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CEBIA-Tech Internationalization Strategy

Project Title: Development of Capacities for Research and Development of TBU in Zlín (RoKaVaV-TBU)

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Foreword

The international cooperation strategy is one of the fundamental pillars of the parent document Strategic Intent of Tomas Bata University in Zlín 21+. Due to the fact that the previous strategic plan ended in 2020, this document reflects new challenges and the development of an approach to internationalization at the TBU level in connection with the newly prepared TBU Strategic Plan valid since 2021, as well as the specifics of this issue for the Faculty of Applied Informatics.

In this spirit, the internationalization strategy at the Faculty of Applied Informatics (FAI) is entirely in line with TBU's superior documents, but it develops and defines in greater detail the areas that are important and specific to the faculty from the point of view of internationalization. According to the general principles of creating strategic documents defined in the Methodology of Internationalization in Research and Development at TBU in Zlín, it contains an analysis of current international activities at the faculty, identification of strengths and weaknesses, opportunities and threats (SWOT analysis), and then the design part, which will be used as a basis for own implementation, e.g., in the form of a relevant directive.

The international strategy of both TBU and FAI can be divided into two main areas, one of which is focused on internationalization in education and the other on strengthening international activities in research and development. The presented document then elaborates in detail international activities in research and development from the point of view of FAI, as they currently bring with them fundamental challenges to which it is necessary to respond so that the faculty can meet the set criteria for evaluating international cooperation in R&D according to Methodology 17+.

1. Analysis of the Current Situation

The Faculty of Applied Informatics strategy in the Internationalisation field is fully in line with the TBU Internationalisation Strategy. Generally, it can be divided into several main points, especially in relation to Internationalisation in Education (which includes not only foreign trips and arrivals of students and teachers, but also administrative staff in increasing their language skills), International Cooperation in Science and Research (the solution of projects with international participation, joint publications with foreign authors, foreign trips and arrivals of researchers, the organisation of international conferences or their partial professional sections) and the appropriate promotional issues (e.g. establishing contacts with prestigious foreign institutions, participating in international conferences, fairs, and faculty presentations on portals that are targeted at students of all levels of studies).

The long-term effort is that as many students of all levels of study as possible complete a study stays of at least 3 months at a foreign university, or a practical internship of at least 2 months. Stays take place at respected and high-quality foreign universities. The main goal of these mobilities is to increase the competitiveness of faculty graduates on the labour market. Graduates who have completed a long-term study or work placement abroad as part of their studies gain a significant advantage on the labour market.

The majority of internships are realised under the aegis of the Erasmus+ programme. the faculty's aim is to conclude bilateral agreements with high-quality foreign universities from all countries in the Erasmus+ programme, whose study programmes are in accordance with the study programmes studied at the Faculty of Applied Informatics. Currently, the faculty has concluded bilateral agreements with more than 70 institutions. Among which are both long-term permanent partners, where cooperation has been going on for many years, and new promising partners, with whom the faculty is working on the development of cooperative ventures.

Another option for students is the so-called Freemovers student exchange framework. Students can go on a study-stay to any university in the world. Students can thus use existing TBU cooperation agreements with specific foreign partner institutions; or find a foreign institution according to the student's own study orientation. This programme is funded by the Ministry of Education, Youth and Sports of the Czech Republic.

One of the faculty management teams' priorities is to inform students about "Exchange Visit" possibilities. Primary information is provided to students by all faculty teaching staff. Tuition staff receive instructions regarding their obligation to inform students about "exchange study stays" from their Institute Directors. Thereby, this ensures that there is not a single student at the faculty who is not informed about mobility possibilities. Students can obtain further information from FAI, TBU in Zlín, International Department staff in the form of short introductions and active participation in regularly organised lectures and meetings with students and the faculty management. At these meetings, students who have already completed study-stays pass on their experiences and motivate other students to go on such mobility programmes. an "International Day" is also regularly organised within the university; whose main goal is to motivate students to go on study visits and internships.

FAI management team's aim is to help students eliminate the main obstacle to stays, which concerns the recognition of subjects completed at a foreign university within the Mobility network/framework, and Financial Costs Coverage concerns. the faculty provides students travelling for mobility purposes with standard financial support within the Erasmus+ and Freemovers programmes, who also obtain above-standard financial support from their own scholarship fund. the main effort and endeavours in cooperation with individual study programmes studied at FAI guarantors; is always to compile a study plan with a "foreign" school such that all subjects successfully completed at such a foreign school are recognised subjects taught at FAI. the semester in which a student would study at FAI is thus replaced by a semester studied at a school abroad.

The faculty, (FAI), has long-term experience with admitting foreign students. These students can apply for a Short-term Study Stay (usually a semester), or a practical internship. the Erasmus+ programme is the most widespread student exchange programme under which an Inter Institutional Agreement must be signed. Students can also use any other programme, or come as a Freemover student, in which case, a partnership agreement is not always

necessary; however, TBU in Zlín prefers this variant. the Faculty of Applied Informatics has a wide range of subjects taught in English for students from abroad.

Every year, a number of foreign students from all levels of study, come to FAI, TBU in Zlín, for practical internships. Individual faculty departments offer practical internships in topics in line with their own foci. in recent years, the faculty's incoming student number has been around 80 per academic year; in view of the overall number, this is a significant number, given total faculty student numbers. Foreign students are also integrated among Czech students within the practical teaching/training exercises context. Students coming for practical internships also work with Czechs (student counterparts). This leads to the creation of a really international environment effect at the faculty.

Equally, the Faculty of Applied Informatics supports academic staff mobility. Outgoing teaching staff thereby gain experience of teaching at foreign universities and their ability to teach in English thus improves. Teacher Internships also aim to strengthen Student Mobility by the intermediary of the promotion of the faculty, and, in particular, by arranging regular targeted promotion of the faculty in terms of mobility by relevant staff at foreign schools. Incoming academics serve as a source of information on how students are educated at foreign universities with related study specialisations. the faculty strives to constantly expand the opportunities for students and academics to complete mobility at top research universities in developed countries. At the same time, FAI strives to continually accept top academics and high-quality students who would contribute to the development of the international environment at FAI and to the improvement of tuition; and increases in FAI, TBU in Zlín research levels.

2. Quantitative Indicators

Indicator	2017	2018	2019
Invited Lecturers – Foreign Experts	3	3	7
Outgoing ERASMUS Students	34	25	19
Incoming ERASMUS Students	72	73	70
External ERASMUS Exchanges – Employees	9	17	11
ERASMUS Arrivals – Employees	7	16	29
IAESTE Arrivals – Students	6	5	2
Summer School Arrivals – Cybernetics and Informatics	6	8	6
Arrivals of R&D Workers Outside ERASMUS	0	2	9
Active International Projects	2	3	4
Outgoing Ph.D. Students Departures Outside the ERASMUS Programme	2	2	3
FAI Staff Mobility Outside ERASMUS	0	3	5
Number of Foreign Ph.D. Students *	6	10	17
FAI Employees in Academic Positions or R&D Positions Who Are Foreign Nationals	2	2	2
Publications by Foreign Authors; (Jimp and Jsc)	13	18	8

* *Approximately (the number of current students in a given year)*

3. SWOT Analysis

a) Strengths

- An ever-expanding portfolio of disciplines / subjects that can be studied in English.
- Over the last few years, the gradual growth of success, above all in bilateral international projects (especially MŠMT – Inter-Excellence, Inter-Eureka).
- Participation in international projects like COST-Action in support of creating international consortia for the resolution of joint R&D projects and the MŠMT MOBILITY programme.
- A relatively wide network of active contacts with foreign R&D institutions including from the EU 15 and ESVO countries.
- A satisfactory annual share in outputs like Jimp, where one or more foreign co-authors (this applies to all Jimp publications, but not periodicals in Q1/Q2).
- A relatively good level of communications in English of academic and research staff.

b) Weaknesses

- After the change in the structure of EU research programmes (former Framework Programmes) there is relatively low success in purely R&D international projects (mainly due to capacity reasons, there is a lack of coordinated monitoring of calls, participation in match-making meetings, membership in evaluation commissions and other steps increasing chances of successful international projects).
- Given the scope of the FAI's research focus and the CEBIA-Tech Research Centre, the low number of teams that repeatedly submit and win foreign projects.
- Low participation in international consortia, clusters or platforms, weak ties to top foreign institutions and industry.
- Low number of Post-docs and staff coming from foreign universities, especially from EU-15 and EFTA countries.
- Low number of Post-docs and employees with longer-term work experience from abroad.
- Low number of visiting professors or researchers who would spend longer periods of time in the order of weeks / months at FAI.
- Absence of foreign experts in the advisory bodies (Council Board) of the CEBIA-Tech Research Centre, incl. the inclusion of English as a working language for communication and Council meetings.

c) Opportunities

- More options at the faculty and university level for incoming and outgoing mobility, especially for young researchers and academics, (in addition to the international Erasmus programme, especially OP RDE projects, TBU internal projects in support of international cooperation, etc.).
- An active approach to articles reviews in professional periodicals in the first two quartiles.
- Active presentation, communication and searches for projects and partnerships on scientific networks such as ResearchGate, Publons etc.
- In selected areas, to focus research on cutting-edge problems that are now being resolved around the world, establishing contacts with international teams working on similar topics.
- Self-presentation of the faculty / individual workplaces in English to foreign partners and institutions on our website and also in the form of presentations in case of interest in cooperation by foreign partners.

d) Threats

- Reducing targeted national support for R&D and internationalisation in R&D.
- Classification among "non-research" universities.
- Departure of excellent R&D staff to other workplaces.
- Changes in the types and support of international activities in connection with global aspects, such as the COVID-19 pandemic, the termination or postponement of well-run international activities (in the case of FAI e.g. education of students in Software Engineering in Kurdish Erbil, following on from a successful TBU internal project for support for international cooperation for the arrival of foreign researchers and the departure of FAI staff to leading foreign institutions, etc.).

4. Internationalization Strategy – Proposal

FAI's strategic objective in the International Cooperation field is to cooperate with institutions from all over the world and become an internationally-recognised partner in the research and development field. Its Strategic Priority is to create suitable conditions for the entry of world-class foreign experts into academic positions. Another priority is to increase its participation and revenue from international research projects. To meet these goals – it is necessary to keep in mind the individual criteria for evaluating international activities in research and development according to Methodology 17+, in particular:

- 1) Double Degree Ph.D. programmes.
- 2) Number of International Conferences / International Conference Sections organised by FAI staff.
- 3) Significant International Awards awarded to FAI employees.
- 4) Significant Citation Rate.
- 5) Membership in International Organisations, Expert Commissions and Major Foreign Research Periodicals Editorial Boards – (Classified in the Q1 / D1, Q2 Categories).
- 6) International Research Project Resolution.

Other significant/important goals from the TBU international strategy point-of-view are:

- 1) Obtaining and resolving international contracts.
- 2) Increasing the share of Academic / R&D staff and Ph.D. students from abroad.
- 3) Increasing Academic and R&D Staff Mobility; especially, the arrival of top experts from abroad in order to prepare joint R&D activities – (joint publications, preparation / project solutions, conference organisation).
- 4) Trips to high-quality foreign scientific conferences.
- 5) Active promotion of FAI R&D results and directions to foreign partners.
- 6) Article Reviews for international scientific journals; especially those classified in the (Q1/D1, Q2 categories).

Below are the specific steps and activities needed to achieve them:

1) Double Degree Ph.D. Studies Programmes

- To identify strategic foreign partners with a similar R&D focus for the preparation of Joint / (Double Degree) Ph.D. study programmes.
- To prepare and accredit at least one Joint / (Double Degree) Ph.D. study programme.

- To coordinate the joint management of students by mentors from both partner universities; which will enable students to participate in research projects and other scientific activities carried out at both workplaces.

2) Number of international conferences/sections of international conferences organized by FAI staff

- Monitoring foreign conferences for the relevant research areas.
- Relevance and Quality Monitoring – conferences listed in the evaluated databases do not necessarily mean higher quality.
- Building personal ties from participation in previous years of the conference, and actively be interested in the possibility of organising your own section.
- To expand the circle of invited experts for already established conferences organised at the faculty.
- Efforts to create a conference in a specialised field in which FAI research excels and to organise a conference with an international dimension.

3) Significant International Awards in the R&D Field Awarded to FAI Employees

- High Quality and well-publicised research in key areas.
- The active search for opportunities to participate in competitions with an international dimension; especially, Top Dissertation authors or young R&D staff.
- To actively search for – and propose, authors of significant R&D results for awards in given research categories or areas. Memberships in International Scientific Societies, Conference Commissions, Editorial Boards, etc. – can also be used for this purpose.
- Recognised Awards, or Nominations, can significantly help in obtaining grants and demonstrably document the research team's quality.

4) Significant Citation Rate:

- The need to publish original and high-quality research results with "Citation Potential" in the given field.
- Thorough research and definition of the Novelty field in forthcoming publications.
- It is necessary to keep in mind not only the given periodical's circle of readers, but also the contribution of the given publication for the fields listed in the preferred research areas for the given periodical.

- At FAI – the Faculty of Applied Informatics, this is complicated by the exceptional application focus applied on research; but, it is possible to target selected high-quality periodical publications and to submit potentially high-quality publications – primarily in Q1/Q2 Category periodicals.

5) Membership in International Organisations, Expert Commissions and Major Foreign Research Periodical Editorial Boards – (classified in Q1 / D1, Q2 categories)

- Active FAI staff registration and integration in Horizon Europe expert panels.
- Support for active international organisation memberships relevant to the R&D field.
- The Support of – and Active Search for, Periodical Editorial Board membership relevant to the given research area.

6) International Research Project Solutions

- To actively search for partners and involvement in international consortia.
- To Work Effectively with the European Commission website on EU projects: (Cordis) – searching for current calls, studying relevant documents and already supported projects in order to gain an overview of those areas that are supported, and in general the ways and rules of writing EU Horizon Europe projects.
- To monitor documents containing a current situation analysis of the preferred R&D areas and to evaluate where it would be possible to identify with our research activities.
- Participation in seminars and workshops on EU projects, gaining / obtaining feedback from successful applicants and researchers.
- Participation in COST-Action type programs to support networking and the creation of consortia for the submission of joint international projects.
- To incorporate experts from abroad into the CEBIA-Tech Regional Research Centre Advisory Body for a broader purview of the centre's research strategies and cooperation with foreign organisations; the use of English as the language of Advisory Panel Meeting proceedings, (Board / Centre Council) areas.

7) Obtaining and Resolving International Contracts

- To develop and promote the R&D Services in English portfolio, including a history of successful collaboration with companies – customer references, where available.
- To identify potential partners from among foreign companies.
- To implement Applied Research projects with foreign partners – (as project partner or subcontractor).

- To target more ambitious research projects and strong industrial partners abroad, good language skills and experience of the Knowledge Transfer Manager (or the TBU Technology Transfer Centre staff level); with R&D results commercialisation abroad.
- To continuously supplement, the knowledge and skills portfolio acquired on the basis of experience and resolved orders and thus create an industrial partner marketing plan – including foreign ones.

8) Increasing the share of academic / R&D staff and doctoral students from abroad

- To actively promote Ph.D. programmes, e.g. within the Co-operating Foreign Institution Mobility framework; sending Ph.D. Study Programmes implemented in English to cooperating foreign institutions.
- To create appropriate Post-Doctoral Student Admissions Conditions.
- When accepting new academic and R&D staff, to announce selection procedures in Czech and English.
- To create appropriate conditions for the admission of visiting experts from abroad to Academic Staff – (AS), or Researchers – (R&D) positions, e.g. in the form of so-called “Sabbaticals” to be able to apply for support grants long-term visiting expert from abroad arrivals.
- Apply for grants to support long-term arrivals of visiting experts from abroad.
- To create appropriate facilities for foreign Ph.D. students and staff – (bilingual environments at all levels, assistance in organising their stay, and the necessary administration).
- To assure co-operation with the TBU International Department and inform foreign students / staff about international activities carried out within TBU.
- In order to increase the attractiveness of FAI for researchers from abroad, there is a need for synergies between several levels – a closer focus of research on highly topical areas addressed at the international level; it is also necessary to focus on the methods and conditions of recruiting foreign staff from Ph.D. students up to visiting professors; and to continuously work on the greater visibility of the faculty and research programmes to foreign faculties, e.g. by integration into international consortia.

9) Increasing academic and R&D staff mobility – and especially, increasing the arrival of top experts from abroad in order to prepare joint R&D activities, (joint publications, preparation / solution of projects, organisation of conferences)

- To provide and promote up-to-date information on implemented programmes and mobility opportunities for Ph.D. students and academic and research staff.

- To apply for grants to support the long-term mobility of the above target groups.
- To develop a questionnaire that reflects the feedback of the stay of foreign Ph.D. students and AK / R&D staff, and respond to suggestions obtained from feedback.

10) Trips to Foreign Scientific Conferences

- Monitoring important conferences for relevant research areas – with a preference for events included in the Web of Science and Scopus databases.
- The possibility of participating in "unrated" conferences in justified cases, if they are of sufficient quality and importance – for example, due to the establishment of future cooperation.
- Active presentation of results, discussions and gaining contacts, active interest in the possibility to appear as a "Chair" of some of the sections.

11) Active Promotion of FAI R&D Results and Research Directions to Foreign Partners

- Supplementing and regular updating individual institutes and working groups research activities on the FAI website.
- The creation and regular updating of a unified presentation of R&D activities implemented at FAI as a whole and at individual institutes to foreign partners.
- The use of R&D popularisation tools defined in the Popularisation of R&D Results at FAI Strategy, e.g. presentation of publications or solved projects on specialised research social networks – (e.g. ResearchGate).

12) Reviews of articles for international scientific journals, especially those categorised – Q1/D1, Q2)

- To actively search for Q1/Q2 categories (Web of Science, Scopus) journals based on their qualifications, to contact journals' editors and express interest in reviewing articles, together with a short list of research and publishing activities, or register in reviewers' databases if publishers offer this option.
- To actively respond to review of articles calls – (verification according to the Scopus and Web of Science databases that it is a good-quality and serious periodical. It should be borne in mind that many review calls are for journals with titles very similar to quality periodicals – however, they are not listed in any of the evaluated databases).
- To participate in seminars and workshops focused on the rules for preparing quality reviews, or to look for tips for reviewers that are available on some proven publishers of professional journals websites – (Elsevier, ScienceDirect...).