

1 HUMAN-ROBOT COLLABORATION



Intelligent robotic assistants and their human co-workers interact via intuitive, multi-modal programming interfaces and share their workspace in safe and efficient industrial applications.

2 MOBILE MANIPULATION



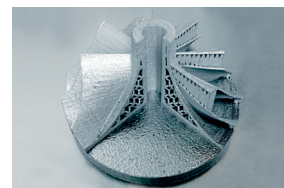
Mobile autonomous production units fitted for carrying out a variety of back-work like tasks help to overcome static shop floor layouts.

3 AUTONOMOUS ASSEMBLY



Intelligent autonomous robots assemble individually customized products using advanced planning algorithms, sensors and modular adaptive robotic skills.

4 ADDITIVE MANUFACTURING



Data analysis and digital tools improve manufacturing methods resulting in complex and individual parts with optimized geometries and improved component properties.

5 DIGITAL TWINS



An accurate digital model represents both the product and the optimized production processes, saving costs, time and engineering efforts.

6 DIGITAL GUIDANCE



Mass customization is a cornerstone in future manufacturing. Digital Guidance helps to minimize set-up-times by autonomously adapting facilities and controlling work-flows.

Factory of the Future is a cross-institutional project of the German Aerospace Center (DLR) aiming at the digital transformation of robot-aided manufacturing processes in Industry 4.0. The DLR initiative supports a comprehensive vstrategy by examining next-generation connected technologies, artificial intelligence and collaborative robot driven approaches – from early stage ideas through to already matured concepts in digitization. *Factory of the Future* applies cutting-edge methods in aerospace research to simplify and streamline production chains.

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Address: Münchener Straße 20, 82234 Wessling

E-Mail: factory-of-the-future@dlr.de

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Factory of the Future



Intelligent robots for digitally-driven production

Institute of Robotics and Mechatronics

Institute of System Dynamics and Control

Institute of Structures and Design

Institute of Materials Research

Institute of Vehicle Concepts

Institute of Optical Sensor Systems

Institute of Composite Structures and Adaptive Systems

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