

# Airbus and Quantum Technologies

*Perspectives on Quantum Computing: NISQ and beyond*

Paris - Sorbonne Université

November 29<sup>th</sup> 2019

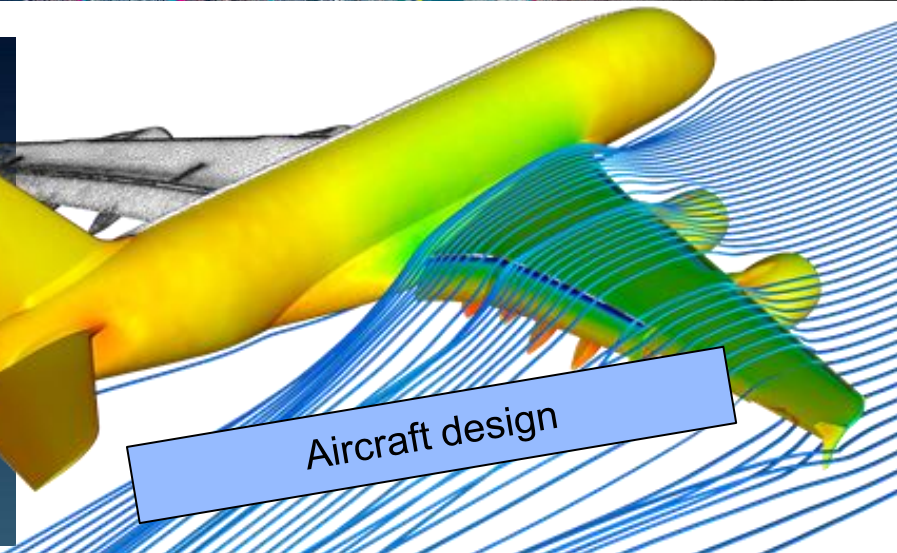
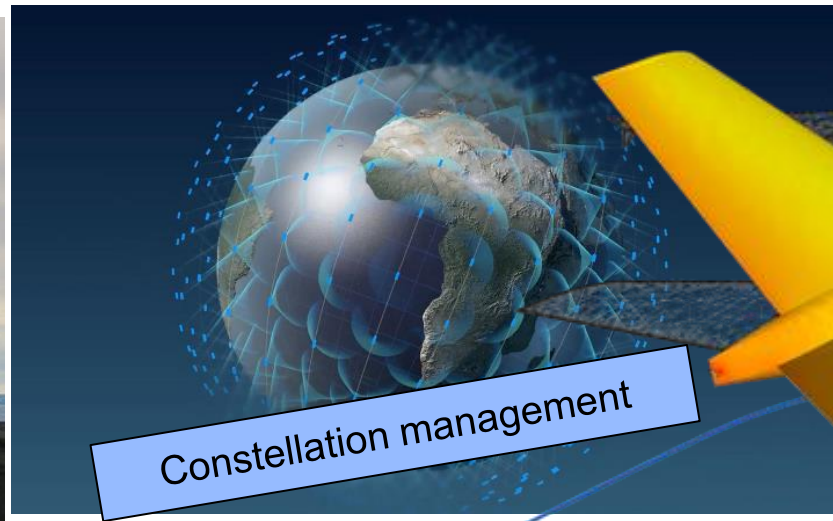
Vincent Galinier  
Airbus IT Interprise Architect

**AIRBUS**

# Airbus & HPC (High Performance Computing)

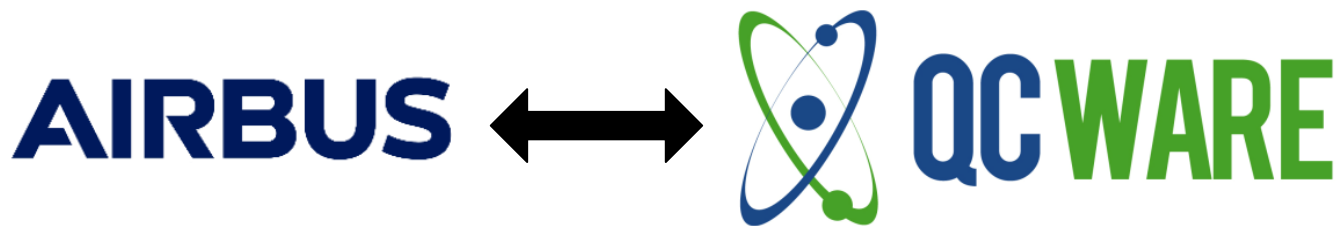
- Long history of deploying large HPC clusters
- R&D focused on extending the HPC toolset
- Cloud & distributed computing
- Alternative platforms (x86/ARM/ASICs/GPUs/...)
- ... and Quantum Computing!

data workflows still a limiting factor for cloud

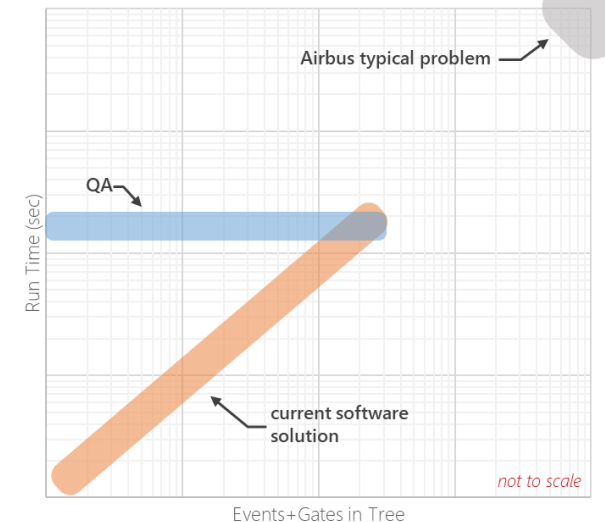


# Airbus Quantum Computing Starting Point

- **Apply HPC philosophy to QC:** leverage external ecosystem in tandem with internal experts to investigate potential applications to Airbus needs.
- **Quantum Computing –Hardware Agnostic:** Airbus is indifferent to the type of quantum hardware implementation / vendor, and whether any system is truly quantum or not. The only determining factor is the demonstrated performances of these systems on relevant Airbus applications / business propositions.
- **Strategic investment:** Airbus became a seed investor in QC Ware in 2016. The marriage allowed Airbus to enter the space of Quantum Computing and have an expert partner to help explore the various corners of the space, across different QC hardware technologies and different aerospace applications.

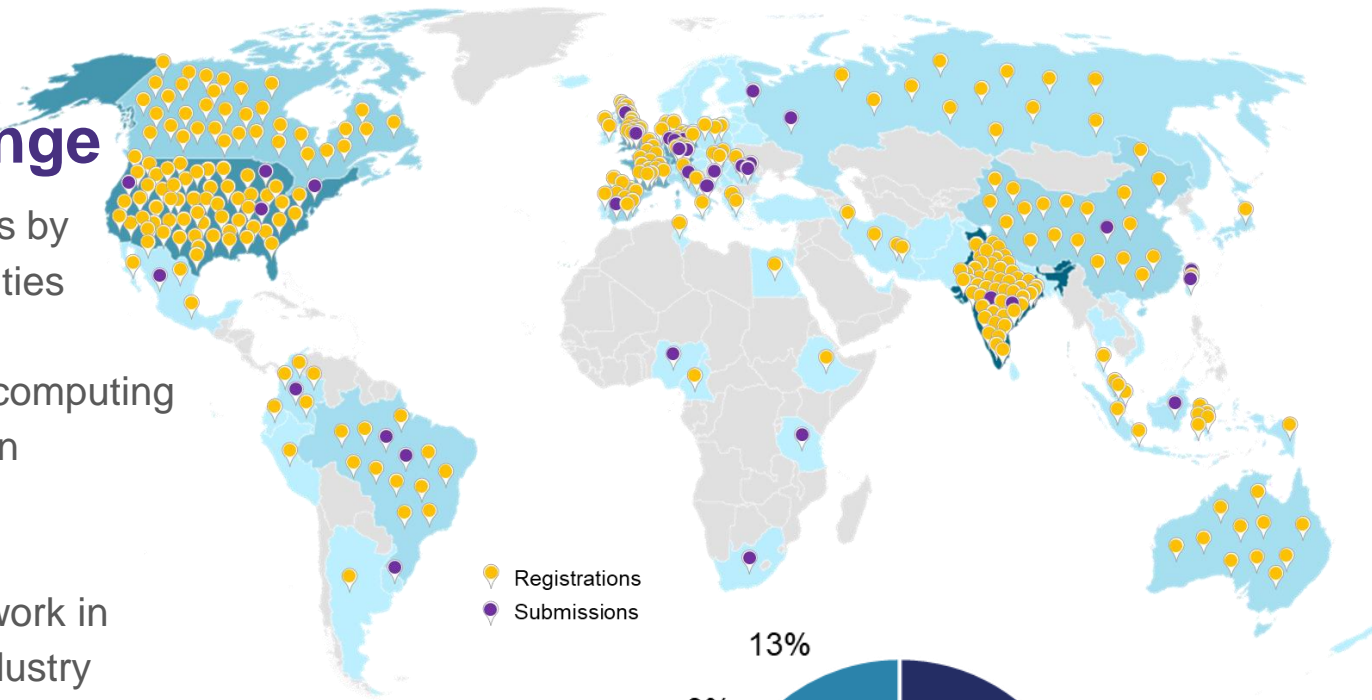


- **First QC investigation:** Fault Tree Analyses
- **Lessons learnt:** Work through nomenclature and mathematical framework, incl. terms for consistency checks, early in project – develop a common language between aerospace and QC worlds.

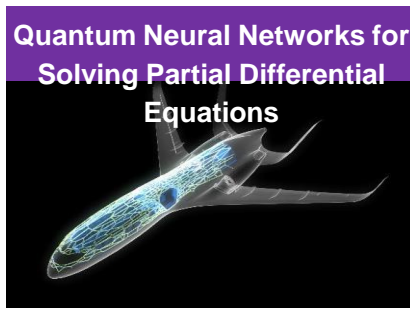
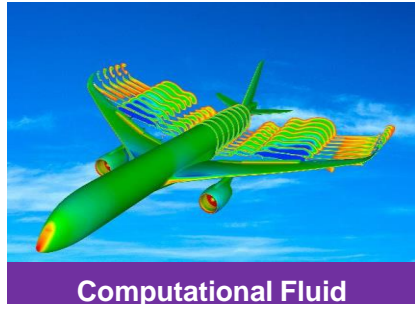
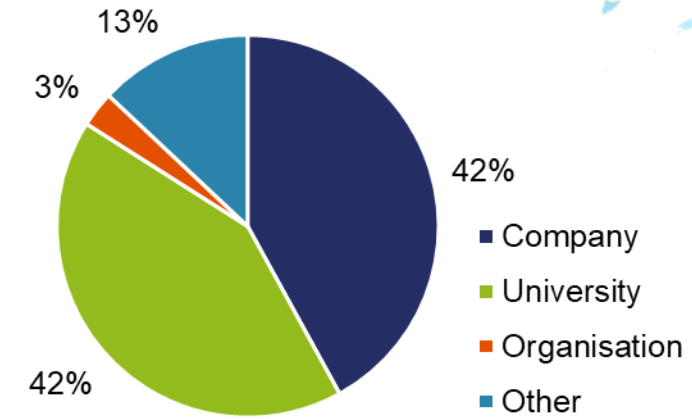


# Airbus Quantum Computing Challenge

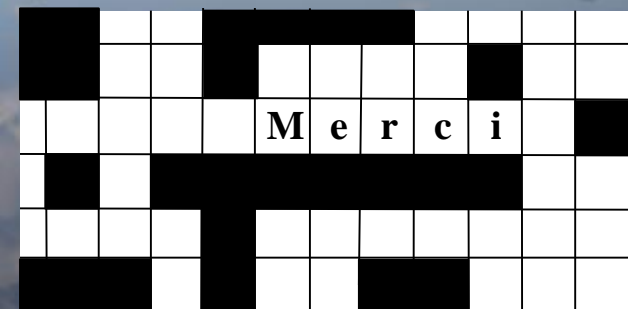
- Deliver solutions to five aerospace flight physics problems by testing and assessing newly available computing capabilities
- Understand the near-and mid-term potential of quantum computing & Lay the ground for the ultimate shift to a Quantum era in aerospace
- Develop strong ties within the Quantum community and work in partnership to answer questions facing the aerospace industry



● Registrations  
● Submissions



Overall interest in the Challenge	Self-reported working on a solution	Number of Submissions
<b>1000+ individuals</b> from <b>70+ countries</b>	<b>160+</b> Individuals / Teams	<b>36</b> (8 Teams / 28 Individuals)



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