

Facts & Figures: Industry 4.0 in Austria

After the third Industrial Revolution i.e. the digital revolution, the next developmental step is to link production with modern information and communications technologies. This refers to the intelligent meshing of production, from planning, manufacturing and logistics to additional high-quality services. Austria stands out as a fertile breeding ground for research and development due to its established strengths in the fields of ICT, mechatronics and electronics.

Industrie 4.0 priority areas (selection)

- Automation/Production
- Robotics
- Simulation
- Predictive maintenance
- Predictive analytics
- Security & Safety
- Digital assistance systems

Initiatives and programs continue to drive Industry 4.0 forward in Austria, along with the ongoing expansion of the research infrastructure, for example in the form of pilot factories.

Moreover, Austria offers a dense network of clusters and competence centers in different areas, promoting the cooperation between science and business. The close interrelationship of theory and practice has a long tradition in the Alpine Republic, also in education.

Clusters, networks and competence centers

- Lower Austria: Mechatronics Cluster, Technopol Wr. Neustadt
- Upper Austria: AC Automotive Cluster, MTC Medical Technology Cluster
- Styria: ACStyria Mobility Cluster, Styrian Automation Technology Platform
- Tyrol: Mechatronics Cluster Tyrol
- Upper Austria, Styria, Carinthia: Silicon Alps

Excellent infrastructure, practice-oriented research in pilot plants

An excellent education also requires an excellent infrastructure. New methods and processes in production are developed and tested in pilot plants in close cooperation with business. The Vienna University of Technology operates Austria's first pilot factory located in Vienna's Urban Lakeside area. As a demonstration plant for smart production and cyber-physical production systems, the facility focuses on new concepts and solutions for multi-variant serial production in the field of discrete manufacturing.

The Graz University of Technology is conducting research at its smartfactory@tugraz into agile production concepts of the future which ensure data security. In contrast, the LIT Factory at Johannes Kepler University (JKU) Linz is working on new types of partial frontier production technologies with high processing engineering and digital innovation potential.

Austria scores high in areas of relevance to Industry 4.0, also in European comparison, thanks to high research funding for production research, investments in the research infrastructure as well as its university and non-university research. For example, the Austrian Institute of Technology (AIT), Austria's largest research and technology organization, carries out research in the fields of security & safety and mobility. Joanneum Research is concentrating its research efforts on robotics, and Johannes Kepler University Linz focuses on artificial intelligence. The Competence Centers for Excellent Technologies (COMET centers) also deal with issues of relevance to Industry 4.0.

University-based and applied research (selection)

- **Vienna:** Austrian Institute of Technology (AIT), Austrian Cooperative Research (ACR), Center for Virtual Reality and Visualization (VRVis), Austrian Center for Digital Production (CDP), Secure Business Austria (SBA Research), Fraunhofer Austria Research
- **Carinthia:** Carinthian Tech Research (CTR)
- **Styria:** Research Center for Data Driven Business and Big Data Analysis of the Graz University of Technology (Know Center), Virtual Vehicle, Materials Center Leoben (MCL), Polymer Competence Center Leoben (PCCL)
- **Lower Austria:** Austrian Excellence Center for Tribology (AC2T Research), Austrian Center for Medical Innovation and Technology (ACMIT)
- **Upper Austria:** Products and Production Systems of the Future (Pro²Future), Linz Center of Mechatronics (LCM), Software Competence Center Hagenberg (SCCH)

Lively startup scene and competence centers of European companies

A lively startup scene has emerged in Austria in recent years. In 2017, weXelerate, Central Europe's largest startup hub, opened its doors in Vienna. One of its specialties is Industry 4.0. Numerous European companies have bundled their competencies for issues relating to Industry 4.0 in Austria.

Industry 4.0 startups (selection)

- **Lithoz:** Development and production of materials and generative production systems for the 3D printing of high-performance ceramics
- **Kpibench:** Performance management systems for industrial plants
- **Sensideon:** SAW transponder systems for object identification (RFID) and radio sensor systems
- **Blue Danube Robotics:** Tactile sensor skin "Airskin" for the cooperation of people and machines without a safety fence
- **Holo-Light:** Industry 4.0 software for the HoloLens

Foreign companies in Austria (selection)

- **Infineon Technologies Austria:** Semiconductors and system solutions serving as enablers for Industry 4.0. In addition to Germany, Austria is the only business location where Infineon bundles its competencies for R&D, manufacturing and global business responsibility.
- **Atos IT Solutions & Services:** Competence center for Industry 4.0 of the French company Atos located in Vienna-Aspern
- **NXP Semiconductors Austria:** Competence center for secure contactless identification systems of the Dutch microelectronics specialist
- **Siemens Austria:** Several competence centers, amongst others in the fields of automation, automotive and aerospace.
- **B&R Industrial Automation:** As part of the Swiss ABB Group, it is the global center for machine and factory automation.
- **PIA Automation:** In 2017, the German firm PIA Automation acquired the Austrian specialist M&R Automation.