

ICE GENESIS Project Overview



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- A map of Japan with the Japanese flag (a red circle on a white field) in the upper left. The Green Cross logo, a green circular emblem with a cross and the text 'GREEN CROSS' and 'JAPAN', is located in the lower right. A scale bar at the bottom right indicates 0 to 200 km.

ICE GENESIS project overview

Creating the next generation of 3D simulation means for icing

 **Duration:** From 1st January 2019 until 31st December 2022

 **Coordinator:** AIRBUS OPERATION SAS

 **Budget:**

- Max EU Contribution: €11 964 300
- Total Estimated Project costs: €21 984 549
- Project effort in Person-months ~ 1858

 **Advisory board:** EASA, FAA, ADSE, AEROTEX,
AIRBUS Defense&Space, CSTB, DAHER, EMBRAER, PIAGGIO, SAFRAN nacelles

ICE GENESIS project overview

Top level objective

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 Icing Wind Tunnels capabilities)

addressing

Regulation CS25 Appendix C (well-known icing environment)

Appendix O (SLD or Supercooled Large Droplet)

and snow conditions,

for safe, efficient and cost effective design and certification of future aircraft and rotorcraft.

Novelties in Europe : 3D ice scanning system
droplet temperature measurement
snow characterization and campaigns

ICE GENESIS project overview

Sub-objectives



Obj#1: Improve and validate existing **3D numerical tools** to predict ice accretion in Appendix C, Appendix O and Snow conditions.



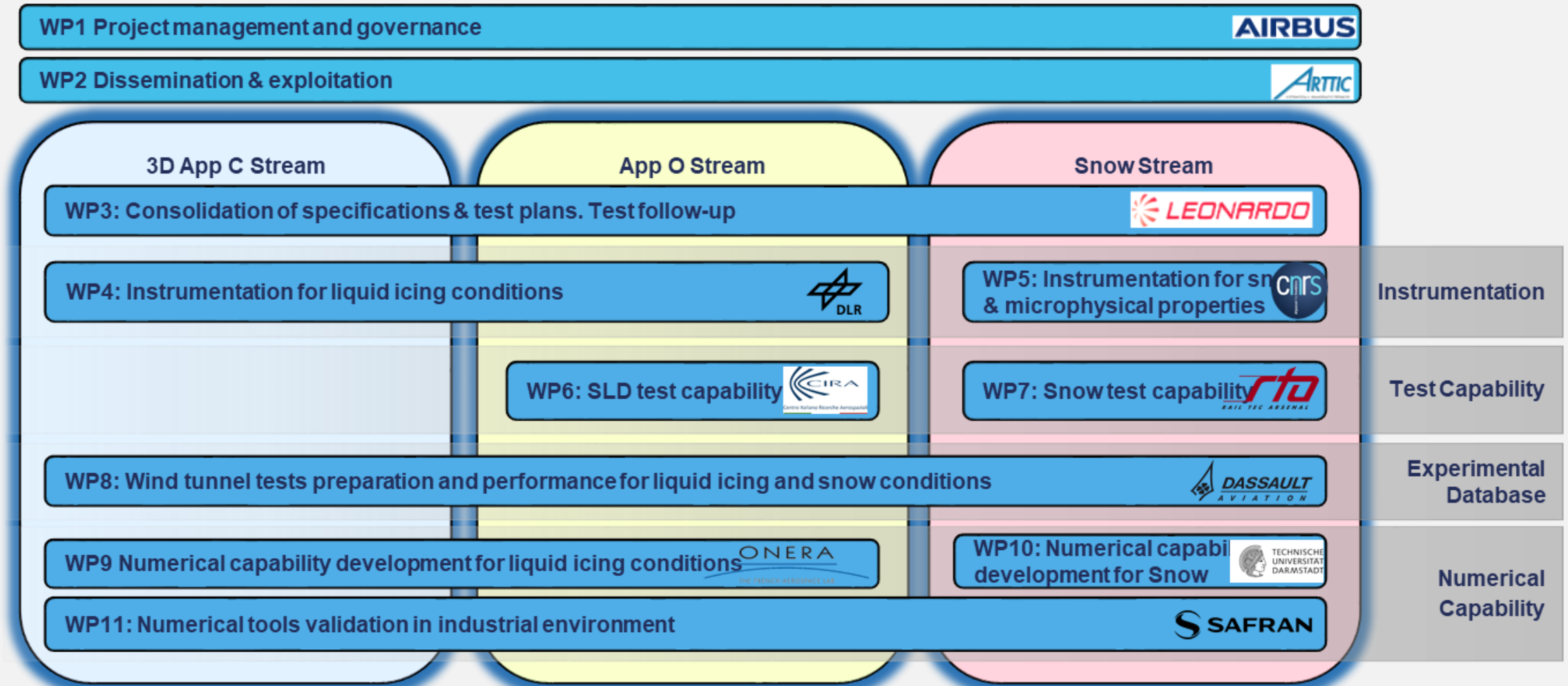
Obj#2: Upgrade and calibrate **icing wind tunnels** to allow reproduction of:

- **Supercooled Large Droplets (SLD)** in FZDZ (Freezing drizzle) conditions.
- **Snow conditions**
- Additionally, to **assess the potential of current icing wind tunnels to represent SLD in FZRA (Freezing rain) conditions.**



Obj#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.

ICE GENESIS Organisation



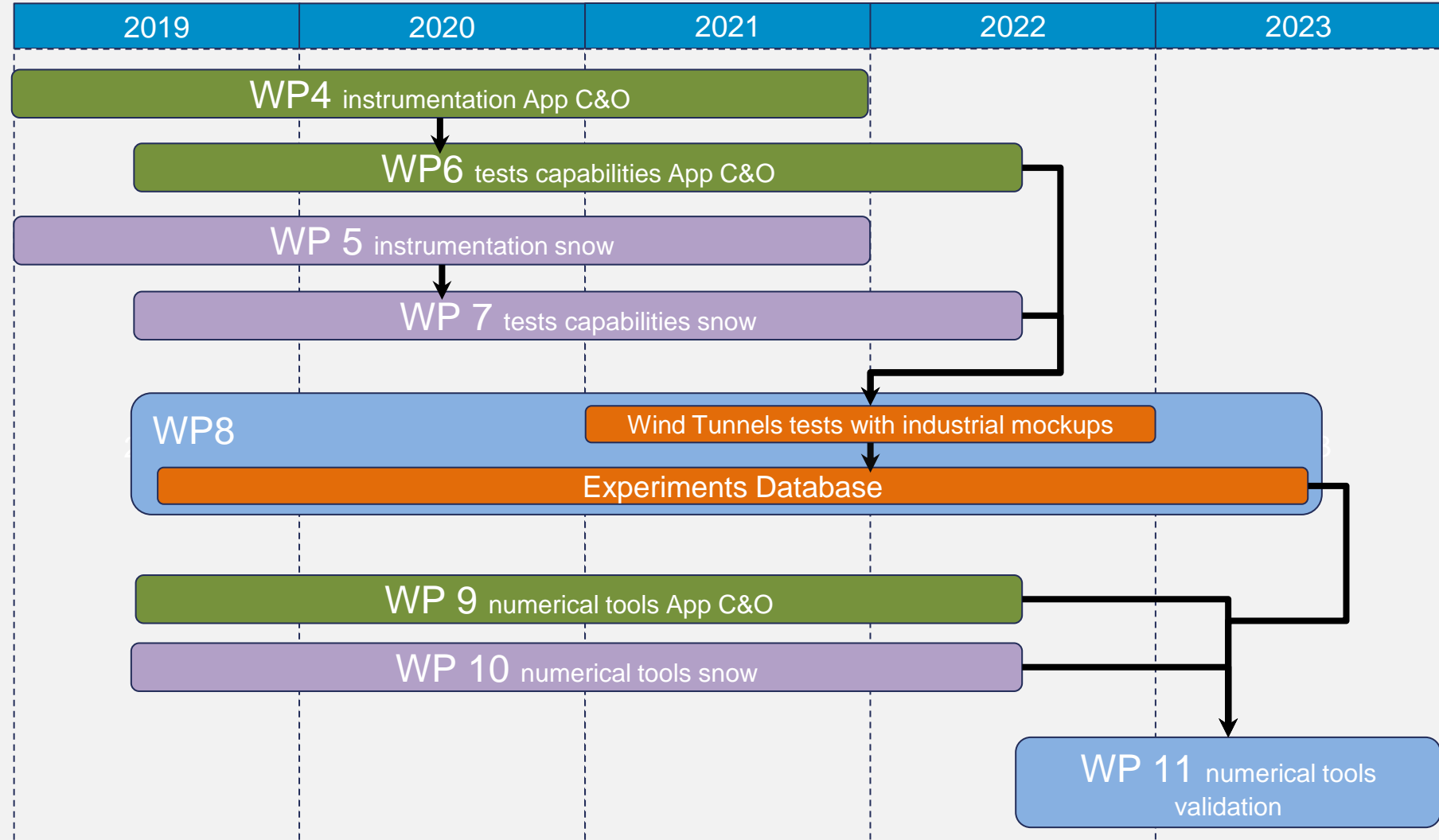
WP DEPENDENCIES



Perform wind tunnel tests in liquid icing and snow conditions, in industrial environment (IWT and mockups)



Provide searchable database of experimental results for validation of numerical tools



THANK YOU FOR YOUR INTEREST



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