

Supplement information to the Self-Evaluation Report

Before the on-site visit, the International Evaluation Panel asked the Brno University of Technology for supplemental information and received supplements for the following parts of the self-evaluation report:

Faculty of Civil Engineering

Information supplemented: September 14, 2020

3.3 Contract research

The numbers from the text section do not match with these from Table 3.3.1 and 3.3.2 – this should be clarified. The faculty reports about a large budget, but this should be compared to number of faculty members, of which the data is not yet available.

Response: We did not provide a complete list as it will be very large list, in Tables 3.3.1 and 3.3.2 selected the most important items of largest finances were included. The complete list is now provided in Excell file enclosed.

Number of faculty members (FTE) is in period 2014-2018:

2014 386

2015 381

2016 394

2017 391

2018 388

TOTAL 1940 FTE

In the reviewed period, the volume of all contracts for contractual research from the Czech Republic equalled 3,986,000 EUR (2055 EUR/per person/per year) and, for foreign contracts, 575,000 EUR (296 EUR/per person/per year).

3.8 System and support of technology transfer and intellectual property protection (can be extended to the whole university, emphasising the specific features of the evaluated unit)

The numbers need to be verified, as the numbers in the text do not match the numbers in the specific tables.

Response: We verified numbers once again, we apologize as the mistake happened during the process of compilation and extraction from university evidence system. Bellow there is updated list and complete tables.

Czech patents: 13 (by years: 4, 1, 2, 4, 2).

Russian patents: 2 (by years: 0, 0, 2, 0, 0).

Licences patents and utility patents: 13 (by years: 6, 2, 2, 3, 0)

Prototypes: 27 (by years: 4, 9, 6, 4, 4)

Results	Year	Title
European patent		
American patent		
Other foreign patents		
Russian patent	2016	Device for heating and cooling, in particular, for water central heating
Russian patent	2016	Device for air conditioning, in particular, designed for central water heating
Czech licenced patent	2014	Device to prepare samples for judgment of dispersion of fibrous polypropylene reinforcement in cement composites and process for preparing samples using this device
Czech licenced patent	2015	The System of the static stabilization of the arched vault using spatial arrangement of the prestressing tendons
Czech licenced patent	2016	Pointing material
Czech licenced patent	2016	Device to prepare samples for judgment of dispersion of fibrous polypropylene reinforcement in cement composites and process for preparing samples using this device
Czech licenced patent	2017	The saddle to prestressing of load bearing members
Czech licenced patent	2017	A method of automatic flushing of a pressure sewage system and system for implementing this method
Licences sold – utility model	2014	Arrangement of under sleeper pads for the turnouts 1:18,5-1200-I with transition area in the turnout
Licences sold – utility model	2014	Arrangement of under sleeper pads for the turnouts 1:14-760 with transition area in the turnout
Licences sold – utility model	2014	Arrangement of under sleeper pads for the turnouts 1:12-500-I with transition area in front of trough sleepers
Licences sold – utility model	2014	Arrangement of under sleeper pads for the turnouts 1:18,5-1200-I with transition area in front of trough sleepers.
Licences sold – utility model	2014	Arrangement of under sleeper pads for the turnouts 1:14-760 with transition area in front of trough sleepers
Licences sold – utility model	2015	Arrangement of sleeper footplates of railway points of the 1:9-300 shape with transient region in front of pea-pod sleepers
Licences sold – utility model	2017	Water distribution equipment at slow flow rates
Czech patent	2014	Method of evaluation the layout and orientation of ferromagnetic electrically conductive fibers in composite material and detection device for its implementation

Czech patent	2014	Set of elements for anchoring
Czech patent	2014	The System of the static stabilization of the arched vault using spatial arrangement of the prestressing tendons
Czech patent	2017	Cement composite with polymer filler
Czech patent	2017	Acoustic and thermal insulation, especially for building industry
Czech patent	2018	Contact system to suppress thermal bridges in buildings
Czech patent	2018	A method for assessing the sealing surface sealing performance of a cementitious composite
Significant analyses / surveys / studies		
Spin-off with a stake held by the evaluated unit		
Spin-off with no stake held by the evaluated unit		
	2018	Conwe s.r.o. CRN:06916601
Prototypes		
Prototypes	2018	Universal tester for Wireless M-BUS data transmissions
Prototypes	2018	Bed load sampler for gravel and cobbles
Prototypes	2018	Suction device for sampling of water with suspended sediments from the stream
Prototypes	2018	Design and physical model research of a specific flume designed to determine the minimum residual flow rates in the Juřinka I weir profile on the Bečva river in the river km 59.7
Prototypes	2017	Hydraulic model research of the VD Nové Heřminovy spillway - 3rd stage (overflow without cascade)
Prototypes	2017	divided pasive probe EIS_OK
Prototypes	2017	Dam Orlik-physical model of the new spillway
Prototypes	2017	Hydraulic model of spilway at Nové Heřminovy dam
Prototypes	2016	Hydraulic model research of functional block dam VD Nové Heřminovy
Prototypes	2016	fork probel
Prototypes	2016	divided pasive probe EIS_L1
Prototypes	2016	divided pasive probe EIS_L2
Prototypes	2016	divided pasive probe EIS_L3
Prototypes	2016	Hydraulic model research of bed load sedimentation area in the upper part of reservoir Nove Heřminovy dam
Prototypes	2015	Injection waterproofing gel with the proportion of secondary raw materials
Prototypes	2015	Hydraulic model research of new bottom outlet organization in the bypass tunnel VD Labská
Prototypes	2015	Hydraulic research of constructions for streamflow of outflow from cone valve
Prototypes	2015	datalogger Hornice
Prototypes	2015	divided active probe EIS_H10
Prototypes	2015	external switcher EPH_47
Prototypes	2015	divided active probe EIS_H3

Prototypes	2015	divided pasive probe EIS_B12
Prototypes	2015	Asphalt heating trailer
Prototypes	2014	Hydraulic model research of the emergency spillway and his bottom of Moravka dam
Prototypes	2014	Žabčice II
Prototypes	2014	Probe-spadeful
Prototypes	2014	The apparatus for simulating and detecting 2D seepage water with salt content
Varieties and breeds		
Other		

Faculty of Architecture

Information supplemented: September 16, 2020

Technology transfer is not our main focus as it is not the profiling activity of our scientific contribution. In accordance with Frascati/FORD, we have chosen to profile in Area 6, Humanities and the Arts, namely subsection 60402 - Architectural Design. We prepare our graduates to become the workforce that powers architectural firms and planning authorities. Additionally, we also provide them with the skills to function as authorized, independent architects able to compete in the open market, design and build, create land use plans (masterplans), and offer expert opinions within larger, established firms and authorities.

The claim could be made that architectural firms are already being established by recent PhD graduates of our faculty (e.g., CHYBIK + KRISTOF ASSOCIATED ARCHITECTS Inc. was established by two of our PhD students during their time at the university. [<http://www.chybik-kristof.com>]). However, the Czech Chamber of Architects (CKA) requires a waiting period, between graduation and authorization, during which recent graduates are expected to gain design experience in cooperation with an authorized individual. This requirement is a barrier to the establishment of new companies by graduates as most established architects have firms of their own and are unwilling to join a startup.

3.8 System and support of technology transfer and intellectual property protection (can be extended to the whole university, emphasising the specific features of the evaluated unit)

This should be preferably clarified further. Further, it is not clear why the mentioned examples are not mentioned in the tables.

In regard to section 3.8 - The system and support of technology transfer and intellectual property protection: We continue to search for new ways to connect the academic and professional activities of our researchers and PI's; however, we have so far had limited success. The main difficulty has typically been that the revenue generated by exhibitions and presentations is insufficient to be recognized as Contract Research (i.e., less than EUR 1877 in profit from individual contractual cooperation).

While pure research remains our primary focus, we also engage in active partnerships with municipalities in the area of applied research. Nonetheless, our scientific contributions are generally

related to intellectual and knowledge transfer or professional expertise, areas to which the intellectual protection typical for technology transfer (patents, utility models) does not apply.

The three examples of intellectual property protection (functional sample, industrial model, utility model) mentioned in the report can be considered test cases designed to show whether it would be prudent for us to continue with similar ventures. This area remains an untapped opportunity for now; therefore, we did not feel it necessary to repeat the examples in the various sections of the document. Next time we will include more information.

3.9 Strategy for setting up and support of spin-off firms or other forms of commercialization of R&D&I results (can be extended to the whole university, emphasising the specific features of the evaluated unit)

This should preferably be clarified further.

In regard to section 3.9 - Strategy for setting up and support of spinoff firms or other forms of commercialization of RDI results: As we have already mentioned, our primary focus in RDI is our cooperation with municipalities in the areas of heritage protection, urban planning, and urban design. (See Sections 3.1 and 3.2.) It is here that our graduates find the majority of their work placements. RDI also takes place mainly at the pedagogical level and is reflected in pure research projects and the dissertations of PhD students.

In order to support newly emerging firms, we are prepared to engage in interdisciplinary cooperation: we are currently building and equipping a new robotics lab, for example. Of course, we also offer the existing infrastructure and support provided by our university.

Faculty of Business and Management

Information supplemented: October 8, 2020

3.4 Revenues from non-public sources (besides grants or contract research) from research work

Faculty receives no revenues from non-public sources because the result of its applied research projects is certified methodology.

3.5 Applied research results with an existing or prospective economic impact on society

Summary research reports - Project No: 201801sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Expert system for evaluation of receivables collection. 2018. Client: Bizon Investments, s.r.o.

The final report of the contract research identified the factors influencing the receivables market and introduced an expert system for estimating the future scenario of repayment of the receivable by the debtor.

Summary research reports - Project No: 201802sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Assessing the propensity to go public in the contractual company.2018. Client: Fabryka Maszyn Budowlanych Bumar Hydroma SA.

Assessing the propensity to go public of the stock company in the regime of Initial Public Offering. In this research, we offer empirical evidence to document whether the academic theories on the

determinants for remaining private are well-grounded in the emerging capital markets of Poland. We concentrated on the heterogeneous response of managers operating in the contractual company.

Summary research reports - Project No: 201701sm. ZICH, R., CHLEBOVSKÝ, V., ŠIMBEROVÁ, I. Research title: Evaluation of possibilities of application of branding concepts on the market of low-alcoholic beverages in the wine-based beverage segment. 2017. Client: VINAŘSTVÍ Velké Bílovice s.r.o.

Within the summary research reports, methodological tools were proposed for the promotion of the new product and its brand.

Table 3.5.1

Results	Year	Title
European patent		
American patent		
Czech licenced patent	2015	Method of modifying hollow fiber for heat exchangers
Other foreign patents		
Licences sold		
Significant analyses / surveys / studies		
Spin-off with a stake held by the evaluated unit		
Spin-off with no stake held by the evaluated unit		
Prototypes		
Varieties and breeds		
Other	2017	Summary research reports - Project No: 201701sm. ZICH, R., CHLEBOVSKÝ, V., ŠIMBEROVÁ, I. Research title: Evaluation of possibilities of application of branding concepts on the market of low-alcoholic beverages in the wine-based beverage segment.
	2018	Summary research reports - Project No: 201802sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Assessing the propensity to go public in the contractual company.
	2018	Summary research reports - Project No: 201801sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Expert system for evaluation of receivables collection.

3.8 System and support of technology transfer and intellectual property protection (can be extended to the whole university, emphasising the specific features of the evaluated unit)

The Faculty provides methodological assistance to the BUT Technology Transfer Department in the preparation of the commercialization of R&D results in the field of marketing and the preparation of a business plan. There is a transfer advisor at the faculty.

The faculty carries out consulting activities within the INPROFO Consultation system (original own methodology, which is based on the research activities of employees of previously implemented projects) to support the commercialization of R&D results in connection with research work contracted, eg.:

- Project No: 201701sm. ZICH, R., CHLEBOVSKÝ, V., ŠIMBEROVÁ, I. Research title: Evaluation of possibilities of application of branding concepts on the market of low-alcoholic beverages in the wine-based beverage segment.
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- Project No: 201802sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Assessing the propensity to go public in the contractual company.
- Project No: 201801sm. MELUZÍN, T., ZINECKER, M., ŠKAPA, S. Research title: Expert system for evaluation of receivables collection.

3.9 Strategy for setting up and support of spin-off firms or other forms of commercialization of R&D&I results (can be extended to the whole university, emphasising the specific features of the evaluated unit)

In 2018, Faculty began creating a strategy to support the setting-up of spin-off companies in following with the long-term plan of BUT. This strategy is based on the experience of the INPROFO Consultation system.

3.10 The most significant individual awards for R&D&I

Award for the best article:

ŽIŽLAVSKÝ, O.; REŽŇÁKOVÁ, M. Innovation Scorecard: Principles and Theoretical Background. In 18th GBATA International Conference coorganised with University of Dubai, U.A.E., 2016. p. 557-567. ISBN 1-932917-12- 8. Global Excellence Award and Best Paper Award.

Award for long-term work in the scientific journal:

Scientific journal *Oeconomia Copernicana* (2015). Awarded: doc. Ing. MAREK ZINECKER, Ph.D., doc. Ing. TOMÁŠ MELUZÍN, Ph.D. – members of Scientific Boards and „subject editors“. Publisher awards: Instytut Badań Gospodarczych // Institute of Economic Research, ul. Ks. Roberta Bilitewskiego, nr 5, lok. 19, 10-693 Olsztyn, Poland.

Institute of Forensic Engineering

Information supplemented: September 11, 2020

3.8 System and support of technology transfer and intellectual property protection (can be extended to the whole university, emphasising the specific features of the evaluated unit)

This should preferably be clarified further.

The university has existing unit (Department of Technology Transfer of Brno university of Technology - DTT) and system for technology transfer and intellectual property protection, Institute (IFE) takes the advantage of this university support and asks for consultations in case of need. The main role of

this cooperation between IFE and university department lies in consultation of Cooperation contracts and Contracts on the use of results in term of projects and applied research activities in general, that are solved at Institute, especially under the support of Technology Agency of the Czech Republic. Results provided by Institute have no significant commercial potential, their impact directs into social area. Those concrete Contracts regulate the division of projects results share among involved parties participating in the research activities (especially projects). In case of necessity we may use network of technology transfer managers, but UpToDate research activities did not require any closer assistance of cooperation between Institute and DTT beside cases mentioned above so far. Relevance and quality assessment of TT activities reflect that most of the research activities are realized in frame of public funding for state and government authorities with social impact, so the results have to be open accessed. The results of expertise activities (for example traffic accidents analyses for criminal proceedings) belong mainly to confidential status, so no intellectual property protection can be arranged. Forensic engineering and solves primary issues that already happened in the past and is there a need to explain them towards state authorities (traffic accidents, property assessment, defects and failures of real estate, mechanical and civil engineering issues...), so in general, activities of the Institute usually do not develop new products and intellectual property that could be protected. There are no additional specific contributions from Institute.

3.9 Strategy for setting up and support of spin-off firms or other forms of commercialization of R&D&I results (can be extended to the whole university, emphasising the specific features of the evaluated unit)

This should preferably be clarified further.

Realized R&D&I activities by Institute have very limited potential for commercialisation as widely described in point 3.8 of this clarification and Evaluation Report Form. There was no need to establish new spin-off or other form firm that should be used for Institute's results commercialisation so far. R&D&I activities are unregularly consulted with TT managers from other BUT faculties with research activities areas that are close to Institute's R&D&I activities.