Testbed VSB-TUO „CPIT TL3“
Part of Living Lab
LTE and 5G Industrial Campus Network

VŠB-TUO campus as a unique Living Lab with 5G Campus Network
Smart Factory Lab, AIM Lab, Home Care Lab, Automotive Lab
Smart Factory Lab

**Smart Factory** is a laboratory facility for teaching and development of industrial technologies according to the Industry 4.0 concept, in particular:

**Interoperability** - the ability of cyber-physical systems to communicate with each other through information systems.

**Virtualization** - a virtual copy of Smart Factory connecting data from sensors with virtual and simulation models of the factory.

**Services Orientated** - Cyber-physical systems offer / provide services to manufactured products or operators.

**Real-time Work** - the ability to analyze the data obtained in real time and intervene in the production process in real time.
Smart Factory Lab

- Experimental testbed built on the principles of Industry 4.0.
- Education, presentation and research in the field of digital production.
- A platform for university-industry collaboration.
- Smart Factory enables engineering and R&D tasks from individual components to complex production lines.

Promotional items
Smart Factory Lab - product

• The product is equipped with a microcomputer system and communicates with a mobile application.
Smart Factory Lab – digital twin

- Tecnomatix
- MCD
- Visual Components
Smart Factory Lab – real view

Digitized assembly line with elements of industrial and mobile robotics. Technologies for development, testing, experimental tasks and education in elements of Industry 4.0.
Smart Factory Lab - video
AIM Lab

- It was established in 2021 with the support of Škoda Auto, a.s.
- The abbreviation "AIM.Lab" means Artificial Intelligence in Manufacturing Lab
- Long-term activities in the field of machine learning and artificial intelligence.
- Active knowledge transfer between VŠB-TUO - students - partners from the application sphere.
- Active cooperation in research projects, contract research, etc.
- New subjects in bachelor's and master's studies.

- Interconnection with new study programs
  - Computer Systems for 21st Century Industry (Bachelor’s)
  - Industry 4.0 (master)
AIM Lab

• Laboratory for cooperation between university & partners in fields of:
  - data analytics,
  - machine learning and artificial intelligence applications,
  - optimization issues.

• Pillars of AIM.Lab
  - Education in data analysis and optimization with a focus on industrial practice.
  - Research and development (R&D) in cooperation with industry.
  - Cooperation with industry and evangelization of industrial data analysis.
Home Care Lab

Apartments as living / observation laboratories with unlimited configuration options

Development and testing in the areas of:

• telemedicine,
• assistive technology,
• home automation,
• energy independence (green energy).
Automotive Lab

- Laboratory for education, virtualized development of automotive vehicle systems and their testing.
- Development of electronic systems for autonomous vehicles.
Automotive Lab - video
UNI CarSharing

- Student project and fully functional solution.
- Custom front / backend apps.
- C2x and the use of the cloud with the IoT operating system Mindsphere.
- Analysis of vehicle fleet operational data.
- Behavioral analysis of drivers' behavior.
- Platform for AI applications.
Thank you for your attention!