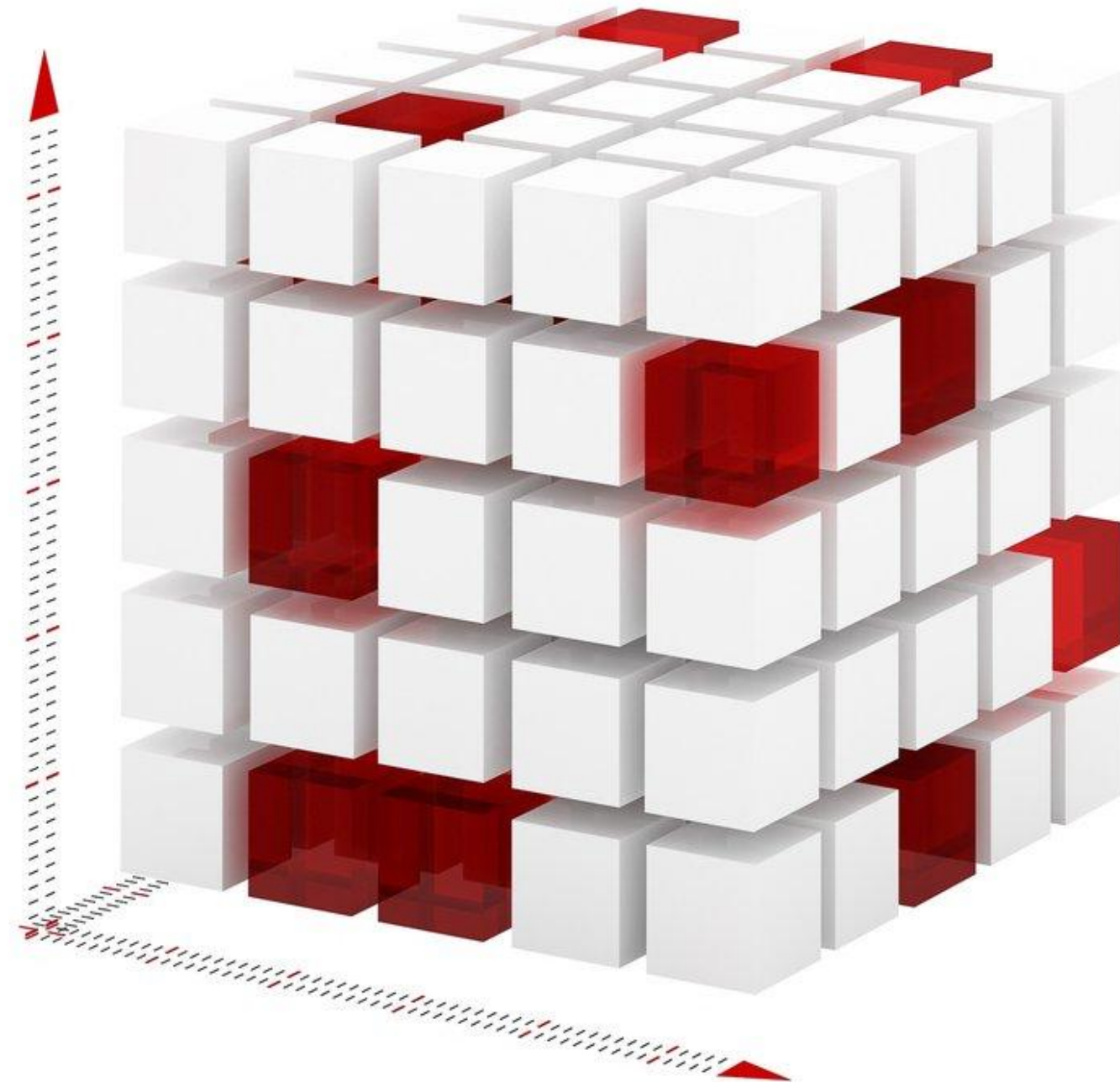




Industry 4.0 Aerospace Industry

How to make your tool
support your work

www.sarissa.de



Sarissa

Assistance Systems

Simply the best quality assurance



Sarissa Assistance Systems

Sarissa GmbH offers high-performance sensor and software systems and is the market leader in the field of ultrasonic localization.

Sarissa's advanced ultrasonic-based assistance systems for millimeter-precise position determination and worker guidance enable error-free production and quality assurance during the value creation. They are used in production and assembly in the automotive, aerospace and other industries.

No errors. Flexible processes. Highest quality.

Sarissa PositionsBox Gen2 determines the position of hands and hand-held tools in three-dimensional space in real time. With the QualityAssist software, the system supports the worker in his activities with innovative guidance and laser visualization.



The Sarissa system can manage any number of screwdriving positions and any number of tools in real time. In addition, several workers can be guided simultaneously by a laser projector.

Sensors and applications

Error prevention during value creation

Zero-defect production

Smaller assembly costs

No final inspection



Riveting
Drilling
Assembly
Picking
Sorting
Tightening

Fewer complaints

Coverage for
product liability

Real-time
efficiency control



Functional principle

Two tasks, one solution

Position transmitter...

...on/in the tool

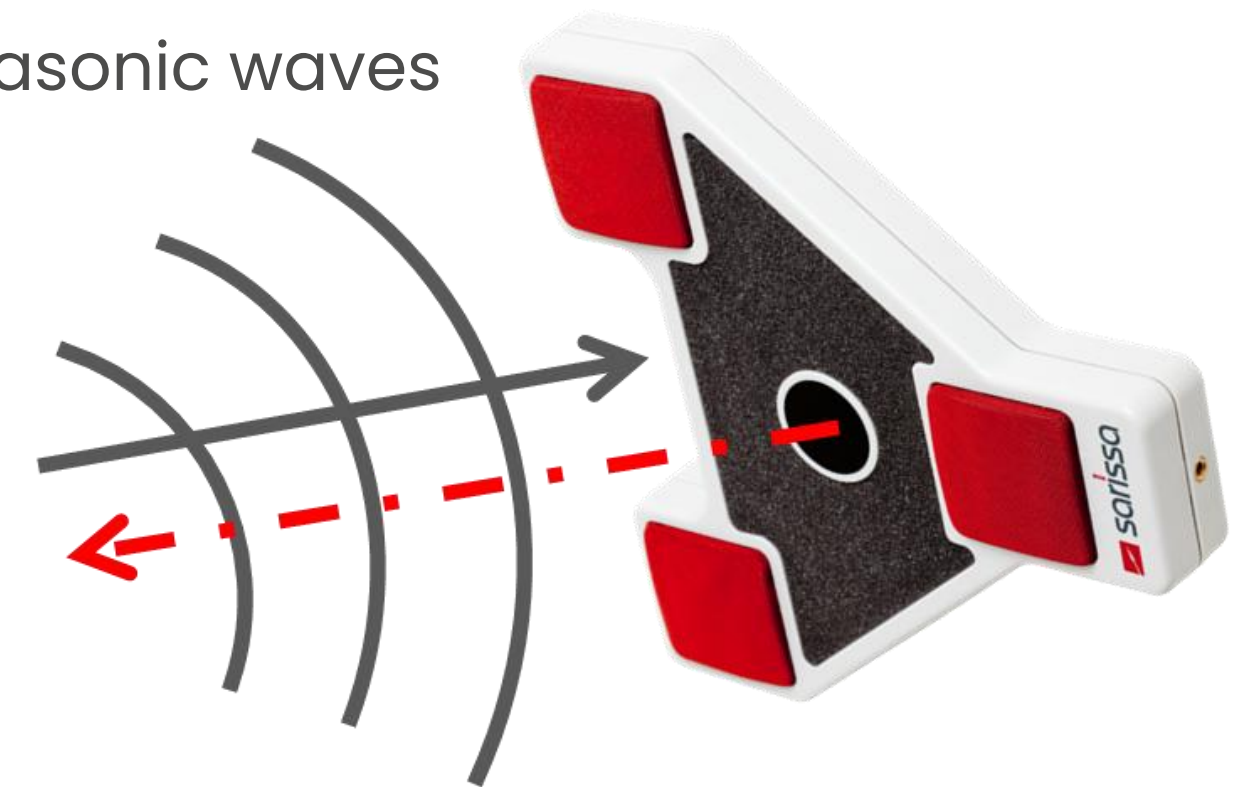


...on the hand

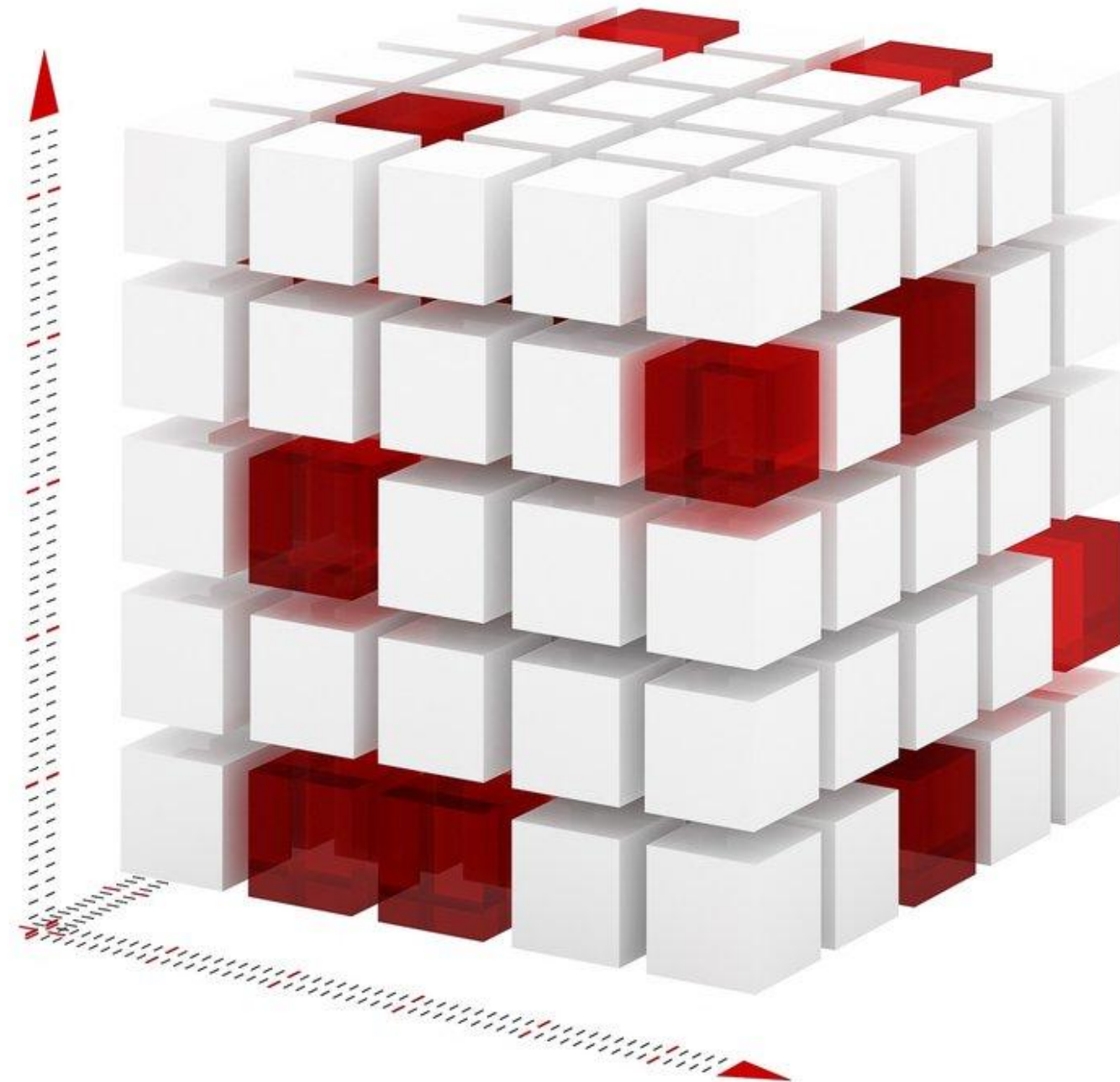


Position receiver

Ultrasonic waves



Information exchange



Application example: LPS PositionBox with tools at project OneWeb



Application Example

Aerospace industry OneWeb

**AIRBUS DEFENCE AND SPACE STARTS
A NEW ERA IN SPACE
WITH ONEWEB CONSTELLATION...**

**A REVOLUTION
IN SATELLITE
MANUFACTURING**

No one has ever built a satellite in one day... we will build several every day!

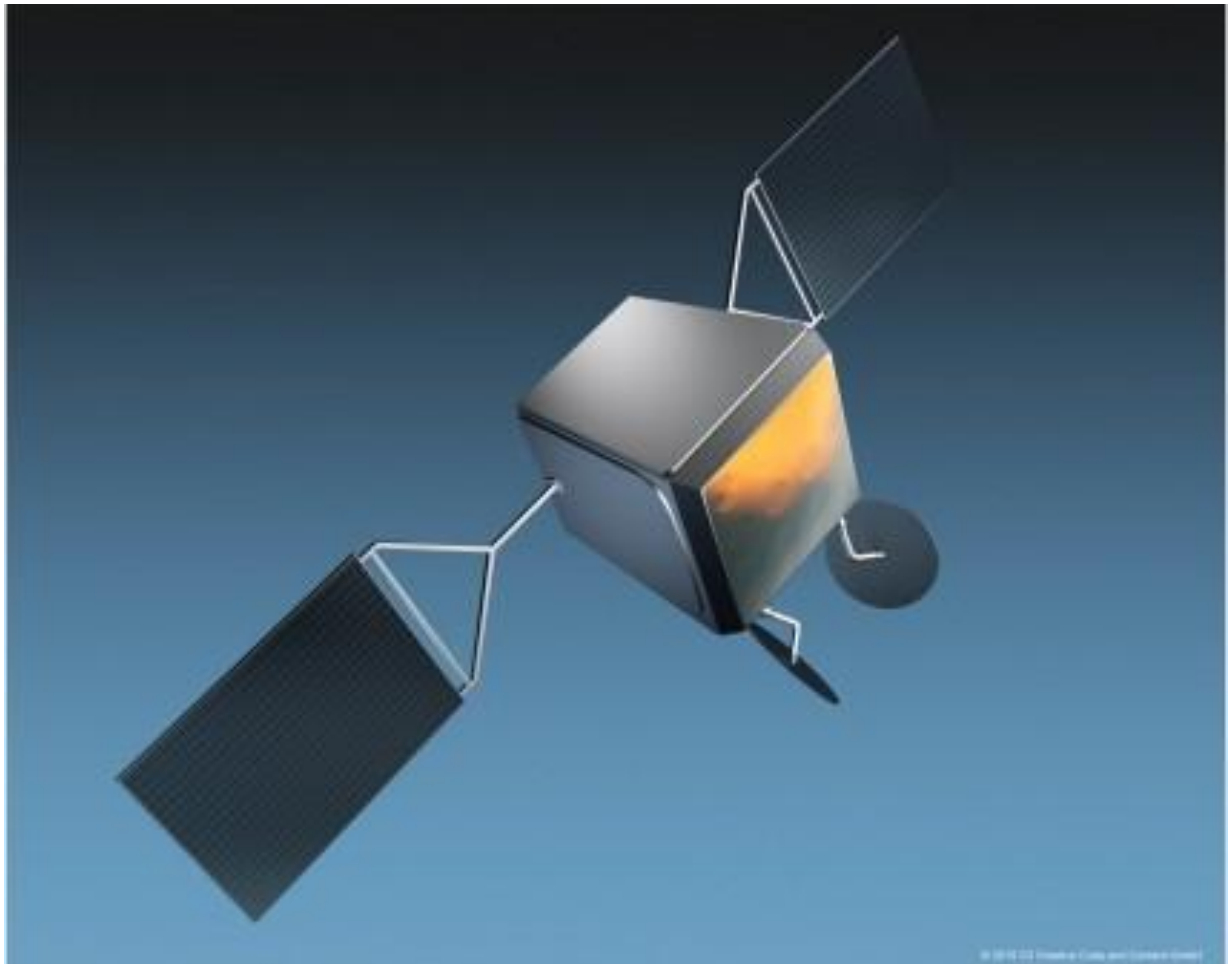
TOTAL COVERAGE

Internet to everyone, everywhere on Earth

GLOBAL LOW EARTH ORBIT CONSTELLATION

Providing high-speed internet connectivity equivalent to terrestrial fiber-optic networks





Facts & Figures

 size

 less than **150 kg**

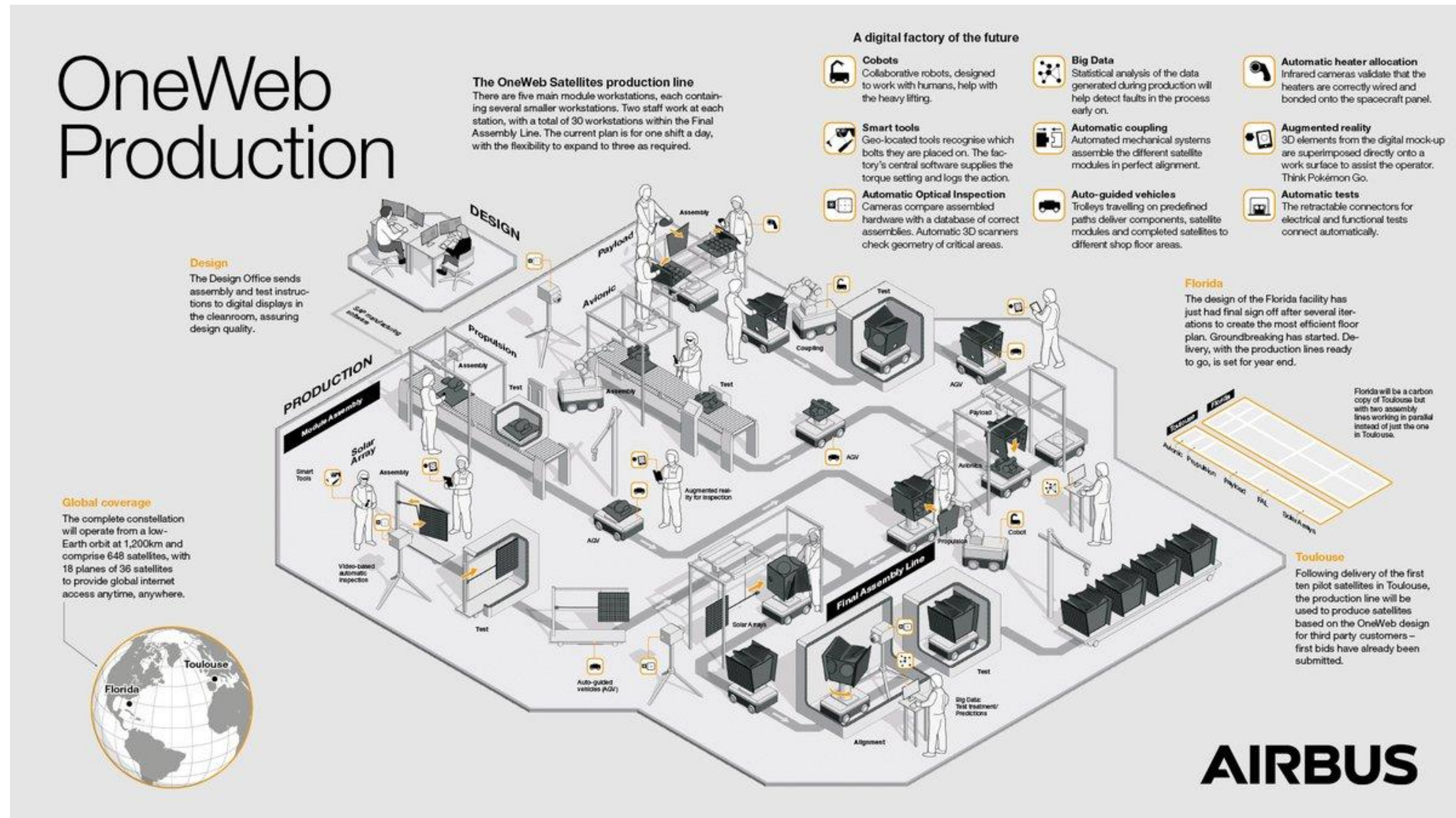
 up to **4** built every day

 **900** satellites to be built



Application Example

Aerospace industry OneWeb



Application example

Aerospace Industry



Application example

Aerospace Industry



Application example

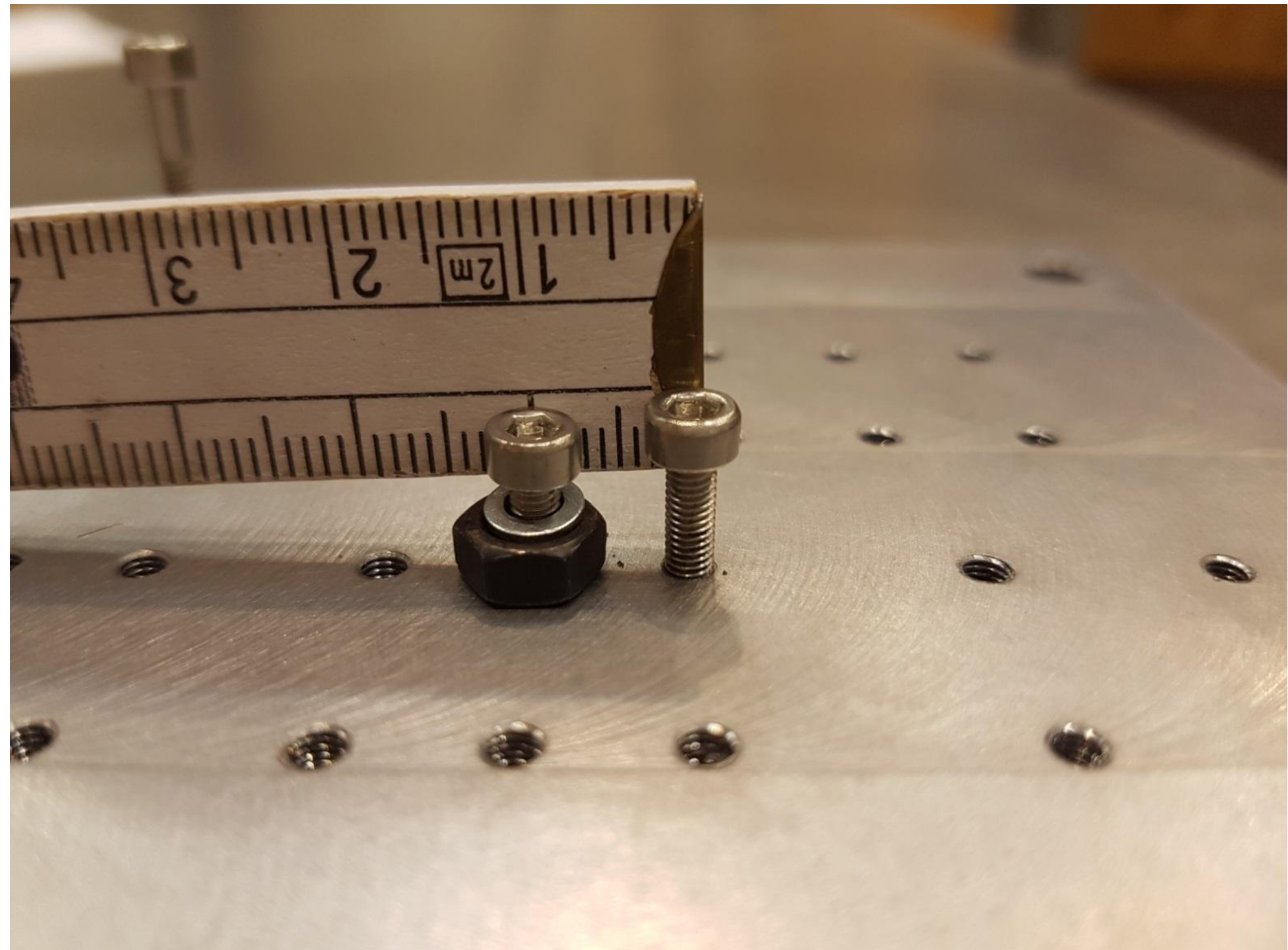
Aerospace Industry



Application example

Aerospace Industry

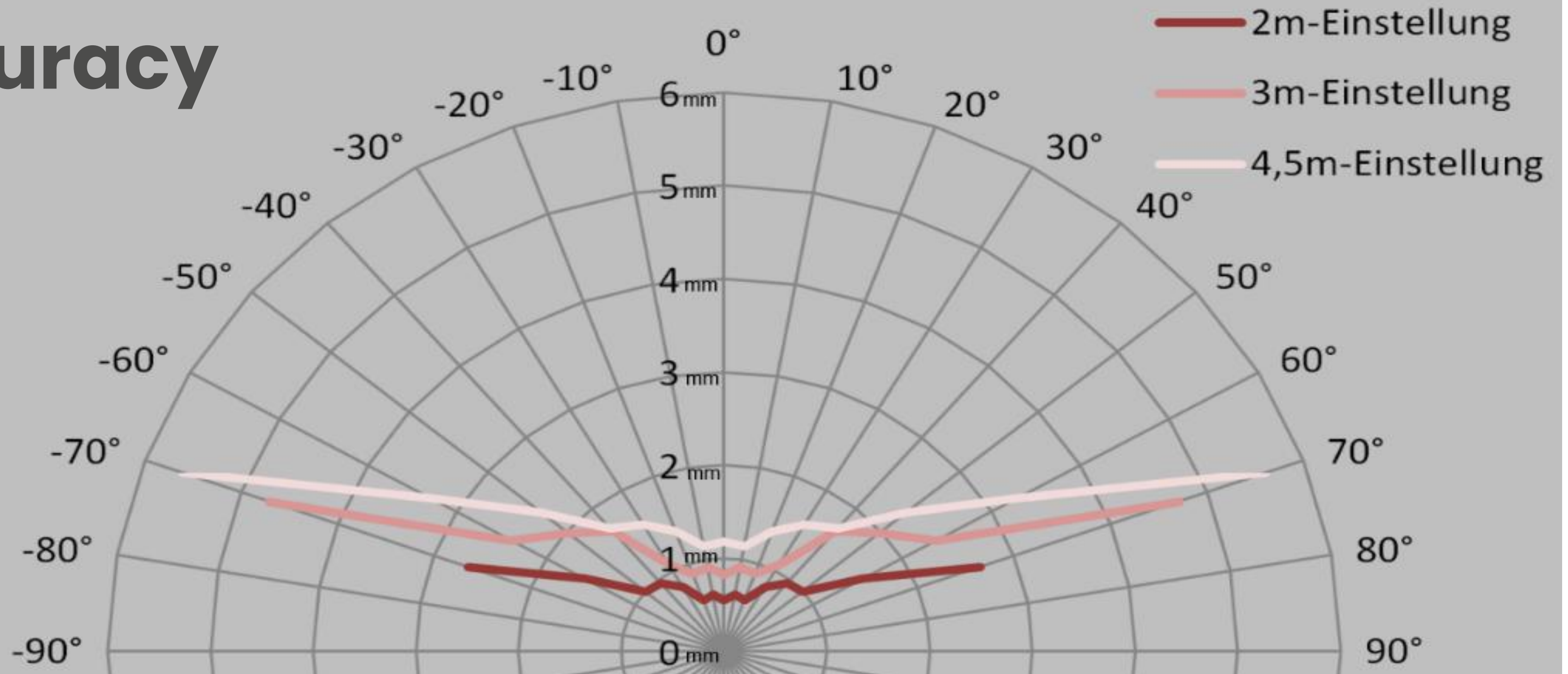
Special challenge:
Accuracy



Application example

Aerospace Industry

Accuracy

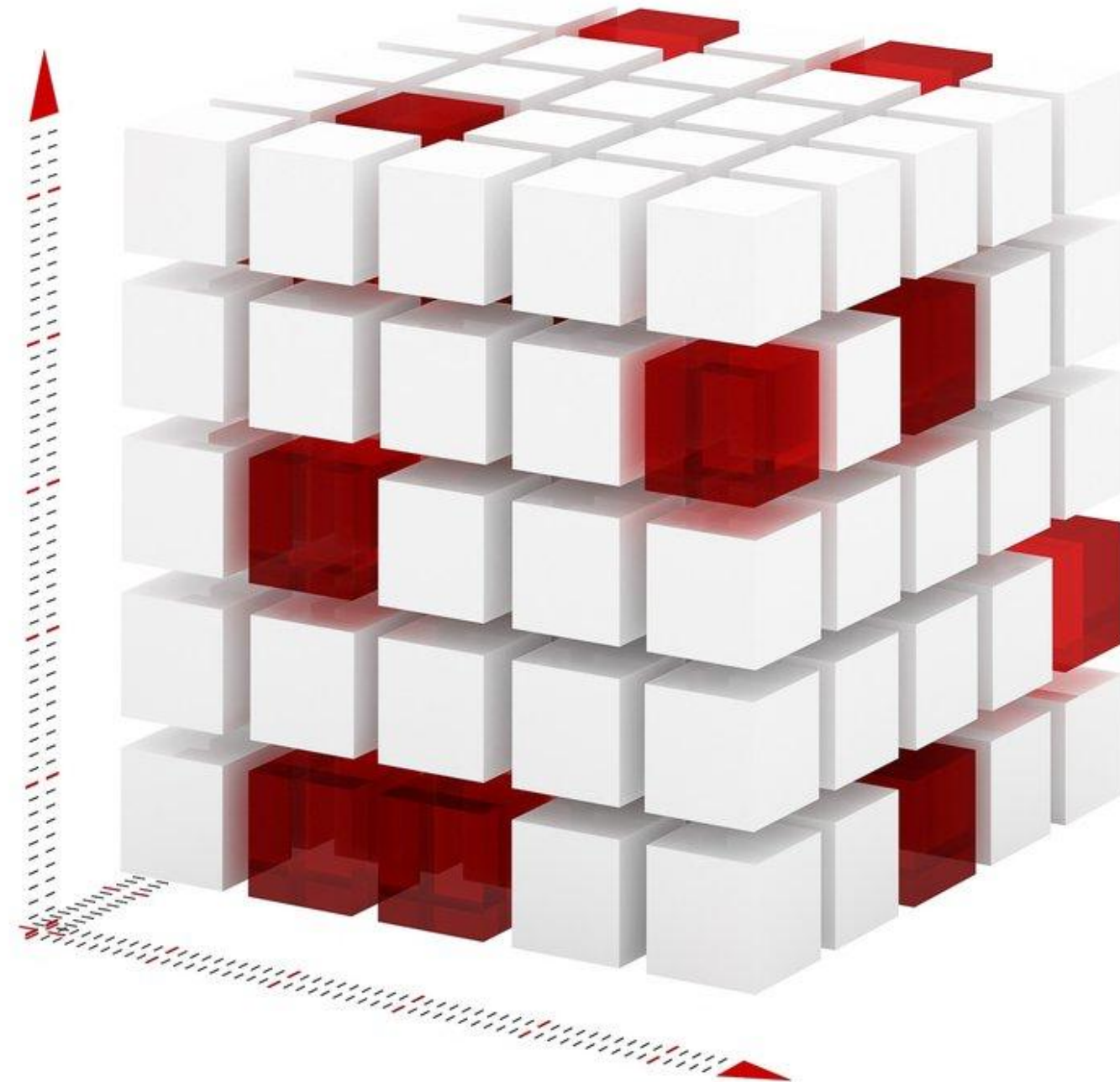


Application example

Aerospace industry

Position determination for tools in satellite assembly

- Three assembly lines (2 x USA, 1 x France)
- Sixteen receiver in six assembly stations
- Fifteen position transmitter on tools
- With moving workpiece the tool sensor refers to a moving coordinate system and calculates its position
- Connected to customers MES



Scope of application: proof of concept at project SeMoSys

Funded by

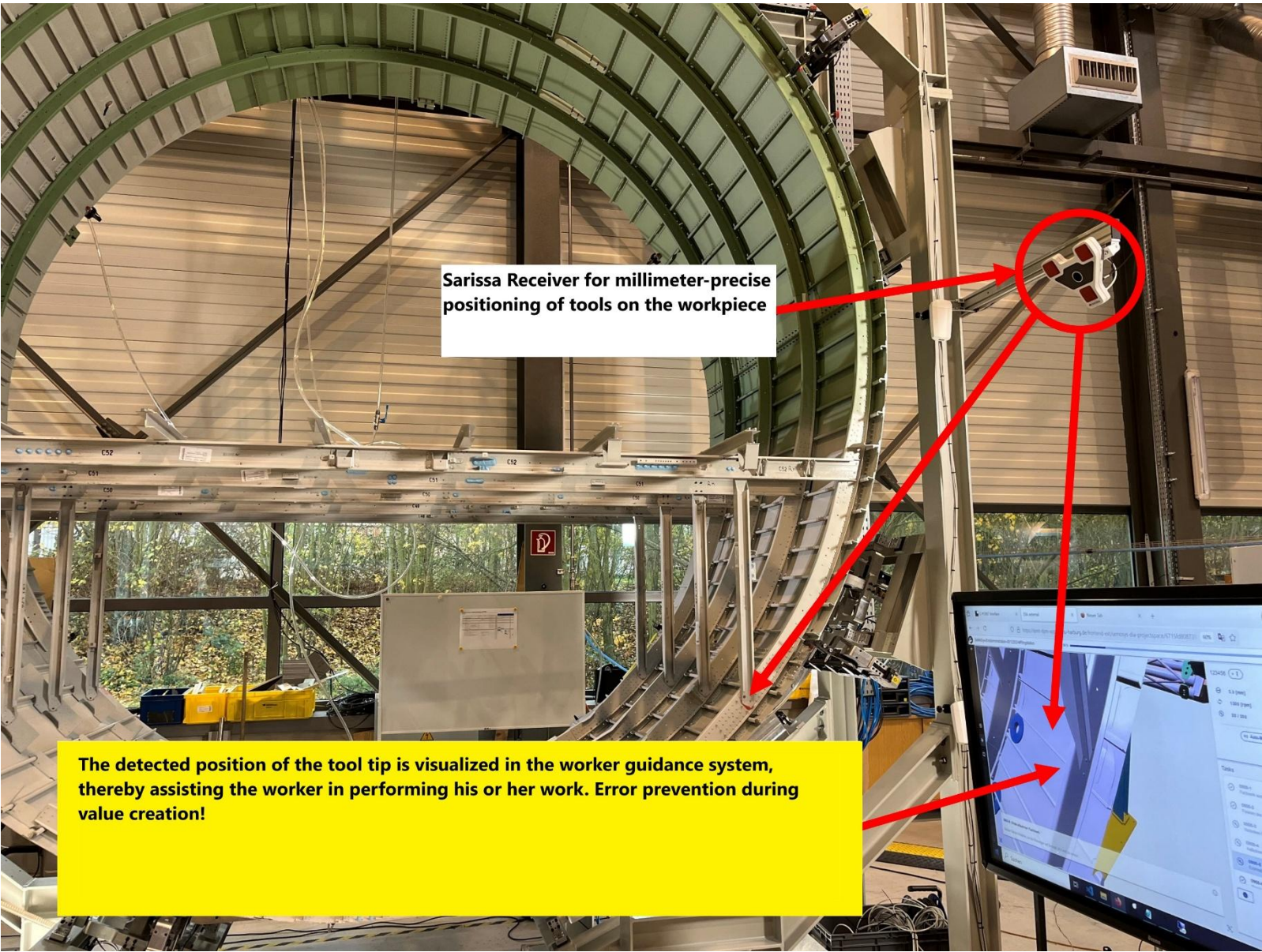
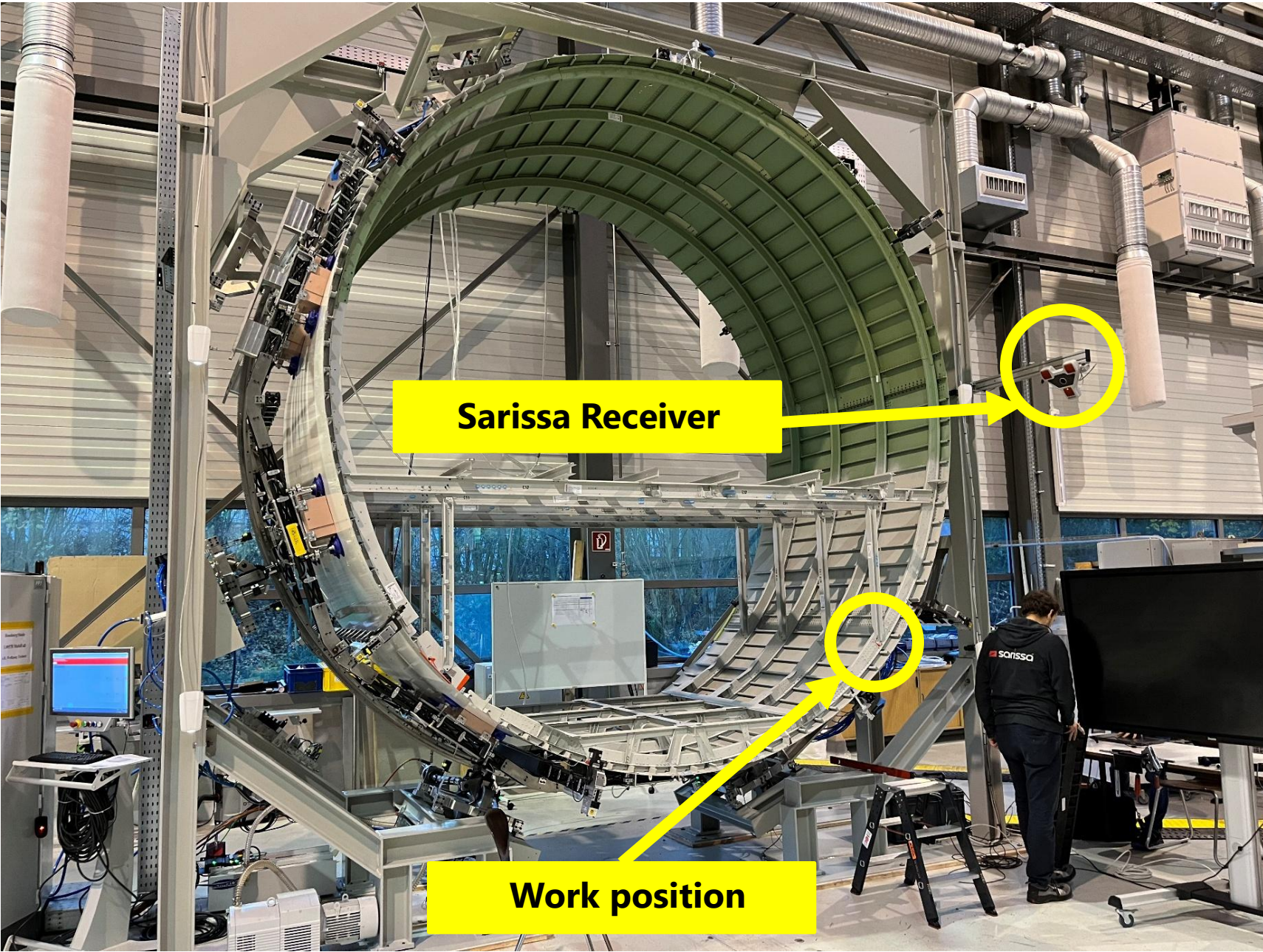


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und Energie

Scope of application

Aircraft industry

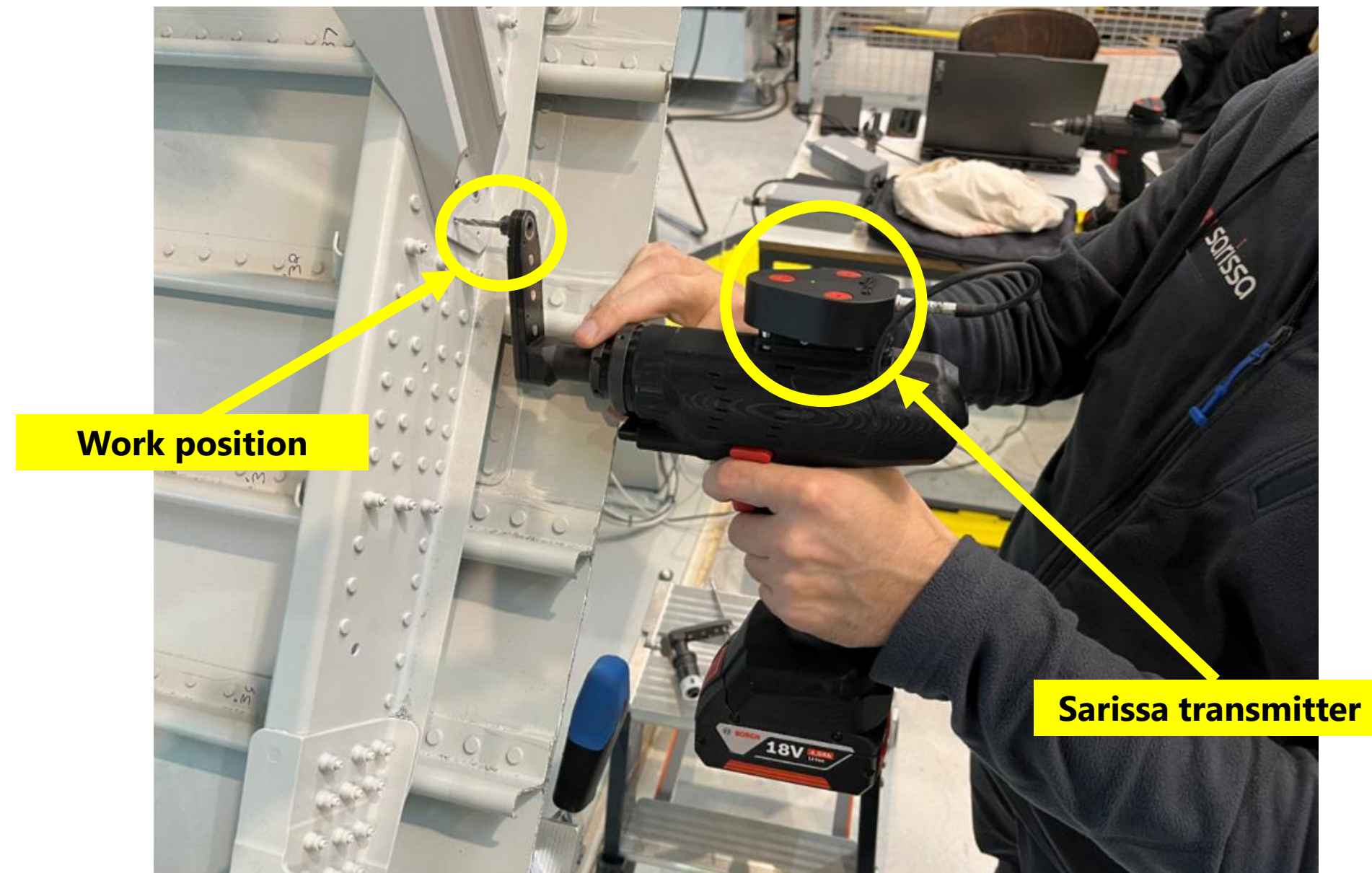
Proof of concept at project
SeMoSys

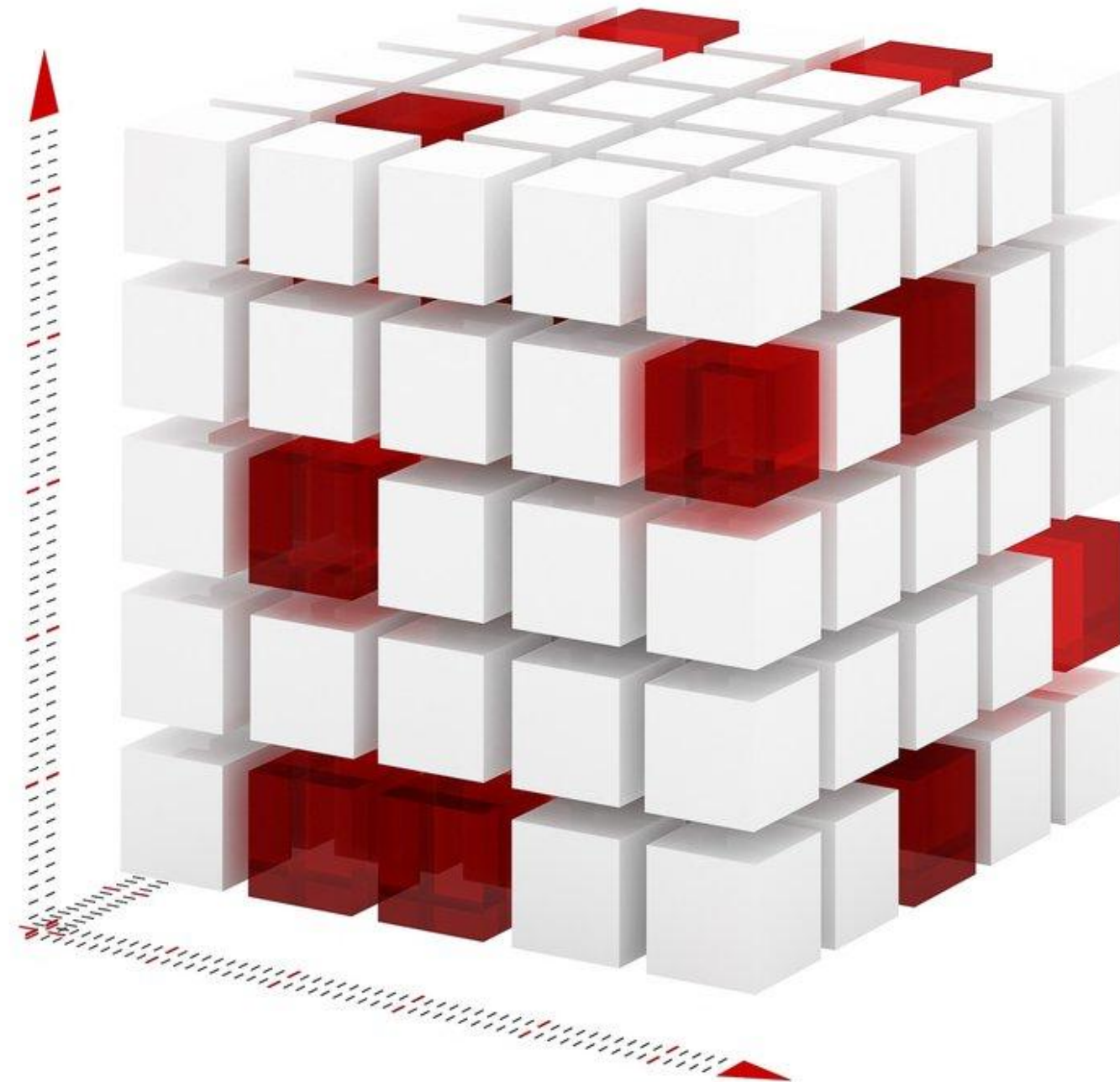


Scope of application

Aircraft industry

Proof of concept at project
SeMoSys





Integration of Sarissa into tools LPS PositionBox in project smartADU 2020

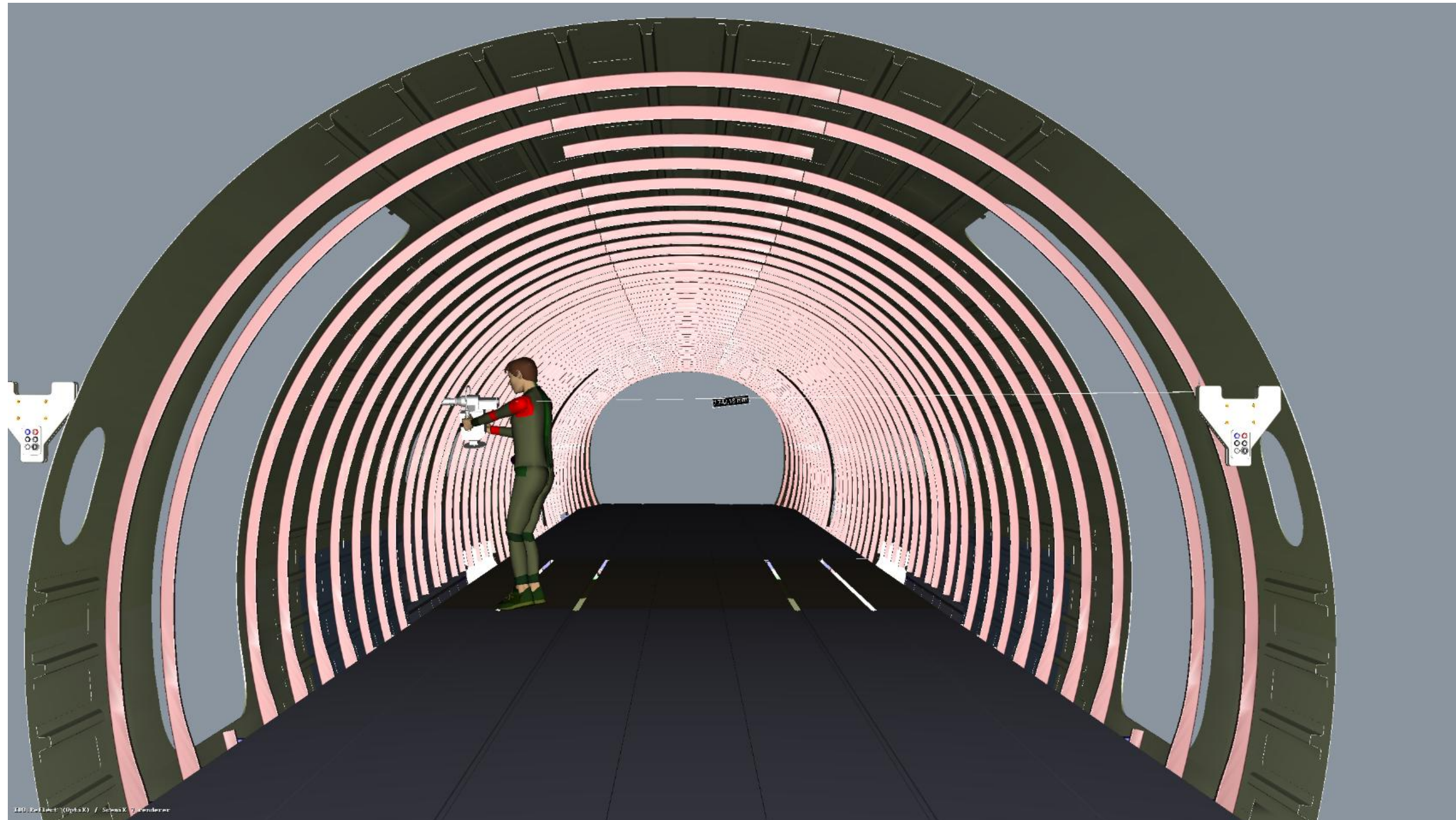
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Aerospace industry

LPS simulation



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Joint Development Project SmartADU2020

Application of Sarissa's Ultrasonic Position Measurement System

How does it work?

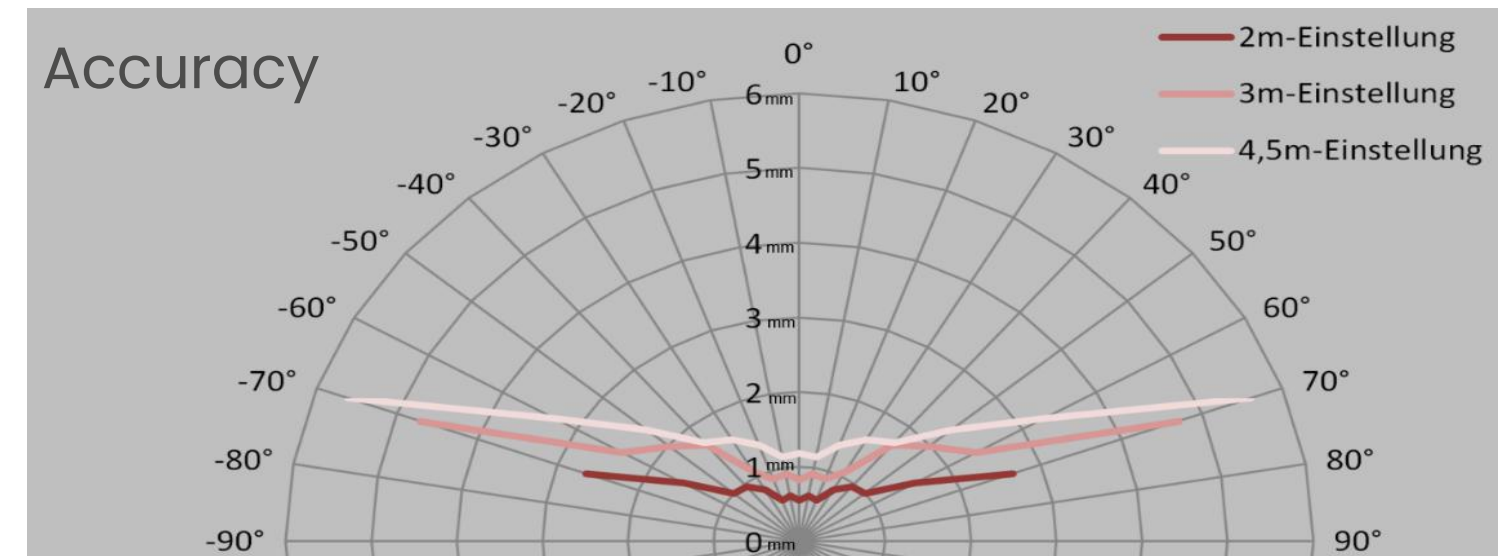
- Ultrasonic transmitters emit inaudible and individual sound sequences
- Distance to 3 ultrasonic receivers (Sarissa PositionBox) is measured
- Calculation of transmitter-position by trilateration

Why Ultrasonic?

- ✓ Robust position measurement compared to image & laser systems
- ✓ High accuracy (< 6 mm) compared to ultra-wideband (≈ 0.5 m)
- ✓ Enables position measurement of moving targets

Where is it used?

- app. 700 installations worldwide
- Automotive industry, satellite manufacturing and many more... ↓



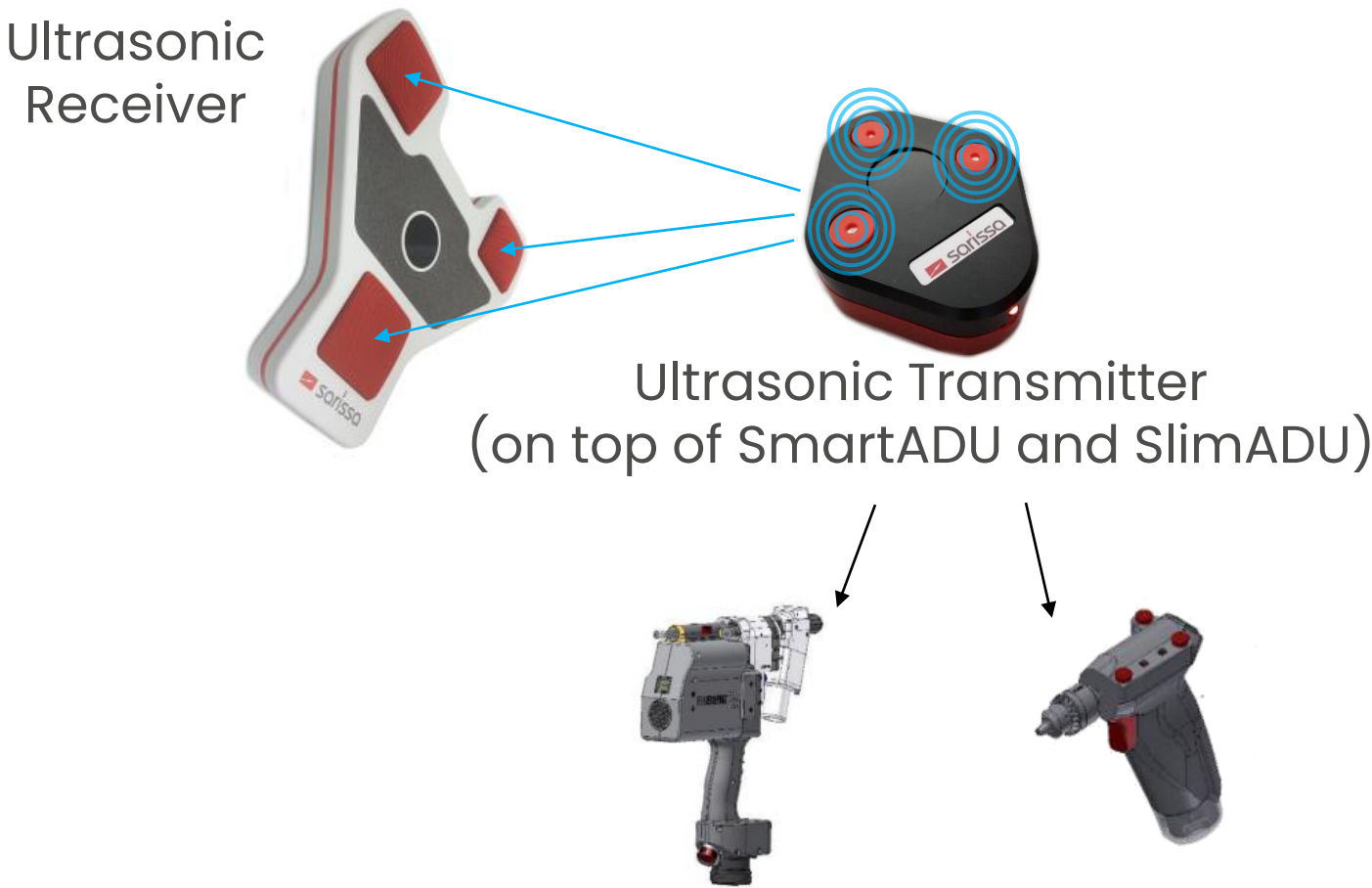
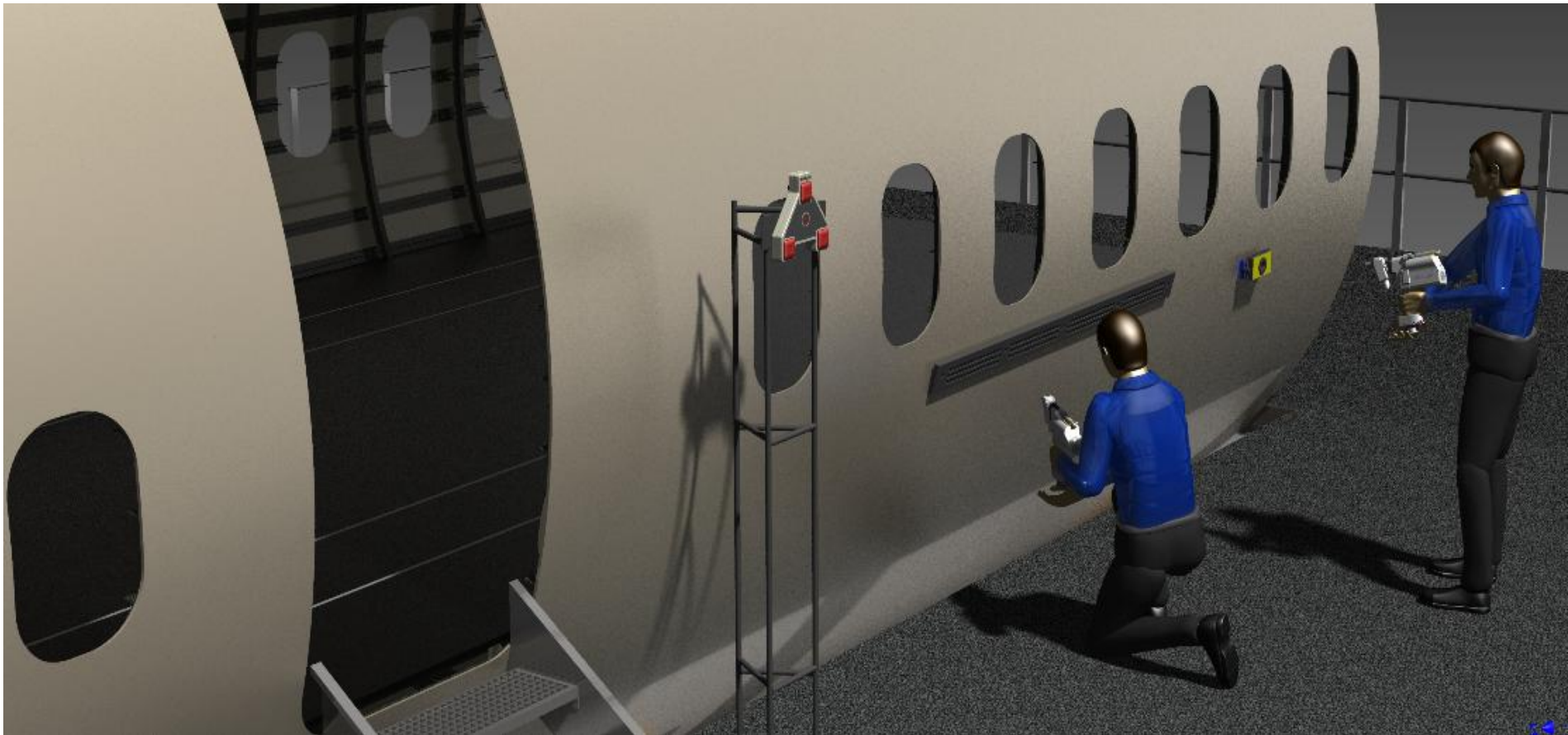
Partners and Associates



Joint Development Project SmartADU2020



Application of Sarissa's Ultrasonic Position Measurement System



Partners and Associates



Project Scope and Benefits

Project Scope

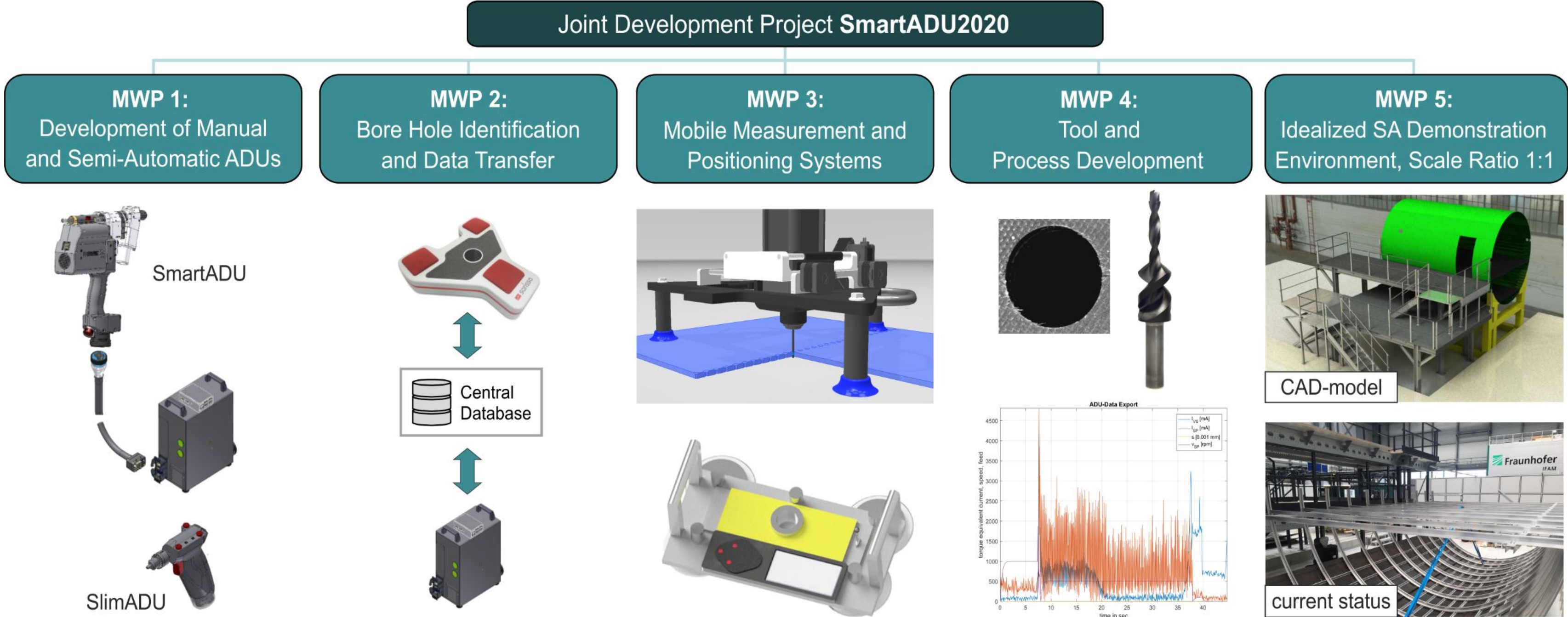
- Smart semi-automatic electric ADUs (SmartADU) and manual drills (SlimADU)
- Ultrasonic position measurement of SmartADU and SlimADU
- Digital guidance for pilot holes of drill templates
- Comprehensive machine-integrated monitoring functions
- Dynamic adaptation of cutting parameters
- Quality verification by portable probing system

Machine and Process Benefits

- ✓ Automated quality control and documentation
- ✓ Reliable quality and chip removal by controlling the peck-feed amplitude
- ✓ Minimization of rework through burr- and delamination-free hole exits
- ✓ Reduction of cleaning (dry drilling / intelligent minimum lubrication)
- ✓ Exploitation of tool life / reduction of tool cost
- ✓ Drastic main time reduction, especially for CFRP/Ti-stacks
- ✓ Completeness and sequence control through position measurement

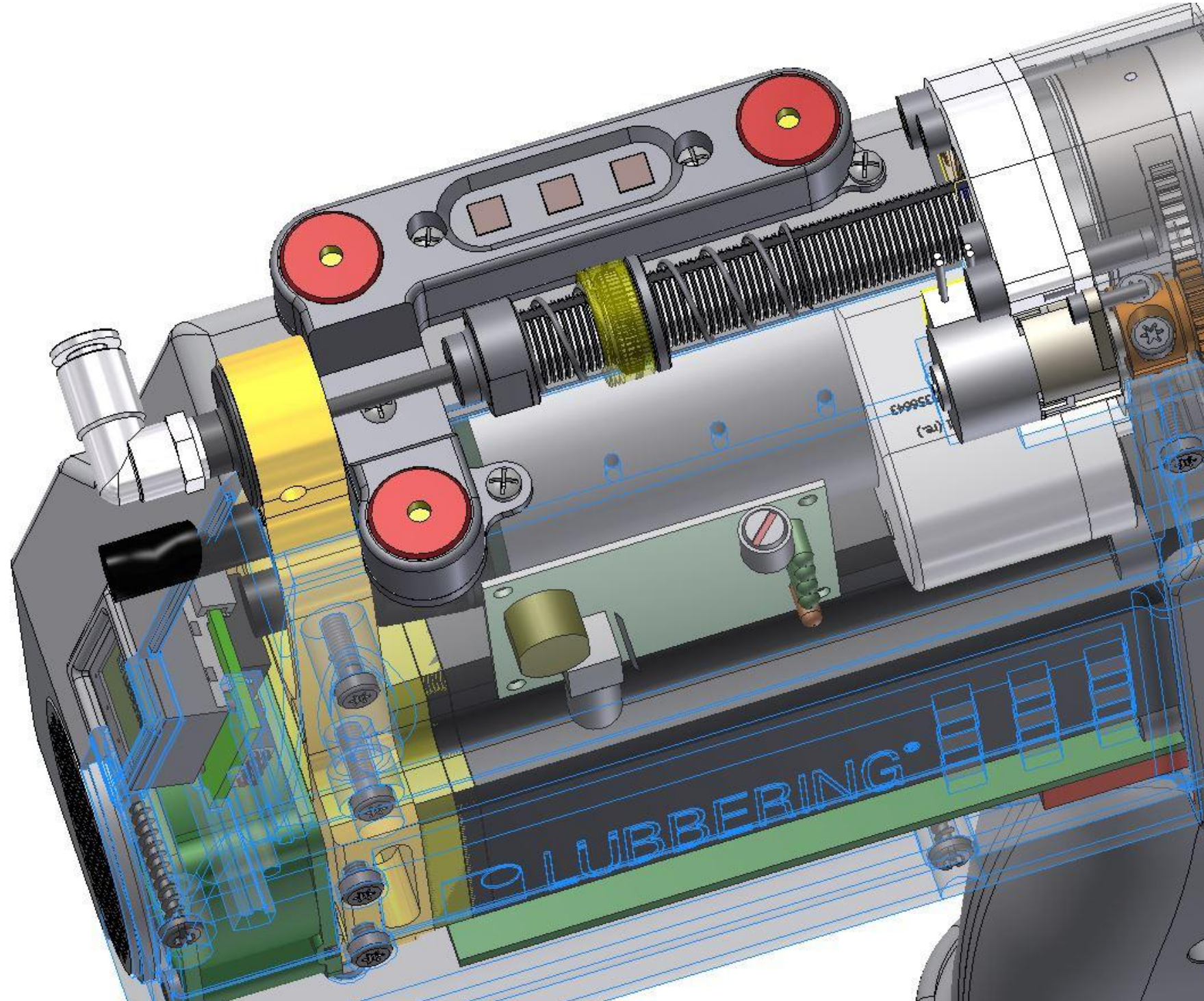
Joint Development Project SmartADU2020

Project Scope and Benefits



Integration into tools

LPS PositionBox



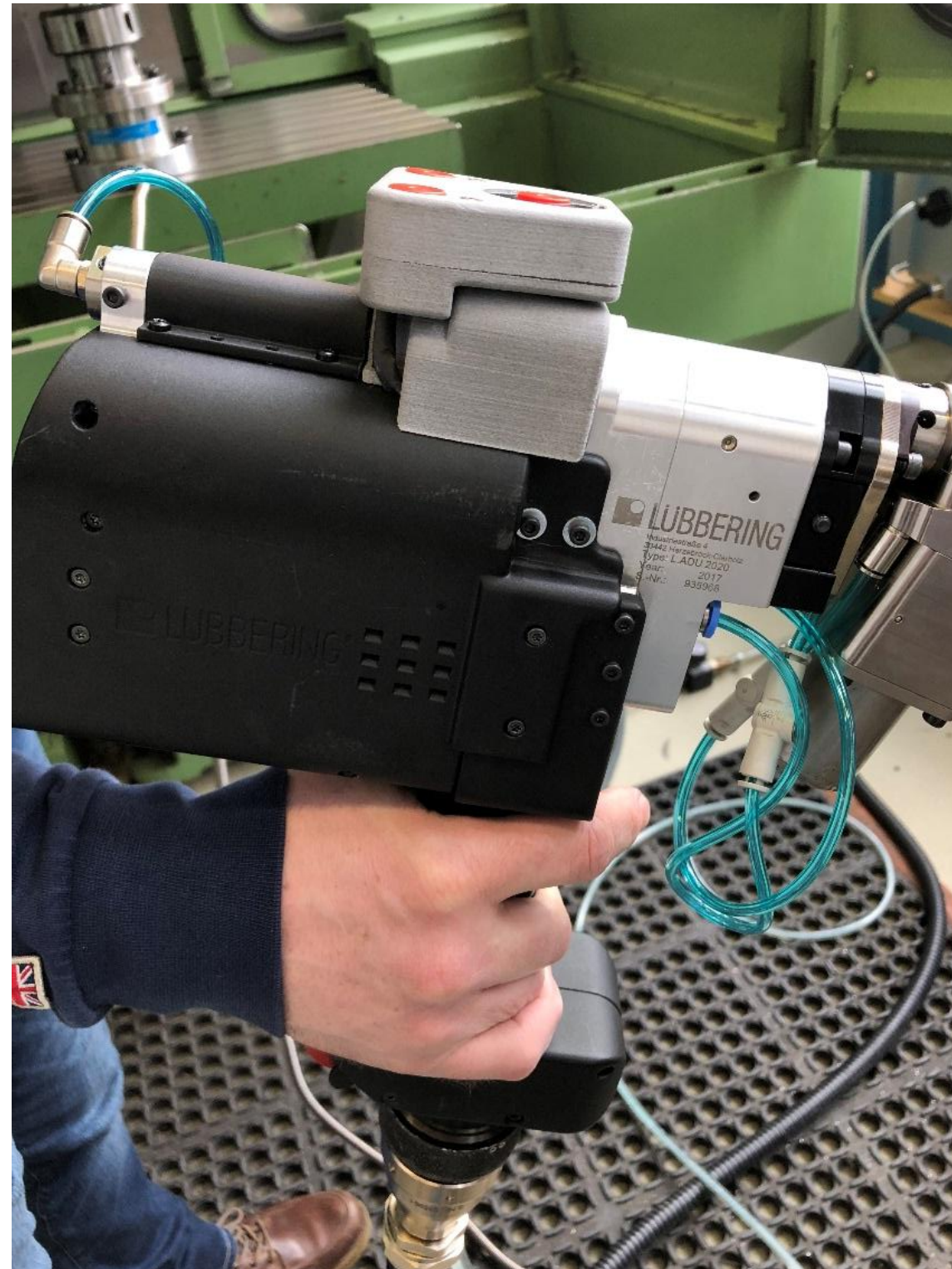
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Integration into tools (prototyp)

LPS PositionBox



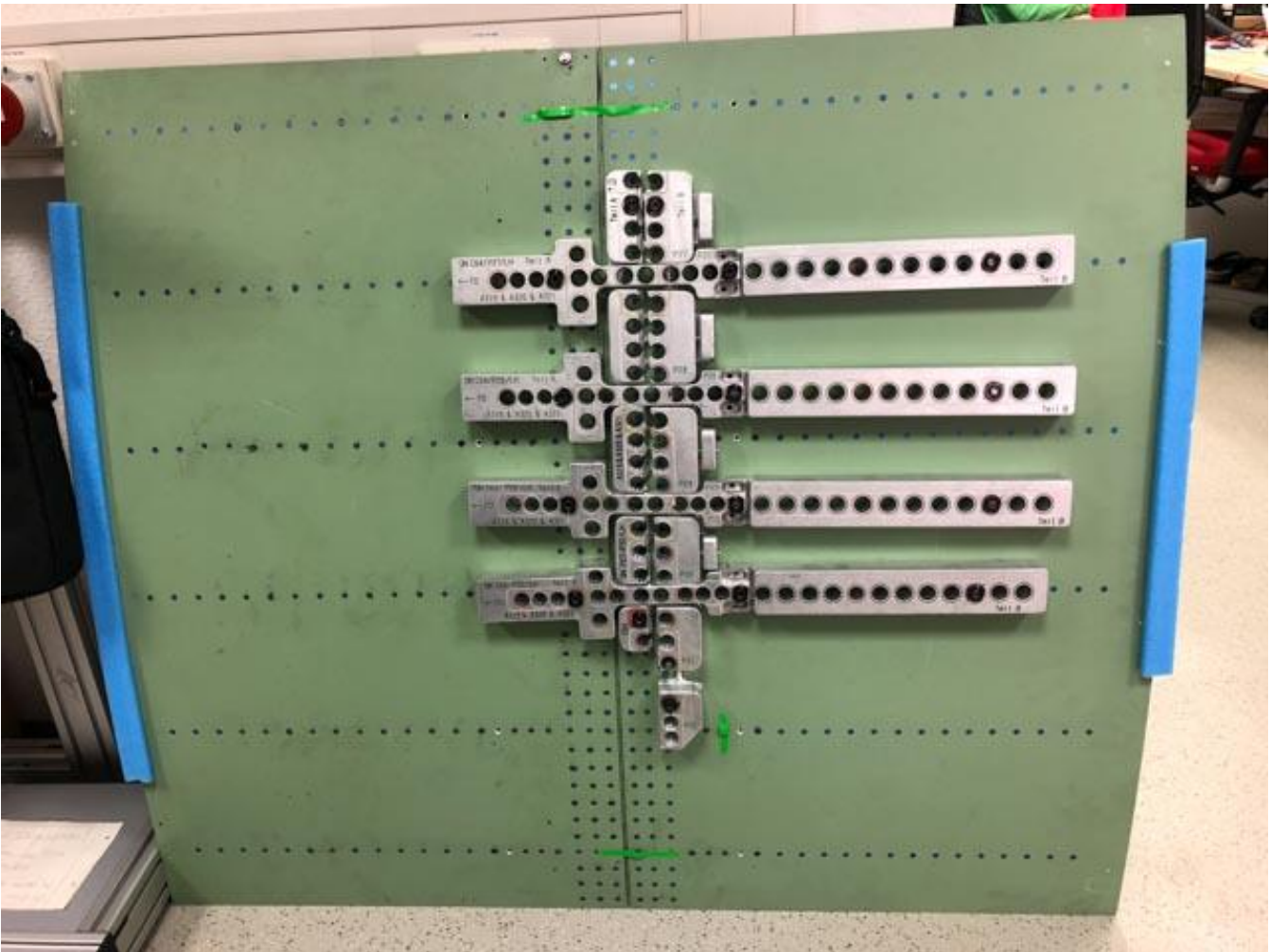
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Aerospace industry

LPS PositionBox



ILA Show-Demonstration,
Berlin 2018

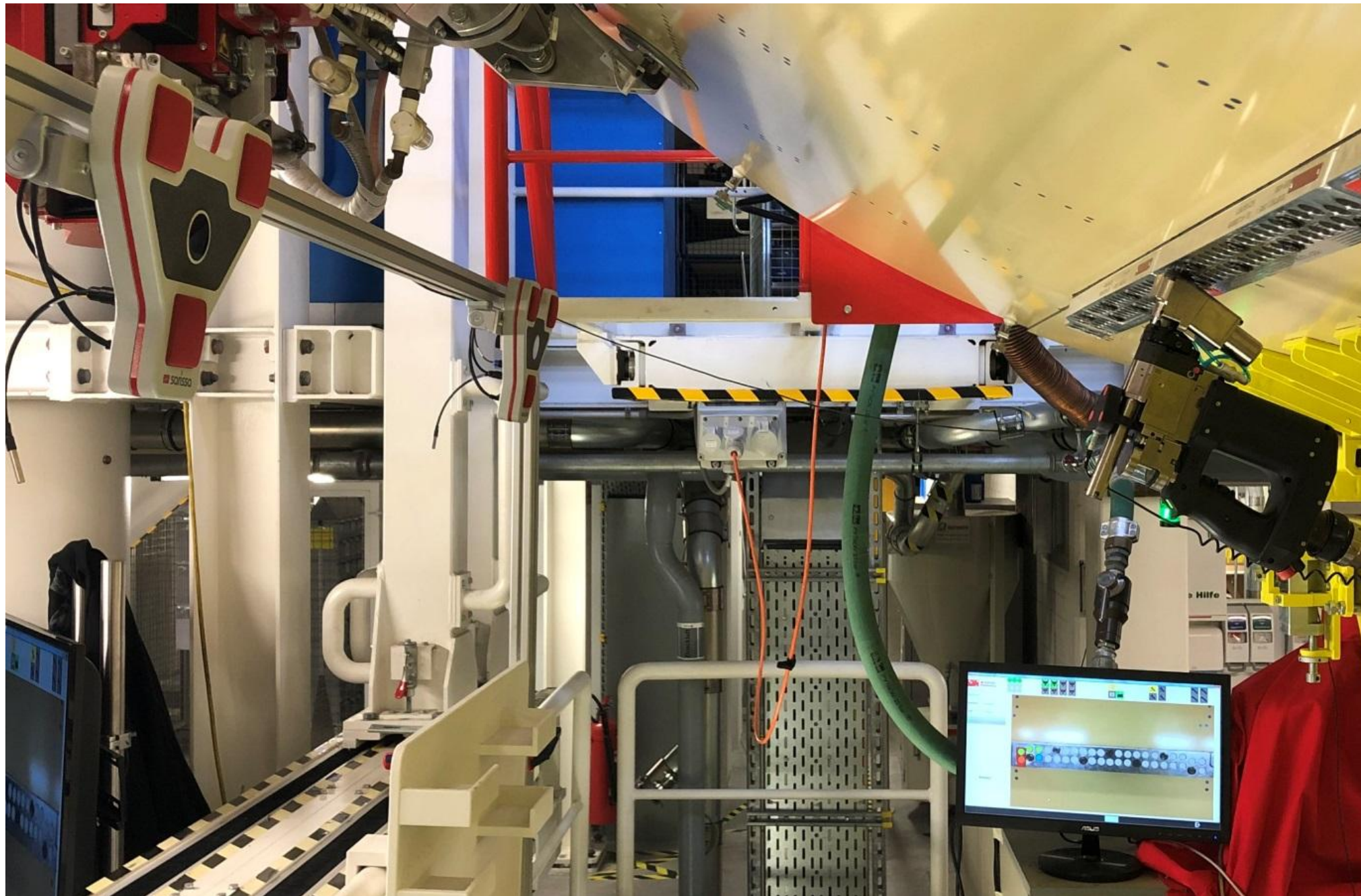


State Secretary
Mrs. Katrin Schütz visits
Sarissa booth



Aerospace industry

LPS PositionBox



Engineers and managers of Airbus visited our presentation in Hamburg.

Sarissa Systems in combination with L.ADU of LÜBBERING.

Aerospace industry

Summary and recap

1. Position data, time stamp and drill parameters stored together (feed rate, number of revolutions, torque)
2. You can be sure that no hole will be missed
3. No second installation of the template
4. No second try in an already drilled hole
5. Increase the lifetime of tools
6. Avoid expensive concessions

Thank you for your interest!

If you have any questions, please do not hesitate to contact us!



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