ICAO ENVIRONMENT

ICAO Environmental Symposium 2019

DESTINATION GREEN: THE NEXT CHAPTER

The role of technology in reducing aircraft noise

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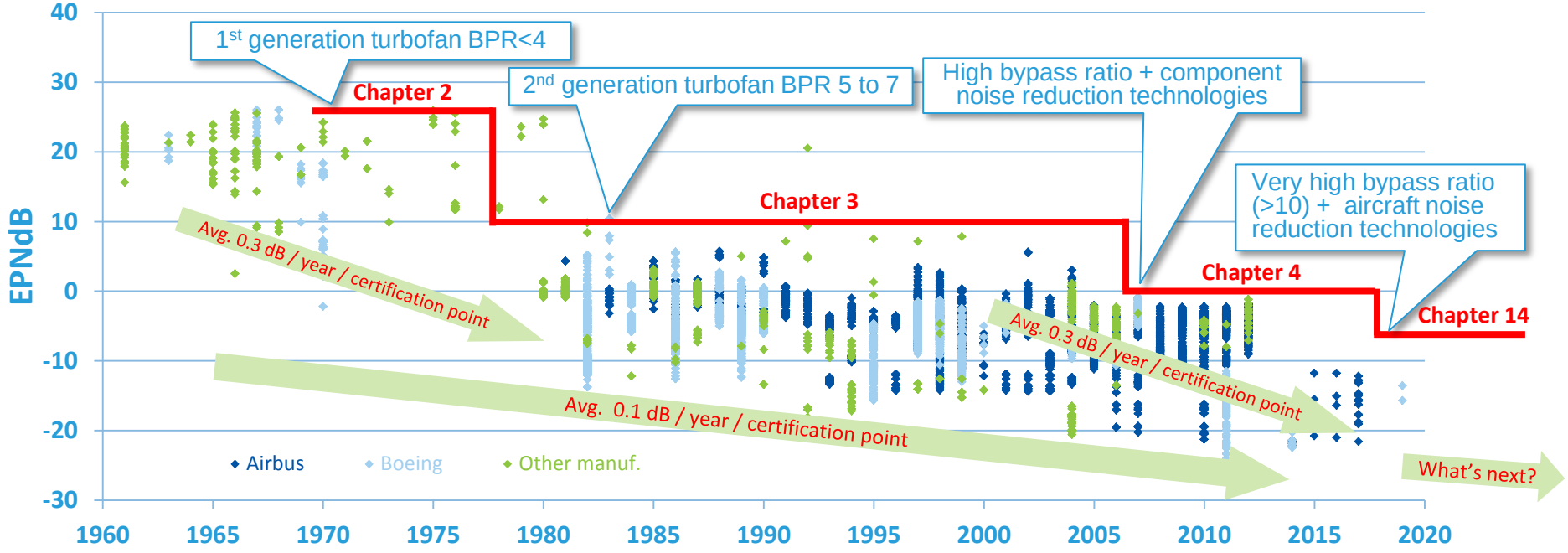
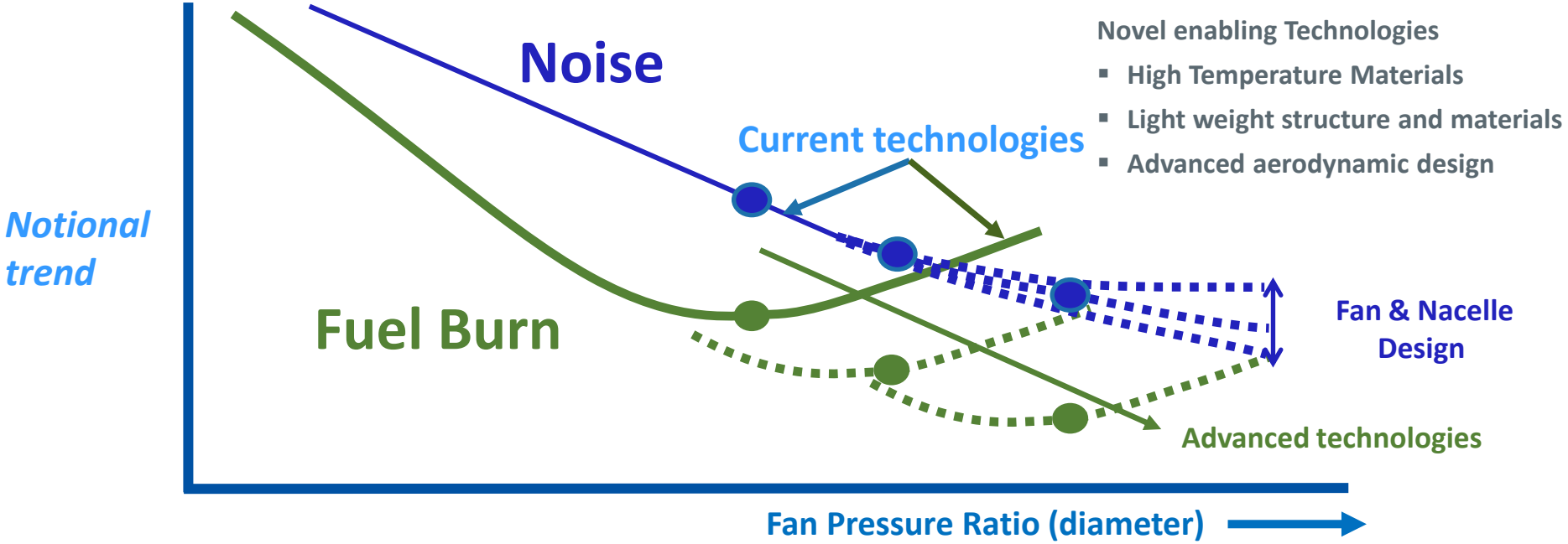
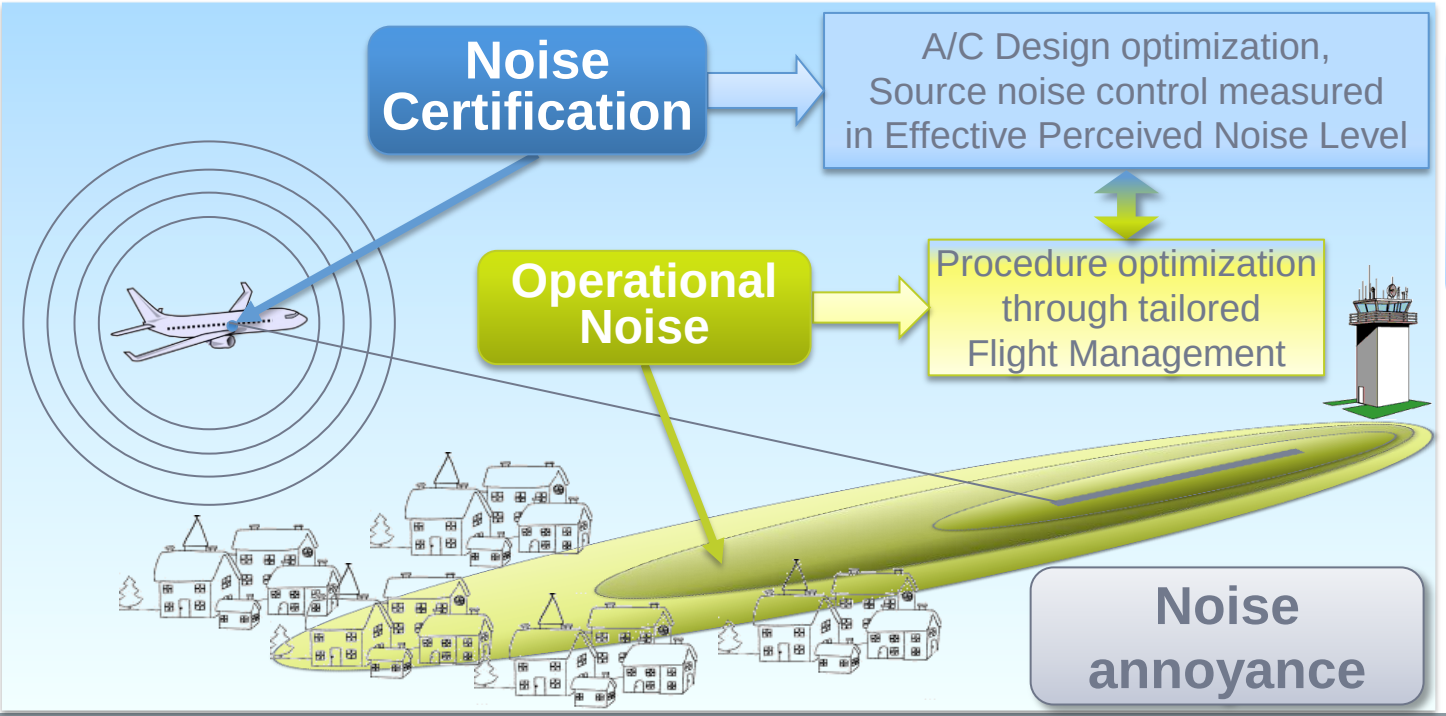
Historical records



Short/medium term potential noise reduction with future propulsion technologies expected to be lower than historical records



ICCAIA is involved in the technological pillars of the balanced approach to mitigate noise annoyance from flight operations



Design and noise control technologies applied to:

- Overall a/c architecture
- Propulsion system integration
- Engine components
- Airframe components
- Low speed performance

Flight Management technologies applied to:

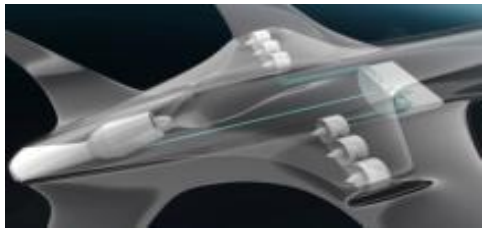
- Noise Abatement Departure Procedures
- Continuous descent & Steeper Approaches
- Trade with emissions and mission efficiency

Is a noise performance technological breakthrough in sight?

- For current tube and wings aircraft configurations, smaller than in past noise reduction expected.
- Adoption of different configurations, such as BWB, should bring noise reduction opportunities (airframe noise / propulsion system shielding).
- On the propulsion system side, innovative installation configurations may allow reducing noise beyond current turbofans.
- Noise reduction from technologies must be balanced with respect to other factors and interdependencies.
- It will take years to bring these technologies to sufficient maturity level for possible implementation in a development project.

CROR

Blended Wing Body



Hybrid distributed propulsion

Mid-term → Long-term

Conclusion

- Significant source noise reduction have been achieved in the last 60 years.
- Industry strives to reduce community noise annoyance with noise abatement procedure and dedicated operational procedures for descent/approach.
- Technological breakthrough will come with alternative airframe configurations (other than tube & wings) and propulsion systems (hybrid electric, …) currently with low TRL.

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THANK YOU