



GLOBALRTM

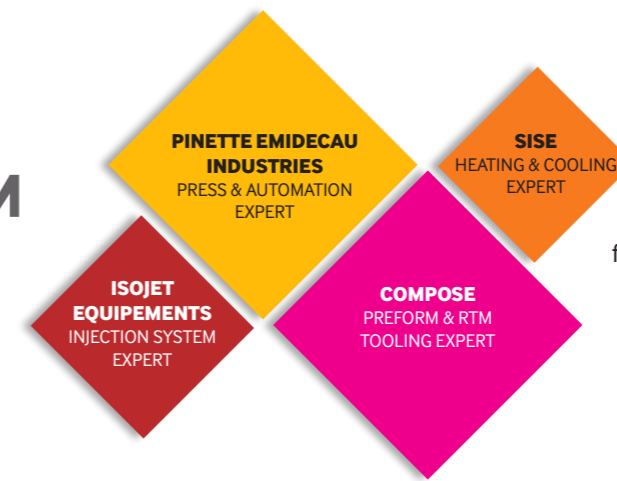
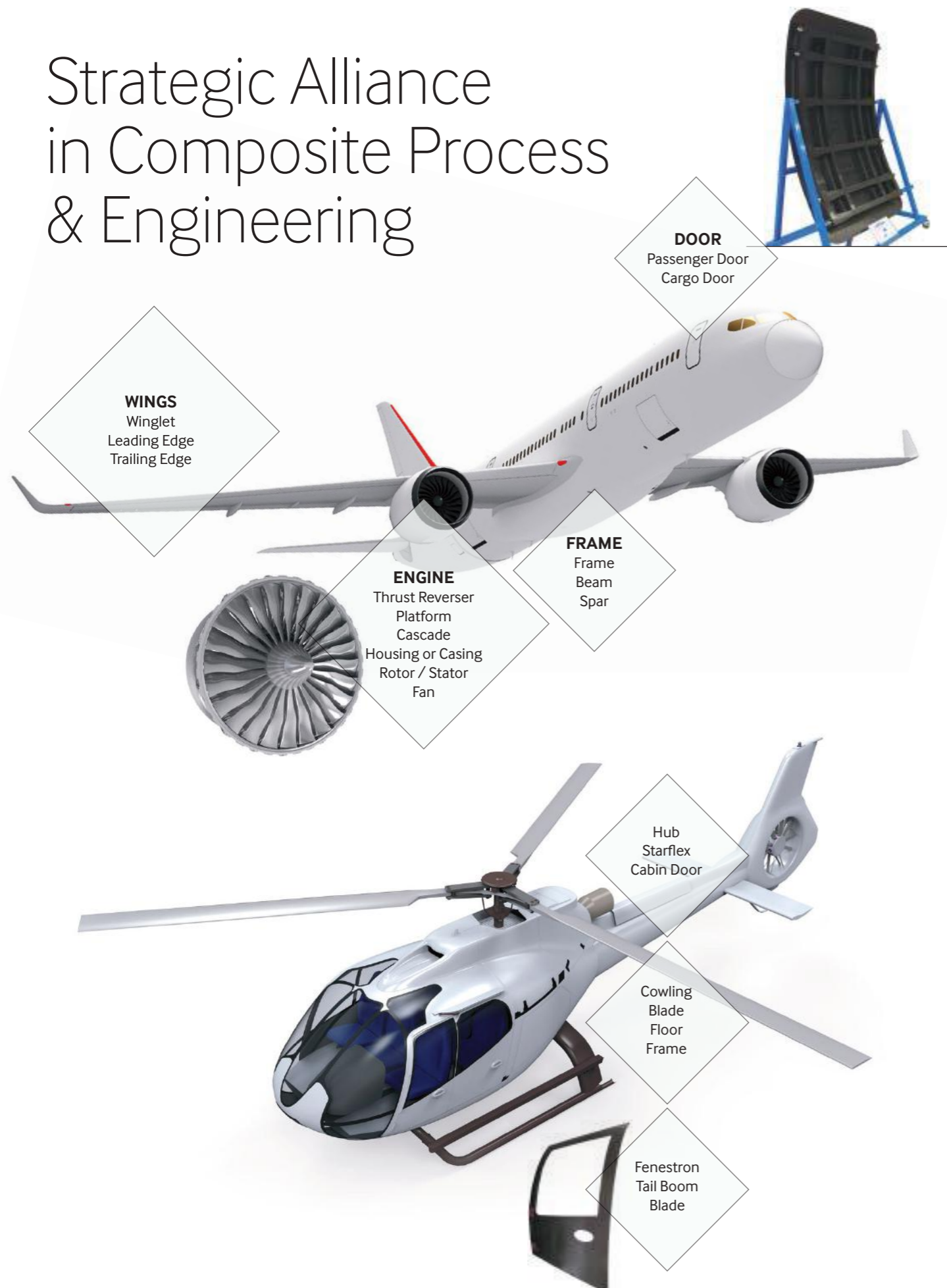
tools and machinery builder

A SINGLE CONTRACTOR
FOR WORLDWIDE
RTM APPLICATIONS



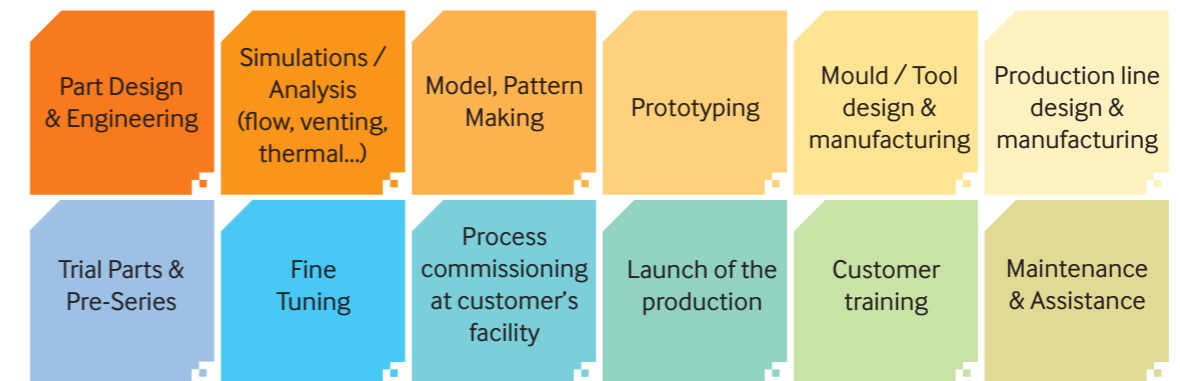
A UNIQUE ENGINEERING
& MANUFACTURING
KNOWHOW

Strategic Alliance in Composite Process & Engineering



Global RTM aims to deliver turnkey RTM processing lines for complex composites parts from a single provider thanks to the cooperation between **four SME's**.

Skills and Services



KEY ADVANTAGES FOR CUSTOMERS

- A single point of contact
- Expertise in all technologies and system integration from 20 years of industry experience
- In house engineering and manufacturing brings the highest level of technical know-how and RTM equipment quality
- A global presence

KEY DATA

SALES REVENUE M€40	ENGINEER & TECHNICIAN STAFF 130
HEADCOUNT 280	R&D ENGINEERS 13

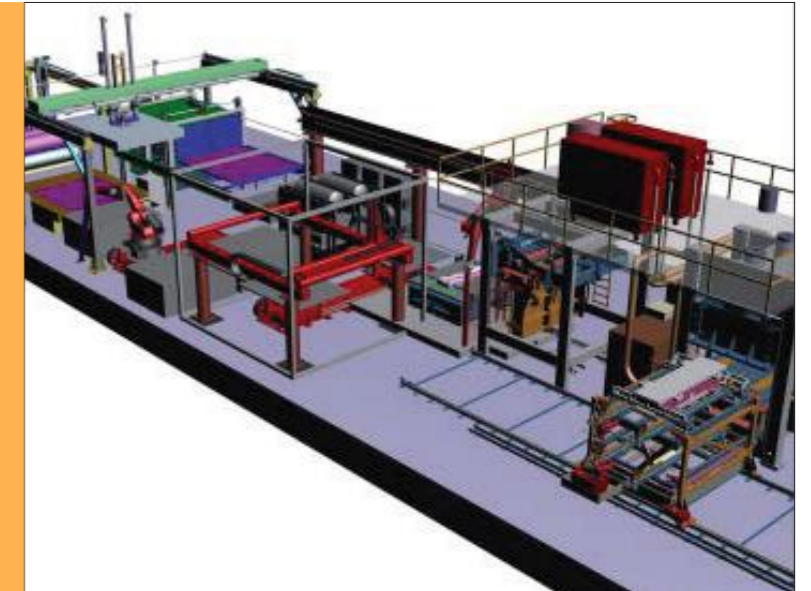
Master Process Monitoring & Control



Automated RTM Line

PLY PREPARATION & PREFORMING

- Plies are unreeled
- Ply Cutting
- Vacuum compacting table
- Plies are laid down in a preforming tool
- Hot Forming
- CNC Cutter
- Portal Robot
- Vacuum Dies
- Ply Storage
- Continuous Preforming



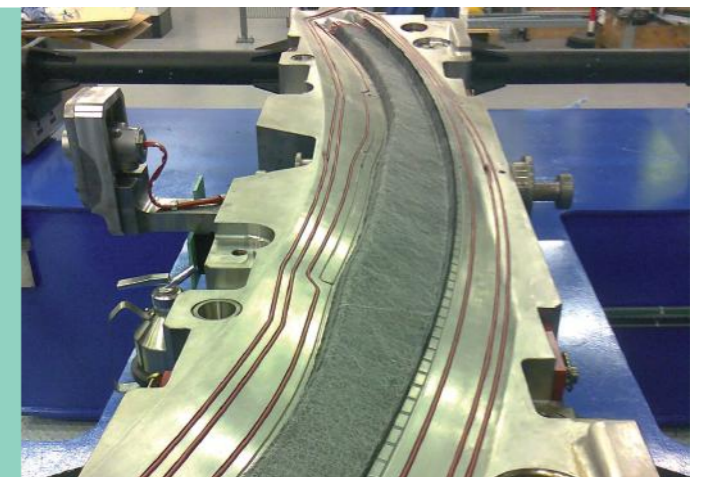
PREPARATION - RTM TOOLS

- Automated cleaning of the cavity
- Coating
- A robot lays down the preform into the RTM tool
- Inserts are set up
- Sealing elements are positioned
- Tool opening/closing
- Tool transfer to the press



INJECTION

- Press closing
- Integrated heating or heated platens
- Heating with oil or water
- Process integration (injection machine, temperature controller, tool, press, vacuum unit, oven...)
- Injection with a flow and/or pressure monitoring and control
- Press Opening
- Data Recording (injection, temperature, pressure, filling)
- Low noise levels



AUTOMATED CONNECTION OF THE MOULD TO THE INJECTION MACHINE

- It is a patented system which:
- reduces consumables
 - feeds several tools



Automated RTM Line

POST-CURING

- The closed tool is transferred to the oven
- Cycle Completion
- The tool is transferred to the preparation station



Master Process Monitoring & Control

- Constant monitoring
- PLC fault finding on display
- Control by industrial PC



MAINTENANCE

- Safe & ergonomic access to technical platform
- Safety & Design are fully compliant with local standards such as EC, UL, OSHA, GOST standards
- Modem for remote maintenance

Services

Automated RTM Line - Achievement

In 2011, DLR Deutsches Zentrum für Luft und Raumfahrt, awarded us the contract EvoRTM to design and manufacture an automated RTM line. The line was set up in 2012 in Stade (Germany).

Objectives of EvoRTM:
TO MANUFACTURE 100,000 PRIMARY CARBON PARTS / YEAR



KEY ELEMENTS

- To optimize the tool heating
- To transfer and handle the tool during the manufacturing process
- To develop an automated connection of the injection and venting systems to the tool
- To optimize the lay-up of the net-shape preform in the tool
- Tool preparation & cleaning
- To manufacture concurrently different parts with different tools on the same line

Since then, Global RTM has been awarded several contracts to deliver automated RTM production line for aircraft manufacturers.



RESEARCH AND DEVELOPMENT

Global RTM has been improving RTM capability and performance through R&D projects. Major R&D topics are new resins, cycle time reduction, function integrations. Global RTM works with universities, customers and technical centers. Global RTM technical center can support customers for prototype or process validation.

R&D



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