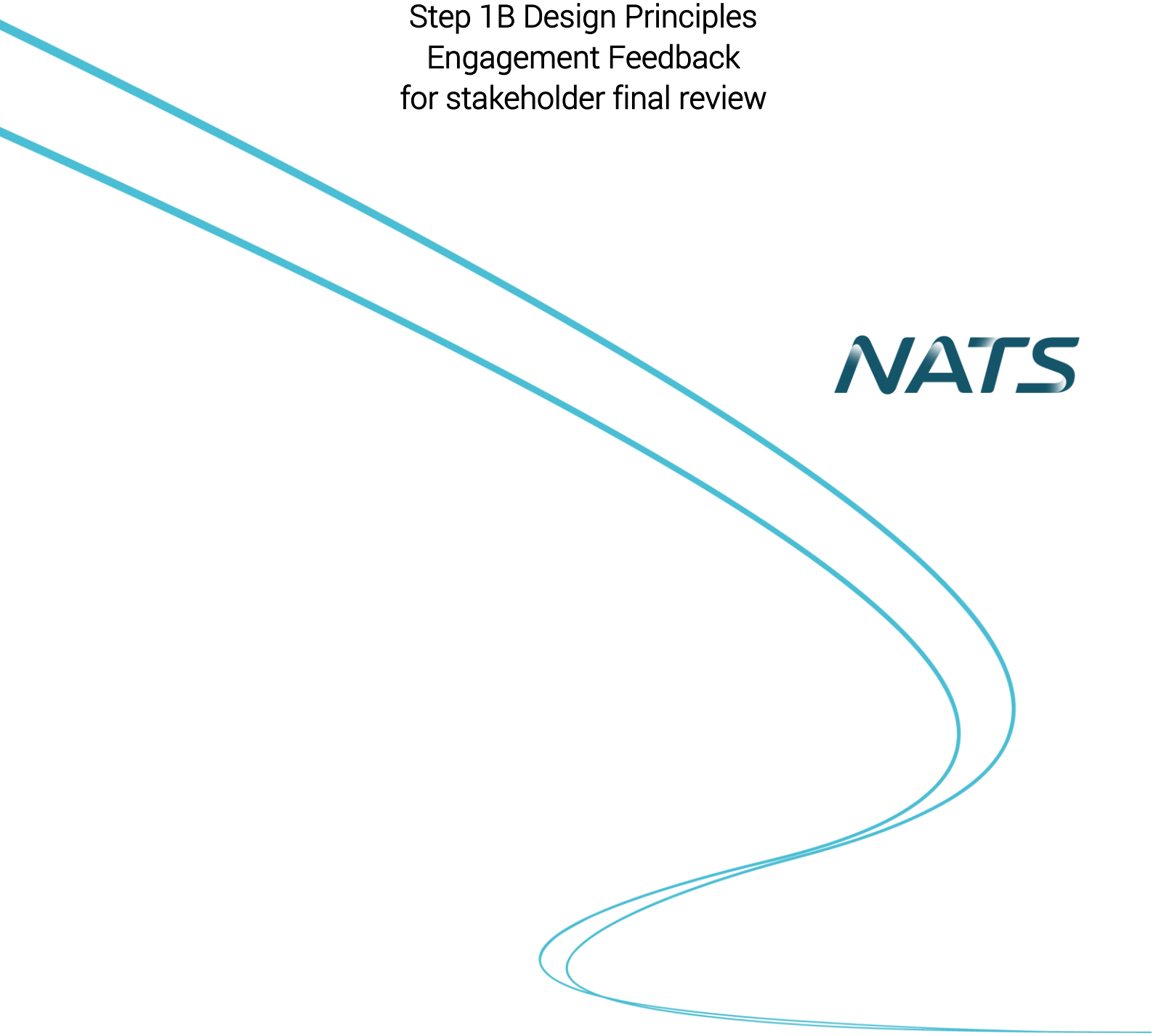
Free Route Airspace Deployment 2

Gateway documentation:
Stage 1 Define

Step 1B Design Principles Engagement Feedback for stakeholder final review



NATS

Action	Role	Date
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Issue 0.2	November 2019	Document written, considering feedback from engagement exercises. Draft distributed to stakeholders for review.

Contents

Introduction

This document forms part of the document requirements for CAP1616 airspace change process, Stage 1 Define Gateway, Step 1B Design Principles.

NATS are currently in the process of proposing airspace changes to implement Free Route Airspace (FRA) within high altitude airspace across the UK. This process is split into four deployments within the UK airspace, each submitted as individual ACPs under CAP1616 and each therefore following similar (parallel) workstreams.

In October 2018, NATS distributed draft design principles relating to Free Route Airspace for Deployment 1 (D1), for feedback & comment, along with some context as to the purpose of design principles. We emailed them to industry stakeholders, in order to engage with them and include them in the conversation regarding the development of Free Route Airspace. During the same period meetings with several key stakeholders took place.

We made it clear that these proposed draft design principles were for discussion, and that they should be discussed, and feedback provided. We received responses and feedback from a number of stakeholders. In November 2018, NATS analysed the feedback and updated the design principles and these have been utilised for Deployment 1.

For the second deployment (D2), we are again required to engage with stakeholders on the Design Principles to be used by the project, required as part of the UK CAP1616 airspace change process.

The draft set of design principles for the FRA D2 changes are the same as the design principles which were developed via the engagement with all stakeholders for D1. Hence, we are building upon this experience. The relative priorities (A – highest, C - lowest) are identified and indicated next to each.

This document describes how stakeholders' feedback has influenced the design principles further for D2. We ask you to read the amended design principles and feedback any additional comments you have, before we adopt them under the Airspace Change Process CAP1616 Stage 1.

The first deployment (D1) of FRA is currently being consulted upon (consultation is open until 10th Dec 2019), and many of the stakeholders for both deployments are being asked for commentary on both.

Please respond by Friday 29th November 2019

Engagement on specific design concepts will happen later, in Stage 2, and formal consultation in Stage 3, but the design concepts will be evaluated against the final design principles as presented herein.

How this document is laid out

The Executive Summary lists the Design Principles (DPs), amended as a result of your feedback, including additional DPs added as a result of suggestions from stakeholders.

The next sections discuss each DP in turn:

We asked	The original discussion text of a potential DP (we sent this out, stakeholders provided feedback)
You said	A summary of how feedback has influenced the DP
We did	Amended DP (unless original was agreed upon)

This is repeated for each DP.

Section 15 summarises the engagement activity, numbers of responses and key stakeholders who were included in the engagement.

Executive Summary – List of Design Principles (DP)

The following list summarises the final design principles which have resulted from the engagement work. Each of these principles evolved from the original DP engagement feedback. Priorities are indicated in brackets (A being the highest priority). These priorities will be considered when the design principles are used to evaluate/ rank design options in the later stages of the airspace change process. How the DPs have evolved is described in detail in the next sections of the document.

DP0 Safety (A)
Maintain or enhance current levels of safety.

DP1 Operational (Resilience) (B)
The proposed airspace will maintain or enhance operational resilience of the ATC network.

DP2 Economic (Network Performance) (B)
The proposed FRA airspace will facilitate optimised network economic performance.

DP3 Environmental (CO2 Emissions) (B)
The proposed FRA airspace will facilitate the reduction of CO_2 emissions per flight

DP4 Environmental (Impact to Stakeholders on the Ground) (C)
Minimise environmental impacts to stakeholders on the ground
(note: due to the altitude of the proposed changes (>20,000ft), it is not expected that there will be any significant environmental impacts to stakeholders on the ground due to noise, visual intrusion and local air quality)

DP5 Operational (Optimised Trajectories) (B)
Create an environment within which AOs may freely flight plan optimised trajectories between defined entry and exit points.

DP6 Technical (Interface) (A)
The interface between FRA and the ATS route network will be optimised for safety.

DP7 Technical (Flight Efficiency) (B)
The interface between FRA and the ATS route network will maintain or improve flight efficiency compared to current day operations.

DP8 Technical (MoD Requirements) (B)
The FRA airspace will be compatible with the requirements of the MoD and take into consideration the requirements of defence industry stakeholders.

DP9 Technical (GA Impacts) (B)
The impacts on GA and other civilian airspace users due to FRA will be minimised.

DP10 Policy (PCP) (A)
The proposed FRA airspace will fulfil the requirements of the PCP.

DP11 Implementation (Phasing) (B)
The proposed FRA airspace will be suitable for introduction in a phased implementation.

DP12 Operational (Adjacent ANSPs) (B)
Connectivity to adjacent airspace (FRA or non-FRA) will be maintained or enhanced.

DP13 Operational (Capacity) (B)

FRA will maintain current ATC capacity, and will aim to maximise airspace capacity.

DP14 Operational (Flexible Use Airspace) (B)

The proposed FRA airspace will be compatible with the Flexible Use Airspace (FUA) concept.

0. DP0 Safety

0.1 Original discussion text

Maintain or enhance current levels of safety.

0.2 How has feedback influenced this DP?

The original wording of the DP was deliberately general.

It was not explicit that safety should apply to all airspace users (not just commercial air traffic), but equally it did not make explicit that safety should apply to those on the ground – all are implicitly included in the general statement.

There was agreement on this DP hence it remains as originally proposed. Priority A assigned, since safety is the highest priority.

1. DP1 Operational (Resilience)

1.1 Original discussion text

The proposed airspace will maintain or enhance operational resilience of the ATC network.

1.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since resilience is high priority.

2. DP2 Economic (Network Performance)

2.1 Original discussion text

The proposed FRA airspace will facilitate optimised network economic performance

2.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since Network Performance is high priority.

3. DP3 Environmental (CO_2 Emissions)

3.1 Original discussion text

Environmental – The proposed FRA airspace will facilitate the reduction of CO_2 emissions per flight

3.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since reduction of CO_2 Emissions is high priority.

4. DP4 Environmental (Impact to Stakeholders on the Ground)

4.1 Original discussion text

Minimise environmental impacts to stakeholders on the ground

(note: due to the altitude of the proposed changes (>20,000ft), it is not expected that there will be any significant environmental impacts to stakeholders on the ground due to noise, visual intrusion and local air quality)

4.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority C assigned, since impacts to stakeholders on the ground due to high level overflights, would only be a deciding factor if all other factors were equal.

5. DP5 Operational (Optimised Trajectories)

5.1 Original discussion text

Create an environment within which AOs may freely flight plan optimised trajectories between defined entry and exit points.

5.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since facilitating optimised trajectories is high priority.

6. DP6 Technical (Interface Safety)

6.1 Original discussion text

The interface between FRA and the ATS route network will be optimised for safety.

6.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority A assigned, since safety is the highest priority.

7. DP7 Technical (Interface Flight Efficiency)

7.1 Original discussion text

The interface between FRA and the ATS route network will maintain or improve flight efficiency compared to current day operations.

7.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since flight efficiency is high priority.

8. DP8 Technical (MoD Requirements)

8.1 Original discussion text

The FRA airspace will be compatible with the requirements of the MoD

8.2 How has feedback influenced this DP?

BAE asked that

"industry activities such as ours are taken into consideration"

Priority B assigned, since MOD requirements are high priority.

8.3 Proposed text

The FRA airspace will be compatible with the requirements of the MoD and take into consideration the requirements of defence industry stakeholders.

9. DP9 Technical (GA Impacts)

9.1 Original discussion text

The impacts on GA and other civilian airspace users due to FRA will be minimised.

9.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since minimising impacts on GA is high priority.

10. DP10 Policy (PCP)

10.1 Original discussion text

The proposed FRA airspace will fulfil the requirements of the PCP.

10.2 How has feedback influenced this DP?

The PCP mandate is a primary driver for the introduction of FRA hence it is important that the proposed FRA solution fulfils the PCP requirements.

There was agreement on this DP hence it remains as originally proposed.
Priority A assigned, since the PCP requirements are mandatory.

11. DP11 Implementation (Phasing)

11.1 Original discussion text

The proposed FRA airspace will be suitable for introduction in a phased implementation.

11.2 How has feedback influenced this DP?

Implementation of FRA will have to occur in a phased programme. This will enable FRA to be introduced earlier in less complex regions. The experience of the early implementations will inform and enhance how the latter, more complex airspace is configured. In particular, practical experience of how best to configure the interfaces with lower airspace, and adjoining airspace of other states/ANSPs will be of critical importance.

There was agreement on this DP hence it remains as originally proposed.
Priority B assigned, since a phased implementation is important to facilitating an orderly transition to FRA.

12. DP12 Operational - (Adjacent ANSPs)

12.1 Original discussion text

Connectivity to adjacent airspace (FRA or non-FRA) will be maintained or enhanced.

12.2 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since efficient connectivity with adjacent ANSPs' airspace is high priority.

13. DP13 Operational - (Capacity)

FRA will maintain current ATC capacity, and will aim to maximise airspace capacity.

13.1 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since maintaining airspace capacity is high priority.

14. DP14 Operational (Flexible Use Airspace)

The proposed FRA airspace will be compatible with the Flexible Use Airspace (FUA) concept.

14.1 How has feedback influenced this DP?

There was agreement on this DP hence it remains as originally proposed. Priority B assigned, since maintaining flexible use of airspace is high priority.

15. Engagement Evidence

A significant amount of engagement was undertaken in the development of these Design Principles for Deployment 1. This is described and referenced in the D1 Stage 1B Design Principles document here.

Example design principles slide pack

15.1 We Asked - Emails to relevant aviation industry interested parties

Emails were sent to 18 organisations, based on National Air Traffic Management Advisory Committee (NATMAC) contacts, adjacent ANSPs, data houses.

15.2 You Said – Stakeholder Responses

The response rate was 22.2% (4 stakeholders).

3 provided no specific comment, lent their general support for the principles without detail or provided comments relevant to later stages in the process.

15.3 We Did

1 stakeholder response provided comments useable to influence the design principles – included in this document (DP8)

Supplied separately, an Excel spreadsheet of engagement records.

A draft of this document was sent to all the stakeholders as feedback on the two-way engagement.

15.4 Key stakeholders

The following stakeholders were engaged with.

NATMAC
- BAE Systems
- Airlines UK
- British Business and General Aviation (BBGA)
- British Gliding Association (BGA)
- Low Fares Airlines
- MoD via DAATM

Data Houses/Flight-planning providers
- Jeppesen
- Lufthansa Systems
- NavBlue
- Sabre

ANSPs
- Eurocontrol Maastricht Upper Area Control Centre (MUAC)
- Irish Aviation Authority (IAA)
- Direction des Services de la Navigation Aérienne (DSNA) Head of Airspace
- DSNA ACC Brest
- DSNA ACC Reims
- NAVIAIR
- Isavia
- Avinor

(Note: any other organisation or individual are welcome to provide input to the DP development process. Wider consultation with a much larger group will be undertaken at a later stage when a mature set of design options will be presented.)

15.5 Conclusion

In this engagement exercise, we supplied stakeholders with a set of draft design principles, to provoke discussion.

We received feedback on the draft design principles and amended some of them and provided an explanation why.

This evolution has resulted in the list of design principles as detailed in the Executive Summary.