

ICE GENESIS Public Forum

Technostream Snow



F.DEZITTER

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Rational

- ✈ H/C manufacturers need to demonstrate safe operations in falling and blowing snow conditions
- ✈ Demonstration is performed at the end of the program development during certification flights.
 - The flight tests in natural snowstorms, beside their intrinsic risk, are difficult to schedule due to the rarity of events ; fewer than 4% of all snowstorms conform to the requirements reported in the AMC
 - Any issue found at this stage of the development can lead to significant delay and cost to redesign the air inlet or integrate protection systems

There is a need to develop SNOW TEST & NUMERICAL CAPABILITIES to de-risk power plant system design before in-flight demonstration and as such, secure future program DEVELOPMENT AND CERTIFICATION



H175 F/T Snow



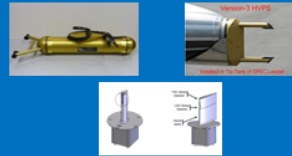
Preliminary RTA Snow Capability



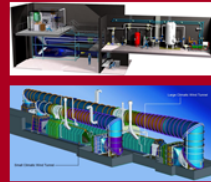
A400M snow ground test capability

Overview

A set of **cloud microphysics probes (TRL5-6)** to both calibrate icing wind tunnels and characterize snow conditions encountered during F/T



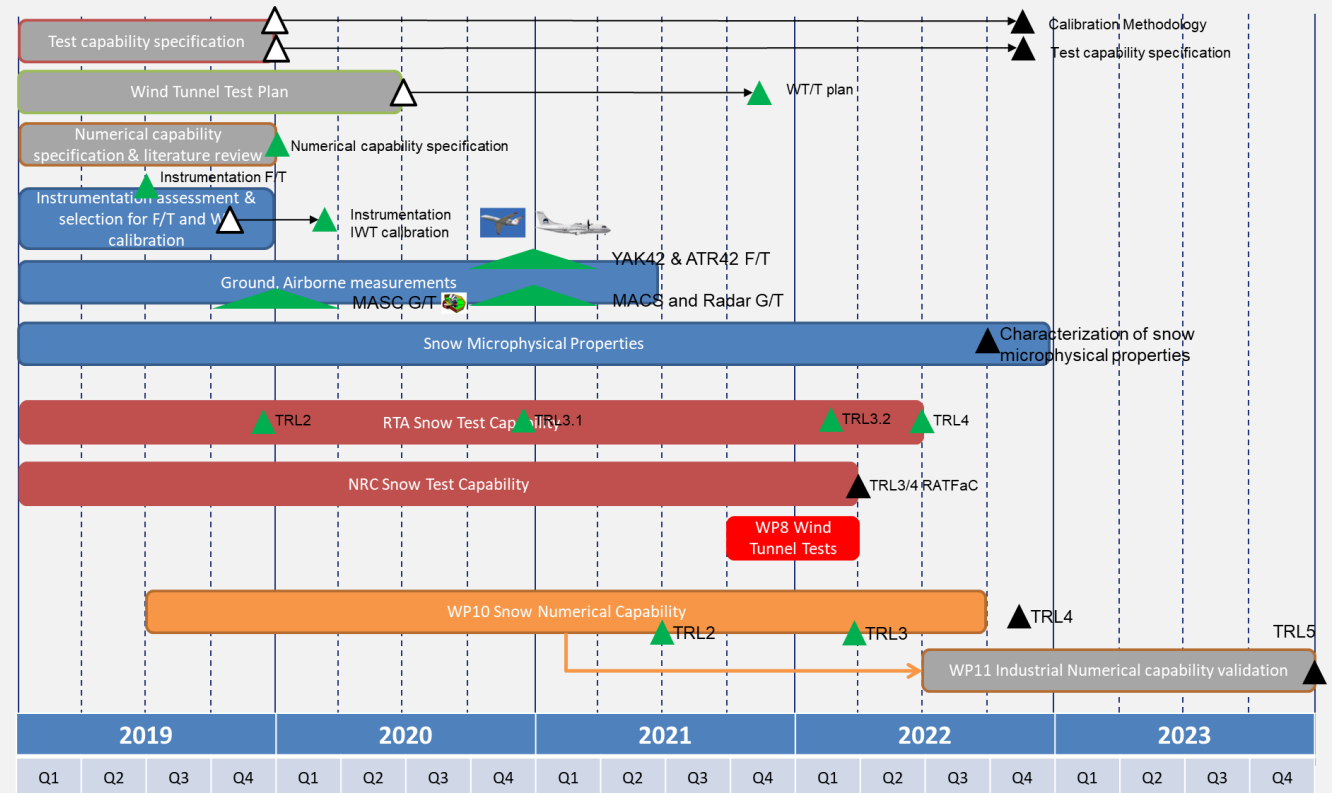
Complementary calibrated icing test facilities (TRL4 / small and large scale facilities and ground facility) with improved capability for the simulation of Falling & Blowing Snow conditions



A **European Experimental Database** for validation of numerical models and tools



A **unique numerical model** for Snow trajectory, impingement, accretion and shedding and **mature research and industrial simulation tools (TRL5)** to support pre-design, design and certification of future Air Vehicles.



Agenda

-  Flight Test and Ground Test campaigns – CNRS, EPFL
-  Characterization of snow microphysical properties – CNRS, EPFL
-  NRC snow test capability - NRC
-  RTA snow test capability – RTA
-  Snow numerical capability – TUDA, ON



THANK YOU



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