Regulatory Sandbox for BVLOS Accommodation Airspace Policy Concept

CAP 2540

Contents

The Civil Aviation Authority is inviting organisations to join its Regulatory Sandbox to trial a policy concept that will see the use of temporary reserved areas (TRA) in conjunction with appropriate procedures and/or technology to accommodate the operation of unmanned aircraft (UA) in unsegregated airspace. Our intention is that the airspace policy concept be trialled by appropriate industry stakeholders so that it may be refined and, in time, implemented as CAA policy. The call is open to individual organisations or consortia working on the development of UA systems (UAS) operating beyond visual line of sight (BVLOS).

Context

The Airspace Modernisation Strategy (AMS) presents the roadmap for the development and modernisation of UK airspace until 2040. One element considered within that strategy is the way that UAS operating BVLOS will be integrated within the airspace system.

There is an expectation that this mode of aviation will expand rapidly in the coming years. To do so successfully, there is a need for such aircraft to be able to enter the airspace system routinely, without the need for special provisions, and to integrate safely in unsegregated airspace.

An airspace policy concept has been created to describe a pathway forward to deliver that integration. The policy concept document can be found on our website at www.caa.co.uk/cap2533

The policy concept proposes the utilisation of a specific type of airspace structure called a temporary reserved area (TRA) to enable the trialling of systems and approaches to safely enable the transition of UAS from segregated to unsegregated airspace in the UK. This process is referred to as 'accommodation' which is defined by ICAO as "the condition when a UAS can operate along with some level of adaptation or support that compensates for its inability to comply within existing operational constructs"[1].

A TRA is a defined volume of airspace that is temporarily reserved for a particular use and can be activated as and when required. The TRA adopts the background classification of the airspace it is in and may have additional requirements applied to enable the safe trialling or operation of aircraft within the TRA. The TRA is managed by an air navigation service provider (ANSP) in accordance with an agreed ruleset when the TRA is active. The TRA may also be overlaid by a transponder mandatory zone (TMZ) and/or radio mandatory zone (RMZ) if required.

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[1] ICAO RPAS CONOPS for International IFR Operations.

Objectives of the Sandbox

Our intention is that the airspace policy concept be trialled by appropriate industry stakeholders so that it may be refined and, in time, implemented as CAA policy.

The objectives of the sandbox are to:

- Demonstrate and validate any specific technologies, airspace management procedures, and flight operation procedures that are needed to enable the safe, managed integration of BVLOS UAS and crewed aircraft.
- Enable the CAA to validate the use of the airspace policy concept with real world use cases to evidence how it supports and enables the accommodation phase.
- Enable participants to progress beyond segregation towards integration of BVLOS UAS flights with crewed aircraft.

The trial of the airspace policy concept will be delivered using the Regulatory Sandbox methodology.

The Regulatory Sandbox allows the CAA to develop policies that better meet the needs of the industry, and to shorten the lifecycle for developing these policies. This is achieved by following **cycles of hypothesis-driven experimentation in a controlled and safe environment** to accelerate learnings, eliminate unknowns and uncertainties, and rapidly converge towards the design of a policy. These cycles are called Build-Test-Learn cycles.

The Regulatory Sandbox is managed by the CAA Innovation Advisory Services team working in collaboration with the Remotely Piloted Aircraft Systems (RPAS) Unit and Airspace, Air Traffic Management & Aerodromes (AAA) Department.

The Sandbox service is an advisory service offered prior to an application for regulatory approval being started. Sandbox services stop as soon as a regulatory application process starts. The CAA individuals involved in the Sandbox services cannot process the regulatory approval. The separation between Sandbox services and regulatory approvals mitigates risks with conflicts of interest.

Sandbox services do not, in any way, predispose regulatory decision-making. Regulatory decision making is made by the CAA's core regulatory teams that sit in another part of the CAA. Such outcomes remain the sole discretion of the relevant regulatory teams with reference to our statutory duties.

What we are looking for?

We are looking for organisations planning to conduct or manage BVLOS flights in unsegregated airspace. This includes all airspace classes – controlled airspace (Class A, C, D and E) and uncontrolled airspace (Class G).

The call is open to individual organisations or consortia working on the development of BVLOS operations of UAS.

Sandbox applicants must be ready to test the TRA policy concept by being able to demonstrate the following conditions:

- There is agreement with an ANSP to manage and operate the TRA, which includes but is not limited to the provision of an air traffic service within the TRA.
- That alongside the airspace management function and the provision of air traffic services in accordance with the airspace classification, the ANSP is capable of providing flight information service supported by information from an ATS surveillance system.
- The airspace change sponsor must be familiar with the process to submit an airspace change proposal in accordance with CAP1616.
  - Note: the CAA **will** provide appropriate support to the applicant through this process as this is a policy concept
- The applicant must be able to explain how their participation in the sandbox will support the transition from segregation to integration.
- The UAS operator must be competent and experienced in applying for Specific category authorisations to conduct BVLOS flights. We expect the UAS operator to apply for an authorisation to operate BVLOS in the Specific category within the TRA, most likely within 2 months from notification of acceptance to participate in the sandbox.
  - Note: applicants must be able to create the operating safety case (OSC) without help from the CAA as that support is not part of the Sandbox.
- The UAS operator is ready to conduct BVLOS flights in the TRA and can support the full duration of the test trial plan developed.

We will triage all the applications against the criteria above. We will onboard a limited number of candidates to match our capacity. Our decision on sandbox applicants will be final.

What you will get from us

The organisation(s) which enter the CAA Regulatory Sandbox will receive the support from a dedicated innovation advisor and from regulatory subject matter experts, who will:

- Collaborate on the development of specific airspace management arrangements and flight operation procedures to enable safe operation of a UA within a TRA;
- Provide feedback on the safety argument for BVLOS operations in unsegregated airspace;
- Collaborate on the development of the trial plan for testing in the TRA to ensure both the CAA and participant objectives are realised;
- Provide critical review of the test data obtained through operations in the TRA; and,
- Ensure lessons learnt are captured to support the development of the policy

All CAA support and access to subject matter experts for the sandbox activity will be free of charge to the selected participant(s).

How to apply

In order to apply, you will need to:

- Complete the provided application form (available by emailing innovation@caa.co.uk), ensuring you provide details of your proposed solutions for operating BVLOS in unsegregated airspace.
  - This should detail how you intend to operate in unsegregated airspace once all the solutions proposed are demonstrated and where applicable approved by the CAA
- Complete the trialling ConOps in as much detail as possible
  - This should detail your proposed solutions and how you would intend on testing these within a TRA

NOTE: Successful applicants/consortia will be required to enter into a memorandum of understanding (MoU) and non-disclosure agreement (NDA) with the CAA. Please review the provisions of these documents as there will be no scope to negotiate them.

If you have any questions about the application process, please contact us through our email address:

innovation@caa.co.uk

Timelines

An overview of the timelines.

- A virtual briefing session will take place **24 April 2023 @ 15:00**. Registration via https://www.eventbrite.co.uk/e/616506366137
- The application period for this sandbox will close **on Tuesday 23 May 2023 at 12:00 hrs BST**. Applications received after this time will not be accepted.
- Applications will be reviewed and assessed for inclusion in the sandbox and all bidders will be notified within **7 working days** of the outcome
- Successful bidders will be onboarded to the sandbox.
- A virtual kick off meeting will be arranged within **10 working days** of notification of onboarding to the sandbox to explain to all parties the next steps
- Individual one to one meetings will be held to provide feedback on the proposed ConOps and establish a timeline for the projects.

The sandbox will only be open once and no other applications for this sandbox will be accepted when the application phase has closed.