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INNOVATION

EUR/NAT WORKSHOP

Paris Office

#FUTUREAVIATION



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EASPG/4 – Agenda Item 6: Innovation for Enhanced
Resilience in International Civil Aviation

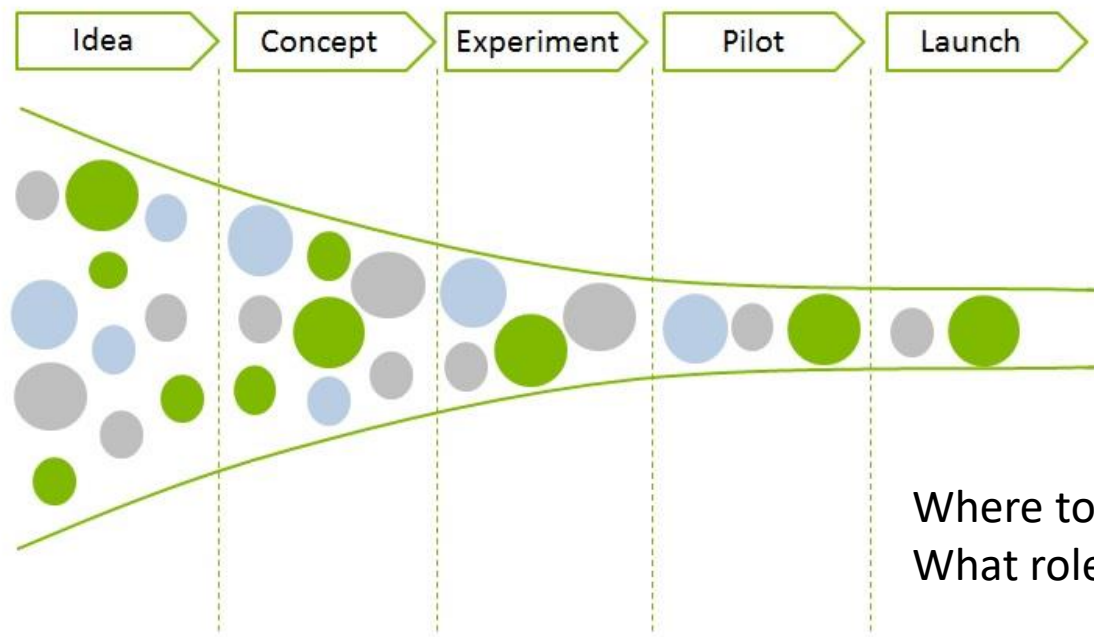
EASA Perspectives on Innovation in regulations



Involvement of Aviation Authorities into Research and Innovation (R&I)

From Ideas to Products

Innovation Pipeline



Where to start ?
What role ?



Evolving context for Aviation Authorities

Facilitate, support and enable Innovation

Technological transformation

HE/hydrogen-powered aircraft, ultra-efficient designs, drones, autonomous systems, ...

Societal transformation

changing mobility pattern, rising ecological and regional consciousness

More demanding stakeholder expectations

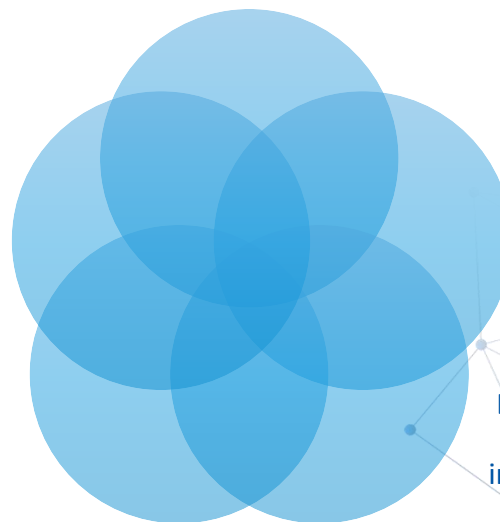
credible partner for technological developments, stronger engagements by EASA

Climate transformation

Green deal, climate neutrality by 2050, circular economy, sustainability, new global threats

Digital transformation

Big data, AI, swarm intelligence, biometrics, virtual certification, remote oversight, digital safety management tools





Main objectives for EASA involvement in R&I

Set in Basic Regulation (Art. 86 R&I, Art. 87 Environment)

- Support the European R&I initiatives for aviation and the EU 'Green Deal' objectives
- Accelerate market deployment of new technologies, changes to concepts of operations
- Provide an agile and effective regulatory system for a smooth and timely integration of new products and innovative operations
- Advance safety, security and environmental impact assessments
- Develop a common R&I agenda for civil Aviation Authorities addressing knowledge transfer, competency acquisition and for setting-up new standards



Roles and levels of involvement

European
Commission
strategic
objectives



Agency strategic
objectives



Policy level

- Contributions to European policies for air transport, incl. R&I policy
- Partnerships with key stakeholders, Industry, EREA, Academia, EC, JUs, MS



Programme level

- European Research Programmes: Clean Aviation, SESAR3, Horizon Europe collaborative research
- Contributions to technology and environmental impact evaluations



Project level

- Management of EASA research contracts
- Contributions to external research projects as advisor
- Pre-application services with Industrial partners



Organisational level

- Technology and innovation intelligence and foresight
- Contributions to competency management, knowledge sharing
- Contributions to EASA own programmes, Sustainable Aviation Fuels, Drones, Hydrogen roadmap



Relevant EU R&I Programmes

Large private – public partnerships engaged in transformative innovation

- **Clean Aviation***
- **Integrated ATM (SESAR)***
- Clean Hydrogen
- European Battery research
- Key Digital Technologies
- Artificial Intelligence
- Made in Europe
- National R&I aviation programmes



* EASA is a member of Programme's Governance Board and Technical Committee



EASA-led research projects

Directly supporting EASA needs for approving new products or concepts of operations

Example: supporting assessment of operations with Single Pilot

- Assess the safety issues, the feasibility of the implementation of single pilot operations concepts in the EU regulatory framework by 2025
- Propose reference risk-assessment framework and investigate a series of key safety hazards and mitigations

Critical areas for investigation

- Pilot workload
- Pilot error
- Pilot incapacitation
- Fatigue
- Sleep inertia (Pilot resting)
- Breaks due to physiological needs



EASA Pre-Application Services with Industry

Cover the supply of technical expertise & support within an industry-led project, ahead of airworthiness certification application

- Encourage development of innovative solutions
- De-risk certification process
- Regulatory gap analysis
- New Special Conditions/Mean of Compliance:
 - New certification specifications identified upfront



Special Condition
Electric/ Hybrid Propulsion
System



Key enabler: Efficient networking and cooperation

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EASA Member State and Stakeholder **Advisory Bodies** (incl. MAB research group)

Partnership Agreements (e.g. IPA with CAA Norway on Zero Emissions; MoC with HU Ministry of Innovation; MoC with EREA)

International cooperation (ICAO, Foreign authorities, capacity building)

Supporting initiatives bringing together stakeholders across the “ECOSYSTEM” (e.g. “Ecosystem” initiatives e.g. AZEA - Alliance on Zero Emission Aviation)

Involve the **new actors** (incl. **SME and start-ups**) in new initiatives linked to **Regulatory developments**

Collaboration with EU institutions, bodies on **EU R&I programme (Horizon, Clean Aviation, SESAR) and policy objectives** (e.g. Fit for 55)



Partnership with EASA Member States

EASA Member States Advisory Board (MAB): dedicated Research Group established

- Develop a common research & innovation agenda addressing aviation authority needs in complement to large innovation programmes
- Ensure the consistency and coordination between publicly funded research and innovation activities
- Promote wider cooperation and synergies between the members

Top 5 research themes (under development)

Environmental sustainability	UAM	Artificial Intelligence and digital transformation	Integration of new technologies in the aviation ecosystem	Operational risk, safety and security risk management, health safety
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THANK YOU!