



Assembly Planning and SIMulation of an Aircraft Final Assembly Line

Fact Sheet

Project Information

SIMFAL

Grant agreement ID: 737881

[Project website](#)

DOI

[10.3030/737881](https://doi.org/10.3030/737881)

Project closed

EC signature date

20 December 2016

Start date

1 February 2017

End date

31 January 2020

Funded under

SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

Total cost

€ 563 986,25

EU contribution

€ 499 719,13

Coordinated by

ASOCIACION CENTRO
TECNOLOGICO CEIT



Spain

Objective

Many tasks in the assembly of an aircraft, such as the assembly of the interior components in the Cabin and Cargo areas, are performed manually, in non-ergonomic conditions, and with complex process chains. Recent advanced in robotics enable the completion of tasks between robots and human worker. Thus, the future of assembly of interior components in these areas will benefit with these new technologies.

However, the planning of assembly tasks in which a human worker collaborates with

a robot in a complex and many times narrow environment is extremely challenging. Many factors have to be analysed including the perception of different types of workers, logistic issues, addressing unexpected situations such as a malfunctioning of a robot, etc.

New technologies such as Virtual Reality (VR) allow the study of this problem in a safe and cost-effective way. Meanwhile Augmented Reality (AR) allows the inclusion of relevant information obtained from computational sources (such as the state of the robot, or new assembly plans) in their proper real context.

The SIMFAL project proposes to develop a new testing tool based on VR to help aircraft manufacturers plan and evaluate different assembly alternatives. The information obtained in the VR simulator will be analysed to obtain the main factors that affect its performance. As a result, the advantages and disadvantages of different strategies of collaboration between the robot and the human will be obtained. This tool will also generate support data for an AR-based assistance tool based. The tool will provide information about the current assembly strategy, the current state of the system (including logistics, the robot, etc.) and maintenance information. This tool will also integrate a tool to help the worker to decide between alternative action plans under unexpected situations. A concept of middleware will be developed during the project to integrate the solution with the current design tools.

Fields of science (EuroSciVoc)

[engineering and technology](#) > [electrical engineering](#), [electronic engineering](#), [information engineering](#) > [electronic engineering](#) > **[control systems](#)**

[engineering and technology](#) > [mechanical engineering](#) > [vehicle engineering](#) > [aerospace engineering](#) > **[aircraft](#)**

[natural sciences](#) > [computer and information sciences](#) > [software](#) > [software applications](#) > **[virtual reality](#)**

[social sciences](#) > [psychology](#) > **[ergonomics](#)**

[natural sciences](#) > [computer and information sciences](#) > [software](#) > [software applications](#) > **[simulation software](#)**



Programme(s)

[H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green And Integrated Transport](#)

MAIN PROGRAMME

[H2020-EU.3.4.5.1. - IADP Large Passenger Aircraft](#)

Topic(s)

[JTI-CS2-2016-CFP03-LPA-02-14 - Assembly Planning and Simulation of an Aircraft Final Assembly Line \(FAL\)](#)

Call for proposal

[H2020-CS2-CFP03-2016-01](#) 

[See other projects for this call](#)

Funding Scheme

[CS2-IA - Innovation action](#)

Coordinator



ASOCIACION CENTRO TECNOLOGICO CEIT

Net EU contribution

€ 349 762,50

Total cost

€ 349 762,50

Address

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Region

Noreste > País Vasco > Gipuzkoa

Activity type

Research Organisations

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Participants (1)



CT INGENIEROS AERONAUTICOS DE AUTOMOCION E INDUSTRIALES SL

 Spain

Net EU contribution

€ 149 956,63

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Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

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

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 214 223,75

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Permalink: <https://cordis.europa.eu/project/id/737881>

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