ICE GENESIS TARGETED RESULTS

A TRL approach will be followed to monitor the project progress, ensuring a direct transfer of capabilities to industry.

Simulation means	Starting point	Targeted TRL for end of ICE GENESIS
IWT for Appendix O conditions	TRL2*	TRL5
IWT for Snow conditions	TRL1/2	TRL4
3D numerical tools for Appendix C conditions	TRL2/3**	TRL5
3D numerical tools for Appendix C conditions	TRL2	TRL5
3D numerical tools for Snow conditions	TRL1/2	TRL5

** considering reproduction of full App O FZDZ envelope*

*** considering ability to reproduce representative 3D shapes for long icing conditions period*

ICE GENESIS EXPECTED IMPACT

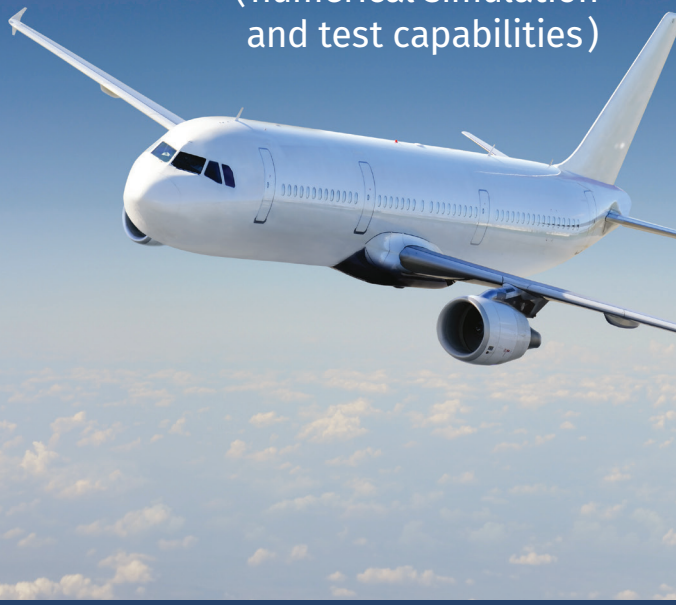
- Larger exploration of design and de-risking against late redesign
- Maintaining competitiveness for European engine manufacturers
- Increasing testing capabilities within Europe
- Contributing to Standardisation
- Increasing scientific excellence and strengthening international research collaboration with Russia, Canada and Japan
- Strengthening European leadership on icing tools
- Cross-fertilisation to other sectors

The ICE GENESIS consortium brings together 36 partners from 10 countries (France, Austria, Italy, UK, Germany, Belgium, Switzerland, Russia, Canada and Japan). Led by AIRBUS, it started in January 2019 for a duration of 48 Months.

ICE GENESIS

CREATING THE NEXT GENERATION OF 3D SIMULATION MEANS FOR ICING

(numerical simulation and test capabilities)



www.ice-genesis.eu

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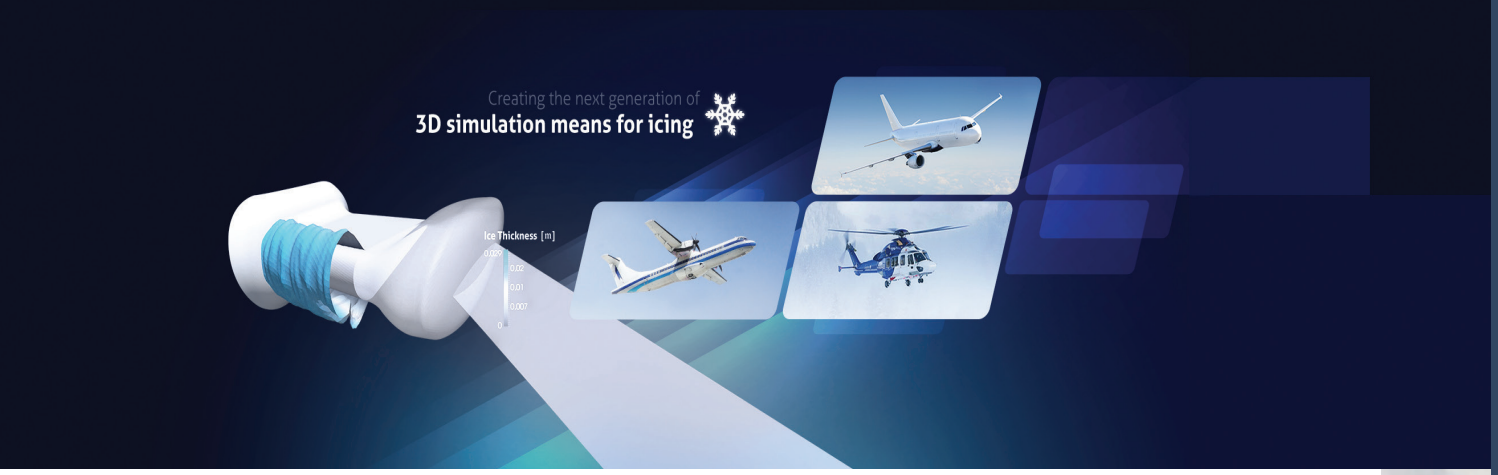

WP 1	Project Management and governance	AIRBUS GROUP
WP 2	Dissemination & exploitation	ARTTIC

3D App C Stream	App O Stream	Snow Stream	
WP 3 Consolidation of specifications & test plans. Test follow-up (LEONARDO)			
WP 4 Instrumentation for liquid icing conditions (DLR)		WP 5 Instrumentation for snow & microphysical properties (CNRS)	Instrumentation
	WP 6 SLD test capability (ONERA)	WP 7 Snow test capability (rfd)	Test Capability
WP 8 Wind tunnel tests preparation and performance for liquid icing and snow conditions (DASSAULT AVIATION)			Experimental Database
WP 9 Numerical capability development for liquid icing conditions (ONERA)		WP 10 Numerical capability development for Snow (TECHNISCHE UNIVERSITÄT DARMSTADT)	Numerical Capability
WP 11 Numerical tools validation in industrial environment (SAFRAN)			

ICE GENESIS OBJECTIVES

The top-level objective of the ICE GENESIS project is to provide the European aeronautical industry with a validated new generation of 3D icing engineering tools (numerical simulation and test capabilities) addressing App C, App O and Snow conditions, for safe, efficient and cost-effective design and certification of future aircraft and rotorcraft. More specifically, ICE GENESIS will:

1. Improve and validate existing **3D numerical tools** to predict ice accretion in App C, App O and Snow conditions.
2. Upgrade and calibrate **icing wind tunnels** to allow reproduction of:
   - **Supercooled Large Droplets (SLD) in FZDZ (Freezing drizzle) conditions**
   - **Snow icing conditions**
3. Build a **large-scale experimental database** on representative 3D configurations to be used as a solid reference (“ground truth”) for future numerical tools validation.