

Proposed Criteria for Assessing and Accepting the Airspace Change Masterplan

CAP 1887



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Executive Summary

1. In 2018, the UK Civil Aviation Authority (**CAA**) published an Airspace Modernisation Strategy (**AMS or the CAA Strategy**) to initiate the major overhaul of a key piece of national infrastructure. The CAA Strategy responds to the Government directing the CAA to “prepare and maintain a co-ordinated strategy and plan for the use of UK airspace up to 2040, including modernisation”.¹
2. The CAA Strategy sets out a new shared objective between the CAA and the Government for modernising airspace which is to deliver quicker, quieter and cleaner journeys and more capacity for the benefit of those who use and are affected by UK airspace. This will mean more choice and value for consumers, allowing airlines to add new flights, reducing flight delays and enhancing global connections that can help boost the UK economy, while continuing to improve safety standards and being more environmentally friendly by minimising the negative impacts of noise on local communities and minimising carbon emissions per flight.
3. Airspace modernisation is also expected to improve access to airspace for all users, ranging from General Aviation users such sports and recreational flyers, to commercial traffic or military operations, by enabling greater integration of different airspace user groups. Coupled with the adoption of new technology by existing airspace users, airspace modernisation will also help to integrate the operations of newer airspace users like drones and spacecraft.
4. Airspace modernisation is expected to support the Government’s objective to increase capacity, including through the development of a northwest runway at Heathrow as outlined in the Airports National Policy Statement, and other airports making best use of their existing runways subject to environmental issues being addressed.²
5. The CAA’s 2018 Airspace Modernisation Strategy replaced the CAA’s 2011 Future Airspace Strategy and sets out the ends, ways and means of modernising airspace through 15 initiatives that will upgrade the design, technology and operations of airspace, initially focusing on the period until the end of 2024. The initiatives are detailed in the **Appendix**.
6. Of these 15 initiatives, two are known as Future Airspace Strategy Implementation – South, and Future Airspace Strategy Implementation – North (known as **FASI-South** and **FASI-North** respectively). These are complex airspace design programmes that require coordination between the different ‘sponsors’ of airspace

¹ The Secretary of State has given the CAA the function to approve changes to the design of airspace in the [Civil Aviation Authority \(Air Navigation\) Directions 2017](#), as amended by the [Civil Aviation Authority \(Air Navigation\) \(Amendment\) Directions 2018](#) and the [Civil Aviation Authority \(Air Navigation\) \(Amendment\) Directions 2019](#).

² [Section 1.15](#), Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England, June 2018.

changes. These sponsors are the airports and NERL (NATS En Route plc, which manages upper airspace and its design).

7. The FASI-South airspace change programme is particularly complicated due to the number of changes necessary to achieve modernisation over the South of the United Kingdom. The CAA and the Department for Transport (**DfT**), have commissioned NERL to lead the FASI-South programme to create a coordinated plan for airspace changes in the South of the UK (or **Masterplan** for short). NERL has been asked to establish an impartial team known as the Airspace Change Organising Group (**ACOG**) to carry out this task. In due course the Masterplan will identify the individual airspace design changes that will need to be developed to achieve the necessary modernisation.
8. The purpose of the Masterplan is to set out where airspace change could be taken forward to provide benefits and to consider potential conflicts, trade-offs and dependencies. The Masterplan does not set the detail of individual airspace designs or solutions. It will include a programme plan for the *development* of the individual changes that together will make up the Masterplan as well as an implementation plan for those changes.
9. It will identify where any airspace changes would be needed to deliver a range of benefits, including to reduce noise, deliver air quality or fuel efficiency benefits or where more direct routes are possible that could reduce controlled airspace.
10. ACOG has proposed an iterative approach to the development of the Masterplan, which recognises that different information and levels of detail will be available at different points as the plan develops.
11. The Masterplan which ACOG produces will be formally assessed by the CAA and DfT as co-sponsors and, subject to that assessment, accepted into the CAA Strategy. Acceptance of the Masterplan into the CAA Strategy makes the Masterplan, together with CAP 1616, the legal basis against which the individual airspace change decisions are made by the CAA.³ Throughout the development of the various iterations of the Masterplan, the co-sponsors need to be reassured that the conflicts and trade-offs associated with airspace redesign are identified in the Masterplan, and that the process ACOG coordinates to resolve those conflicts is transparent, fair and aligns with relevant policy. Once the co-sponsors are reassured on these points, the Masterplan can be 'accepted' into the CAA Strategy and be relied upon to inform airspace decisions taken to achieve airspace modernisation. It may also be used by the CAA when it gives advice to the Secretary of State for Transport.
12. The CAA has prepared this draft document to set out the proposed requirements on ACOG when preparing the Masterplan and the analysis the co-sponsors will undertake before deciding whether to accept the Masterplan. The analysis seeks to determine whether the commission for the Masterplan is being met, and that the Government's policy objectives are being delivered.

³ Direction 5, 2017 Air Navigation Directions.

13. **The proposed criteria and expectations covered in this document are to inform assessment and acceptance of the Airspace Change Masterplan. It is not a replacement for the CAP 1616 airspace change process which must still be followed for all individual airspace change proposals.⁴**

Summary of the Acceptance Criteria

14. There are three components to the process of assessing and accepting the Masterplan, and these are summarised over the next three pages.

⁴ [CAP1616: Airspace change](#): Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information, January 2020.

1

NERL was commissioned to identify where and why airspace changes would be needed, based on the following considerations:

Identify where airspace changes could be developed in the South of the UK in light of:

- forecast growth in demand for aviation across all sectors and the required airspace capacity to accommodate that growth;
- airspace bottlenecks where delays to consumers could be alleviated by capacity;
- areas where planned development on the ground such as new runways will require new airspace designs;
- areas where more direct routes are possible that could, for example, reduce controlled airspace.

Identify other changes that may be required to deliver one or more of the following benefits:

- where airspace changes are needed to deliver a safety benefit, for example, changes that ensure route separation;
- where airspace changes can reduce noise (more specifically, reduce the total adverse effects of noise, as set out in the Air Navigation Guidance 2017);
- where airspace changes can deliver air quality or fuel efficiency benefits;
- where airspace changes are needed to allow improved access to airspace for all users, for example where the existence of controlled airspace is no longer justified;
- where airspace changes are needed to enable the military to fulfil their training requirements and national security functions;
- where airspace changes are needed to introduce new technology, for example the introduction of performance-based navigation.

Also identify:

- the operational concepts required to deliver these changes and their level of maturity;
- the set of assumptions on which the proposed changes are based and are dependent;
- the key risks associated with delivering the plan and how they could be mitigated;
- the recommended coherent sequence of individual or modules of changes against the evaluated alternatives;
- the preferred timescale for their adherence against each step of the CAA's CAP 1616 process and subsequent implementation;
- the party responsible for taking each individual airspace change forward;
- the interdependencies between individual changes;
- the degree of commitment offered by each individual party.

The co-sponsors (DfT and the CAA) would also like to know the minimum number of changes that are necessary to ensure that major airspace projects (e.g. to accommodate new runway capacity) are viable.

2

The Masterplan must include the following information, which will be considered by the CAA to decide whether to accept the Masterplan:

A programme plan of airspace changes including a list of airspace changes, in specific volumes of airspace and with identified sponsors and anticipated timings and dates.

This is described further in Chapter 2.

Information about the dependencies between changes in the plan. A dependency might mean that there is a **conflict** between design options of two or more sponsors (for example they both seek to use the same airspace), or that they **enable** one another. It might be that sponsors need to work together to solve a conflict between two or more of their potential design options, or to improve the current airspace structure.

Information on trade-offs. The choice or decision to resolve a conflict is known in this document as a 'trade-off'. It can arise between two sponsors of airspace changes wanting to use the same airspace, or between two objectives of an airspace change proposal such as achieving a noise reduction and achieving growth in capacity. Where there could be potential trade-offs on Government policy objectives that could be delivered by different solutions, the CAA would want to understand the potential consequences as soon as possible.

Information about the potential solutions to dependencies. The range of potential solutions to dependencies might include decisions that require a trade-off to be made, such as:

- the sequencing of proposed changes;
- moving routes vertically, laterally or the time/day they are used to resolve a conflict;
- a sponsor no longer pursuing one of its routes to resolve a conflict;
- other potential solutions identified by ACOG and sponsors.

Information about potential implications of the proposed solutions at a system level. It is important that sponsors work together, so that the potential implications of their dependent designs can be understood by impacted stakeholders, and will, together, deliver policy objectives. Potential implications may include:

- where dependencies will lead one or more change to have knock-on effects on other airfields, airspace users, including General Aviation, or traffic;
- where the resolution of a conflict will mean one sponsor or one policy objective will need to be traded-off against another (or others) in order to resolve the conflict;
- where those impacted by airspace change are likely to be affected by multiple changes.

Dependencies, potential solutions and potential implications are described further in Chapter 2.

The CAA needs the information listed above because we will need to be confident that public government policy and the CAA's Airspace Modernisation Strategy are adhered to in the trade-off decisions taken to determine the Masterplan.

This is described further in Chapter 3.

Information about stakeholder engagement, including how sponsors are working together, solutions they are considering together that affect stakeholders, and the degree of commitment from sponsors. At an appropriate stage in the Masterplan process, a public engagement exercise should be undertaken.

This is described further in Chapter 4.

In deciding whether to accept the Masterplan, the CAA will review all the information listed here and any other documents for assessment and acceptance described in this document. The CAA may ask for additional detail or supporting information to help inform whether to accept the Masterplan. ACOG is to keep the CAA informed on how it intends to present the required information, so a decision can be made on the suitability of it.

3

The format of the information the CAA will review is for ACOG to determine, providing the CAA can use it for the following regulatory activities:

For any proposed airspace change in the United Kingdom, the CAA will need to decide whether it conflicts with the Masterplan. For example, if a change is identified in the Masterplan as being an enabler for, or dependent with, other changes that have been identified following the commissioning requirements, this will be considered in CAA gateway assessments and decisions under CAP 1616. If a change conflicts with the Masterplan and could thereby undermine the modernisation programme, the CAA will have to consider refusing it.

For proposed changes listed in the Masterplan at **Stage 2 Gateways in CAP 1616**, the CAA will ensure that the individual proposal identifies any dependencies with any other changes identified in Iteration Two of the Masterplan. If there are conflicts, the CAA will want to understand whether and how the sponsors are working together on potential solutions to the conflicts, and what the implications of these solutions may be (for example a knock-on effect on other airfields, airspace users, including General Aviation, or a policy objective will need to be traded-off against another). This should be reflected in both sponsors' stage 2 materials, and the Masterplan will help the CAA look for this.

If one of the dependent sponsors is not yet at stage 2, the CAA will want reassurance in the Masterplan as to why the dependent sponsor does not need to be on the same timeline and that the materials it produces later will work within the scope of the Masterplan. The CAA will need to understand the risks in the Masterplan – including the consequences of one sponsor progressing through stage 2 ahead of dependent sponsors – and the degree of commitment offered by each sponsor. If a later dependent proposal delays or conflicts with one that has already passed through a gateway, the CAA will consider how best to mitigate the problem, including through considering the use of the new legislative powers currently being debated in Parliament in the Air Traffic Management and Unmanned Aircraft Bill.

For proposed changes listed in the Masterplan at **Stage 3 Gateways**, the CAA will want to know that the designs the sponsors will consult on will work together to deliver a modernised system. This means that dependencies must be clear and solutions developed, and that cumulative impacts are explained in an accessible consultation for stakeholders. This means that before the CAA will consider accepting the third iteration of the Masterplan, the CAA will want evidence that a public engagement exercise has taken place to gather feedback on the proposed system-level solutions in the Masterplan including any trade-off decisions made, and to consider any potential gaps in or productive additions to the Masterplan. Further detail on the solutions and expected impacts will be necessary so the CAA can check that the outcomes align with the policy outcomes set by government. This will require greater alignment between dependent sponsors, and evidence of that alignment in the Masterplan.

The criteria and expectations covered in this document are to inform assessment and acceptance of the Airspace Change Masterplan. It is not a replacement for the CAP 1616 process which must still be followed for all individual airspace change proposals.