



JEC COMPOSITES INNOVATION AWARDS

Celebrating the best collaborative achievements



2019


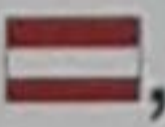
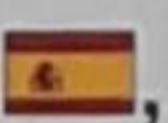

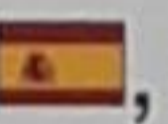





AEROSPACE • PROCESS

VOTE FOR ME



PROFACTOR GMBH

Partners: InFactory Solutions GmbH , PROFACTOR GMBH , FIDAMC - Fundación para la Investigación, Desarrollo y Aplicación de Materiales Compuestos , AIRBUS DEFENCE AND SPACE GMBH , DANOBAT , DASSAULT SYSTEMES SA , IDEKO S COOP , M TORRES DISEÑOS INDUSTRIALES SA 

Zero-defect manufacturing process

Key benefits

- No (or substantially reduced) defects showing up during final NDT
- Substantial productivity gains during lay-up due to automated inspection
- Optimized infusion and curing processes through direct feedback
- Qualified decisions about re-work based on analysis of the part as manufactured
- Global view of the whole process using part flow simulation

At the heart of the zero-defect manufacturing process are the automated dry fibre placement and automated dry material placement lay-up processes and the subsequent infusion and curing processes. The processing chain involves four steps:

- 1) An inline quality control system scans the laid material during the lay-up process, providing immediate feedback about any quality problems that might exist. Once the layer is finished, the machine operator can immediately initiate any rework if required or continue with the next layer. Manual inspection after each layer is not needed.
- 2) Process monitoring during the infusion and curing generates information that cannot yet be controlled directly.
- 3) Defect data are collected and then used with FEA to calculate the impact of defects on strength. This allows an assessment of the part as it is manufactured and provides important input for rework processes.
- 4) A decision support tool merges all the above-mentioned data sources and combines them with a logistical part flow simulation to eventually select a rework strategy.

