



CHANGE

1. Category of Airspace Change

Does your proposal concern Changes to Notified Airspace Design or Planned and Permanent Redistribution of Air Traffic? *

- Changes to Notified Airspace Design Planned and Permanent Redistribution of Air Traffic

2. Title of proposal

Please enter a title for this intended change, (max 80 characters): *

Electronic Conspicuity (EC) Mandated Zone trial

- Have you previously submitted a Statement of Need ?

SPONSOR

3. Change Sponsor Details

Please select the appropriate category and complete. *

- A Company
 An Unincorporated Association or other body
 Individual (including sole traders and partnerships)

3a. A Company

Registered Company name (in full) *

Air Navigation Solutions Ltd

Registered Company Number

09166111

Country of Company Registration

United Kingdom

Registered Office Address

The Old Control Tower

Postcode

RH6 0LD

E-mail

[REDACTED]

Trading name (if applicable)

Trading Address (primary site)

As above

Country

Postcode

Website address

ans-atc.com

Primary Point of Contact Name *

[REDACTED]

Requires Airspace Portal Access ?

Telephone *

Mobile Number (for Airspace Portal) *

Email *

Additional Contacts

You can add up to 4 additional contacts

STATEMENT OF NEED

4. Independent Aviation/Airspace Consultancy

Is an Independent Aviation/Airspace Consultancy involved in this proposal?

5. Statement of Need

Please provide a brief 'Statement of Need' clearly explaining what issue or opportunity this proposal is seeking to address.

*Further information can be found in CAP1616 **

Air Navigation Solutions Ltd (hereby known as ANSL) (the airspace change sponsor) are an Air Navigation Service Provider (ANSP), who provide Air Traffic Services under Licence to London Gatwick Airport and Edinburgh Airport, are seeking a volume of airspace over the west coast of Scotland for a six-month period in which to investigate the feasibility of the creation of an electronic conspicuity (EC) mandatory zone (ECMZ) in low-density airspace over rural areas that would enable the safe integration of unmanned aircraft systems (UAS) beyond visual line of sight (BVLOS) operations with other aviation users.

Skyports Limited (herby known as Skyports) shall co-sponsor the airspace change proposal (ACP), contribute to stakeholder engagement exercises, and concept of operations (ConOps) and trial plan development. Skyports is a drone services provider, committed to creating positive change by connecting people, businesses and communities to vital supplies and services, such as healthcare, maritime logistics and e-commerce.

A successful project will:

1. Validate our proposals that an ECMZ in low-density airspace over rural areas is a viable means of safely, seamlessly and equitably integrating unmanned with manned aviation;
2. Provide a blueprint for an ECMZ that can be applied anywhere in the UK with the same air and ground risk characteristics;
3. Support the achievement of recurring UAS BVLOS operations in the UK not currently achievable inside temporary segregated airspace structures; and
4. Complete a foundational step towards unlocking u-space airspace in the UK without disenfranchising manned aviation.

Issue

Operation of an unmanned aircraft (UA) BVLOS currently requires either:

- A technical capability which has been accepted as being at least equivalent to the ability of a pilot of a manned aircraft to 'see and avoid' potential conflicts;
- A block of airspace to operate in which the UA is 'segregated' from other aircraft because other aircraft are not permitted to enter this airspace block, the unmanned aircraft can operate without the risk of collision, or the need for other collision avoidance capabilities; or
- Clear evidence that the intended operation will pose 'no aviation threat...' (CAP722)

The technology for on-board 'detect and avoid' (DAA) is currently immature and cannot be relied on as a strategic airspace mitigation. Segregation is an inefficient use of the airspace, disruptive to other airspace users who 'share the air', and not a sustainable solution for enabling recurring UAS BVLOS operations when temporary structures are limited to three- month periods. Finally, UK airspace is busy; it is difficult for UAS BVLOS to operate for end users on the ground without posing an aviation threat.

Opportunity

The creation and testing of an ECMZ potentially provides a means of overcoming those aforementioned challenges and to create a scalable, flexible and simple solution that caters for all airspace users. Practically, this means moving away from temporary segregated airspace structures that satisfy no-one.

The project also furthers the objectives and is consistent with the UK Airspace Modernisation Strategy. Incorporation of widespread UAS operations into existing airspace cannot be achieved easily. Safe integration of unmanned with manned aviation in a known traffic environment would reduce the need for segregation and lead to a more efficient use of the airspace.

How has the opportunity arisen?

Skyports has operated UAS BVLOS off the west coast of Scotland in segregated airspace to prove the concept and trial a drone delivery service for the NHS around Argyll and Bute. Skyports and the NHS are in the process of exploring the permanent drone delivery operations over an expanded area. In order to achieve this objective, an airspace structure will be required to enable recurring UAS BVLOS operations to occur; nevertheless, the proposed ECMZ would not be restricted to one UAS operator but ultimately open to any aircraft that can meet the criteria for safe entry (see Use Cases).

Airspace Characteristics

The ECMZ in low level airspace would have the following characteristics:

- 0-500ft AMSL over sea;
- 0-1000ft AMSL over land;
- Single volume of airspace; no separate blocks, corridors or complexes designed for one UAS operator;
- Supported by a network of ground-based sensors; and
- Existing airfields excluded from the ECMZ to allow non-EC aircraft to access airfields.

Reason for the chosen area

ANSL and Skyports have chosen the area of the west of Scotland to trial the ECMZ rather than an existing airspace structure in another, arbitrary location, e.g. permanent danger area, because we cannot create the same operating environment elsewhere.

The operating procedures that ANSL and Skyports are developing and testing are unique to the local area. During the testing phase, we will be identify, for example, specific general aviation (GA) hotspots in the area and develop operating procedures for UAS operators that will help them remain well clear. As part of the creation of a known traffic environment, we will be using ground-based sensors, which are being deployed.

Use Cases

The anchor use case for this project is medical deliveries for the NHS. This includes the pick-up of patient pathology samples from the islands and remote medical practices, but also includes delivery of chemotherapy, medicines and medical goods to both hospitals and medical practices.

The ECMZ would also facilitate a wide variety of other potential use cases for other UAS operators. Examples include:

1. Ship-to-shore deliveries from vessels operating the area;
2. Maritime surveillance;
3. Water sampling in support of the fishery industry;
4. Long-range linear inspections;
5. BVLOS inspections of critical infrastructure assets;
6. Deliveries for Royal Mail to the multiple islands within the ECMZ; and
7. Deliveries of school meals on behalf of the council to children living on the islands.

The area would also provide a safe operating environment that could help mature on-board DAA technologies which will require a vast amount of real-world flight test.

ConOps

ANSL and Skyports will leverage a set of foundational UTM services to enable separation between the various airspace stakeholders. UAS operators will use strategic deconfliction principles and a robust set of self-separation procedures to remain well-clear from other traffic at all times.

A ground sensor network will enable situational awareness throughout the zone and will improve operational safety for both unmanned and manned operators.

Manned operators that are equipped with a compliant EC device will have unrestricted access to the airspace.

Non-EC equipped manned operators will be able to contact the ANSP and get access to the ECMZ as is the case for any ECMZ.

Temporary Operating Instructions (TOI) will be put in place to ensure that commercial and government operators, especially those that benefit from airspace primacy, are not constrained in their operational requirements.

6. Administrative Changes

Does your proposal represent an administrative change to the Aeronautical Information Publication (Proposed Level 0 change)?

7. Instrument Flight Procedures

Does your proposal have the potential to include a change to and/or new IFPs?

8. Five-Letter Name Codes (5LNC)

Does this request solely concern the reservation of new Five-Letter Name Codes (5LNC) in advance of a future proposal?

9. Additional Information

Please use the box below to add any further information which the CAA should be aware of when considering this submission (for example dependencies on other airspace change proposals and/or funding deadlines):

This proposal has been taken through the CAA Innovation Team Sandbox process.

SUBMISSION INSTRUCTIONS

Submission

Date and Time: **03 May 2022 4:03:01 PM**

Your form has been successfully submitted. Please keep a copy of this acknowledgement for your records.

Application Submission Number: **DAP1916V2-355**

Please note that the Airspace Regulation team will contact you to acknowledge receipt of your Statement of Need and to confirm the unique ACP reference number (ACP-YYYY-NNN) allocated to this submission. Following receipt of your unique ACP reference number, you will be required to create an associated airspace change proposal on the [CAA's Airspace Change Portal](#). Please refer to CAP 1706: CAA Airspace Change Portal Sponsor Training Manual provides for further information/guidance on how to use the Airspace Change Portal.

Once your submission has been assigned, arrangements will be made for you to attend an Assessment Meeting. One of the key outputs from this meeting will be an indicative timeline for the proposed airspace change. To enable the CAA to consider your proposed timescales, you will be expected to present dates for the following milestones at the Assessment Meeting:

- DEFINE Gateway
- DEVELOP & ASSESS Gateway
- CONSULT Gateway
- Formal Airspace Change Proposal Submission
- Target AIRAC

The CAA holds Gateway Assessment Meetings on a monthly basis and the annual schedule is published on the [CAA website](#).

Finally, you should also note that from September 2018 any amendments submitted by a Data Originator or ANSP for onward promulgation in the UK IAIP will be subject to the Aeronautical Data Quality Requirements. See [Commission Regulation \(EU\) No 73/2010](#) (updated by 1029/2014) and [CAP 1054: Aeronautical Information Management](#) guidance material for further information. These requirements will be discussed in greater detail during the course of your initial meeting with the CAA.

When you have completed this form, click this button to submit the form for processing. Do not click this button more than once. You will then be provided with further instructions.

