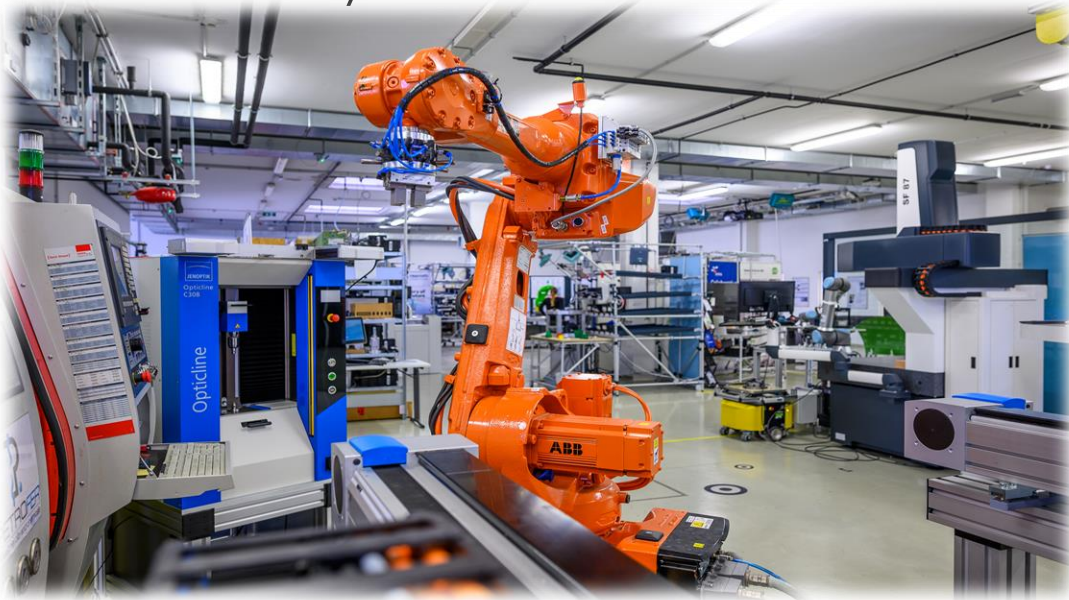
The background of the slide is a circular image of a modern industrial factory. In the foreground, a bright orange robotic arm is positioned over a conveyor belt. The background shows various industrial machines, pipes, and bright overhead lights, creating a sense of a high-tech manufacturing environment.

TU Wien Pilotfactory Industry 4.0

Welcome

What is a Pilotfactory?

- ❖ Demonstration factory for Smart Production and Cyber- Physical Production - System
- ❖ Testing area for intelligent production
- ❖ Lab for practical tests strengthening the industry of tomorrow



TU Wien Pilotfabrik

3 Main topics

- ❖ Strengthening **research** activity in the field of production technology
- ❖ Extension of the **education** activities in the academic education as well as in the in-service training for companies
- ❖ **Knowledge / Innovation transfer**

Application context

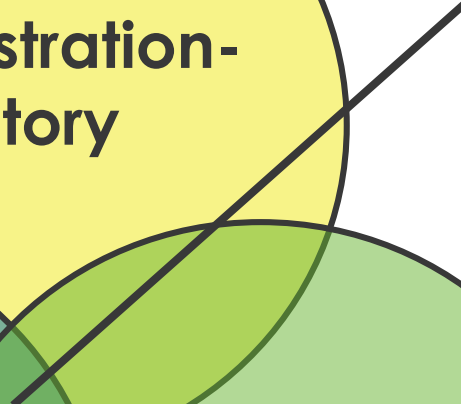
- ❖ Discrete, multivariate serial production up to production in the smallest quantities
- ❖ Entire product life- cycle, from design to assembly, in integrative approach
- ❖ Scientific know how shall be developed about optimal production techniques

Since 2015:
>10.000 visitors
2022:
38 guided tours
416 Visitors



**Demonstration-
Factory**

Pilotfabrik
Industrie 4.0



**Innovation-
Factory**

**Education-
Factory**



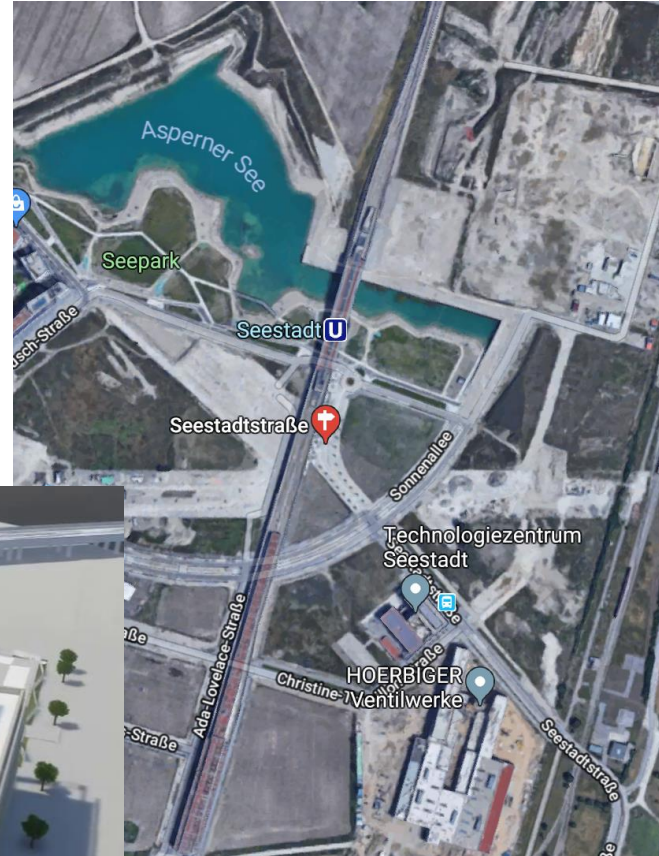
2022:
25 projects



2022:
8 workshop days

Location of the Pilotfactory

Smart building in a smart surrounding



- ❖ **Smart City** Seestadt Aspern
- ❖ The Pilotfactory was one of the first tenants of Vienna's **growing Technology Park**
- ❖ The Pilotfactory is an **innovation partner** of the a growing number of technology and innovation driven companies and Start-ups



Partner Network

Founding Partners



Current Partners



Funded by



Partner Departments of TU Wien



Holistic Example

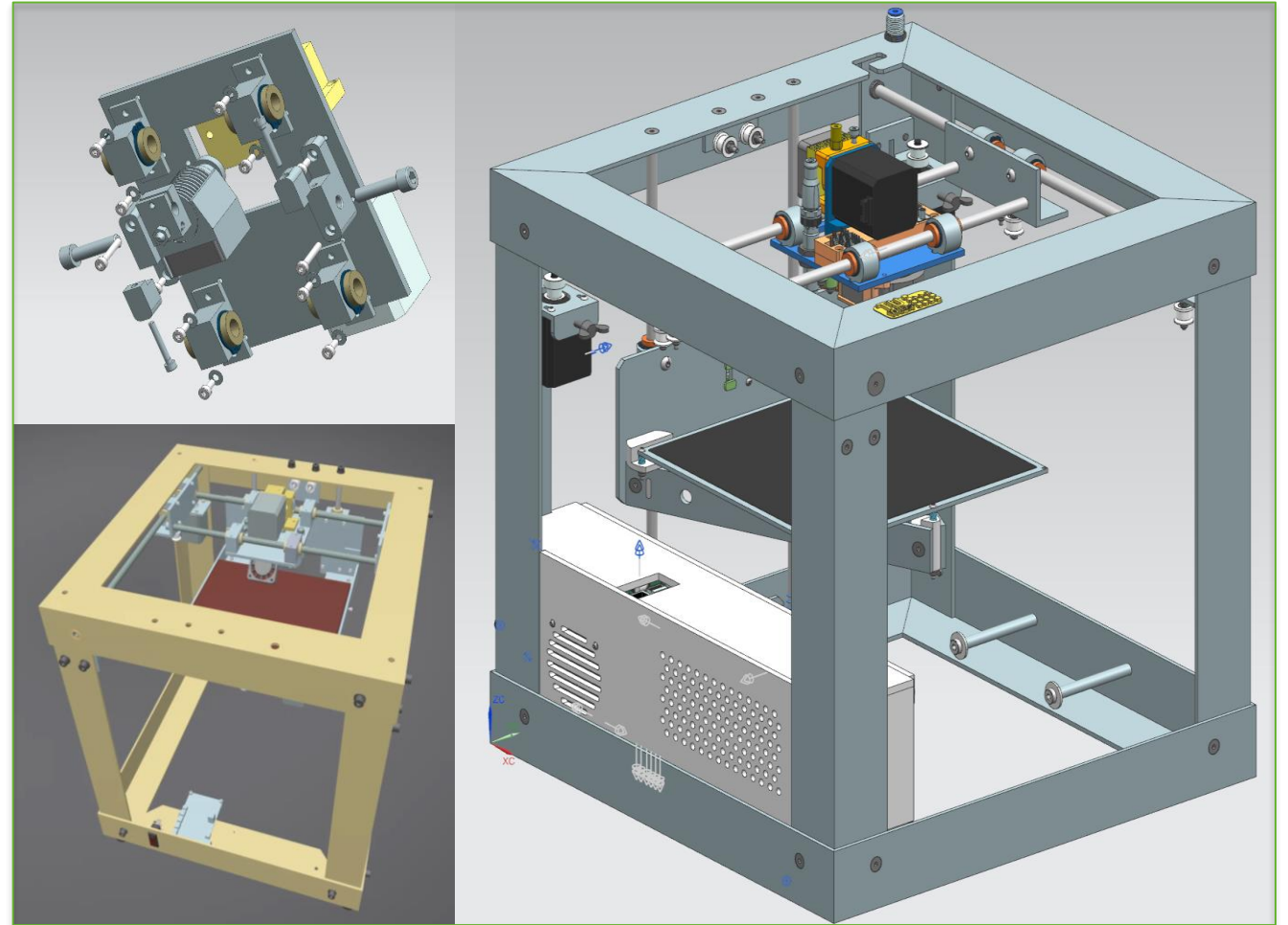
- ❖ Parts-Manufacturing (Lathe, Mill)
- ❖ Pre-Assembly/Assembly
- ❖ Materialflow, Intralogistics
- ❖ Smart Product

Why 3D-FDM-Printer?

- ❖ Mechatronic Product
- ❖ Configurable (Many Variants)
- ❖ Complexity
- ❖ Moderate Material-Use
- ❖ (Small) Sales possible

But:

- ❖ Only a Demonstration-Example!



IT Infrastructure and Virtualization	Manufacturing	Cyber-Physical Assembly-Logistic Systems
<ul style="list-style-type: none"> ❖ Multidisciplinary modelling of product and production system ❖ Operational parallel virtual simulation and optimization of real-time processes with direct synchronization of fine-grained real-time information 	<ul style="list-style-type: none"> ❖ Simulation and virtualization of manufacturing cells ❖ adaptive and modifiable manufacturing processes <ul style="list-style-type: none"> ❖ flexible configuration (Plug & Produce) ❖ Modelling & execution ❖ Knowledge- and function-based modeling in OPC UA ❖ Safety and security of reconfigurable equipment 	<ul style="list-style-type: none"> ❖ Cognitive Assistance Systems in Assembly and Logistics <ul style="list-style-type: none"> ❖ Digital and visual assistance ❖ Cooperative and Collaborative Robotics ❖ Human-Centered appropriate and work load-adaptive assembly ❖ Cell-oriented Assembly systems planed and controlled by DIGITAL TWIN

- ❖ Different industry projects with Comet-Zentrum CDP:
- ❖ Infrastructure for Security in Industry Research Lab: #safeseclab:
- ❖ Austrian-German Lighthouse Project for GAIA-X in Industry
- ❖ Member of the International Association of Learning Factories
- ❖ Several projects in EIT-Manufacturing
- ❖ Starting in November 2022:
 - ❖ European Digital Innovation Hub: AI5production
 - ❖ PilotLin-X: Austrian manufacturing Innovation Data Space (Gaia-X based)





Thank you for your attention!

Dipl.-Chem. Dr.rer.nat.

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Leitung TU Wien Pilotfabrik Industrie 4.0

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Pilotfabrik

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