Zero-defect manufacturing of composite parts in the aerospace industry

Fact Sheet

Project Information

ZAero

Grant agreement ID: 721362

Project website

Funded under
H2020-EU.2.1.5.1.

Start date
1 October 2016

End date
30 September 2019

Overall budget
€ 4 124 143,75

EU contribution
€ 3 548 206,01

Coordinated by
PROFACTOR GMBH

Austria

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 (MTrorres, 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

Address

Im Stadtgut A2
4407 Steyr Gleink
Austria

Activity type

Other

EU contribution

€ 927 413,75

Website

Contact the organisation

Participants (6)
AIRBUS DEFENCE AND SPACE GMBH

Germany

EU contribution

€ 365 498,88

Address

Willy-messerschmitt-strasse 1
82024 Taufkirchen

Activity type

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

Website

Contact the organisation

DASSAULT SYSTEMES

France

EU contribution

€ 447 125

Address

Rue Marcel Dassault 10
78140 Velizy Villacoublay

Activity type

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

Website

Contact the organisation

M TORRES DISEÑOS INDUSTRIALES SA

Spain

EU contribution

€ 315 980,88

Address

Ctra. Pamplona-huesca, Km.9
31119 Torres De Elorz

Activity type

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

Website

Contact the organisation

IDEKO S COOP

Spain

EU contribution

€ 611 250

Address

Calle Arriaga 2
20870 Elgoibar

Activity type

Research Organisations
DANOBAT
Spain
EU contribution
€ 215 250
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Poligono Industrial Arriaga 21
20870 Elgoibar
Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)
Website  
Contact the organisation

FUNDACION PARA LA INVESTIGACION, DESARROLLO Y APLICACION DE MATERIALES COMPUESTOS
Spain
EU contribution
€ 665 687,50
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Avda Rita Levi Montalcini (Tecnogetafe) 29
28906 Getafe
Activity type
Research Organisations
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