

H2020-PROJECT SARAH INCREASED SAFETY AND ROBUST CERTIFICATION FOR DITCHING OF AIRCRAFTS AND HELICOPTERS

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Key Words: *Water Impact, Aircraft, Helicopter, Fluid-Structure Interaction*

The H2020 project SARAH addresses the topic of safety during aircraft and helicopter ditching by a.) performing tests in large towing tanks, b.) performing high-fidelity coupled numerical simulations (taking into account fluid-structure interaction) to better understand structural deformation and their impact on the ditching loads and, finally, by c.) improving medium and low fidelity tools used for certification based on the results of high-fidelity analysis. In order to achieve this ambitious target an EU-funded H2020 project was set up. Within this frame the consortium consists of four industrial partners (Airbus, Airbus Helicopters, Dassault Aviation, Airbus Defence and Space), four research facilities (Nantes, Hamburg-Harburg, Braunschweig, CNR) and four SMEs (EASN, NextFlow, HydrOcean, IBK). Thus, the consortium combines Aircraft manufacturers with a direct need/ motivation to exploit, the R&D capacities necessary and a test-facility (CNR) with a strong track-record in water impact tests.

Within SARAH IBK-Innovation is coordinating the activities of the consortium and technically supports several work-packages. One topic of SARAH is addressing the question how to calculate impact loads on unconventional aircraft configurations. Unconventional geometries are problematic since it is difficult to transfer existing knowledge from previous testing campaigns to them. Obtaining ditching loads from testing in general is difficult, time and cost-consuming. So finally, quick and fast methods are necessary which support the design.

Within SARAH IBK is supporting WP4 in which a blended-wing-body configuration is under review. Together with the partners, modelling as well as simulation requirements are identified while ensuring that models and simulations are performed and compared with conventional aircraft. Impact on the design for this configuration is analysed and discussed.