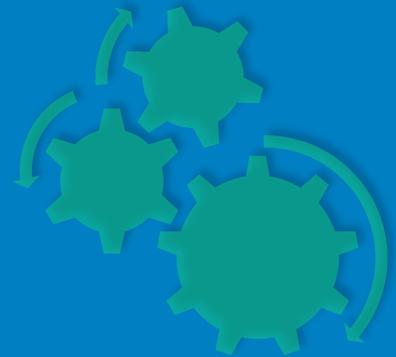


# EASA highlights on common learning path, competency acquisition and synergies

*Raising awareness on the benefits and the importance of working collaboratively, sharing knowledge and competency acquisition on the common denominators. Highlighting synergic potentialities.*

*Douriya Ouguenoune, New Propulsion Technologies Expert (H2)*

*Javier Castillo, Large Aeroplanes Propulsion & Powerplant Systems Section Manager*



**Your safety is our mission.**

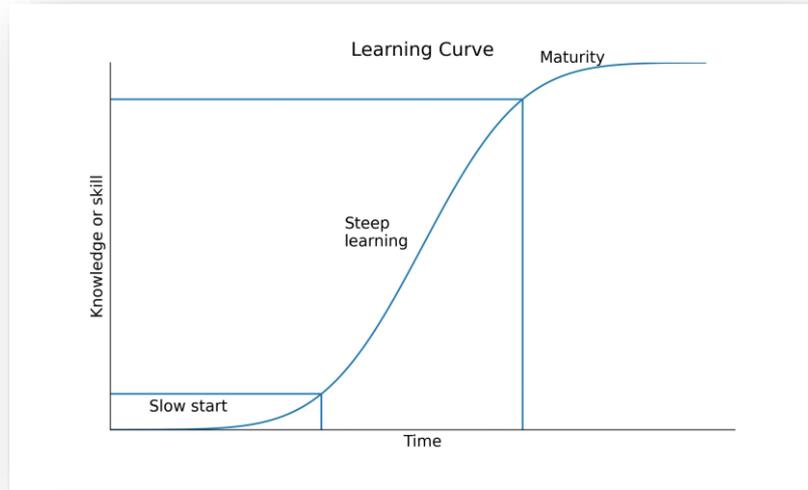
# A joint learning path

- Learning path for novel technologies:
  - New architectures, new operational characteristics
  - Novelty on risks, hazards or safety cases, several unknowns to be investigated
- Knowledge and innovation : coming from various operational sources : Industries, Research organizations, Consortia & standardization bodies



- From all these sources of knowledge ➔ **Sharing and developing synergies are key to success**

# A joint learning path



- Optimize the efforts → Sharing of tasks and heavy workload
- Competencies acquisition and sharing between industries & research organization → development of new disciplines & skills that could benefit to everyone
- **Common maturity to solve new challenges**
- Various progress speed for different type of technologies (FC, Heat exchangers, Tanks...) or technical domains (Crashworthiness, Fire & explosion...)

→ Develop the sense of “H2 for aviation community” ?

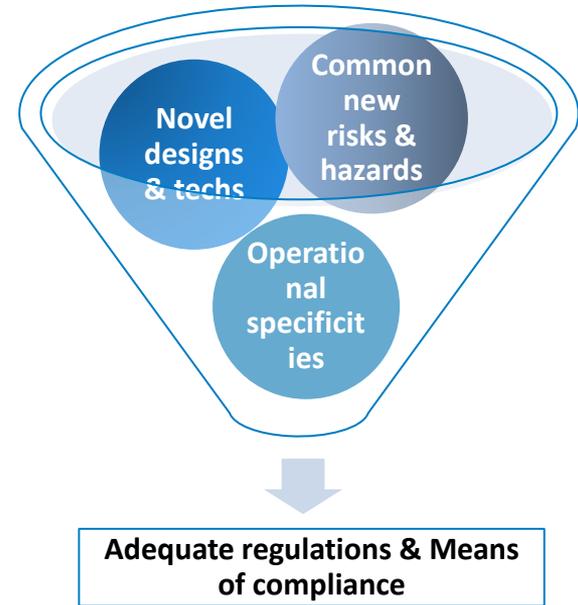
# A necessary cooperation...

- As Authorities, our role now goes beyond certification activities only
  - Strongly encourage & support all these joint efforts
  - Involvement in earlier stages than certification (development & research activities)
- 2-ways cooperation with all stakeholders is key
  - Huge learning curve for novel & innovative technologies
  - Authorities needs to be “nourished” with all different sources of learnings : technologies & new risks-hazards
  - And in reciprocity, we provide feedback as much as practicable to identify & anticipate future certification risks



# ... to reach a harmonized level of safety

- Ultimate goal to progress in the adequate direction & in a harmonized manner
  - Collectively highlight common denominators in terms of risks and main technical characteristics → define safety objectives
  - Intent of the rules heavily affected by H2 disruptive techs
  - Protecting intellectual property (not disclosing sensitive technological details)
- Reflect all these in future regulations :
  - Technical requirements to be adjusted or created (Special Conditions, future CS adjustments...)
  - Potential different Certification Policies
  - While ensuring proportionality depending on technologies maturity



# Common denominators example?

- Sufficiency of existing rules / policies / standards → gap analysis (coming from various sources)
- Risks and Hazards associated to H2
- How do we address the gaps? → transformed into recommendations from Authorities when mature.
- Level of safety to different product lines (i.e. large transport aeroplanes, GA, VTOL-Rotorcraft)
- MoCs / AMC
- (...)?

# Open questions

- Is industry/WG prepared to share knowledge with Authority?
- Which platform are allowing these exchanges?
  - Standardization : EUROCAE, SAE, AZEA,
  - Clean aviation,
  - Other platforms?

# Some take-away/highlights captured during this workshop

- More involvement of Authorities with SDOs, Guidance regarding priorities, to guide industry regarding the appropriate forums for rulemaking work
- Importance of having consensus between regulators / high hopes placed in the harmonization WG
- Importance of early engagement of authorities to derisk certification aspects
- Iterative process to refine designs / rules & MoCs as knowledge increases (too restrictive requirements may not be applicable in early stages)
- Who is working on what?
- Fuel Cell systems: authorities discussions and guidance on how to certify (possibility to certify a FC alone? As part of an engine, or an aircraft, or both?)

# Any thoughts?

Please feel free to share on Slido.

## Many thanks!



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