tools and methodologies and by collecting structured feedback from partner institutions.

These steps would consolidate its role as a provider of nationally relevant expert knowledge while opening pathways for broader recognition.

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	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	4 - Very good
Average rating [1–5]:	5 - Outstanding
Grade [A–D]:	A
Summary assessment: The Institute of Forensic Engineering at Brno University of Technology presents a compelling example of a small yet high-performing academic unit with exceptional impact and societal relevance. Over the evaluated period, IFE has maintained a clearly defined mission centred on applied forensic research, expert valuation, accident reconstruction, and risk engineering. Through this focused orientation, it has achieved national leadership in its field and contributed significantly to the practical application of research in areas directly affecting public safety, justice, and infrastructure management. IFE's recognition by the research community is outstanding. The institute's staff have received prestigious national awards, contributed to editorial boards of international journals, and regularly serve as evaluators for national funding programmes. Importantly, IFE co-organised the globally renowned WREX 2023 conference and remains deeply embedded in international expert networks. This esteem from peers and stakeholders reflects the scientific authority and professional trust that IFE has cultivated over the years. The institute's portfolio of research projects is well-balanced, highly applied, and aligned with its institutional mission. Projects funded by the Technology Agency of the Czech Republic and ministries have produced a rich set of deliverables, including certified standards, expert methodologies, functional hardware prototypes, and digital tools. Internal collaboration within the university, particularly with technical and engineering faculties, is frequent and productive. However, participation in EU framework programmes remains limited, and further efforts are needed to internationalise the research funding base and broaden thematic coverage. IFE's research results demonstrate outstanding societal impact. Key outputs—such as the <i>Methodology for Investigating the Scene of a Traffic Accident</i> (now an internal regulation of the Czech Police), the <i>Road Traffic Accident Reconstruction Standard</i>, and the <i>Vehicle Damage Catalogue</i>—are not only applied in practice but have demonstrably improved legal processes, public safety, and forensic accuracy. Environmental and occupational safety results, such as nano-filtration systems and flue-gas stabilisation technologies, further contribute to sustainability and public health objectives. These results exemplify IFE's ability to produce mission-driven, interdisciplinary, and high-utility research.	

Equally impressive is the institute's performance in transferring results into practice. Approximately 80% of annual revenue now comes from non-grant sources, including licensing, consultancy, expert testimony, and commissioned research. Strong partnerships with ministries, law enforcement agencies, road infrastructure authorities, and private companies underscore the depth of stakeholder engagement and practical relevance. The pathways from research to real-world application are clearly structured and efficiently managed.

In the domain of public engagement, IFE has developed a vibrant outreach programme. Events such as CrashDay, the ExFoS conference, and participation in Researchers' Night and technology fairs make complex forensic research accessible to both expert and lay audiences. Public demonstrations, media commentary on major incidents, and active use of social media channels extend IFE's visibility and public value. However, the institute would benefit from more systematic monitoring of outreach effectiveness, as well as increased engagement with international science communication platforms.

Summary recommendations:

While IFE has implemented many previous recommendations—particularly in stakeholder engagement, mission focus, and the societal integration of research—some areas require further attention. Gender diversity remains limited, particularly among senior staff, and the involvement of early-career researchers in leading roles could be strengthened. Additionally, although the institute has developed commercially promising prototypes, it has yet to create spin-off ventures or fully systematise its intellectual property valorisation processes.

To sustain its current excellence and deepen its international presence, several strategic recommendations are proposed. First, IFE should intensify efforts to join Horizon Europe, COST, and NATO-funded consortia, thus leveraging its applied expertise in broader European contexts. Second, the development of a spin-off accelerator in collaboration with the university's Technology Transfer Office would enable the commercial scaling of hardware and digital tools. Third, pursuing standardisation of key outputs through CEN, ISO, or UNECE frameworks would elevate IFE's influence beyond national borders.

Furthermore, the institute should adopt systematic impact analytics to track safety improvements, environmental benefits, and economic savings resulting from its work. A more structured communication strategy—with international, multilingual outreach and targeted media content—would amplify its societal role. Finally, introducing a long-term talent strategy that includes gender-sensitive recruitment, postdoctoral fellowships, and structured mentorship would help ensure the sustainability of IFE's excellence.

In conclusion, the Institute of Forensic Engineering at BUT exemplifies a highly effective, mission-driven research unit. It delivers measurable societal value, produces impactful and applicable knowledge, and maintains a trusted position among key stakeholders. With focused investment in internationalisation, commercialisation, and inclusivity, IFE is well-positioned to grow from a national leader into a European centre of excellence in forensic engineering and applied safety science.

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 Architecture (FA)	B
Faculty of Business and Management (FBM)	B
Faculty of Chemistry (FCH)	A
Faculty of Civil Engineering (FCE)	A
Faculty of Electrical Engineering and Communication (FEEC)	A
Faculty of Fine Arts (FFA)	A
Faculty of Information Technology (FIT)	A
Faculty of Mechanical Engineering (FME)	A
Central European Institute of Technology (CEITEC)	A
Institute of Forensic Engineering (IFE)	A
Summary grade	A

Summary quality assessment:

The internal evaluation confirms that BUT is progressing steadily towards its strategic goals in research, development, and innovation, with a noticeable consolidation of strengths across the University. Since the last assessment period, there has been a clear institutional shift towards greater **research quality, relevance, and societal engagement**, underpinned by purposeful responses to past recommendations and growing alignment with European and global research agendas.

Research activities at BUT demonstrate a **robust integration of basic and applied research**, with a rising number of outcomes contributing not only to academic excellence, but also to industrial innovation, public service, and community needs. The University is increasingly able to **translate research into practice**, often through verified technologies, patents, consulting, and collaborations with a wide spectrum of societal stakeholders. **Societal impact** has become a more prominent dimension of institutional performance, supported by structured knowledge transfer pathways and varied forms of public engagement.

BUT shows growing **interdisciplinarity and internal collaboration**, with a number of joint research initiatives emerging across faculties and institutes. These developments are supported by a strong infrastructure base, as well as a focus on priority areas such as sustainability, digital transformation, safety, and the arts. While internal interdisciplinarity is progressing, further potential remains in breaking silos and promoting a culture of shared research leadership.

There has been **tangible improvement in publication quality and research visibility**, with increased output in high-impact journals and broader engagement in international scientific communities. Participation in competitive international funding schemes is growing, though in several areas this still requires systematic capacity-building and strategic targeting to match institutional ambitions.

BUT has also significantly **strengthened its innovation ecosystem**, with improved technology transfer processes, commercialization outputs, and support for entrepreneurship and spin-off formation. In parallel, public engagement activities—ranging from science communication to educational outreach—have become more embedded in the university’s mission, contributing to the societal perception of BUT as a relevant and open research institution.

Challenges persist in ensuring **balanced internationalisation**, especially in diversifying funding sources, increasing staff mobility, and forming strategic global partnerships. In addition, there remains space for **better support of early-career researchers**, structured talent development, and a more systematic integration of cross-cutting themes such as gender equality and sustainability. In summary, it is clear BUT is a research-intensive technical university with growing international credibility, well-developed foundations for knowledge transfer, and a research culture that is progressively aligned with excellence, openness, and impact.

Summary recommendation:

To build on the positive momentum and further elevate the research profile of BUT, the following strategic recommendations are proposed:

1. Internationalisation and Funding Diversification

- Strengthen participation in **EU research programs** (Horizon Europe, ERC, COST, NATO) across all faculties, with structured support for identifying project leaders and building consortia.
- Expand **strategic global partnerships** to enhance joint publications, mobility, and leadership in international consortia.

2. Interdisciplinarity and Internal Collaboration

- Promote deeper **interfaculty cooperation**, especially leveraging strengths in **STEAM approaches** (e.g., integrating FFA with technical faculties).
- Encourage joint research clusters in **materials, sustainability, digital technologies, and public health** (e.g., CEITEC, FCH, FME).

3. Research Strategy and Impact Orientation

- All units should develop or refine **targeted research strategies** that focus on key themes aligned with societal and industrial needs (e.g., New European Bauhaus, energy transition, digitalization).
- Implement **frameworks for measuring and monitoring long-term societal impact** using indicators, analytics, and longitudinal studies.

4. Commercialisation and Innovation

- Formalize support for **technology transfer**, including spin-off acceleration, structured IP training, and internal commercialization benchmarks.
- Establish **efficient administrative support** for licensing and technology valorisation across faculties.

5. Support for Early-Career Researchers

- Enhance **career development pathways** for young researchers and postdocs, focusing on mentorship, mobility, and leadership training.
- Provide **solid and sustained PhD funding**, enabling full engagement with research themes.

6. Gender Equality and Diversity

- Increase the **representation of women in senior academic positions**, especially where imbalances are notable.
- Systematically integrate **gender and sustainability dimensions** in research design and evaluation.

7. Public Engagement and Communication

- Expand **public science communication** and popularization activities with clear goals, metrics, monitoring, and inclusion strategies.
- Develop **professional communication strategies** to increase the visibility of results and attract societal interest.
- Use **alumni and digital platforms** more effectively as multipliers for outreach and knowledge transfer.

8. Infrastructure and Legal Frameworks

- Sustain and expand **research infrastructure** investments (e.g., ADMAS, CEITEC).
- Address regulatory barriers such as the **legal recognition of CEITEC's PhD School**, which is critical for long-term research training excellence.

EVALUATION REPORT FOR MODULES 4 & 5

HIGHER EDUCATION INSTITUTION NAME: BRNO UNIVERSITY OF TECHNOLOGY

COMPANY REGISTRATION NUMBER (CRN): 00216305

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:¹¹

BUT has a fairly standard overall structure compared with other national and international universities, but BUT has also taken the highly innovative approach to appoint, in 2023, two additional advisory boards, the International Scientific Advisory Board (ISAB) and the Industrial Council BUT, to provide them with key insights to improve their current operations and make valuable strategic decisions for the future. These advisory boards are seldom to be found at other national and international universities and BUT should be commended for this highly valuable initiative. This innovative model positions BUT ahead of many foreign peer institutions and elevates the university's strategic decision-making capabilities to international best-practice standards.

Recommendations:

A meeting (even online – perhaps once a year) between the International Scientific Advisory Board and the Industrial Council could be useful to provide insights and thus help align the university's future research strategy with industrial needs. A dedicated liaison coordinator can harmonize communications and recommendations across all advisory bodies and university departments to maximize the strategic value of these innovative structures.

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:

BUT has adopted a novel multi-pronged approach to manage quality and support R&D&I across the university. The university has developed an excellent system for supporting the preparation of national and international research projects. This system is coordinated by the Department of

¹¹ 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.

Project Support (DPS) under the responsibility of the Vice-Rector for Research. DPS plays a central role in coordinating and overseeing project offices at each faculty, ensuring they receive consistent, high-quality methodological guidance and expertise.

All aspects of project preparation, acceptance, and delivery are supported through this structure. DPS also provides valuable training for project managers, researchers, and young scientists, contributing to a strong science management culture across the institution. Additional support is provided by the Research Support Department and the Department of Knowledge Transfer, both of which play important roles in the university's research ecosystem.

The quality and effectiveness of project support at BUT is evidenced by its success in national and international funding schemes, including Horizon 2020, Horizon Europe, ERC, Interreg, the Technology Agency of the Czech Republic (TA CR), the Czech Science Foundation (GA CR), and various ministerial programmes. Between 2020 and 2024, 534 project proposals were submitted under Horizon programmes alone, with 71 projects funded, 21 of which were coordinated by BUT. In total, project funding accounts for approximately 32% of the university's annual budget, a performance that compares very favourably with leading international universities.

BUT also fosters an entrepreneurial culture by offering a range of internal funding schemes that support both staff and students. A key initiative is the internal grant competition for proof-of-concept ideas, which enables researchers to explore the commercialisation potential of their innovations.

Support for PhD candidates and postdoctoral researchers is robust and multifaceted, including financial support, career development services, and a well-structured mentoring system. In line with modern university standards, dedicated wellbeing services are also available.

BUT is proactive in recruiting top international talent, as demonstrated by the appointment of five new international professors, each of whom received additional funding from the university to build and lead their research teams. The university also supports the establishment of new research groups, further enhancing its research capacity.

Interdisciplinary research is a strategic priority at BUT, underpinning several cross-faculty initiatives involving the sharing of staff, infrastructure, and equipment. These initiatives include focus areas such as semiconductors and nanotechnologies, artificial intelligence and cybersecurity, environmental technologies, and the circular economy—all with strong potential for significant societal impact.

Finally, the university supports academic dissemination through its dedicated publishing house, VUTIUM, which ensures the professional publication of scholarly books and materials in an efficient manner.

Recommendations:

The rules and the whole system are set correctly.

A University level "Distinguished Lecture series" could help foster even further cross-disciplinary interaction between the Faculties, through the presentation of current key interdisciplinary challenges by leading experts in the fields.

BUT could also consider embracing STEAM (Science, Technology, Engineering, Arts, and Mathematics) approaches in research and higher education, strengthening connections between STEM fields with art, design, and architecture—disciplines that collaborate most closely with cultural institutions and society—thereby positioning the university as a leader in "science with society" applied research as well.

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:

BUT has developed a robust and multi-layered system for quality assurance in research, development and innovation (R&D&I). This system is grounded in the principles of the Higher Education Act and is primarily overseen by the Internal Evaluation Board, which ensures compliance with internal regulations and national legal frameworks.

In addition to this standard framework, BUT has taken several commendable and innovative steps to strengthen quality oversight and create a supportive, forward-looking research environment. These measures include the establishment of an International Scientific Advisory Board (ISAB), composed of independent international experts. The ISAB convenes annually to provide external feedback and strategic recommendations for improving research quality and institutional performance.

BUT has also adopted the principles of the Coalition for Advancing Research Assessment (CoARA), reflecting a strong commitment to responsible and modern research evaluation practices. In line with this, a two-phase internal evaluation process has been introduced, offering a more nuanced, reflective, and development-oriented approach to assessing research quality across the institution. As a member of European University Alliance, BUT participates in the Institutional Evaluation Programme, which provides very valuable feedback on the quality of the research and the overall research environment. In addition, new rules for the distribution of institutional support were introduced, with a strong focus on the quality of R&D&I.

A high level of quality assurance is underpinned by both internal and external evaluation, the systematic use of data and analytical tools, effective QA governance, feedback mechanisms, stakeholder involvement, and internal training for QA processes. All of these elements are in place and integrated within the institution's QA system.

It is very commendable that the university management have been pro-active and visited other universities to learn "best practice" and then have adopted what has been learned into a Strategic Plan. BUT have also established key positions to directly support their research quality, including expert ethics committees, Social Safety Coordinator and an Internal Whistleblowing System. These are highly valuable additions to the University and help ensure an academic environment that is very supportive of its staff and students.

Recommendations:

The rules and the whole system are set correctly. Outstanding achievements by staff and/or students could be better celebrated and made visible, possibly through the presentation of an annual University Award – or even awards in different categories, and including students from all departments.

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:

BUT has built a strategic system for ensuring sustainable development and for quality assurance and support in research, development, and innovation (R&D&I).

Sustainability is a key cross-cutting priority that permeates all areas of university activity.

Key strategic areas include:

- Education: Embedding sustainability principles into all study programmes and empowering educators to promote values of responsibility, ethical thinking, and respect.
- Research, development and artistic/creative activities: Focusing on solutions that contribute to a safer and more sustainable future, with sustainability-driven innovation as a core objective.

- University management: Emphasising the responsible and efficient use of resources, infrastructure, and institutional operations.
- Societal role: Strengthening BUT's engagement with the public through science communication, lifelong learning, knowledge transfer, and cultural outreach.

The university's approach to sustainability is coordinated at the institutional level, with the Vice-Rector for Artistic Activities and Sustainability directly responsible for this agenda. A dedicated Sustainable University portal on the BUT website communicates key initiatives and outcomes.

Since 2024, the university has operated with clearly defined Sustainable Development Goals (SDGs), supported by action plans, a communication framework, and monitoring tools. The short-term goals should be achieved by 2025, the medium-term goals by 2030 and the long-term visions by 2040. The goals and corresponding measures are set correctly.

BUT takes its corporate social responsibility seriously and includes ethical principles and social responsibility in its undertakings including teaching, research, management, collaborations and technology transfer. The university also takes a leading role in regional development.

Knowledge transfer has a high priority at BUT with a dedicated Department of Knowledge Transfer which supports and co-ordinates these activities across the University, including identifying commercial potential arising from any work being undertaken. Furthermore, a dedicated Business Development Manager promotes strong links with industry, technology parks, innovation centres, and chambers of commerce. This is helped with legal support from the University's Legal Department.

A highly innovative step by BUT was the establishment in 2023 of the Industry Council to advise the University and support its strategic decision making.

Recommendations:

The rules and the overall system are well designed; it is recommended to ensure that the underlying principles are consistently applied across the entire university. The Sustainability Strategy of BUT should be regularly reviewed and updated as new opportunities arise and circumstances change.

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:

During the evaluated period BUT significantly modernised its human resources (HR) policies, with the overarching aim of creating a transparent, fair, and motivating working environment for all staff categories. The updated HR framework is fully aligned with the European Charter for Researchers and the HR Strategy for Researchers (HRS4R). As a result, BUT has held the HR Excellence in Research Award since 2019, with the award successfully renewed through an external evaluation in 2023.

BUT places strong emphasis on inclusion, gender equality, and a non-discriminatory workplace. A notable step in this direction was the adoption of the Gender Equality Plan (2022), complemented by internal regulations aimed at fostering a safe, ethical, and respectful working environment across all faculties and units.

The total staff of BUT is approximately 3,000. The number of staff engaged in R&D&I activities, measured in full-time equivalents (FTE), has increased across nearly all academic categories. As of

the latest reporting period, BUT employs 139.2 FTE professors, 307.3 associate professors, 560.4 assistant professors, and approximately 143.9 assistants. The number of early-career researchers (ECRs) also grew slightly, rising from 79.9 FTE in 2020 to 84.6 FTE in 2024. A particularly significant development occurred in the category of "Researchers in other categories", which more than doubled—from 194.8 FTE in 2020 to 479.0 FTE in 2024.

This growth reflects BUT's pro-active approach to gender equality, internationalisation, and the creation of an inclusive and welcoming academic environment. Although the increase in the number of women has so far been modest, it is clearly on an upward trend—growing from 19.3% in 2020 to 21.5% in 2024 across all staff—and is expected to improve further as the university's strategic HR initiatives mature. Gender representation varies by age group: younger cohorts (under 39) tend to be more balanced or female-dominated (particularly among assistants and technical staff), while senior academic positions remain predominantly male.

In terms of age structure, the distribution of associate professors remained relatively stable, although the proportion in the oldest age group declined from 15.7% in 2020 to 12.4% in 2024. The most notable rejuvenation occurred among "Researchers in other categories", where the share of staff under the age of 29 increased sharply from 21.4% in 2020 to 45.5% in 2024. These trends reflect the impact of new career development incentives embedded in BUT's internal Career Rules.

The internationalisation of R&D&I staff also increased during the reporting period. The proportion of foreign nationals among the total staff rose from 6.6% in 2020 to 8.6% in 2024 (FTE), and from 7.4% to 10.9% specifically in academic and research positions. The highest proportion of foreign staff is found among early-career researchers (23.6%), followed closely by researchers in other categories (approx. 20%). To attract international talent, BUT regularly conducts open international selection procedures.

BUT fully recognises the benefits of attracting foreign researchers and actively supports them through tailored schemes such as the BUTalent Scholarship and institutional mobility programmes, which deserve to be commended for their strategic value.

Recommendations:

The commendable initiatives that BUT has introduced are starting to make a difference and should be actively continued at the entire university level to further improve their gender equality and international employees. The results of these endeavours should be far more noticeable in the next round of assessment. The rules and the overall system are well designed; it is recommended to ensure that the underlying principles are consistently applied across the entire university.

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]:

5 - Outstanding

Qualitative assessment:

The implemented HR policy at BUT, which has been repeatedly evaluated and for which the university was awarded the HR Excellence in Research Award, creates—together with reforms adopted in recent years and the newly introduced Career Rules—excellent conditions for the career development of all staff across all categories. Since 2019, BUT's HR policy has been fully aligned with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

The entire HR policy is characterised by the basic principles of equality, diversity, inclusion, social safety, and an ethical working environment, all of which are embedded in BUT's internal regulations. The university provides extensive support for all stages of career development, ranging from targeted training, mentoring, conference participation, sabbatical leave, and adaptation assistance

for new or returning staff, to international internships, mobility support, and parental leave adjustments. In 2024, BUT introduced a dedicated Guide for Recruitment, Selection and Admissions, and in 2025 will launch a comprehensive recruitment support system.

The strategic framework for career development at BUT is structured around several key pillars:

- Creation of a transparent, fair, and supportive environment for staff development, based on equal opportunities, anti-discrimination, and work–life balance.
- Support for career development across all staff categories and position types at BUT.
- Implementation of individual career development plans and regular annual evaluations as a basis for career progression.
- Access to motivational tools, such as mobility schemes, mentoring, sabbaticals (regulated in Article 10 of the Career Rules in line with the Higher Education Act), and flexible working conditions, including part-time and remote work.
- Job-retention support during maternity, paternity, and parental leave, as well as in cases of family care responsibilities or public service leave.

BUT takes care to avoid too much „internal focus” by requiring applicants for postdoctoral positions to either (i) have completed their doctorate at a different institution, or (ii) have at least 12 months of professional experience elsewhere, or (iii) have spent a minimum of 12 months at another institution, preferably abroad. This does mean that a good PhD student is then „forced” to leave for at least a year, which carries the risk that they might not return. So while this is a „noble” initiative, care should be taken not to lose any talent as a result.

A mentoring system for new employees is very commendable and will help the person settle in much quicker. No mention is made as to whether Czech language courses are offered to people from outside the Czech Republic. Although many of the courses at BUT are given in English, „strongly advising” the new employee to learn Czech will also help them integrate more quickly into the country.

It is also commendable to see that sabbatical leave conditions are regulated by the Career Rules in Article 10 in accordance with the Higher Education Act. Many universities, although „paying lip service to the need for sabbaticals” can often severely restrict a person taking up such an opportunity.

BUT should also be commended on their pro-active approach, including job-retention, to support employees during maternity, parental, or paternity leave, as well as in situations involving care for family members or public service leave.

On campus childcare, the Edisonka Children’s Group, is a very valuable facility for staff and students with small children.

BUT also offers their staff and students a wide range of activities to support their wellbeing, including those in cooperation with the Centre of Sports Activities.

Recommendations:

Some flexibility could be shown in keeping PhD students on without requiring them to move elsewhere for 12 months. So, perhaps they could be offered the post-doctoral position and then within this work away from BUT for a while, but still with the direct connection to BUT.

It is also important to provide suitable conditions for experienced professionals from industry—typically holding a PhD and having led development and innovation processes—who are interested in applying their expertise in the academic environment but may not fully meet standard academic criteria. The use of the position of extraordinary professor, in accordance with the Higher Education Act, can facilitate their entry into an academic career.

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]:

4 - Very good

Qualitative assessment:

BUT takes the issue of Gender Equality very seriously. This can clearly be seen in the establishment of a dedicated position of Gender Equality (Equal Opportunities) Coordinator in 2022. Such a position is not usual in many universities so BUT should be highly commended for taking this bold initiative. The coordinator works closely with faculty and institute representatives, together they create a Gender Equality Coordination Group. Furthermore, BUT has a clear Gender Equality Plan and HR Award Action Plan. The gender equality principles are also embedded in career development processes, in the Career Code.

These commendable actions have resulted in a modest increase in the number of women in academic positions (Associate Professors from 10.8% to 13.1% between 2019 and 2023), including early-career researchers (from 20.9% to 23.4% during the mentioned period, including early career researchers and a strong increase in women in administrative roles (51.7% to 64.5%). BUT has also made significant strides to increase gender equality at senior management level with two female Vice-Rectors and a female Bursar working closely with the Rector. The detailed information is given in table 4.7.1 in the SER for M4. Gender balance is also documented in the tables in the SERs of each evaluated unit and the data confirms that the processes are suitably set and allow expected measures to be acquired.

BUT has also been very “forward thinking” in helping their staff balance their professional and personal lives, including part-time work, flexible working hours, and working from home. There are also employee benefits related to childcare.

In addition, BUT maintains a zero-tolerance policy towards all forms of undesirable workplace behaviour. This helps ensure a positive, respectful, and safe environment for work and study.

Recommendations:

BUT could work more with their Faculties to reach out to women early – even girls as young as 7 or 8 – to get them interested in technical subjects. More summer schools for girls, such as that undertaken by FIT, could help ensure more women enter BUT in the future. In addition, Women Role Models across all aspects of the University could help inspire more women not only to join BUT, but also current female members to continue with BUT as their career.

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]:

5 - Outstanding

Qualitative assessment:

Mobility is a core feature of BUT’s strategy. The University strongly encourages both staff and students to spend time abroad. PhD students are required to undertake at least one month of international mobility during their studies, unless prevented by personal circumstances. The importance of active mobility is further underlined by BUT’s strategic goals in internationalisation, such as enhancing international cooperation and intersectoral collaboration in support of excellent science.

Mobility activities are coordinated at the university level by the Vice-Rector for Internationalisation and External Affairs, while implementation is carried out by the Department of Internationalisation. The institutional framework is defined in the Concept for the Development of Mobility Programmes

at BUT, with emphasis on partnerships with foreign institutions. International cooperation is also guided by strategic documents such as the BUT Strategic Territories Assessment Manual and the Methodology for Concluding International Contracts, used when signing or renewing Memoranda of Understanding.

BUT is an active member of multiple prestigious international networks and alliances, including the CESAER network, the European University Association, and the University Alliance of Taiwan. It is also part of the European University Alliance EULIST, a consortium of ten European universities, of which BUT's Rector was elected President in May 2024. This alliance offers strong potential for future collaboration in teaching, research, and internationalisation.

International mobility is supported through several programmes, including Erasmus+, AKTION, CEEPUS, and scholarship schemes such as the Barrande Fellowship. In 2024, BUT took the initiative to launch the BUTalent Scholarship Programme to attract high-quality international students. Additionally, the BUT Scholarship and Partnership Programme for Excellence supports both outbound and inbound mobility of top researchers and students. BUT also addresses mobility barriers, such as financial constraints or gender imbalance, particularly in technical disciplines. The University is to be commended for its family-friendly measures and remote work options for staff and students with caregiving responsibilities.

While the number of outgoing staff and students has remained relatively steady, it is encouraging that the number of incoming employees is steadily growing. BUT's participation as either beneficiary or partner in numerous international projects—including Horizon 2020 and Horizon Europe—demonstrates its strong integration in global research and education networks.

A set of five examples of specific mobilities is included in the Self-Evaluation Report (Module 4) to further illustrate the university's efforts. The presented results confirm that mobility-related processes at BUT are functioning properly and effectively.

Recommendations:

The rules and the overall system are well designed; it is recommended to ensure that the underlying principles are consistently applied across the entire University.

A dedicated mentoring service could help new arrivals settle in quicker, while collecting the experiences of returning staff and students, e.g., how to arrange accommodation, public transport, where to buy food, even the best pub, could be a highly valuable resource and significantly help others going to the same or similar locations in the future.

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:

Research infrastructures at BUT represent a strategic asset that supports both basic and applied research across multiple disciplines and plays an important role in international cooperation. BUT systematically develops, maintains, and shares its research facilities at both national and European levels. These infrastructures also support innovation and services to industry, including contract research, joint development projects, and the formation of start-ups and spin-offs.

CzechNanoLab at BUT is a unique research facility in the Czech Republic. By adopting the European Charter for Access to Research Infrastructures this highly valuable facility currently has more than 400 users annually with over 100,000 instrument hours being logged in 2023.

In addition to this lab, BUT also has a number of other Centres of Excellence in Research Infrastructure, including the NETME Centre and ADMAS Centre Advanced Materials, Structures and Technologies. The valuable, major equipment at these centres can be shared within faculties and is also accessible to researchers across the University.

The valuable and major equipment at these centres is accessible both within faculties and across the entire University, and often shared with external academic and industry partners. As a member of the European University Alliance EULIST, BUT also benefits from access to cutting-edge infrastructure at partner institutions abroad.

BUT is a core partner in other large-scale national and international initiatives, such as Czech-Biolmaging, and participates in projects related to ESFRI (European Strategy Forum on Research Infrastructures).

BUT pro-actively monitors their major equipment and looks to replace when necessary and expand where possible. There are plans for a centralized research equipment database with an integrated booking system and digital lab notebooks for efficient equipment management.

As a member of the European University Alliance EULIST, BUT also has access to novel equipment at other universities.

The equipment and expertise are also available commercially.

BUT is also active in services to industry and innovation, in knowledge and technology transfer. All faculties and units are continuously running contract research activities. The researchers are participating in joint research and development projects with companies in different fields such as microelectronics, automotive or energy. The great experience obtained in different fields of research enables the formation of start-ups and spin-offs through access to high-end instrumentation.

Recommendations:

Establish the centralized research equipment database and integrated booking system as soon as possible and use this to monitor equipment usage. This can provide insights to whether any equipment is being under or over utilised (and additional equipment may be necessary).

This database can also be used by BUT's dedicated Business Development Manager to identify possible companies that may also benefit significantly by having access to such novel equipment.

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:

The R&D&I budget is created from the primary sources of funding which include national grant, institutional support, international programs and industry collaborations. The total R&D&I budget for BUT over the period 2020–2024 is impressive and growing with funding being obtained from a number of sources.

The detailed information about the structure and amount of each source in each year of the evaluated period is presented in the self-evaluation report. This section is very well articulated with graphs and tables clearly showing the required information.

During the period 2020-2024 the total budget for R&D&I was more than CZK 10 billion. The funding came from a balanced portfolio of sources:

76 % from public domestic funding, 16 % from foreign funding like EU structural and research programmes (BUT have been very successful in obtaining funding from the most important funding sources, especially Horizon 2020 and Horizon Europe. They have also been successful in Marie Skłodowska-Curie Actions and European Research Council programmes) and 8 % from private sources including contract research, industrial collaboration and licensing.

It is clearly visible that BUT maintains a diversified, strategically managed and performance-oriented funding system to support the R&D&I activities at all faculties and units. The most important fact for the sustainability and future development of the research activities is that the financial structure enables both stability and flexibility. It allows BUT to pursue long-term strategic goals while remaining responsive to emerging opportunities.

The final budget of BUT for R&D&I is created from 41 distinct funding streams. These include basic institutional support for R&D, which depends on the last evaluation, national and international competitive grants – GAČR, TAČR, H2020, Horizon Europe, ERC, contractual funding from companies and public institutions and targeted investment programmes.

The transparent and efficient allocation between the units of BUT is ensured by application of a combined management model. It is based on the combination of the central control and methodology via the Rector's Collegium, Vice Rector for Research and relevant departments and delegated operational management at the level of faculties, institutes and research centres, which operate as autonomous budgetary units within the university.

Since 2023 BUT has implemented new rules for internal redistribution of institutional R&D support, with the aim of more significantly reflecting the quality and scope of research at individual faculties and eliminating outdated retrospective parameters. The allocation using the old model was mainly focused on the stabilisation component on historical performance prior to the implementation of the Methodology 2017+. The new allocation model is based on the following principles:

- Formative and forward-looking approach – rules are designed to guide long term development rather than focus solely on retrospective assessment.
- Motivation and predictability – the system aims to be predictable and motivating, reducing the risk of researcher demotivation and promoting initiative.

The new rules reflect following three main aspects:

Development aspect: Support for promising fields based on their quality and capacity. The development component replaces the previous stabilisation component and is calculated based on the number and qualification structure of R&D&I staff and the research focus of the faculty.

Quality aspect: Includes performance indicators such as M1 module results, citation impact, internationalisation, number of doctoral students and revenues from knowledge transfer.

Performance aspect: Based on the number and quality of publications including first or corresponding authorship, volume of targeted funding and contract research. BUT supports also young researcher, master students or doctoral students through the Internal Grant Agency. About 3,2 million EUR is distributed for specific research based on an internal grant competition. The projects enable them to be intensively involved in solving problems and also within the team, undertaking important research and development activities.

The budget and structure of the financial resources at the BUT can be characterized as well structured and adequate to the size of the university and each unit based on the presented data about the funding of the research activities at BUT and the annual educational and research revenue in the period 2020-2024. The annual research revenue is at a similar level as the educational revenue, smoothly growing up from cca 70 mil. EUR to cca 80 mil. EUR and the share of the educational and research revenues is varying around 50 %. It is very important that the research budget is created from different sources and approx. more than 8 % is from international projects, more than half of the sources is from competitive project funding, the normative funding is slightly going down from 42 % to 39 %.

The artistic and design-related activities conducted by the Faculties of Fine Arts and the Faculty of Architecture, and also by the Faculty of Mechanical Engineering within Industrial Design, by the Faculty of Civil Engineering in Architecture and Faculty of Electrical Engineering through the sound mastering in cooperation with the Janacek Academic of Musical Arts, are also well supported and the total budget grew up from cca 1,2 mil. EUR to cca 2,4 mil. EUR in the evaluated period.

BUT was actively involved in European Commission research and innovation programmes, particularly Horizon 2020 and Horizon Europe. More detailed information about projects and their budgets, as well as examples of excellent projects in different areas is given in the SER M4 and related tables in the par. 4.10.

It is possible to conclude that the financing of the research activities is excellent. This demonstrates stable growth with a well-balanced structure of the sources, which allows to predict sustainable development in the future for R&D&I activities at BUT.

Recommendations:

The rules and the overall system are well designed, and the results achieved clearly demonstrate their effectiveness. This approach has been evaluated as outstanding, and it is strongly encouraged to continue in the same direction. It is recommended to maintain this strategy and update it as needed in response to potential changes in external legislation.

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 allocated normative institutional support for the long-term conceptual development of research organisations provided by the Ministry of Education, Youth and Sports (MEYS) reflects BUT's performance within the national evaluation framework (formerly Methodology 2017+). In 2024, BUT received CZK 579.6 million, representing 10.3% of its total research funding.

BUT has been very proactive in 2024 in implementing the new allocation system, which represents a more strategic and motivational framework for distributing institutional support. The revised model provides strong incentives for both individuals and research groups and reflects a commendable effort to enhance internal research quality.

A special portion of this budget, amounting to 3%, is dedicated to an Excellence Support Fund, which is aimed at reinforcing high-performing research areas and encouraging further excellence.

However, it is noted that such a model carries a slight risk that currently underperforming staff or groups may become marginalised, making it more difficult for them to re-establish themselves. It is therefore important to complement the model with appropriate support mechanisms for potential recovery and inclusion.

Recommendations:

Care should be taken, perhaps in the form of mentoring or a dedicated "restart/reboot fund", to ensure staff/groups who are currently not performing as well as they could, are not further demotivated by having no opportunity or support to improve this performance.

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]:	5 - Outstanding
Qualitative assessment: BUT has long established collaborations with major national industries, including Skoda and Tescan, and are working closely with key European institutions, including the European Space Agency. They also have good established collaborations with international universities and other institutions, including Lappeenranta-Lahti University of Technology in Finland, Rigaku Corporation in Japan and Korea Electric Power Corporation. They have especially good links with Technische Universität Wien, which is very valuable given its close proximity to Brno. These examples confirm very high quality of the research and development work at all units of BUT, which attract companies and universities in the Czech Republic and also abroad to cooperate with BUT.	
Recommendations: The system functions effectively. It is recommended to ensure its consistent application across the entire University. BUT could look to establish more formal collaborations with other international universities, such as they have with Lappeenranta-Lahti University of Technology in Finland. This could lead to a wide range of joint publications and more opportunities for student visits and visiting professorships in both directions.	

STUDIES

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]:	5 - Outstanding
Qualitative assessment: Doctoral education represents a core element of research quality at BUT. The University provides comprehensive support for Ph.D. candidates and postdoctoral researchers, with a strong focus on internationalisation, research integration, and career development. Doctoral study programmes are offered at eight faculties and two university institutes, and their structure fully complies with national legislation. Each programme is overseen by a Board of Studies, and every doctoral student follows an Individual Study Plan, developed in collaboration with their supervisor, who is responsible for guiding the student's research activities. The responsibilities and evaluation criteria of supervisors are defined in internal guidelines. The organisation of doctoral studies is supportive of student needs—for example, full-time students are entitled to a scholarship, which makes doctoral studies more accessible and attractive. Doctoral students are frequently involved in research projects, often led by their supervisors, and actively integrated into faculty research teams and externally funded grants. BUT offers several study programmes accredited in English, which strengthens its international appeal. Internationalisation is further promoted through structured models of cooperation such as the cotutelle system, which allows for dual supervision and joint doctoral degrees with prestigious partner universities such as RWTH Aachen, Université Grenoble Alpes, and Lappeenranta–Lahti	

University of Technology. The possibility of having an international co-supervisor is another innovative feature, though data on the uptake of this option would help to evaluate its wider impact. BUT is also a national leader in the implementation of Industrial Doctorates, a clearly regulated model enabling students to conduct research in collaboration with industrial partners, such as Škoda Auto, TDK Electronics, and VZLÚ. These partnerships facilitate close links between academia and industry. Although the framework is well established, it would be helpful to have quantitative data on how many students enter this track each year. The option of an international co-supervisor is also innovative – and again it would have been helpful to know what percentage of PhDs currently have such an international supervisor.

Promotion of doctoral studies is ensured through comprehensive information available on the BUT website and social media. However, recruitment is often based on personal contact between applicants and potential supervisors, and some faculties organise specialised events to present dissertation topics.

At the national level, BUT maintains strong cooperation with the Czech Academy of Sciences, including opportunities for Academy researchers to act as doctoral supervisors, which deepens academic collaboration.

Currently, approximately 1,600 students are enrolled in doctoral programmes at BUT, 26% of whom are international students—primarily from Slovakia and over 50 other countries. The number of international students has increased by 50% over the past decade. On average, 160 students graduate annually, most commonly in their 5th to 7th year of study. The drop-out rate has averaged around 20% over the past three years. More than two-thirds of doctoral theses are defended in English, and the number of English-written theses rose from 59 in 2018/19 to 113 in 2023/24.

BUT provides well-rounded personal support for PhD students, including wellbeing services, career development resources, and even fitness and sports activities, often in collaboration with the Centre of Sports Activities. An important addition in 2024 was the establishment of a university-wide alumni portal, which supports networking and celebrates the achievements of PhD graduates.

Recommendations:

It could be useful to have junior staff more formally involved in the supervision process, so they can gain credit for the work as well as the highly valuable experience.

It is recommended to continue in the organisation of the study programmes based on the motivation of the Ph.D. students to the high-quality research activity and achieving of high-quality research outputs. It is important to keep these principles also after implementation of the changes in the doctoral study programmes published in the higher education act this year.

It is recommended to increase the number of the international opponents of the doctoral theses not only in relation to the growing number of the doctoral theses written in English, but also from the point of view of the very effective promotion of the research outputs abroad by this way. The specialist from the partner universities at the EULIST university network can be asked to review the theses.

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

Qualitative assessment:

BUT has clearly considered the previous recommendations very seriously and taken a pro-active approach to address the issues raised. They should be highly commended for this.

Two key developments at BUT which will make a significant difference to providing insights for future strategic decisions are the International Scientific Advisory Board and the Industrial Council.

Recommendations:

A regular – perhaps annual – meeting between the ISAB and IC would help further align strategic research direction with industrial needs.

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	5 - Outstanding
4.7 Gender equality measures	4 - Very good
4.8 Mobility of academic and research staff (including sectoral and inter-sectoral mobility)	5 - Outstanding
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	5 - Outstanding
4.13 Doctoral studies	5 - Outstanding
4.14 Implementation of recommendations in Module 4	5 - Outstanding
AVERAGE RATING	5 - Outstanding
GRADE [A–D]	A

Summary assessment:

BUT has been strongly pro-active and introduced a number of key initiatives which are playing a major role in significantly enhancing the services that BUT provides. These include:

- The International Scientific Advisory Board and the Industrial Council to provide key insights into their strategic planning
- A system to strongly support the preparation of national and international research projects
- A robust and multi-layered system for quality assurance in research, development and innovation (R&D&I)
- A strategic system for ensuring sustainable development and for quality assurance and support in R&D&I

- Modernisation of its human resources (HR) policies, with the overarching aim of creating a transparent, fair, and motivating working environment for all staff categories
- A mentoring system to help new employees settle in quickly
- A transparent and efficient allocation of the budget between the units of BUT
- A new strategic and motivational allocation scheme for distributing institutional support
- Placing mobility as a core feature of BUT strategy
- Fostering international co-operation through their unique research infrastructure
- Comprehensive support for Ph.D. candidates and postdoctoral researchers, with a strong focus on internationalisation, research integration, and career development.
- Maintaining close collaborations with major national industries and key European institutions.

In addition, BUT fosters a vibrant entrepreneurial culture, and places strong emphasis on inclusion, gender equality, and a non-discriminatory workplace. The total R&D&I budget for BUT over the period 2020–2024 is impressive and growing.

Finally, BUT should be highly commended for addressing the previous recommendations in such a thorough and pro-active manner.

Summary recommendations:

- Annual meeting between ISAB and IC to align the university's future research strategy with future industrial needs.
- University wide distinguished lecture series – perhaps annually – to bring famous people – scientist, artist, architect, etc. - to Brno – to raise international profile.
- Regular review of Sustainability strategy and be flexible to respond to changing circumstances
- Be even more pro-active in promoting gender equality and encouraging young girls into STEM subjects – more summer schools and outreach activities even to girls of 7 or 8.
- Consider establishing female role models to help inspire young women both to encourage them to join BUT and also to stay at BUT as their career, for instance for a mentoring programme.
- Be more flexible with the requirement that people have to leave for 1 year to ensure talent doesn't leave and not come back.
- Collect detailed experiences from returning staff and students to provide a valuable resource for others going to the same or similar places in the future.
- Establish centralised equipment database as soon as possible to ensure most effective use of unique/novel equipment.
- Take care to support underperforming staff and students as well to avoid them being even further demotivated
- Build on and make visible the complementary strengths across BUT's fields to establish leadership in STEAM approaches.
- Establish more formal relationships with other leading universities.
- Involve junior staff formally in PhD supervision so (a) it improves their CV and (b) they gain valuable experience.

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 Statute of BUT is a key and very valuable document that clearly specifies the University's vision and mission, outlining its key roles and focus areas for the coming years. These are carefully aligned with national strategies and policies, including the National Economic Strategy, the National Research, Development and Innovation Policy of the Czech Republic 2021+, the National Semiconductor Strategy, the State Energy Policy, the National Knowledge Transfer Reform, and the Gender Equality Strategy 2021–2030, amongst others. The mission and vision are also elaborated in the Strategic Plan of Educational and Creative Activities of BUT for the period 2021+, and are further operationalised through annually updated Implementation Plans, which define priorities, objectives, expected outcomes, resources, and responsibilities.

The mission and vision of BUT reflect all key roles of the institution, namely:

- Educational activities,
- Research, development, artistic and creative activities,
- Social responsibility,
- and Governance and internal administration.

BUT's vision is to be a modern, open and research-oriented technical university, with a strong emphasis on international competitiveness, academic excellence, and societal relevance. This vision is clearly articulated not only in the fields of research and education, but also in relation to its societal role and institutional governance.

In education, BUT aims to be a respected provider of high-quality, competitive university education, characterised by critical thinking, imagination, creativity, and the ability to generate innovative solutions to current and future challenges. This is achieved through a close connection between research and teaching, and by leveraging synergies between technical, economic, managerial, and artistic disciplines.

In the area of research, development, artistic and other creative activities, BUT strives to advance knowledge, generate new insights, and translate these into practical applications, offering innovative solutions to pressing global and societal issues.

A key component of BUT's strategy is the profiling and development of strategic research areas. These areas were identified and defined in 2023 by University leadership using clear criteria, including:

- Concentration and size of research personnel and infrastructure capacity,
- Qualitative and quantitative research outcomes,
- and Project and financial performance.

Based on these criteria, BUT has defined the following key strategic research areas for future development:

- Semiconductor technologies (especially chips),
- Nanotechnology,
- Automotive technologies (including e-mobility),
- Aerospace technology,

- Electron microscopy,
- Cybersecurity,
- Artificial intelligence,
- Energy (including nuclear energy),
- Energy storage,
- Environmental technologies (including renewable energy),
- Technologies for the circular economy,
- Biomedical engineering,
- Advanced materials,
- Architecture,
- Fine arts (especially in connection with technology) and artistic research,
- and other emerging fields.

In these areas, BUT achieves international competitiveness, supported by the quality of its basic and applied research results. Due to their interdisciplinary nature, these areas often do not align directly with traditional FORD categories, which limits the relevance of statistical reporting by discipline. Instead, BUT profiles its research through these strategic, interdisciplinary themes.

To support and coordinate their development, BUT began appointing strategic research area coordinators in 2024. These individuals are responsible for facilitating interfaculty cooperation and act as contact points for external stakeholders, including industrial partners, research organisations, and public institutions. This institutional model of area coordination is unique within the Czech Republic and reflects BUT's systematic and innovative approach to research management.

An impressive number of measures have been adopted to fulfil the vision and mission of the university. These are reflected across the university's governance, educational system, research support structures, and its proactive role in addressing national and international challenges. The mission and vision of BUT in the field of R&D&I are precisely defined, clearly communicated, and actively implemented across all levels of the institution.

Recommendations:

Many of the strategic research areas are "fast moving" and thus they will need to be monitored closely to be able to react quickly should new opportunities, including new strategic research areas, arise. These strategic research areas could perhaps be discussed at a regular joint meeting with the ISAB and the Industrial Council.

BUT should consolidate and strategically prioritize its investments to avoid fragmentation and excessive dispersion across topics.

The successful implementation of the strategy will depend on attracting international researchers, securing additional ERC-level funding, and strengthening technology transfer and research impact. It is essential to elevate research leadership, provide robust support for ERC-level grant applications, and recruit scientists of global calibre.

Furthermore, developing a strong institutional brand, particularly in English, will be crucial to support global talent recruitment and enhance student mobility.

As stated in recommendations for Module 4, BUT could also consider embracing STEAM (Science, Technology, Engineering, Arts, and Mathematics) approaches in research and higher education, strengthening connections between STEM fields with art, design, and architecture—disciplines that collaborate most closely with cultural institutions and society—thereby positioning the university as a leader in "science with society" applied research as well.

One of the recommendations formulated at the final meeting of the IEP during the on-site visit was to establish the "Victor Kaplan Medal" – an award for outstanding achievements in mechanical engineering and related fields. The idea, originally proposed by Prof. Vidal, has the potential to motivate researchers not only at BUT or in the Czech Republic, but worldwide. At the same time, it

would highlight and promote excellent research outputs in mechanical engineering, and strengthen the international visibility of BUT as the institution where Victor Kaplan conducted his pioneering work, thus reinforcing the genius loci of the university.

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:

BUT has clearly defined research and development objectives for the next five-year period, which are central to delivering the University's mission and vision as articulated in its Strategic Plan of Educational and Creative Activities. The objectives are accompanied by clearly described measures of success and are supported by detailed implementation steps to ensure their fulfilment.

The objectives are well suited to a large, public, research-intensive university in the Central and Eastern European context and are closely aligned with both the University's mission and broader Czech and EU strategic frameworks. While the ambitions of BUT are realistic, their full achievement will require phased implementation, diversification of funding sources, and institutional flexibility.

The research and development objectives are structured into three key areas:

In the field of research, development, innovation and knowledge transfer, the primary objective is to strengthen high international competitiveness in selected strategic areas of basic and applied research.

In the area of cooperation with public administration, businesses, and non-profit organisations, the goal is to increase the relevance of research outputs to meet the R&D&I needs of the application sphere and to address priority societal challenges.

In the field of institutional development, the objective is to enhance the institutional position of BUT as an internationally competitive research university by improving its stability, efficiency, and resilience.

For each of these strategic goals, appropriate strategies for their achievement are clearly described. The planning and structure of these objectives demonstrate a high level of foresight and coherence with both internal development priorities and broader national and international strategic frameworks.

Recommendations:

Although detailed Measures of Success are clearly defined for each objective, it would be useful to have more details as to how progress will be continually measured qualitatively and quantitatively, and what mitigation strategies are planned if these Measures of Success are not "on track" to being achieved.

Prioritize excellence in 3–5 strategic disciplines and build the critical mass needed to develop ERC-ready teams.

Strengthen data-driven governance and enhance internal integration to unify efforts across faculties in pursuit of shared strategic goals.

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:

BUT has been highly pro-active in shaping and implementing its research and development (R&D&I) strategy. A wide range of institutional tools and measures has been introduced to support the achievement of its defined goals in R&D&I. These can be summarised as tools focused on:

- Managing R&D&I to improve quality
- Evaluating the quality of R&D&I processes and outcomes
- Supporting and motivating all R&D&I participants at BUT
- Using MEYS-funded programmes to support strategic development.

Amongst the most innovative elements are the establishment of an Internal Evaluation Board, an International Scientific Advisory Board, the implementation of a two-phase internal evaluation of research quality, and participation in the Institutional Evaluation Programme (IEP) of the European University Association. These initiatives have provided valuable external and internal feedback, significantly strengthening BUT's strategic outlook and positioning in the European research space. A set of important and innovative tools has also been put in place to enhance the academic environment and increase BUT's international competitiveness. The specific tools and their links to the corresponding internal policy documents—which define the rules and steps for practical implementation—are summarised in Table 5.3.1 of the Self-Evaluation Report (Module 5).

The strategy for achieving R&D&I goals can be evaluated as realistic, well-developed, and comprehensive, covering all critical areas of research activity, including measurable outputs. It creates favourable conditions for delivering both institutional and national objectives.

As outlined in the Self-Evaluation Report, this strategy is also designed to be flexible and responsive to future developments. It will be adjusted as needed in response to the anticipated revision of the national Methodology for Evaluation in Higher Education (expected from 2025), the upcoming Act on the Support of Research and Development from Public Funds, future changes in R&D&I funding mechanisms, and the new MEYS Strategic Plan for 2026–2030.

Recommendations:

Despite all these innovative measures, it is disappointing to see how low BUT currently ranks in the various “international order of universities”. Perhaps a dedicated person could be appointed to fully “understand the rules of this game” and then help ensure BUT is properly considered in future ranking exercises.

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]:

5 - Outstanding

Qualitative assessment:

Instead of a “generic” vision statement, there is a new Statute of BUT that clearly defines the university's vision including how this relates to their four key areas: 1. Education 2. Research, development, artistic, and creative activities 3. Social role 4. Governance and internal administration. This is a highly valuable framework that greatly facilitates strategic management at BUT. Furthermore, BUT's Strategic Plan is another key document that specifies how future developments

will be undertaken in at least the next 5 years, while the Annual Implementation Plans are an innovative means of helping ensure that the strategic plan is delivered.

In addition to incentivising staff and students who are achieving, new mentoring and guidance tools have been put in place to support those people who are underperforming. This shows a caring attitude to staff and students.

There has also been a significant effort to foster an entrepreneurial spirit at BUT.

Recommendations:

It is rare to see a university take such a pro-active approach to address all the concerns that were raised at the previous assessment. BUT should be highly commended for this.

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	5 - Outstanding
AVERAGE RATING	5 - Outstanding
GRADE [A–D]	A

Summary assessment:

The introduction of the Statute of BUT provides a key document that clearly specifies BUT's future vision and mission, and plainly outlines its roles and focus relating to the four key areas:

1. Education
2. Research, development, artistic, and creative activities
3. Social role
4. Governance and internal administration

These have been carefully aligned with national strategies and policies.

Furthermore, BUT's Strategic Plan of Educational and Creative Activities clearly defines its research and development objectives for the next five-year period, to deliver on BUT's mission and vision. This is underpinned by Annual Implementation Plans, an innovative means of helping ensure that the strategic plan is delivered.

BUT should be highly commended for taking such a pro-active approach to addressing all the previous recommendations. The previous vague and generic "vision statement" has been replaced with this clear, well-articulated Statute of BUT.

Summary recommendations:

Strategic planning needs to be flexible in fast moving fields. A regular review of strategic opportunities would be useful with valuable input from a joint meeting of ISAB and IC to help dynamically formulate this strategy as necessary.

Regular measuring and mitigating procedures will help ensure that the "Measures of Success" are progressing well and allow BUT to react early if progress is not as expected.

Perhaps the appointment of a dedicated person to fully understand all the “international university ranking” schemes would be useful to help ensure that BUT prepares the most effective submissions to these schemes.

BUT has considered the previous recommendations very seriously. It is rare to see a University take such a pro-active approach to address all these recommendations.

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
MODULE	MODULE WEIGHT	GRADE [A–D]
MODULE 1 and 2	50 %	B
MODULE 3	30 %	A
MODULE 4	10 %	A
MODULE 5	10 %	A
OVERALL RATING		A – Excellent
Qualitative assessment: Brno University of Technology (BUT) demonstrates a consistent trajectory of progress and excellence across its faculties and university institutes, with several units achieving top evaluations and showing exceptional responsiveness to prior recommendations. A strong commitment to research quality, internationalization, interdisciplinarity, societal impact, and institutional development is evident throughout the evaluation. Multiple faculties attained outstanding marks across core evaluation dimensions. These faculties have built robust scientific profiles supported by international publications in top-tier journals, active engagement in global scientific communities, and successful commercialization of research results. The University as a whole has undertaken significant structural improvements to enhance the quality and sustainability of R&D&I. Key initiatives include the establishment of the International Scientific Advisory Board (ISAB) and the Industrial Council (IC), transparent internal funding allocation schemes, modernized HR policies, a multi-layered quality assurance system, and support mechanisms for early-career researchers. The adoption of the new Statute of BUT marks a strategic shift toward a clear institutional vision aligned with national priorities in education, research, and societal engagement. Interdisciplinarity is increasingly present where links across disciplines, especially in sustainability and digital innovation, are being leveraged for impact. Faculties are also strengthening their roles in public engagement through popularization activities, science festivals, and schools outreach. Examples such as the Chemical Mini Opera, CrashDay, and Space Week reflect a vibrant, innovative, culture of societal interaction. While some faculties still face challenges in fully exploiting international funding instruments like Horizon Europe, the foundation for competitive engagement is being steadily built. Institutional		

support structures for project preparation and talent development are becoming increasingly effective and appreciated by the research community.

The evaluation also highlights ongoing issues in gender balance, particularly amongst senior staff, and calls for more structured approaches to improving female representation, mentoring, and visibility. Nonetheless, there is a university-wide effort to foster an inclusive and motivating environment for all staff and students, and to ensure mobility, career support, and integration into international research networks.

In summary, BUT has responded to the previous evaluation in an exemplary manner, implementing systemic reforms and strategic initiatives that have strengthened its research performance, societal relevance, and internal cohesion. The institution is now well-positioned to consolidate its national leadership and further develop as a prominent European and indeed international research university.

Therefore, the International evaluation panel awards grade A in Modules 3, 4 and 5.

As no definitive grade was proposed for Modules 1 and 2, with the suggested grade being A/B in the R&D&I Council report, the IEP recommends the following approach for evaluation of Module 1 and Module 2:

For Engineering and Technology, grade A was suggested by the R&D&I Council, which was subsequently supported by the IEP. The Engineering and Technology discipline represents 61.4 % of BUT's disciplinary profile (see Table 5.5 of the Self-Evaluation Report on R&D&I capacities). For Natural Sciences, grade B+ was proposed. However, based on findings from the on-site visit and a more in-depth discussion of research outputs quality and research performance, the IEP members responsible for this discipline concluded that the performance in Natural Sciences more closely aligns with grade A. The Natural Science discipline represents 33.1% of BUT's disciplinary profile.

To put it more concisely, the IEP, based on findings from the on-site visit, assesses the research performance and the quality of research in Natural Sciences, as well as in Engineering and Technology, with grade A. Since these two disciplines represent 94.5% of BUT's disciplinary profile (see Table 5.5 of the Self-Evaluation Report on R&D&I capacities), the IEP leans towards grade A in Module 1 and Module 2.

In summary, based on the report of the Council for Research, Development and Innovation concerning Modules 1 & 2, together with the findings from the self-evaluation report and the on-site visit, the IEP recommends the assignment of grade A for Modules 1 & 2.

Thus, the suggested overall grade for Brno University of Technology is A.

Recommendations:

1. Internationalization and strategic collaboration

- Deepen participation in competitive European funding programs, especially Horizon Europe, ERC, and EIT initiatives.
- Build stronger, strategic international research alliances and joint PhD programs across faculties and with global partners.
- Promote institutional achievements more assertively through international networks, conferences, and media to enhance visibility.

2. Interdisciplinarity and internal synergies

- Foster interdisciplinary research clusters by leveraging complementarities across faculties (e.g., CEITEC, Chemistry, Mechanical and Civil Engineering, and Arts).

- Encourage joint research initiatives that combine technology with societal and cultural aspects, supporting STEAM approaches.

3. **Commercialization and knowledge transfer**

- Formalize spin-off support through incubators and accelerators, especially in fields with high innovation potential (e.g., biomedical, digital, and engineering tools).
- Develop faculty-level commercialization strategies with clear targets, performance tracking, and institutional support for licensing and IP management.

4. **Human resources and gender equality**

- Intensify efforts to improve gender balance, especially in senior academic positions. Introduce targeted mentoring, visibility campaigns, and flexible recruitment practices.
- Continue developing structured talent pipelines for young researchers and postdocs, including sabbaticals, mobility funding, and career development support.

5. **Governance and strategic flexibility**

- Conduct regular strategic reviews in dynamic fields, involving both ISAB and IC, to ensure responsiveness to evolving global trends and industrial needs.
- Monitor implementation of strategic plans through robust indicators and ensure adaptability in long-term planning.

6. **Public engagement and societal impact**

- Expand outreach activities, particularly those aimed at underrepresented groups, and introduce impact indicators for public-facing events.
- Support faculties in systematically tracking and communicating the societal and economic impacts of research, including through longitudinal studies and digital platforms.

7. **Infrastructure and internal processes**

- Finalize the development of a centralized equipment and infrastructure database to improve resource sharing.
- Streamline administrative procedures related to project management, technology transfer, and international collaboration.

8. **Alumni engagement and communication**

- Establish or strengthen alumni networks to support knowledge transfer, career guidance, and visibility through guest lectures and partnerships.
- Develop targeted communication strategies to publicize successes and foster university pride amongst stakeholders.

9. **Inclusive culture and motivation**

- Ensure support mechanisms are in place for underperforming staff and students to prevent disengagement.
- Motivate staff to participate in outreach, commercialization, and interdisciplinary work through incentives, training, and recognition.

By strategically addressing these recommendations, BUT will reinforce its institutional strengths, broaden its international footprint, and deepen its impact across academia, industry, and society.