EASA
European Union Aviation Safety Agency

Federal Aviation Administration

EASA-FAA Safety Conference

Plenary Panel B

THE CHALLENGES OF TECHNOLOGY

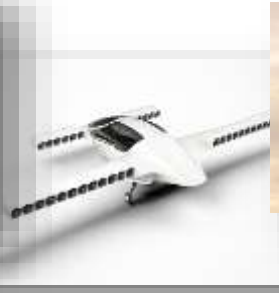
Cologne, 12th – 14th June 2019

Your safety is our mission.

An Agency of the European Union

The Challenges of Technology…

- Technology is evolving fast and the Aviation world has been greatly impacted. In the last decade we have witnessed to…
  - Faster and faster acceleration of technological novelties,
  - launch of new business models and players,
  - growth of new sectors,
  - transition towards a digital information-centric society,
- **Bringing to new Challenges and opportunity for Synergies in Aviation.**



Panel Composition

- **Moderator**:
  - **Jon Wandless** - *Director of Airworthiness & Quality, Civil Aerospace Engineering Rolls*
- **Panellists**:
  - **Rachel Daeschler** - *Acting Certification Director, EASA*
  - **Earl Lawrence** - *Executive Director, Aircraft Certification Service, FAA*
  - **Francois Duclos** - *A350 & RPAS Chief Airworthiness Engineer, Airworthiness and Certification, Airbus*
  - **Lionel Wallace** - *Head of Airworthiness, Lilium*
  - **Brent Webb** - *President and CEO, Aircraft Inventory Management and Services*

Digital Transformation

Digital Technologies

- Big Data
- Digital Twins
- Internet of Things
- Digital Certificates
- Blockchain

Autonomous Technologies

horizontal *both* *vertical*

Key technologies to enable Vehicles and Traffic Management

Image processing

Navigation – Surveillance
Visible, Infra-Red, Lidar, Radar

Decision Making

Cognitive Assistant

Speech processing

cleared
Air Traffic Control Speech Recognition

Air Traffic Control
Civil & Military

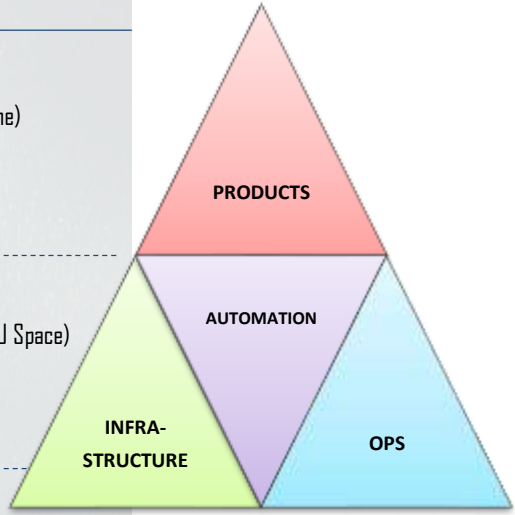
Trust in Autonomy

General Regulation for Autonomy
Certification, Validation … Explainable **AI** …

Urban Air Mobility

Supported by a facilitating regulatory framework that allows technology roadmap flexibility

Launch	Scale-up
Aircraft ▪ Type certification (Fixed-wing aircraft v Rotorcraft Heritage) ▪ Pilot Licensing	▪ Autonomous - Certified category drone) ▪ RPS Standardisation
Operations ▪ Traffic coordination under existing separation minima ▪ Operations possible both in controlled and uncontrolled airspace ▪ Commercial operations - AOC	▪ Fully automated ATM ▪ Full integration into U-Space (Define U Space) ▪ Dedicated Airspace
Infrastructure ▪ Fit for different environments ▪ Approved/Certified aerodromes ▪ Large airports (high maneuverability and precision) ▪ Inner-city location (low noise profile and high safety level)	▪ Standard procedure to fast-track landing pad approval



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Cybersecurity

- All the subjects discussed heavily rely on advanced computer systems and connectivity…
- … everything digitalized and connected is exposed to (cyber) attacks.
- Possible consequences of a successful attack are
  - *People safety*
  - *People privacy and sensitive data*
  - *Brand impact*
  - *Service Availability*
  - *Stealing of knowledge*
  - …