CAA Future of Flight **Industry Update September 2023**

The Civil Aviation Authority (CAA) is working with colleagues across industry and government to deliver the regulatory frameworks and certification that will enable the next generation of aircraft to be developed and operated in UK airspace, at the same time continuing to protect the public and other aviation users from harm.

This update provides industry and other external stakeholders with a snapshot of the CAA's Future of Flight progress at time of publication – for any queries please email: oliver.davies@caa.co.uk

The CAA has identified and categorised **more than 180 interconnected programme milestones** which it is delivering through a number of ongoing and proposed delivery projects which include the Airspace Modernisation Scheme (AMS), Digitalisation of the Specific Category Operations (DiSCO), Remote ID and Regulatory Review. To deliver the UK Future of Flight Programme all these milestones must be delivered, many simultaneously, requiring the coordination of other owners and stakeholder including UK Research and Innovation (UKRI), Department for Transport (DfT) and other partners.

The CAA Future of Flight programme (alongside the DfT Future of Aviation Programme and the UKRI Future Flight Challenge) will jointly deliver the Future of Flight Action Plan, as endorsed by the Future of Flight Industry Group (FFIG) run by DfT. The FFIG is due to publish its Action Plan in December 2023.

> **We are supporting a thriving drone and model aircraft industry in the UK**, as of 31/3/2023 there were:

> • **513,860** active registered drone flyers and operators
> • **14,638** Active Remote Pilot Competency Qualification Holders
> • **3,620** Active Specific Category Operational Authorisation Holders
> • **30** Active Recognised Assessment Entities
> • **4** Active Associations (BMFA, LMA, UKFPV, ARPAS-UK)

> **We are already providing authorisations for BVLOS (Beyond Visual Line of Sight) with visual mitigations and BVLOS flying**. However, we recognise that industry would welcome scalable, routine BVLOS flying which we are working to enable via the DiSCO programme and its 4 key pillars of work on Risk Assessment, Remote Pilot Competency, Flightworthiness Assessment Entities and Airspace.

Open Category

> **In June 2023 we completed the Discovery phase of the 'Regulatory Review' project** which is reviewing the regulatory framework that we inherited from Europe that applies to Remotely Piloted Aircraft Systems (RPAS) operating in the UK. Following our withdrawal from the EU framework, we have been looking for opportunities to streamline existing legislation to make manufacturing and operating easier for businesses in the UK. We launched a Call for input on this in August 2023, and expect to run a further consultation later in the year.

> **In March 2023 we completed the Drone & Model Aircraft Registration and Education Scheme (DMARES) migration of 5.2 million records onto Microsoft Azure** – In July 2022 the government took the decision to decommission Gov.Uk.PaaS, which meant we had to move DMARES on to a new hosting platform, an important technical milestone which enables future activity such as DiSCO.

> **We follow a Continuous Improvement (CI) approach to DMARES and request for and action customer feedback, as a result, we have made many functional and technical changes to the platform** such as creating a Drone Code PDF Version, adding site search functionality, adding FPV questions and offering SMS access codes instead of email.

Specific Category

> *CAP722H*

> > **Update to Specific Category Operations: Pre-defined Risk Assessment Requirements, Guidance and Policy** – the publication now reflects the updates to the risk assessment methodology contained within CAP 722A and provides assurance explanations to the identified mitigations and administrative amendments.

> > **CAP722H has undergone review with the RPAS Safety Leadership Group**, which includes industry representatives and was a necessary first step before a review of our most popular PDRA, PDRA-01, which allows

more operations in congested areas, to be undertaken.

> *PDRA01*

> > **Around 3500 authorisation holders currently operate using a PDRA01.**

> > **We are reviewing the privileges of PDRA01 as part of our continuous improvement and development of PDRAs,** and also as part of our adoption of the Specific Operations Risk Assessment (SORA) methodology. Our review will also explore better ways for operators to mitigate the risk of their operations to uninvolved persons.

> > **PDRA01 is going to be the first type of operational authorisation that will be hosted on the new DiSCO application platform.** Applying for PDRA01 via DiSCO will make the application process quicker and easier for operators.

> **In July 2023 we launched a public consultation on the future framework of Remote Pilot Competence,** as part of the DiSCO project. This sets out our thinking and tests our concept before detailed drafting and further consultation later in the year.

> **We launched a public consultation in June 2023 to review industry's feedback on Innovation Test Sites.** We had over 100 attendees at the introductory session and have had over 80 responses – the feedback capture window finished on 30th June 2023. We are now reviewing the feedback and crafting the test site strategy.

> **In April 2023 we published CAP2533 - Airspace Policy Concept - Airspace Requirements for the Integration of Beyond Visual Line of Sight (BVLOS) Unmanned Aircraft –** exploring how BVLOS drones can be better accommodated

within our heavily utilised airspace, whilst minimising the impacts on other established users. We had 118 attendees at the industry engagement session, 17 applications and selected 6 to move forwards. The CAA is also actively working on a policy to enable BVLOS operations in atypical operating environments, where established user operations, whilst still possible, are less likely.

> **In March 2023 we completed the discovery phase, for a new technical platform, to support the Digitalisation of the Specific Category Operations (DiSCO)** which will digitise the application and risk assessment process for RPAS operators, allowing for greater transparency and a better customer experience. The Alpha phase for technical delivery completed in **June 2023**. As part of the Alpha Phase we sent out questionnaires to over 3,000 current PDRA01 (Pre-defined Risk Assessment) holders, received over 350 responses with whom we ran UAT. The prototype is now about to move into the build phase which has a planned go live date of March 2024.

> **In Jan 2023 we published the refreshed version of the Airspace Modernisation Strategy (AMS) Parts 1 and 2** setting out how modernised airspace can be delivered through individual elements that will modernise design, technology, and operations. Part 3 is now in the detailed planning phase.

Certified Category

> **In July 2023 we issued an Operational Authorisation to Vertical Aerospace to conduct remotely piloted testing** as part of their certification programme within clearly defined limits.

> **In March 2023 we submitted and agreed our Aviation, Legistation and Policy Mandate update to develop regulations for the Certified category of Unmanned Aircraft Systems (UAS).** Regulations are required for: certification of the aircraft, licensing of remote pilots, certification of operations, additional regulatory changes to take into account the presence of certified RPAS.

Airspace Modernisation Strategy (AMS)

We recognise the need for greater integration of RPAS into UK airspace structures and are continuing to develop our policy position on integrated traffic management. We are required by law to consider the needs of all airspace users, but before we make any decisions, we need to develop our knowledge on what future airspace users will need from an integrated network.

> **Since 2017, the Secretary of State for Transport has required that the CAA develops and maintains a forward-looking strategy to 2040 for all UK airspace, users and stakeholders, at the same time reinforcing the CAA's mission to 'maintain a high standard of safety'.** The first version of the AMS (2018) focussed on establishing a strategic direction to address modernisation of UK airspace infrastructure and growing delays in Commercial Air

Transport, with the consequential impact on consumers.

> **The 2023 version of the strategy introduces significant new areas of focus**, such as better enabling activities outside of Controlled Airspace, facilitating more access to the UK's airspace for more of its users, and integrating, as opposed to segregating, the growing activity of 'new entrants', including BVLOS Drones, Advanced Aerial Mobility, High Altitude Platform Systems, Space Launch, etc.

> **The CAA has recognised that both Electronic Conspicuity and an integrated digital data management function are key enablers of the successful integration of crewed and uncrewed aerial systems,** particularly in the lower airspace, outside of Controlled Airspace. Progressing these elements are now a priority of the CAA's AMS delivery planning activity. We are currently working with DfT and industry to set the standards for technology and information provision so we can decide on the architecture of an integrated system.

Electronic Conspicuity (EC)

> **Work on EC in 2023 is focused on conducting all trials and studies required to develop the Con Ops**, this will cover areas such as frequency management, MAC risk modelling, airspace safety case development, ground infrastructure analysis and human factors studies.

> **Focus during the last quarter has been on agreeing the scope and deliverables to enable the above in order to build out the project plan**, working closely with other interdependent project teams such as DAA, UTM and RPAS to ensure we are all clear on the deliverables and dependencies.

Remote ID

> **In March 2023 we completed a Strategic Outline Case (SOC) for the DfT on the UK's options for Remote ID (RID).** The Detailed Design Phase for Remote ID started on 1st April 2023 and aims to complete at the end of September 2023. We expect to have a Call for Input on this in August 2023 and a consultation in the Autumn of 2023.

> **The SOC outlined that the best solution for the UK would be a hybrid approach** for Direct and Networked RID – this is being explored in the design phase that completes at the end of September.

Innovation Advisory Services (IAS)

> **The CAA plans to publish its 'Strategy for AI' in Summer 2024.** We are actively considering its potential impact in 3 key areas;

  o How we can regulate its use in an aerospace environment while maintaining a focus on safety and security?
  o How we can use it to work more effectively and efficiently to deliver our regulatory duties?
  o How we align our use of AI with other regulators and government departments such as DfT and the Office for AI

> **We have been providing advisory services to the Future Flight Challenge consortia that received funding from UKRI.**

> **In July 2023 we started work on new paid-for advisory projects** to provide advisory services on hydrogen propulsion and BVLOS / Airspace Integration of UAS.

Advanced Aerial Mobility (AAM)/eVTOL

The CAA continues to work with industry and international regulators to ensure continuous progress in the area.

> **In May 2023 we published CAP 2539 - A guide to applying consumer principles to the AAM industry** ensuring that in addition to safety, consumers are supported in relation to choice, value and fair treatment.

> **In May 2023 we also published CAP 2538 - Considerations for Aerodromes and Vertiports** planning to operate Vertical Take-off and Landing Aircraft (VTOL).

> **In May 2023 we consulted on the Means of Compliance (MOC) to SC-VTOL to aid the development of guidance for Original Equipment Manufacturers** entering or intending to enter into the certification process for VTOL aircraft.

> **In March 2023 we issued the first Design Organisational Approval (DOA) to Vertical Aerospace** enabling them to continue to advance their design and certification work on their four-passenger VX4 vehicle.

> **In March 2023 we published CAP2055 and 2056 - Assessments on the noise impact of eVTOL aircraft.** These reports examine the effects of eVTOL aircraft noise on humans and review the available data on noise measurements from eVTOL aircraft.

We are also continuing our work in the following areas:

> **Licencing:** setting out our policy position on licensing pathways for existing commercial licence holders in collaboration with industry stakeholders via the licensing round table.

> **Aerodromes/Vertiports:** setting out our policy approach and informally consulting industry at a round table in September. Proposals for operations from existing aerodromes are being developed now, with regulations for bespoke vertiports to follow.

> **Operational requirements:** setting out our policy position to outline our approach. We have completed a gap analysis against FAA and EASA proposed operational rules to form the basis for developing UK rules.

> **Security:** completing our draft risk assessment so that a security policy can be published by DfT.

> **Current applications:** continuing our work with existing applicants for CAA certification of their eVTOL aircraft. We're also continuing to collaborate with NAA's and other regulators on the validation requests for vehicles certified by them.

> **Air traffic integration:** continuing our work on criteria for operating in IFR conditions, linked to UTM work and ensuring AAM considerations are fed into the AMS.

> **International:** we continue to chair the ICAO AAM Study Group as our commitment to international collaboration and harmonisation. We will also continue to work closely with FAA, EASA, CAA New Zealand and CASA on sharing best practice and understanding where we can simplify and harmonise.

> **Testing:** reviewing how testing and trialling of innovative technologies, including for eVTOL and RPAS, can be facilitated to enable tests to be carried out safely via a more streamlined and simple process.

Upcoming Events

28-31 Aug
ICAO Air Navigation World
Montréal, Canada – focus on the future technologies and procedures to support evolution of aviation, operational and implementation challenges of air navigation and safety solutions.

20-22 Sept
RAeS Summit: Future of Flight
RAeS, London – review of the progress of flight technologies, from lightweight fuel cells to aircraft autonomy and how they're being applied to flight trials.

25-27 Sept
ATCA – Airspace Integration
Madrid, Spain – integration of new technologies and users (AAM, UAM, drones, autonomous vehicles) into airspace.

26-27 Sept
DroneX
ExCel, London – focusing on commercial, future of flight, military and defense and emergency services

27 Sept
EASA Safety Summit
Seville, Spain – leveraging disruptive technologies.

27-28 Sept
Global Urban & Advanced Air Summit Asia
Marina Bay, Singapore – urban and advanced air mobility expert insight, knowledge sharing and debate from leaders in Asia.

27-28 Sept
Electric & Hybrid Aerospace Technology Summit
Bremen, Germany – highlighting development of hybrid propulsion, electrical subsystem architecture and other electric aircraft.

5-7 Dec
ICAO Drone Enable
Montréal, Canada – symposium on introduction of UAS and UAS traffic management.

11-15 Dec
ICAO AAM Study Group
Montréal, Canada – Group established at last Assembly to assist ICAO in identifying missing international requirements.