Zero-defect manufacturing of composite parts in the aerospace industry

Fact Sheet

Project Information

ZAero
Grant agreement ID: 721362

Funded under H2020-EU.2.1.5.1.

Overall budget € 4 124 143,75

EU contribution € 3 548 206,01

Coordinated by PROFACTOR GMBH
Austria

Start date 1 October 2016
End date 30 September 2019

Objective

In the aerospace industry very high quality standards have to be met. For the manufacturing of carbon fibre parts this is currently solved through extended end-of-line inspection in combination with re-work processes to deal with defective parts. Also, in-situ visual inspection is used for quality control, which is currently causing huge productivity losses (30%-50%) during lay-up and has become a real bottleneck in carbon fibre parts manufacturing.

The project will provide a solution by developing inline quality control methods for the key process steps: automatic lay-up (dry fibre placement and automatic dry material placement) and curing. At the system level decision support systems will be developed that assist human decision-making when assessing defects and when planning the part flow through the production line. These will be supported by simulation tools for part verification and logistical planning.

The future manufacturing of the A320neo wing covers will be provide the background for the developments. Each such wing cover consists of two parts, that each cost
several hundred thousand Euros in manufacturing. Assuming the planned production rates of 60 planes per month from 2025, savings of 150 MEUR in production costs can be obtained per year.

The consortium consists of all key players that will play a future role in the manufacturing of such large carbon fibre parts. Airbus with its research centers Airbus Group Innovations and FIDAMC will play a leading role in the consortium as far as the multi-stage manufacturing process is concerned. Machine builders (MTorres, Danobat) and research centers will develop the inline quality control, while Dassault Systémes will provide simulation support.

Field of science
/social sciences/economics and business/economics/production economics/productivity

Programme(s)

Topic(s)

Call for proposal
H2020-FOF-2016

Funding Scheme
IA - Innovation action

Coordinator

PROFACTOR GMBH

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Im Stadtgut A2
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Activity type
Other

EU contribution
€ 927 413,75

Website
Contact the organisation

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Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

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DASSAULT SYSTEMES
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Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Website [Contact the organisation]

M TORRES DISEÑOS INDUSTRIALES SA
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€ 315 980,88

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Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Website [Contact the organisation]

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Activity type
Research Organisations
DANOBAT

Spain
EU contribution
€ 215 250

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Activity type: Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Website  
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FUNDACION PARA LA INVESTIGACION, DESARROLLO Y APLICACION DE MATERIALES COMPUESTOS

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EU contribution
€ 665 687,50

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