



## **HORIZON-CL4-2023-TWIN-TRANSITION-01-07: Achieving resiliency in value networks through modelling and Manufacturing as a Service (Made in Europe Partnership) (RIA)**

**4-6M EUR, total budget 32M, RIA, TRL3-6, 20 April 2023**

### **Ideas for the project:**

MaaS represents a modern production concept, aimed at transforming the traditional approach to production resources to services using cloud computing, the Internet of Things (IoT), as well as virtualization and making them available over the Internet. Available production services are managed by an intelligent platform based on remote access at a service provider that offers its infrastructure to multiple companies at once. In this way, it is possible to implement selected processes in a cost-optimized manner. The concept of MaaS manufacturing covers the entire product life cycle, from development and design to production and testing to maintenance during operation, with the aim of using resources more efficiently and reducing barriers to entry for companies that want to work on the basis of state-of-the-art technologies that are otherwise unavailable to them.

### **Our ideas for the project:**

Creation of digital models by applying available software and hardware tools in the workplace. Subsequent implementation of the created digital models of the individual elements of the investigated systems into the environment of simulation tools aimed at the design, analysis and optimization of all elements in the value chain and the life cycle of the investigated product. The course of these processes consists of measuring and mapping these flows with the help of various technical means, scanners, sensors, converters. The results can then be presented using elements of virtual, mixed and augmented reality.

**Previous solutions:** Projects implemented in cooperation with industrial practice, aimed at analysis, evaluation of data from production processes, identification of bottlenecks in the production process and evaluation of the theoretical (process) performance of selected solutions primarily in relation to the specified project goals. Processing of simulation models, testing and validation of variant solutions, optimization proposals, creation of models for the application of virtual, mixed and augmented reality.

### **Experience and infrastructure offered:**

1. Modern infrastructure for modeling and testing production and non-production systems in a virtual environment.
2. Collection, analysis, transformation and subsequent optimization of the obtained data.

### **Projects solved, related to the issue:**

1. VEGA 1/0438/20 The interaction of digital technologies for support of the software and hardware communication platform of the advanced manufacturing system,
2. KEGA 001TUKÉ-4/2020 Modernization of the teaching of industrial engineering to develop the skills of the existing educational program in specialized laboratory
3. APVV-17- 0258 Application of elements of digital engineering in production flows innovation and optimization,
4. APVV-19-0418 Smart solutions to increase the innovative capacity of the company in the process of their transformation into smart companies,
5. VEGA 1/0508/22 Innovative and digital technologies in production and logistics processes and systems

### **Partners in previous research projects:**

University of West Bohemia

University of Zielona Góra

College of Economics and Computer Science in Cracow

### **Contacts to industrial partners:**

**Magna PT s.r.o., ECO-BAGS, s.r.o., Ryba Košice s.r.o., Tauris group a.s., Essity Slovakia s.r.o.**

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