UK Civil Aviation Authority
innovation

AAE Conference
Urban transportation of passengers by eVTOL
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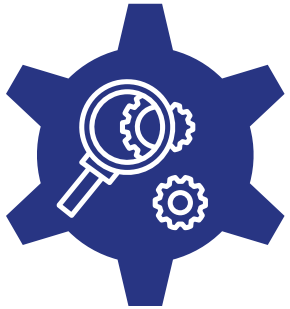
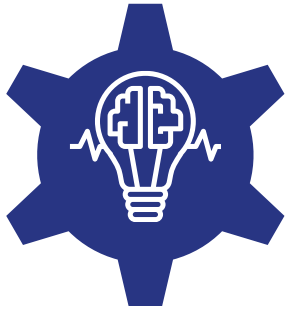
The Innovation Hub

Mission | To create an environment where innovation in aviation can flourish in line with CAA principles

1. **Gateway** to make it easier for innovators to access CAA expertise, guidance, and viewpoints on regulations

2. **Sandbox** to trial innovative concepts to maximise regulatory and innovator readiness.



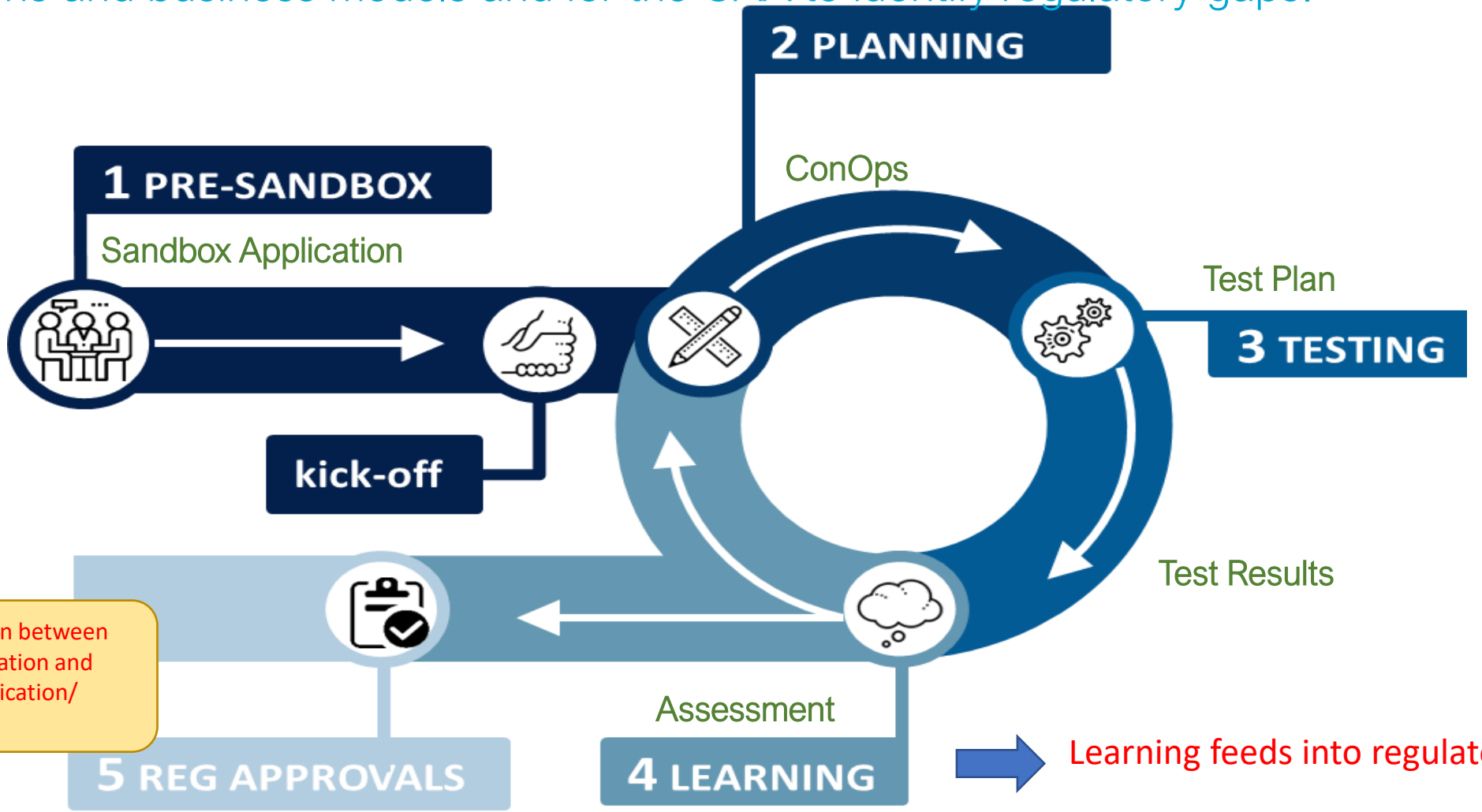


3. **Regulatory Lab** to accelerate the development of new policies and regulations

www.caa.co.uk/innovation

The Sandbox

The Regulatory Sandbox is a ‘safe space’ for Innovators to test their novel technologies, operations and business models and for the CAA to identify regulatory gaps.



Clear distinction between enabling innovation and approval/certification/ oversight

Learning feeds into regulatory lab

The Regulatory Lab

UK Civil Aviation Authority

INNOVATION PROGRAMMES

- AAM Regulatory Challenge: an initial commercial operation of a passenger carrying service by an electric vertical take-off and landing aircraft by 2025.

- BVLOS Regulatory Challenge: routine and safe beyond visual line of sight (BVLOS) RPAS operations within non-segregated airspace by 2024

    - Develop & drive programme plan
    - Identify gaps
    - Identify systemic risks
    - Work with SMEs to develop mitigations
    - Distinction between enabling and regulating

Regulatory Lab

THOUGHT LEADERSHIP

- Innovator maturity
- Stakeholder 'maps'
- Baseline Papers
- Guidance for Innovators
- Internal Guidance & Recommendations

AAM Programme Plan outline (1)

- Clarification of UK approach to Initial AW Certification for eVTOL Aircraft for internal and external stakeholders.
- eVTOL Operators and Training Providers have clarity over the UK's requirements for eVTOL aircraft pilot training, competency and licensing.
- Ground infrastructure providers and operators have clarity over the UK's design and operational requirements and means of compliance for the operation of VTOL and eVTOL aircraft in the UK.
- eVTOL aircraft operators understand their safety and operational responsibilities and the requirements for obtaining and maintaining an Air Operators Certificate (AOC) for the commercial transport of passengers.
- eVTOL operators and designers have clarity of the UK standards for eVTOL aircraft ongoing airworthiness and maintenance.

AAM Programme Plan outline (2)

- Development of regulatory assumptions around requirements for AAM integration into traffic management services including future technical requirements in line with BVLOS and the CAA's Airspace Modernisation Strategy.

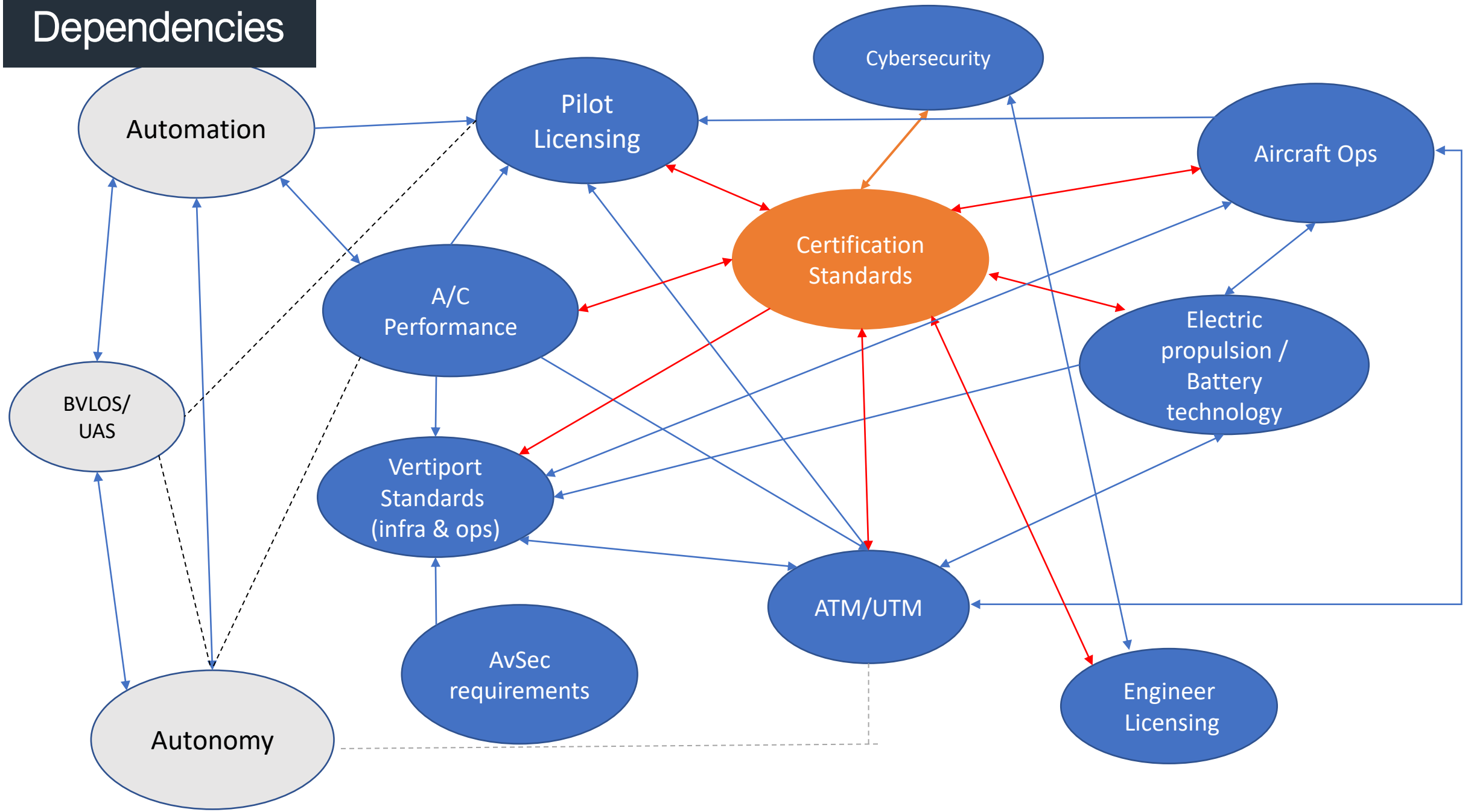
- Stakeholders have clarity of the requirements, policies/standards for AvSec for commercial AAM passengers and cargo

- Development and consultation of CAA Scheme of Charges for eVTOL operators.

- Development of initial approach to airline licensing and economic regulation for operators of eVTOL aircraft.

- Stakeholder engagement. The AAM industry sector are clear on what is achievable by 2025 (and what is not) and beyond from a regulatory standpoint.

Dependencies



Unknowns impacting certification and other criteria

- Known unknowns:
  - Battery performance
  - Different aircraft performance metrics
  - Aircraft handling characteristics, especially in emergency situations
  - Public appetite
  - UTM solutions
- Unknown unknowns
  - ?

Vehicle Certification

- EASA SC-VTOL and associated MoCs.
- FAA safety continuum approach based on part 21.17(b) using 14 CFR Parts 23, 25, 27, 29, 31, 44 and 35 as appropriate per vehicle.
- UK CAA has decided to adopt SC-VTOL. Evaluating MoCs for suitability.
- Participating in many Eurocae WG

UK CAA will adopt what is appropriate for the UK AAM operating environment while being very cognisant that harmonisation increases efficiency for industry and regulators but also enhances safety as can be seen from previous slide.

International regulatory community must work together to move towards harmonisation:

- Collaboration and exchange of type certification data
- Streamline validation activities and minimise duplication of effort
- Establish a risk-based approach to validation between the State of Design and the Validating Authority using acceptance practices for low-risk validation items

Collaboration

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To capitalise on the benefits of UAM/AAM for the public, environment and industry, all stakeholders need to work together in a different way as when we developed standards for 'traditional' aviation and aerospace.

- Speed of technological development and need for regulations/oversight/certification to keep pace.
- Much technological expertise resides in industry
- Aviation SMS experience
- Aviation Safety Culture

Liaising with other NAAs: FAA, TC, ANAC, JCAB, CAA NZ, CASA, CAAS, EASA, ICAO to share expertise and insights. Open for more collaboration

Learning from Industry in our Sandbox activity, as well as 1:1 engagements.

How can we explore synergies and make best use of our combined experience, and limited resources?