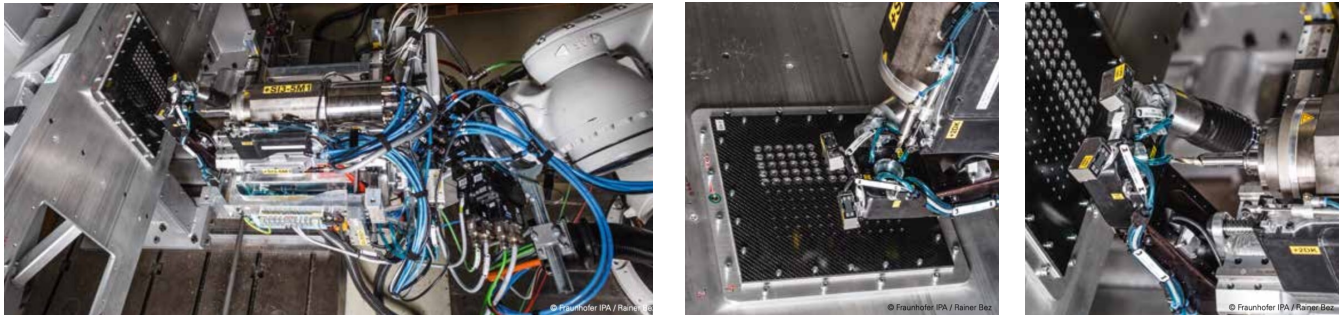




Institut
Produktionstechnik und
Automatisierung

Fraunhofer-Institut für Produktionstechnik und Automatisierung (IPA)



Fraunhofer IPA conducts research in the field of manufacturing engineering, e.g. for light-weight materials such as CFRP and titanium. In addition to machining and cutting, the scientists are working on automation and quality assessment.

For aerospace applications and in cooperation with BA Assembly & Turnkey Systems GmbH and J. Lübbering GmbH, Fraunhofer IPA has developed a robotic based automated drilling and riveting unit for the processing and assembly of multi-material aircraft shell components. An interdisciplinary team of three departments, such as "Lightweight construction technologies" elaborated:

- Design and development of a lightweight end effector for drilling and riveting
- Qualification of drilling tools and development of the manufacturing process
- Modeling and implementation of algorithms to increase accuracy of robot positioning
- Development of feature-based optical methods for component referencing

The benefits are: improved positioning accuracy, even for curved surfaces; implementation of thorough quality control when drilling and riveting; and prolonged tool life and process reliability.

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Facts & Figures

Employees	> 1.000
Turnover	70,8 Mio. EUR