

GAP ANALYSIS FOR ÚSTÍ REGION

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This document summarises the situation of the individual Industry 4.0 ecosystem components in the Ústí Region. We are building on the general model of the knowledge ecosystem, the analysis of the current components and the SWOT analysis. The document brings a summary of what is already available in the region and how the ecosystem can be extended. The projects were initiated within WPT3 of the ECOS4IN project.

1. What components are currently available in the ecosystem.

- a. The current ecosystem for Industry 4.0 in the Ústí Region already includes numerous components, which will be presented below. Unfortunately, we still completely lack the shared Infrastructure (testbeds) where we have to focus on the interregional cooperation, particularly on Prague, the capital city, and the Saxony region (Germany).
- b. The strength of the region lies in the existence of an organization which can perform the role of mediator. The Innovation Centre of the Ústí Region (ICUK, <https://icuk.cz/>) was established as an association of the Region, Ústí University and the Chamber of Commerce. It has sufficient resources today to develop the innovative ecosystem and is building a regional and interregional network of contacts. The ICUK and the Chamber of Commerce develops different types of networking events, exchange of experiences, speed dating between businesses and research institutions, events such as Technodays, etc.
- c. Knowledge of the organization - the strength of Ústí University (www.ujep.cz) lies in the field of materials, it combines knowledge of engineering, natural sciences, physical sciences and biology. However, it is very undersized in the field of ICT. The Region also hosts a branch of the Faculty of Transportation Sciences of the Czech Technical University in Prague (ČVUT Praha) <https://www.fd.cvut.cz/o-fakulte/pracoviste-decin.html> which focuses on telematics. There is an extensive number of tertiary technical schools (VOŠ) (applied science schools) focusing on engineering, automation, transport and ICT in the Region. The situation in technical work with adolescents has been improving, there is a network of technical youth clubs, which obtained extensive funds to purchase equipment (Arduino, Mindstorms robots, etc.). The ICUK also started to set up their own network of company experts, the so-called Platinn programme.
- d. The region has its own financial instrument to support new technologies - the innovation voucher, which covers the area of digitization as well. In addition, the region offers a wide range of instruments provided by European funds (www.agentura-api.cz) as well as the Technology Agency of the Czech Republic (www.tacr.cz). Unfortunately, regional businesses use the instruments substantially less than in other regions. Accordingly, the Region initiated the setting up of the business-oriented "one stop shop" in the



international cooperation with the partners from Birmingham and the Government of Catalonia. Its purpose is to increase the use of national financial instruments for the competitiveness of regional businesses. The regional subsidiary of Czechinvest - the national Business and Development Agency which supports small and medium-sized enterprises - is an important partner for the Region (www.czechinvest.org)

- e. The Smart accelerator project is implemented by the Region and the ICUK and its purpose is to support the preparation of strategic projects. The project links to the preparation of the RIS3 strategy and is co-funded at the national level. It has a financial instrument, the “assistance voucher“, which can be used to prepare other projects for development of Industry 4.0.
- f. The unemployment rate in the region has been very low in recent years, so apparently, there are partly undersized instruments of the labour market here. The regional employment pact is also available, <http://www.kr-ustecky.cz/pakt-zamestnanosti-uk/ds-99648>, designed to interlink companies and educational institutions (retraining, VET). A rather bureaucratic approach on the part of Labour offices (Ministry of Labour and Social Affairs) to funding of retraining programmes can impede the process by, for example, focusing on costs instead of the teaching quality in tenders for a retraining contractor.

2. What needs to be developed in our ecosystem

- a. The main component of the regional ecosystem will be the Digital Innovation Hub, set up as a network of cooperating partners coordinated by the Innovation Centre of the Ústí Region (ICUK). Its main role will be:
 - to create a network of experts who will be able to introduce measures in digitization, including contact details for the shared infrastructure, such as the Czech Institute of Informatics, Robotics and Cybernetics <https://www.ciirc.cvut.cz/>
 - to organise events and conferences and awareness events.
 - to coordinate financial resources (regional digital vouchers, national programmes) and present these to businesses.
 - the acceleration programme for start-ups within Industry 4.0.
 - to develop strategic projects to develop the ecosystem.
 - to create partnerships both in and outside the region (the National Centre for Industry 4.0, www.ncp40.cz, Confederation of Industry, www.spcr.cz).
 - a specific part of the DIH will be the Mobility Innovation Hub prepared by the ICUK, the Region, UJEP, FD CVUT and Czechinvest, which will focus on the acceleration of autonomous driving businesses.



Examples of the DIH's work can be found at our partners, particularly the activities of biz up Upper Austria.

- b. The UJEP is extending its range of material equipment and preparing the strategic project of the 3D prototype centre. Its objective is to attract talents to work in industry. This will be the first entity of the shared infrastructure type.
- c. Nanohub is in the stage of preparation, this activity is growing from the initiative of the Association of Nanotechnology Industry of the Czech Republic in cooperation with the UJEP. It links the UJEP laboratories with industry accompanied by the new "awareness" centre established in Lovosice.
- d. It is necessary to create a Job watch, an activity which monitors the development of needs of businesses and initiates the response of educational institutions to these needs, in cooperation with the regional Council for human resources and Employment pact. An example of best practices can be the Tecnimetro initiative from the Lombardy region.

3. What would be nice to have in our regional ecosystem

- a. The region lacks large-scale conferences to promote and raise awareness of the regions and Industry 4.0 issues at the national level. NCP and the Confederation of Industry could be suitable partners. The event could be extended to the local Entrepreneur's board. The first edition of the conference could be part of the ECOS4IN project in early 2021.
- b. Inflexibility of financial instruments is one of the barriers to the fast development of technologies. To get project approval from European funds it takes half a year, sometimes even a year, and approximately three to four months are needed to approve project applications at the national Technology Agency (TAČR). The Gama TAČR programme is a good instrument, which allocates funds to a subsidy programme managed by the intermediary (e.g., the University) which is then able to allocate subsidies within a month. It would be beneficial to create a similar Proof of Concept Fund as part of the DIH, followed by the equity fund in the future, which would allow a company with convertible credits or capital to be entered.
- c. Digitization requires experts with a narrow focus, however, small and medium-sized or even large enterprises cannot afford to pay them on a permanent basis. If we want to support digitization, we must support development of the market for these independent professionals. The basic idea is to substitute part-time employment for so-called micro jobs, which requires a flexible instrument to interconnect supply and demand - the electronic job marketplace. It might probably be most effective to cooperate with other DIH on an interconnected database. This is a point for further discussion.

4. With whom specific ecosystem components we will share resources with other regions (at national or cross-board level)

- a. As specified above, the Region lacks a *shared infrastructure* in Industry 4.0, as well as knowledge capacities, and a university with a broader focus on teaching applied informatics. Accordingly, we will rather rely on interregional cooperation in the field of shared infrastructure.

At the national level, it will particularly be the already mentioned CIIR CVUT and Digimat of the South Moravian innovation centre, <https://www.dih-digmat.cz/>. The cooperation with Saxony is based on the Regional

RIS3 strategy and activities of the Smart Accelerator supported by the twinning programme. As for the DIH, we want to develop co-operation with Testbed Chemnitz, <https://www.tu-chemnitz.de/mb/FabrPlan/edf.php>, IoT Testbed Dresden, <https://www.htw-dresden.de/> and others.

- b. There is also an initiative to create the “Cyber security testbed“, where Krajská zdravotní (representing the holding of hospitals set up by the Region) together with the Faculty of Electrical Engineering of the Czech Technical University in Prague (CVUT) as the main know-how owner and the University of Jan Evangelista Purkyně (UJEP) would cooperate. The purpose is to create a simulator of cyber security threats.
- c. The shared knowledge base, Industry 4.0 contains a large number of individual pieces of knowledge and requires extensive cooperation between experts. It would make sense to create a knowledge base at the national level following the example of good practice of the Veneto region - DocuWeb.
- d. The system of funding is created particularly at the national level in the framework of the ERDF/ESF European programmes and from TAČR - the national innovation agency. It is essential for the region to coordinate our activities with the national agency supporting business - Czechinvest. We are preparing the so-called entrepreneurial one stop shop in the Ústí Region which will distribute public services for entrepreneurs to regional small and medium-sized businesses.