Increased Safety and robust certification for ditching of aircrafts and helicopters

Fact Sheet

Project Information

SARAH
Grant agreement ID: 724139

Status
Closed project

Start date
1 October 2016
End date
31 March 2020

Funded under
H2020-EU.3.4.

Overall budget
€ 6 636 395

EU contribution
€ 6 636 393,75

Coordinated by
IBK-INNOVATION GMBH & CO. KG
Germany

This project is featured in...

RESULTS PACK
Making EU skies the safest through innovative EU-funded research

22 May 2019

Objective

SARAH is concerned with establishing novel holistic simulation-based approaches
SARAH is concerned with establishing novel, holistic, simulation-based approaches to the analysis of aircraft ditching. It is build up from a consortium of experts from OEM industries, experienced suppliers of simulation technologies, established research institutions and representatives of the certification authorities. Results of SARAH are expected to support a performance-based regulation and certification for next generation aircraft and helicopter and to enhance the safe air transport as well as to foster the trustworthiness of aviation services.

Aircrafts and helicopters often travel above water and thus have to prove a safe landing under emergency conditions. The specific challenge is to minimize the risk of injury to passengers and to enable safe evacuation. Accordingly, the motion of the aircraft/helicopter along with the forces acting on the structure are studied for controlled water impact during the design phase of an aircraft.

Ditching has close links with crash simulation, but also distinctive features. Examples refer to hydrodynamic slamming loads on airborne vehicles and complex hydromechanics (partially at very large forward speeds) as well as the interaction of multi-phase fluid dynamics (involving air, water, and vapor phases) and structure mechanics.

Design for ditching involves more than the analysis of loads and subsequent strengthening of the structure. It often requires adjustment campaigns for the handling of the vehicle during approach and the identification of favorable approach/flight-path conditions in line with the pilots flying capabilities to minimize the remaining kinetic energy of the vehicle to be transferred into the water.

In conclusion, a pressing need for more advanced studies to support the development of next-generation, generalized simulation-based ditching-analysis practices is acknowledged by all stakeholders. The public interest in safety makes this proposal an ideal candidate for a European research proposal.

Field of science

/social sciences/sociology/governance/public services
/engineering and technology/mechanical engineering/vehicle engineering/aerospace engineering/aircraft/rotorcraft
/social sciences/social and economic geography/transport
/natural sciences/physical sciences/classical mechanics/fluid mechanics/fluid dynamics
/engineering and technology/mechanical engineering/vehicle engineering/aerospace engineering/aircraft

Programme(s)

Topic(s)

Call for proposal

H2020-MG-2016-SingleStage-INEA
Funding Scheme
RIA - Research and Innovation action

Coordinator

IBK-INNOVATION GMBH & CO. KG

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Contact the organisation

Website

Participants (11)

EASN TECHNOLOGY INNOVATION SERVICES BVBA

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<td>3440 Budingen</td>
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NEXTFLOW SOFTWARE

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<td>Research Organisations</td>
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<td>Germany</td>
<td>€ 707,363,75</td>
<td>Am Schwarzenberg Campus 1 21073 Hamburg</td>
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<td><strong>AIRBUS DEFENCE AND SPACE SA</strong></td>
<td>Spain</td>
<td>€ 412,500</td>
<td>Avenida De Aragon 404 28022 Madrid</td>
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<td><strong>AIRBUS OPERATIONS GMBH</strong></td>
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<td>Kreetslag 10 21129 Hamburg</td>
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**TECHNISCHE UNIVERSITAET BRAUNSCHWEIG**

Germany

EU contribution

€ 495,250

Address

Universitaetsplatz 2
38106 Braunschweig

Activity type

Higher or Secondary Education Establishments

**ECOLE CENTRALE DE NANTES**

France

EU contribution

€ 781,875

Address

Rue De La Noe 1
44321 Nantes Cedex 3

Activity type

Higher or Secondary Education Establishments

**BUREAU VERITAS SOLUTIONS MARINE & OFFSHORE**

France

EU contribution

€ 587,083,75

Address

8 Boulevard Albert Einstein
92400 Nantes

Activity type

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

**AIRBUS HELICOPTERS**

France

EU contribution

€ 378,750

Address

L Aeroport
13700 Marignane

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)
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**Record number:** 205809

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