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European Institute for Innovation
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Talentjourney Transnational Steering Group

Furthering on the recommendations listed out in the Talentjourney report, produced by the European Institute for Innovation – Technology (Elfi-Tech), on sustainability of data collection in relation to the creation and implementation of the Talentjourney transnational joint curricula, the Talentjourney Transnational Steering Group has been formed.

Furthering on the recommendations listed out in the Talentjourney report, produced by the European Institute for Innovation – Technology (Elfi-Tech), on sustainability of data collection in relation to the creation and implementation of the Talentjourney transnational joint curricula, the Talentjourney Transnational Steering Group has been formed. The

**Skills,
IIOT, IOT,
smart manufacturing,
sustainable,
data,
methodology,
transnational,
curricula,
VET**

transnational steering group consisting of 4 Talentjourney pilot partners from Slovenia, Estonia, Finland and Italy (Šolski center Nova Gorica, I.S.I.S. Malignani, Sataedu & Tallinn Polytechnic School) has been created to collect information on current VET use of data and job trends used to inform the provision of education and training, and to develop summary propositions for good practice in the use of IIOT in smart manufacturing skills development needs. The transnational steering group identifies the most useful frameworks (industry, discipline, field of study or unit of competency) for VET planning and indicators, and the extent to which the training data forecasts policy/industry trends.

A task overseen by Elfl-Tech, several meetings have been held thus far to establish a clear and sustainable governance or structure for the Talentjourney Transnational Steering Group going forth. It is clear that information flow is a two-way process between the Transnational Steering Group and Regional Makers' Groups. Both strategic and operational structures need to be agreed upon through Transnational Steering Group Meetings – the main topics for discussion are the establishment and the agreement upon responsibilities and accountabilities at the regional and transnational levels. As recommended within Elfl-Tech's report on sustainable data collection, partners have been asked to present their answers to questions on data collection at the regional (operational level) per pilot partner country; e.g., "How, when, where and by whom is data implemented in your VET organisations?". Specifically, partners presented concrete examples of current databases, timelines, etc. (i.e. their organisations' data collection methodologies that influences their curricula). Knowledge exchange amongst pilot partners to determine the pilot partners databases availability at their institutes used for curricula development has therefore been conducted, in the attempt to identify common databases at the transnational level.

Following up on this, the transnational steering group shall continue to select a common set of KPIs/TTTs (Key Performance Indicators/Transnational Talentjourney Targets) and databases. Written consensus from all involved parties within the transnational focus group is required, as per the Memorandum of Understanding (MoU) and Data Sharing Agreement (DSA), which is still to be drafted and signed by pilot partners.

Future regular meetings shall address KPI/TTT selection, as a consensus must be made by pilot partners, and are vital to establish a governance for the transnational steering group moving forward, and are set to provide modernised regional curricula from VET to CoVEs.

Some key findings of the report include a developed methodology, which shall evaluate the ways in which participating partners are preparing to use data sets to enhance quality and the learner experience and deliver on commonly agreed Talentjourney outcome agreements. In regards to how, when, where and by whom will data be implemented (collecting and data analysing), the complete Talentjourney ecosystem shall provide data to inform of any environmental changes that impact on the programme: a Talentjourney data-sharing group shall be established to address data returns along with other regional data concerns, and some other data sharing agreements and partnership support arrangements shall be put in place.

To address what data will be provided, and who will be provided with data, Elfi-Tech's research found that the entire Talentjourney ecosystem shall provide data; it is intended to have an ideation session to determine the exact data to be used. Most Talentjourney partners are not yet clear about the data requirements of their centre in a regional context, although they fully understand their own organisation reporting requirements and arrangements – the data sharing group will prioritise the data set requirement. Research also uncovered what/who the main data source(s) used by Talentjourney are and at which level (regional, national, EU, global), including the European Centre for the Development of Vocational Training (Cedefop), ECVET – European

credit system for vocational education and training, European Skills, Competences and Occupations (ESCO), Europass, ReferNet, Skills Panorama, and so on. Finally, the report addressed the responsibilities of the project's partnership in the process of methodology implementation: while most companies surveyed clearly value the development and implementation of a Talentjourney joint curriculum, through which open discussion and collaboration with VET to ensure relevance to industry needs, there still appears to be a disconnect between VET providers and companies involved in Talentjourney. A recommendation to combat lack of engagement, as outlined in the report, is that sustainable support can be provided by the participation of mentors from companies in the process of teaching modules.

The main goal of the Talentjourney report 2.3 on ideation of a transnational joint curricula is to develop the idea and the concept of transnational Industry 4.0/IIOT (Industrial Internet of Things) in smart manufacturing vocational curricula/joint curricula that will be implemented in the countries of the project's partnership – Slovenia, Italy, Finland, Estonia. The joint curricula developed within the project partnership will ultimately be used as a catalyst to roll out the concept across the EU VET system. In addition, there are two sub-goals of the report: to identify which knowledge/skills/competences will be included in designing the transnational sector-wide vocational curricula so as to deliver the learners the excellence; and to identify which knowledge/skills/competences will be included in life-long trainings at the regional level, according to the regional labour market needs and at international level, the specialised trainings that are needed globally.

The result of the Talentjourney report 2.3 written by Elfi-Tech is a framework (idea/concept) for transnational Industry 4.0/IOT (in smart manufacturing) vocational curricula/joint curricula consisting of the following parts:

- ideation of trans-national Industry 4.0/IOT (in smart manufacturing) vocational curricula;
- indicators that are crucial for the excellence of joint curricula;
- reasons for entering into joint curricula collaboration;
- added value and wider relevance of the intended learning outcomes;
- inclusion in the involved partners' strategy and internationalization policy;
- assurance of involved partners' support (strategic and practical) and flexibility;
- national and institutional/employers' regulations of involved partners regarding implementation of joint curricula;
- involved partners' strategic commitment, mutual trust (through open communication and a shared understanding);

- considering (draft planning) budgeting for implementation;
- a clear definition of target learners;
- benefits for the main end users: learners, VET teachers/tutors, company trainers, employers, other stakeholders.

A main focus of both reports conducted by Elfi-Tech is that the Talentjourney transnational joint curricula should show learners, teachers and employers what has been learnt and what one can do as a result of that Talentjourney learning. Across the EU, there is a large variety of training and qualifications available, and quality educational and training programmes are grouped together into levels to demonstrate how they compare and what other qualifications they can lead to – hence, Talentjourney should level the joint curricula providing its learners with pathways to progression and employment, a clear path to positive outcomes.



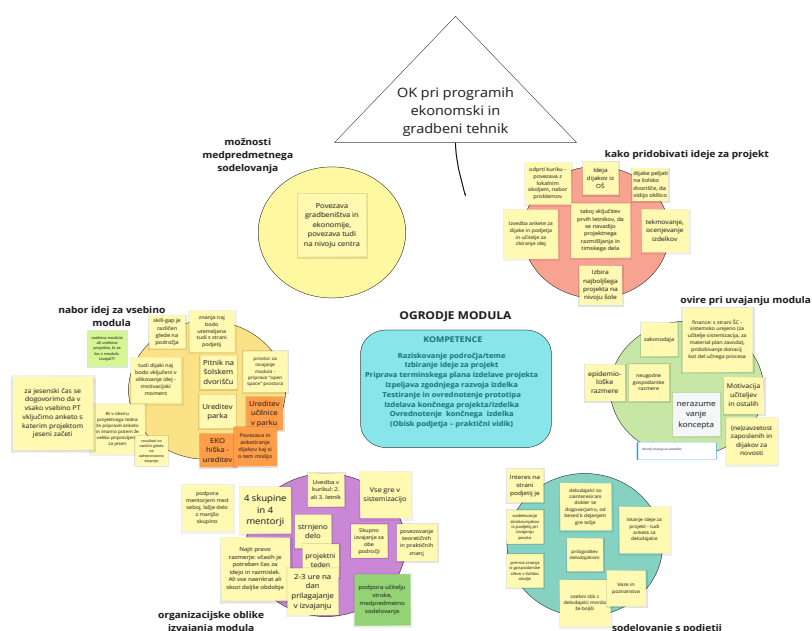
School Center Kranj: Implementation of modules

At Kranj School Centre we continue the development and implementation of modules Data Science and Production Process Development into the curricula of educational programs.

Modules, Curricula, Data Science, Production Process Development

The headmasters of Vocational College, Secondary Technical School, Secondary Technical School of Economics, Services and Civil Construction, Specialist Grammar School and Vocational College are active at meetings where all headmasters are exchanging the ideas how to implement new modules. The main focus of meetings is implementation at three levels:

- at school curriculum
- joint curriculum at national level
- joint curriculum at the international level



*Miro board about
implementation
of modul
Production Process
Development*

The Data Science module will be implemented in the open curriculum of program ICT Technician. The Production Process Development module will be implemented in the programmes of Economic Technician, Construction Technician and Mechatronics Technician. Secondary Technical School and Secondary

Technical School of Economics and Services and Civil Construction are most involved in the process. During the implementation process we actively cooperate with headmasters and specialised councils of teachers. We also connect with external experts and companies as a support for teachers.

School Center Velenje:

Digital production demo laboratory in the field of robotics

**Automation,
robotics,
VR, AR,
demo lab,
3D printing,
meeting of
stakeholders**

School center Velenje organised a meeting for stakeholders engaged with the process of implementation of a digital production demo laboratory in the field of robotics at School center's MIC facility. The main theme of the meeting was discussion of the needs of the industry in this area and applicable solutions.

The main identified needs were addition of collaborative robots for easier and safer learning and the integration of individual subsystems into a centralized SCADA control system, which would provide real-time process control. The SCADA system stores data in a local database that is used for later processing and optimization using artificial intelligence algorithms. The digital





In the field of digital maintenance, the field of argumentative AR and virtual VR reality also has a special place. With the help of the AR system, we can remotely guide the worker with the pre-prepared instructions for maintenance and replacement. This makes it easier to manage the maintenance of such complex devices and systems. With VR systems, however, we could in addition to that, simulate a robotic application and monitor status.

maintenance should also turn its focus to connected systems. This means that all device plans should be located on a local server that can be accessed by the maintainer via a computer, phone, or tablet. Such device should also report errors or specific defective modules or parts so that the maintainer can be prepared before they arrive at the place of the malfunction. The advantage of digital maintenance is that the error is detected faster and rectified faster. All requests are reachable and visible, as well as the time of the error and the time until the restart.

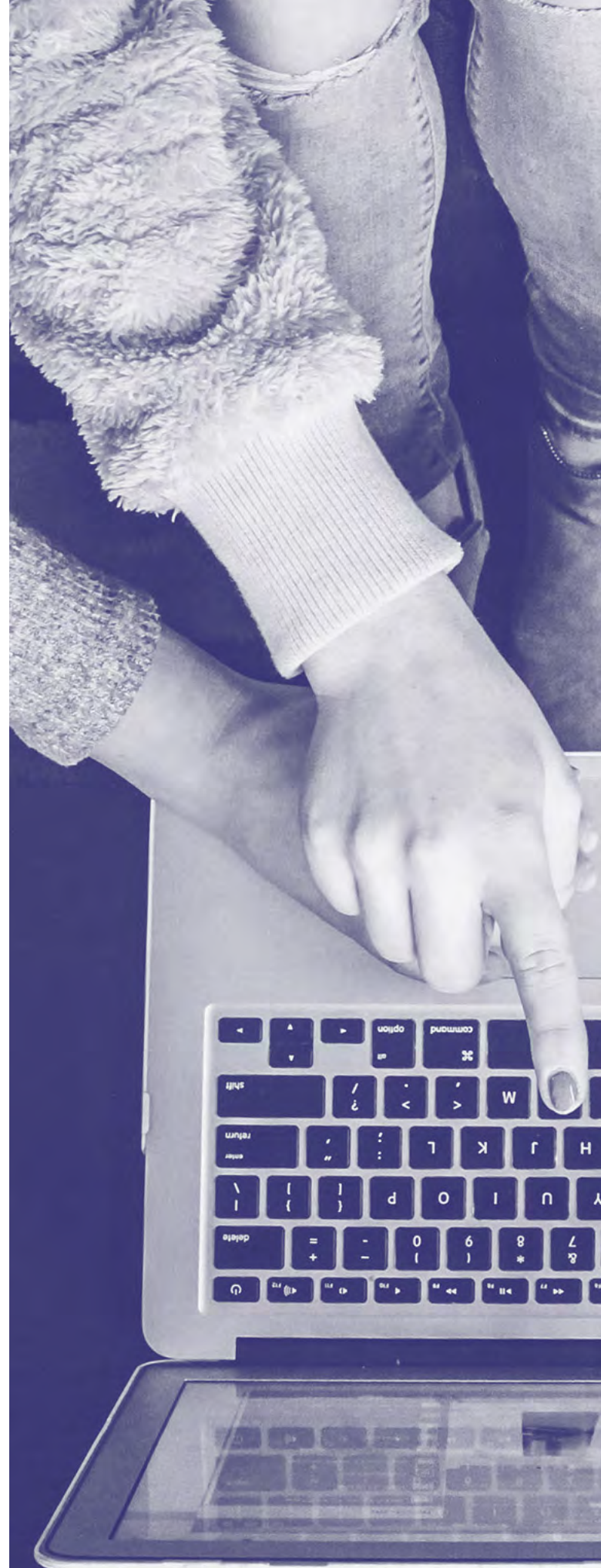
In the demo lab we should also use industrial cameras and 3D cameras for dynamic positioning and stacking applications from and into containers. Mobile industrial robots, on the other hand, could transport pallets of workpieces and products around the lab. With attached collaborative industrial arm and camera, a mobile robot can pick up objects along the transport line and warehouse and present or even set them up.

A 3D printer could be added to connected to the cloud for making of prototypes. The connection to



the cloud would allow Wi-Fi or Ethernet interface. In that way we could monitor remote printing via the cloud, with emphasis of monitoring parameters such as nozzle temperature, heating tables, product print percentage and errors. It would also allow remote printing (prototype selection).

Such a laboratory would allow us to automate the entire production, which would in turn allow us to monitor parameters via the SCADA system and a remote control system. The captured data would serve to optimize the production itself. Digitized maintenance would make it easier and faster to troubleshoot and monitor error conditions. System simulations would allow faster adjustment for different products and workpieces and palletizing and storage would be simplified via mobile robots.



SATAEDU:

Invitation to IoT and data enabled services webinar (12. 5. – 14. 5. 2021)

**Interoperability,
agile development
methods,
cloud application
development tools**


With the increasing level of the automation the industrial systems are getting more and more complex. This course will provide some insights how to tackle the challenges of collecting and working with data in the factories of the future. One of the key concepts is interoperability between different system components. We will go through some the most modern industrial communication protocols recommended by Industry 4.0. We will also look at a modern industrial IoT platform with its low code/no code programming environment and see how to utilize cloud systems in orchestrating the deployment of IoT devices and data collection.

This training is appropriate for Teachers and educators who would like to learn about industrial IoT platforms and standards.

Learning outcomes of this training

- Understand some of the key standards in industrial communication. We will use OPC UA as an example.
- Gain hands-on insight of the possibilities of a modern IoT platform. There will be a possibility to build a simple application using IoT-TICK-ET platform.
- Understand no-code/low-code concept.
- Understand different API interfaces in cloud systems. We will use Microsoft Azure as an example
- Understanding infrastructure as code (IAC). We will use Terraform as an example.
- Understanding the impact of IoT for industrial companies

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More about the training and enrollment forms can be found on Talentjourney website.

Besides preparing the deliverables described, a Design Thinking training was also provided to partners, in order to strengthen learner-centricity throughout the project.

In the last partner meeting in November 2020, organized by the Italian partners, the activities in the ‘Explore’ phase were successfully finalised, and the activities in the ‘Define’ phase kicked-off. The preparation of deliverables such as user journeys and mission/vision for Talentjourney were some aspects that were approached.




Once these deliverables are validated, the service blueprint for the platform will be prepared, followed by the memorandum of common understanding and a roadmap. Strong and active collaboration will be key to deliver the WP5 outcomes in October this year.



Education for Future Growth

*Do you want to get involved in the project? Send us an **email**.*

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