Glasgow Airport
Airspace Change Proposal
Appendix E – Stakeholder Resources

Executive Summary

This document contains the documentation that Glasgow Airport's ACP stakeholders were provided with during Stage 2A. The presentations given to stakeholders at the briefing sessions are provided as a separate file. Full details of the communications, including communication content, can be found in Appendix C. For a timeline of key engagement activity, please see the engagement report.

Fig. 1 Frequently Asked Questions Document

Glasgow Airport FASI-N Airspace Change Proposal

Frequently Asked Questions

Introduction

This frequently asked question document provides a short summary of information in advance of the Stage 2 workshops which will be held in November and December 2021. The document is intended as an optional pre-reading for stakeholder planning to attend the sessions.

Frequently Asked Questions

General

1. What is Airspace?

Airspace is the 'invisible infrastructure' in the sky which helps aircraft operate safely. It includes the flight paths that aircraft take when arriving and departing from an airport, which are usually the responsibility of an airport up to 7000ft, and the routes on the airspace network above 7000ft which are the responsibility of NATS.

Airspace can be controlled and uncontrolled; this means that in some areas there are restrictions on which aircraft and/or pilots can fly in the airspace to protect other airspace users such as commercial airliners. To enter controlled airspace, pilots must get permission from Air Traffic Control. There are different classifications of controlled airspace that have varying requirements. For more information about different types of controlled airspace, please see here.

Airspace Change Policy and Regulation

2. What is Airspace Change?

Airspace change is the process through which flight paths, routes, controlled airspace boundaries and controlled airspace classification can be changed. The Department for Transport (DfT) is responsible for all aviation policy in the UK, including airspace. The Civil Aviation Authority (CAA) is responsible for its regulation and for the Airspace Change Process (see question 3) which all airports must follow where changes to airspace are proposed. Glasgow Airport is responsible for the design of any changes to flight paths into and out of the airport up to approximately 7,000ft, and NATS is responsible for changes to airspace above 7,000ft.

3. What is CAP1616?

The aviation industry is regulated by the Civil Aviation Authority (CAA) in the UK, and they ensure that the environmental impact of aviation on local communities is managed through efficient use of airspace. When changes to airspace are proposed, an airport is required to follow the CAA's Airspace Change Proposal (ACP) process, this is known as CAP1616.

CAP1616 is a 7-stage process which places great importance on engaging and consulting on airspace proposals throughout the process with a wide range of stakeholders, including potentially affected communities.

Glasgow Airport are currently in Stage 2 of the CAP1616 process. More information on Stage 1 can be found on the CAA's Airspace Change Portal, here.

4. What is the Airspace Modernisation Strategy?

The Airspace Modernisation Strategy (AMS), also known as CAP1711, is a document published by the DfT and CAA in December 2018. The document describes how the airspace within the UK is reaching capacity and due to the age of the design, includes features that restrict the aviation industry's ability to improve its operational and environmental performance.

The AMS sets out a new shared objective between the CAA and the DfT 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.

5. What is Performance Based Navigation?

Performance based navigation (PBN) is a type of navigation that uses satellite-based technology. This is similar to the type of technology used in car sat-navs, or in GPS based sports watches. PBN is being introduced across the world and Glasgow Airport are required to implement it as part of meeting the requirements of the Airspace Modernisation Strategy (see question 3 above)

PBN improves the accuracy of where aircraft fly and offers opportunities for different flight path locations by moving away from the constraints of outdated conventional navigation using ground-based beacons. This helps improve operational performance, reduce delays, and improves resilience.

6. What is FASI-N?

Many of the airspace changes that the airports and NATS are required to deliver overlap. In the busiest areas of Southern England, Northern England, and Scotland the airspace changes have been grouped into two major programmes:

- Future Airspace Implementation (FASI) North: The fundamental redesign of the terminal airspace in northern England and Scotland that is based on the widespread adoption of satellite navigation procedures.
- Future Airspace Implementation (FASI) South: The fundamental redesign of the terminal airspace in Southern England.

The FASI North and South airports are responsible for upgrading their individual arrival and departure routes from the ground to 7000ft. NATS are responsible for redesigning the route network above 7000ft that guides traffic to and from the boundaries of the UK's airspace. The airports and NATS are working closely to ensure that their individual ACPs are aligned, and the final set of changes can be combined seamlessly.

7. Who are ACOG?

ACOG is the Airspace Change Organising Group, and they are the team tasked with coordinating the redesign of the UK's airspace (FASI-N & FASI-S programmes). ACOG was formed in 2019 and are a fully independent organisation within NATS, under the direction of the DfT and the CAA.

ACOG's role is to coordinate the delivery of key aspects of the AMS. The cornerstone of ACOG's work is to create and maintain the Airspace Masterplan, which will provide detailed information on the airspace design options under development, the overlaps between airports changes and the compromises and trade-offs that may need to be made to integrate each airspace change effectively. More information on ACOG can be found here.

Glasgow Airport's Airspace Change Proposal

8. What is Glasgow Airport proposing and why?

Glasgow Airport is conducting an ACP to upgrade the airport's arrival and departure routes. It will cover a review of all routes from the ground up to 7000ft and will also include a review of the boundaries of controlled airspace.

Glasgow Airport is required to meet regulatory requirements to introduce routes and procedures compliant with PBN criteria and the requirements of the Airspace Modernisation Strategy.

In addition, the existing ground-based navigation aids, which routes at Glasgow are attached to, are being withdrawn as part of the national modernisation programme. This means that the routes are required to be updated to change the reliance from the current ground-based navigation to more advanced Global Navigation Satellite Systems (GNSS).

More information about Glasgow Airport's airspace change proposal can be found on the CAA's Airspace Change Portal here.

9. CAP1616 Stage 1: What are Glasgow Airport's Design Principles?

At Stage 1B of the CAP1616 process, the following design principles were developed with stakeholders. For more information about Stage 1, please see our submission documents on the Airspace Change portal here.
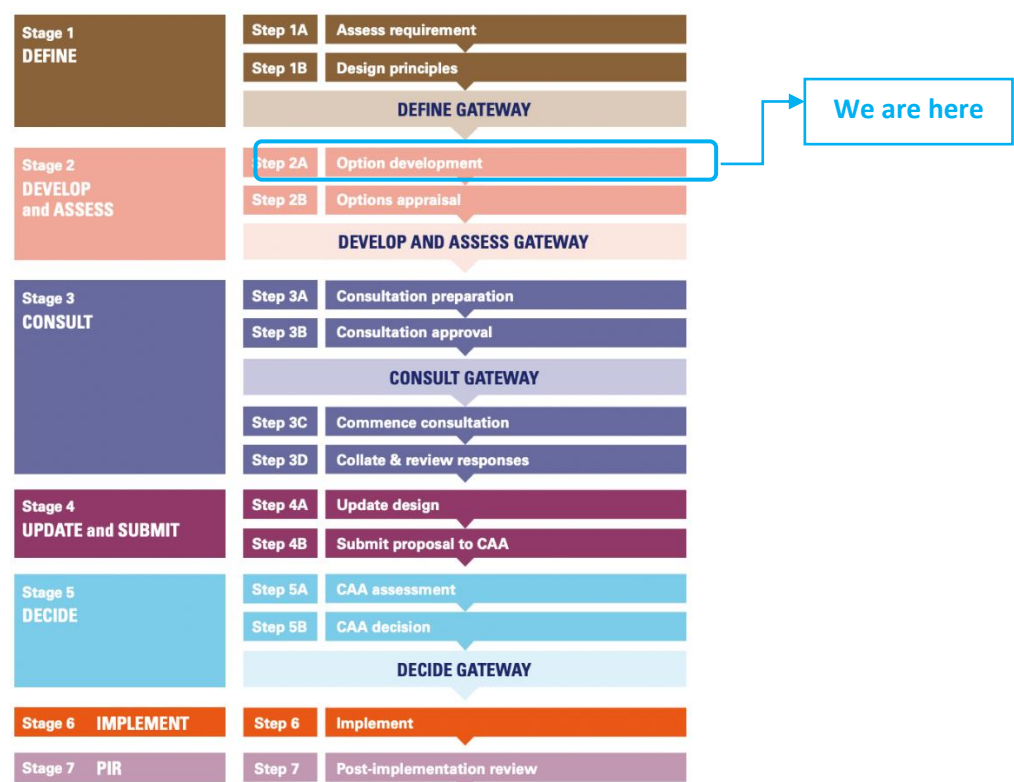
#	Design Principle
1	The airspace design and its operation must be as safe or safer than today.
2	Facilitate the growth in quicker, quieter and cleaner traffic by configuring the airspace to improve efficiency and meet the forecast demand for air transport.
3	Design the appropriate volume of controlled airspace to support commercial air transport, enable safe, efficient access for other types of operation and release controlled airspace that is not required.
4	Mitigate any future requirements for airborne holding for inbound traffic and holding on the ground pre-departure for outbound traffic.
5	Minimise the total adverse effects of aircraft noise and visual intrusion on physical and mental health and wellbeing.
6	Offer communities options for both noise concentration and noise dispersion through the use of predictable and transparent multiple route options and other respite methods that are possible within the technical ATC system, en-route network and procedural constraints.
7	The arrival and departure routes that serve Glasgow Airport below 7000ft should avoid noise sensitive areas and buildings, national parks, areas of outstanding natural beauty/National Scenic Areas and areas that are not currently affected by aircraft noise.
8	Mitigate the impacts on local communities that are currently affected by aircraft noise on final approach or the vicinity of the immediate climb out, where overflight is unavoidable.
9	Reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.
10	Collaborate with other Scottish airports and NATS to ensure that the airspace design options are compatible with the wider programme of lower altitude and network airspace changes being coordinated by the FASI North programme.
11	Routes to/from Glasgow and Edinburgh airports should be procedurally deconflicted from the ground to a preferred level in coordination with NATS Prestwick.
12	Minimise the growth in aircraft emissions, the further degradation in local air quality and adverse ecological impacts to address growing concerns about the impact of aviation on climate change.
13	Aircraft operating at Glasgow Airport should climb and descend continuously to/from at least 7000ft with a preference for the most environmentally beneficial option to be chose, if both cannot be achieved simultaneously.
14	Routes should be designed to meet a RNAV1 specification as a minimum in order to gain maximum benefit of the performance capabilities of the modern aircraft fleet operating at Glasgow Airport in line with the guidance provided in CAA CAP1385 on enhanced route spacing for PBN and provide sufficient resilience and redundancy against Global Navigation Satellite System (GNSS) failure.
15	The GLA ACP accords with the CAA's published Airspace Modernisation Strategy (CAP1711), any current or future plans associated with it and all other relevant policies and regulatory standards.

As part of our CAP1616 Stage 1 work, where we developed the Airspace Change Design Principles, the CAA mandated that the airport include a design principle around the AMS (DP15).

These Design Principles will be used throughout Stage 2A when we are developing our comprehensive list of options and then evaluating the performance of these options (See question 10 for more details)

10. Where is Glasgow Airport in the Airspace Change Process?

We are currently in Stage 2 of the 7-stage CAP1616 process which is called 'develop & assess'. As part of Step 2A, Options Development, we are developing a first comprehensive list of options which address the Statement of Need and align the design principles from Stage 1. More information on Stage 1 can be found here.

Stage 1 **DEFINE**	**Step 1A**	**Assess requirement**
	Step 1B	**Design principles**
	DEFINE GATEWAY	
Stage 2 **DEVELOP and ASSESS**	**Step 2A**	**Option development**
	Step 2B	**Options appraisal**
	DEVELOP AND ASSESS GATEWAY	
Stage 3 **CONSULT**	**Step 3A**	**Consultation preparation**
	Step 3B	**Consultation approval**
	CONSULT GATEWAY	
	Step 3C	**Commence consultation**
	Step 3D	**Collate & review responses**
Stage 4 **UPDATE and SUBMIT**	**Step 4A**	**Update design**
	Step 4B	**Submit proposal to CAA**
Stage 5 **DECIDE**	**Step 5A**	**CAA assessment**
	Step 5B	**CAA decision**
	DECIDE GATEWAY	
Stage 6 IMPLEMENT	**Step 6**	**Implement**
Stage 7 PIR	**Step 7**	**Post-implementation review**

We are here

Following the development of the initial comprehensive list of options, we will engage with the same Stakeholders engaged at Stage 1B, to ensure that they are satisfied that the design options are aligned with the design principles and that we have properly understood and accounted for stakeholder concerns specifically related to the design options.

11. When can we see the flight path options?

Step 2A

During Step 2A we are required to engage on our comprehensive list of options with our stakeholders including those we engaged with during Stage 1. The aim of this engagement is to gain feedback from stakeholders about Glasgow Airport's process for developing its design options. Specifically,

stakeholders will be asked to consider if Glasgow Airport has taken full account of the Step 1B Design Principles as listed in point 9 above.

Step 2B

Following this, Glasgow Airport will commence Step 2B, which involves an initial appraisal of the options presented to stakeholders at Step 2A. This step will determine what flight path options are taken forward to Stage 3.

Stage 3

During Stage 3 Glasgow Airport will undertake detailed quantitative appraisal of the benefits and impacts of these options. These flight path options will then be shared via a public consultation process. At this stage the public will have the opportunity to see and understand what is being proposed and respond to the consultation.

12. How will airspace change options be assessed?

We will initially qualitatively assess options against each Design Principle as part of the Design Principle Evaluation. This takes place at Stage 2A after we have developed our comprehensive list of options and tested these with stakeholders.

In Step 2B, we will undertake an Initial Options Appraisal of our options which is a more detailed qualitative appraisal. The outcomes of Step 2A and 2B will be published on the Airspace Change Portal following submission to the CAA.

At Stage 3, as options are developed and refined into detailed designs, we will build upon the Initial Options Appraisal with quantitative analysis as part of the Full Options Appraisal. The material published as part of the consultation will include a Full Options Appraisal. This will include a full analysis of the option(s) being proposed by Glasgow Airport.

More information about the options appraisals can be found in Appendix E of CAP1616.

13. When can I have my say?

Stakeholders who have already been part of the process will continue to be engaged throughout stage 2. Our stage 2 documents will be published on the Airspace Change Portal following submission to the CAA.

The wider public will be informed of the proposals during Stage 3, with a full public consultation. A key element of this consultation is that it takes place when proposals are at a formative stage, so that feedback from the consultees can potentially impact the proposal.

Glasgow Airport are expecting the public consultation to take place in Q1-Q2 2023.

14. Will there be a public consultation?

Yes. At Stage 3 of the CAP1616 process we will hold a public consultation. This is anticipated to take place in Q1-Q2 2023.

15. Where can I find out more information?

You can find out more about this airspace change on the CAA Portal here. You can register an email address on the site to receive email updates about this airspace change proposal.

The Glasgow Airport website is also updated with information about the airspace change and can be used to register your interest in the ACP: https://www.glasgowairport.com/airspace/

Fig. 2 Stage 1B Design Principles Document

Table 1: Final list of airspace design principles that GLA propose to adopt for ACP 2019-46

#	Airspace design principle
DP1	The airspace design and its operation must be as safe or safer than today.
DP2	Facilitate the growth in quicker, quieter and cleaner traffic by configuring the airspace to improve efficiency and meet the forecast demand for air transport.
DP3	Design the appropriate volume of controlled airspace to support commercial air transport, enable safe, efficient access for other types of operation and release controlled airspace that is not required.
DP4	Mitigate any future requirements for airborne holding for inbound traffic and holding on the ground pre-departure for outbound traffic.
DP5	Minimise the total adverse effects of aircraft noise and visual intrusion on physical and mental health and wellbeing.
DP6	Offer communities options for both noise concentration and noise dispersion through the use of predictable and transparent multiple route options and other respite methods that are possible within the technical ATC system, enroute network and procedural constraints.
DP7	The arrival and departure routes that serve Glasgow Airport below 7000ft should avoid noise sensitive areas, buildings, national parks, areas of outstanding natural beauty and areas that are not currently affected by aircraft noise.
DP8	Mitigate the impacts on local communities that are currently affected by aircraft noise on final approach or the vicinity of the immediate climb out, where overflight is unavoidable.
DP9	Reduce complexity and bottlenecks in controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.
DP10	Collaborate with other Scottish airports and NATS to ensure that the airspace design options are compatible with the wider programme of lower altitude and network airspace changes being coordinated by the FASI North programme.
DP11	Routes to/from Glasgow and Edinburgh airports should be procedurally deconflicted from the ground to a preferred level in coordination with NATS Prestwick.
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DP13	Aircraft operating at Glasgow Airport should climb and descend continuously to / from at least 7000ft with a preference for the most environmentally beneficial option to be chosen if both cannot be achieved simultaneously.
DP14	Routes should be designed to meet a RNAV1 specification as a minimum in order to gain maximum benefit of the performance capabilities of the modern aircraft fleet operating at Glasgow Airport in line with the guidance provided in CAA CAP1385 on enhanced route spacing for PBN and provide sufficient resilience and redundancy against Global Navigation Satellite System (GNSS) failure.
DP15	The GAL ACP accords with the CAA's published Airspace Modernisation Strategy (CAP 1711), any current or future plans associated with it and all other relevant policies and regulatory standards

Fig. 3 Pre-Reading for Stage 2A Briefing Sessions

Glasgow Airport FASI-North Airspace
Change Proposal

Stage 2A Engagement on Comprehensive List of Options

AGENDA

1. Introductions and project overview
2. Purpose of Stage 2A engagement
3. Our approach to developing the initial comprehensive list of options
4. Comprehensive List of Options
5. Our questions for you
6. Next steps

1. Introductions and overview

1. INTRODUCTION AND OVERVIEW: RECAP

Glasgow Airport is developing an airspace change proposal (ACP) to upgrade the airport's arrival and departure routes. The ACP will cover a review of routes from the ground up to 7000ft and will also review the boundaries between controlled and uncontrolled airspace.

Every ACP sponsor must follow the regulatory process for changing the airspace design known as CAP1616 (Civil Aviation Publication no. 1616).

- CAP1616 sets out the process for developing airspace change options. This entails engaging with affected stakeholders, evaluating the impacts of options, consulting the public, regulatory approval and implementation.

- The CAA review our submission at each stage of the process to ensure the engagement and analysis is robust prior to moving to the next stage.
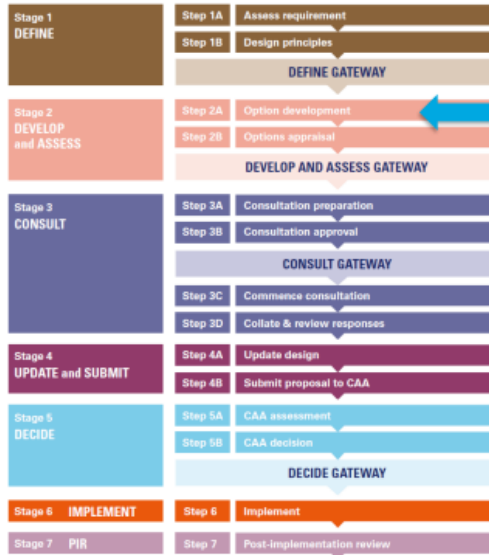
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1. CAP1616

Nov 2019 Glasgow Airport submitted the Stage 1 Design Principles documents to the CAA and moved onto Stage 2 of the 7-stage CAP1616 process.

April 2020 Due to COVID-19 the ACP was paused

Mar 2021 Following the announcement in March 2021 from the Department for Transport and the CAA of short-term financial support for the next phase of the FASI project, Glasgow Airport have been able to progress this ACP.

In line with CAP1616 guidance, during Stage 2, Glasgow Airport will continue to seek involvement from the same stakeholders that were engaged as part of Step 1B.

1. CAP1616 STAGE 2 DEVELOP & ASSESS

Our ACP is currently in Step 2A of the CAP1616 process – known as Options Development

Step 2A requires Glasgow Airport to first develop a comprehensive list options to the extent that a list is possible. This list of route options should address the Statement of Need and align with the Design Principles which were developed in Stage 1.

We are now engaging with stakeholders to ensure that they are satisfied that the route options are aligned with the design principles and that the airport has properly understood and accounted for stakeholder concerns, specifically related to the design options.

Glasgow Airport will then produce a design principle evaluation which will set out how our route options have responded to each of the design principles. This will be published on the CAA's Airspace Change Portal.

2. Purpose of Stage 2A Engagement

2. PURPOSE OF THIS ENGAGEMENT

- The purpose of this session is to explore and test our approach to developing the options and answer questions relating to our approach.

- We will use your feedback to try and address any concerns raised. We are able to refine or develop more options, based on your feedback.

- The purpose of this engagement is **NOT** to seek feedback on individual route options by examining the detailed specific geographical position of the options.

- We do not yet have any detail on the potential impacts of each option, that will come later.

- At this stage we are engaging community groups, local authorities, airline, general aviation bodies, other airports and NATS.

- This is not a public consultation exercise, that comes later, on the preferred option(s).

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