



IMPACT

AIRCRAFT ADVANCED REAR END AND EMPENNAGE OPTIMISATION ENHANCED BY ANTI-ICE COATINGS AND DEVICES

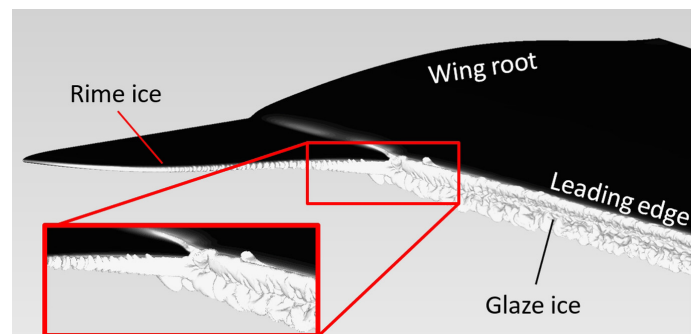
IMPACT will explore the implementation of new passive anti-ice coatings and devices for the advanced rear end concept for the next generation of Airbus short and medium range aircraft. The project will also optimize its aerostructural properties and validate the technology with Icing Wind Tunnel tests.

MAIN OBJECTIVES

- Unlocking the capability to perform fast and accurate 3D ice accretion simulation suitable for non-straight leading-edge empennages, accounting for effects of passive anti-ice coatings and devices like leading-edge undulations;
- characterising, integrating, and exploiting the passive anti-ice coatings and devices for non-straight leading-edge empennage configurations, reaching TRL 5 at the end of the project;
- developing and applying innovative aerostructural optimisation methods for advanced rear ends (ARE), including the effects of the passive anti-ice coatings and devices, to

minimise drag and include structural and aeroelastic constraints;

- validate the accuracy of the 3D icing accretion simulations and the performance of passive anti-ice coating and devices by means of large scale icing wind tunnel (IWT) experimental tests.



SMR Aircraft horizontal stabilizer with inflight icing, 45 mins in a holding fly condition





FACTS

- IMPACT – Aircraft advanced rear end and empennage optimisation enhanced by anti-ice coatings and devices
- Programme: JTI-CS2-2019-CfP10-LPA-01-80
- Funding agency: CleanSky2
- Duration of project: 09/2020 – 08/2023
- Project coordination: AIT Austrian Institute of Technology



PROJECT PARTNERS

- Aerospace and Advanced Composite GmbH
- Kompetenzzentrum für elektrochemische Oberflächentechnologie GmbH
- ANSYS Canada Ltd
- RTA Rail Tec Arsenal Fahrzeugversuchsanlage GmbH
- University of Naples Federico II
- SMARTUP Engineering S.R.L.
- University of Southampton
- Eurotech s.a.s
- University of Udine



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