

**SIEMENS**  
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Industrialize Additive Manufacturing



# Additive Manufacturing Experience Center

*Digi*  
**AMEC**

# Kick-start your AM journey

## Experience live the seamless digital Siemens AM value chain

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### Digital AM Experience Center

- Experience virtual the end-to-end digital AM value chain along a use-case from design to production
- Develop & prove customer value-add by using the seamless & integrated Siemens AM portfolio
- Information about the challenging industrial requirements for AM design, simulation & production
- Overview & insights into different industrial AM technologies
- Next level of industrialized AM with the cloud based, open IOT architecture MindSphere & collaboration platform AM Network



### Our offering

- Virtual hands-on area with demanding industrial AM parts
- Virtual demonstration of AM machines (DED Hybrid, Jetting, Multi-axis FDM robot, Virtual PBF)
- Deep dive into the seamless digital AM value chain & experience exchange with Siemens AM experts
  - NX Hybrid & NX Planar
  - Teamcenter
  - Simatic IT UA DM
  - Siemens automation solutions
  - AM factory simulation with Tecnomatix Plant Simulation
  - MindSphere with AM machine connection
  - Additive Manufacturing Network

# Different Use Cases show the value-add of industrialized Additive Manufacturing

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## Jetting

### Air Duct



- Optimize the function - Flow optimization with StarCCM+
- Function driven design: Experience Siemens NX as designer of a part
- „Design for AM“ with NX design checkers
- Print job preparation with automatic nesting
- Create print job for HP Multi Jet Fusion
- Simulate the factory size for your demands with Tecnomatix plant simulation

## Directed Energy Deposition

### Drone



- Preparation easily the part design for AM
- Define the production strategy in digital twin
- Get insights about AM special features for Multi-Axis AM production
- Simulate toolpath and generate machine code
- See DED Hybrid machine live printing
- Insights - optimize the DED printing process with innovative control functions

## Powder Bed Fusion

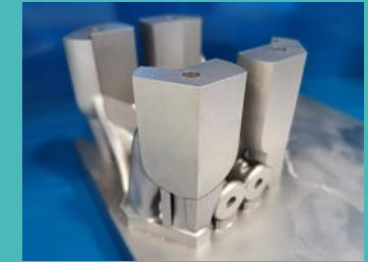
### PCS Main Swirler



- Flow optimization with StarCCM+
- Simcenter 3D: Structural FE analysis to define function specific printing parameters (40/80 micron) for higher build rate
- Digital Twin of product and production, integrated post processing and quality analysis in NX CAM
- Automated generation of serial numbers for full part traceability
- Build Process Simulation for first-time-right printing

## Powder Bed Fusion

### Injection Mold



- Fast generation of smooth topology-optimized design proposals
- Convergent Modeling for easy processing of faceted geometry with conventional feature commands
- Learn about multidisciplinary validation - Virtual tests of load cavities
- Print Job Setup for EOS M System using the EOS NX DRIVER as direct NX integration
- 1<sup>st</sup> time right: Process Simulation to predict distortion



# Live stations to experience the steps from first design to finished products including factory-setup and -management



# Siemens AM Experience Center Opening of expanded area in May 2019



## Experience seamlessly integrated Industrial Additive Manufacturing



Power



Aviation & Space



Automotive & Motorsports



Machine tool Industry



more than

**50**

Portfolio Elements of Digital Enterprise in action

more than

**350**m<sup>2</sup>

Digital workshop space

Use cases for

**4**

Leading industrial AM technologies live

- Use-Cases from Design to Deliver for all industrial AM applications
- Broad coverage of materials and leading machine technologies
- Experience the power of the digital twins and Siemens automation

## Additive Manufacturing Experience Center

Experience the industrialization of Additive Manufacturing with Siemens' software, automation and digitalization solutions



Increase workflow efficiency by **seamless integrated software and data consistency**



Print first time right by **digital twin of product, production & performance**



Increase machine quality, efficiency and provide worldwide **service** by TIA portfolio



**Accelerate industrialization** with value add services and a digital eco-system