



Laboratory of Digital Factory and Simulation of Manufacturing Systems

Principal goals and activities

- Research and development of heuristic methods in the field of planning and scheduling and logistics.
- Development of optimisation tools.
- Solving complex projects from the current state mapping and its analyses to detailed dynamic simulation.
- Dynamic evaluation of enterprise processes considering stochastic effects (occurrence of failure, variability in operator performance...).
- Real-time simulation.

General focus of laboratory

- Analyses, mapping and improvement of existing material and information flow.
- Design of manufacturing, including the logistics and production planning.
- Evaluation of planned investment and proposed solution variants.
- Design and verification of capacities (manufacturing, assembly, transportation).
- Verification of production line characteristics in failure states.
- Simulation of transportation and dispatching (supply and transport logistics).
- Schedule optimization (order sequence and manufacturing batch size in considering delivery due dates, etc.).

Specific instruments and outcomes

- Witness simulation system – analyses and simulation of material flow with the support of digital simulation.
- Simcron simulation system – pilot studies and analyses in scheduling with the support of digital simulation.
- Digital factory Tecnomatix– ergonomics studies, material flow analyses.
- Job shop scheduler – production scheduling with the support of self-designed SW tool.
- Trimble CX3D scanner – digitization of large objects, e.g. production machines, halls, buildings, or works of art.

Offer of technology and expertise

We are offering before mentioned activities and experiences in the simulation of production systems for:

- Investigation of scientific and research projects within contracted research.
- When investigating topics and writing of bachelor, master and dissertation theses.



PROCESS CELL

