

# Free Route Airspace Deployment 2.1

PEMAK Triangle, TAKAS Box

Gateway documentation:

Stage 1 Define

Step 1B Design Principles

and Stakeholder Engagement Feedback

The NATS logo is displayed in a bold, italicized, blue sans-serif font. A large, decorative blue swoosh graphic originates from the left edge of the page, curves downwards and to the right, and then loops back towards the left, ending near the bottom right corner. This swoosh partially encircles the NATS logo.

**NATS**

## Roles

Action	Role	Date
Produced	<b>Senior Airspace Change Specialist</b> NATS Airspace and Future Operations	28/08/2020
Reviewed Approved	<b>Head of Airspace Change Compliance and Delivery</b> NATS Airspace and Future Operations	28/08/2020
Reviewed Approved	<b>Manager Airspace Evolution</b> NATS Airspace and Future Operations	28/08/2020
Reviewed	<b>FRA ATC Lead</b> NATS Swanwick Development	28/08/2020
Reviewed Approved	<b>FRA Project Manager L6234</b> Operations & Airspace Programme Delivery	28/08/2020

## Publication history

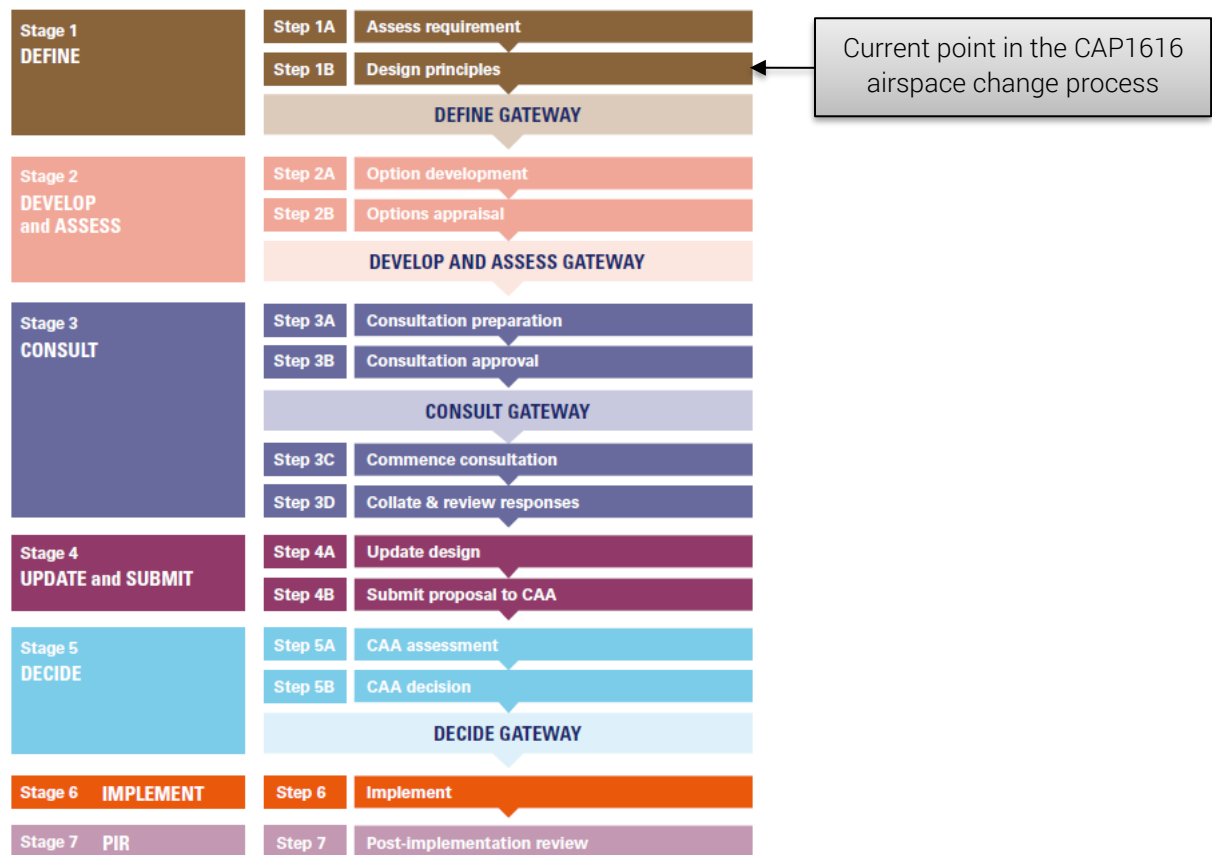
Issue	Month/Year	Changes this issue
Issue 1.0	08/20	Submitted to CAA and uploaded to airspace change portal

## Contents

1.	Introduction.....	3
2.	How this document is laid out.....	5
3.	List of Design Principles (DP) .....	6
4.	DP0 Safety.....	7
5.	DP1 Operational (Resilience) .....	7
6.	DP2 Operational (Impact to Stakeholders – Brest ACC).....	7
7.	DP3 Operational (Impact to Stakeholders – Shannon ACC) .....	7
8.	DP4 Policy (PCP) .....	8
9.	DP5 Technical (MoD Requirements).....	8
10.	DP6 Operational (Flexible Use Airspace Concept).....	8
11.	DP7 Operational (Adjacent ANSPs (NATS)).....	8
12.	DP8 Operational (Impact to Stakeholders –AOs).....	8
13.	Engagement Evidence .....	9
14.	FRA D2.1 Key Stakeholders Engagement Summary .....	10
15.	Conclusion.....	10
16.	Next steps.....	10
	Annex A: Engagement emails (outgoing – launch and hastening) .....	11
	Annex B: Engagement Activity – Stakeholder Responses (redacted emails) .....	13
	Annex C: Engagement Activity – Confirmation of DPs (redacted email) .....	17
	Glossary of Terms .....	18

# 1. Introduction

- 1.1 This document forms part of the document requirements for CAP1616 Airspace Change Process (ACP), Stage 1 Define Gateway, Step 1B Design Principles. This document should be read in conjunction with Stage 1A documentation; [Statement of Need](#) and [Assessment Meeting Minutes](#).



**Figure 1 Overview of the UK Airspace Change Process (CAP1616)**

- 1.2 NATS is in the process of proposing airspace changes to implement Free Route Airspace (FRA) within high altitude airspace across the UK, as mandated by European Law. UK FRA is planned to be introduced in a phased manner, split into four main deployments within the UK airspace. This plan was developed in alliance with neighbouring Air Navigation Service Providers (ANSPs). Each phased deployment of FRA is being progressed as an individual ACP under CAP1616, and each is therefore following similar (parallel) workstream.
- 1.3 This ACP seeks to enable Brest and Shannon ACCs to operate FRA in airspace above FL245 where the provision of ATS has been delegated to them.
- 1.4 These two volumes FL245-FL660 are known as the PEMAK triangle and TAKAS box, and collectively are referred to as 'the region' in this document. The region is illustrated in Figure 2 overleaf.
- 1.5 NATS does not provide an air traffic service to aircraft in the region.
- 1.6 NATS sponsors this ACP on behalf of Brest ACC and Shannon ACC, the ATS providers in the region.
- 1.7 The UK FRA deployment plan initially sought to introduce FRA in this region as part of the second FRA deployment, known as FRA D2, which originally aligned with Brest and Shannon ACCs' airspace change requirements and schedule.
- 1.8 The UK's FRA timeline has changed but the Brest/Shannon timeline cannot.
- 1.9 For this reason, the PEMAK triangle and TAKAS box – 'the region' – has been removed from the original scope of UK FRA D2 and is now progressing separately, as FRA D2.1, in accordance with Brest ACC's timelines and requirements.

1.10 Early engagement with Brest and Shannon ACCs articulated the constraints associated with this proposal:

- Brest ACC **must** deploy FRA to meet the extant PCP mandate:  
*Flexible Airspace Management and Free Route shall be provided and operated in the airspace for which the Member States are responsible at and above FL310 in the ICAO EUR region...from 1 January 2022.*
- Brest ACC's Flight Data Processing system (FDP) **cannot** operate in a mixed mode, i.e. where one volume of airspace is FRA and another part consists of a 'conventional' ATS route structure.
- NATS sponsors this airspace change but does **not** provide an air traffic service to aircraft in the region. ATS in this region has been delegated to Brest and Shannon for decades. The flows in the region essentially join Brest's Area of Responsibility (AOR) with the AOR of Shannon, crossing a small sliver of southwestern UK airspace FL245+ without any interaction by UK (NATS) controllers.
- The French and Irish primary radar cover in this region at FL245 is **better** than that available to NATS controllers (see UK AIP ENR 6-10).
- Brest ACC has a **fully mature airspace design** for the entire Brest ACC AOR, including this region, suitable for their FDP system.
- Brest ACC has followed **French airspace change process** regulatory requirements to develop their design – NATS has no influence on that process.
- The IAA already operate FRA (fulfilling the PCP mandate). Provisionally, the IAA is content to change the airspace within the TAKAS box in accordance with Brest ACC's requirements and timeline.

1.11 To minimise stakeholder engagement fatigue (particularly for those already engaged through other UK FRA deployments), NATS considers it proportional to limit stakeholder engagement regarding design principles activities to targeted stakeholders via email only.

## 2. How this document is laid out

- 2.1 This document describes how stakeholder feedback has influenced the design principles for FRA D2.1.
- 2.2 The proposed design principles were sent to all stakeholders for feedback with a two-week review period from 28<sup>th</sup> July to 10<sup>th</sup> August 2020. Those who did not respond were sent a reminder on 10<sup>th</sup> August and given an extended deadline of 14<sup>th</sup> August after which NATS considers that adequate engagement effort was made.
- 2.3 Minor feedback was received, which did not result in a change to any of the originally proposed DPs, after the initial feedback on the Design Principles hence they are now being progressed under the Airspace Change Process CAP1616 Stage 1 Step 1B.
- 2.4 Summary Section 3 lists the final Design Principles (DPs) after stakeholder feedback has been considered. The relative priorities for each DP are also identified and indicated in the same Section 3, next to each DP.
- 2.5 Engagement on specific design concepts/options will happen in Stage 2, and formal consultation in Stage 3. The design concepts will be evaluated against the final design principles presented here.
- 2.6 The next sections discuss each DP in turn. In accordance with recommended engagement/consultation practice<sup>1</sup> this is structured as follows:
  - *We asked* The original discussion text of each draft DP (we sent this out, stakeholders provided feedback)
  - *You said* Agreement that the draft DP is acceptable, or a summary of how feedback has influenced the DP
  - *We did* Amended final DP (unless original was agreed upon)This is repeated for each DP.
- 2.7 Section 13 summarises the engagement activity, numbers of responses and key stakeholders who were included in the engagement.

---

<sup>1</sup> Recommended by the Consultation Institute and noted in CAP1616 para C10.

### 3. List of Design Principles (DP)

3.1 The following list summarises the final Design Principles which have resulted from engagement with our stakeholders. Priorities are indicated in brackets (A being the greatest priority). These priorities will be considered when the design principles are used to evaluate/rank design options in later stages of the airspace change process. How the DPs have evolved is described in detail in the next sections of the document.

<u>Design Principle (DP)</u>	<u>(Priority)</u>	<u>Section of this document</u>
<b>DP0 Safety</b> Maintain or enhance current levels of safety.	(A)	Section 4
<b>DP1 Operational (Resilience)</b> The proposed airspace will maintain or enhance operational resilience of the ATC network.	(B)	Section 5
<b>DP2 Operational (Impact to Stakeholders – Brest ACC)</b> The proposed FRA airspace will be consistent with the airspace design requirements of DSNA Brest ACC.	(A)	Section 6
<b>DP3 Operational (Impact to Stakeholders – Shannon ACC)</b> The proposed FRA airspace will be consistent with the airspace design requirements of IAA Shannon ACC.	(A)	Section 7
<b>DP4 Policy (PCP)</b> The proposed FRA airspace will fulfil the requirements of the PCP.	(A)	Section 8
<b>DP5 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.	(B)	Section 9
<b>DP6 Operational (Flexible Use Airspace Concept)</b> The proposed FRA airspace will be compatible with the Flexible Use Airspace (FUA) concept.	(B)	Section 10
<b>DP7 Operational (Adjacent ANSPs (NATS))</b> Connectivity to adjacent airspace (FRA or non-FRA) will be maintained or enhanced.	(B)	Section 11
<b>DP8 Operational (Impact to Stakeholders –AOs)</b> The proposed FRA airspace will be consistent with the requirements of airline operators and flight planning service providers.	(B)	Section 12

Note: There is no Design Principle that specifically considers General Aviation because the existing airspace is Class C, FL245 and above, and wholly over the sea.

#### **4. DP0 Safety**

##### 4.1 Original discussion text

Maintain or enhance current levels of safety.

##### 4.2 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.

Jeppesen's feedback was that nothing is equal to safety. NATS' inference was that Jeppesen believes this DP should be the absolute highest priority with all other DP priorities demoted one level.

NATS considered this, and decided that Priority A was appropriate and consistent with other UK FRA deployment ACPs.

Otherwise there was agreement, or no comment, on this DP hence it remains as originally proposed. Priority A assigned because safety is the highest priority.

#### **5. DP1 Operational (Resilience)**

##### 5.1 Original discussion text

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

##### 5.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed. Priority B assigned because resilience is high priority.

#### **6. DP2 Operational (Impact to Stakeholders – Brest ACC)**

##### 6.1 Original discussion text

The proposed FRA airspace will be consistent with the airspace design requirements of DSNA Brest ACC.

##### 6.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed. Priority A assigned because it is critical that the FRA design within the PEMAK triangle is consistent with the rest of the Brest ACC FRA airspace and compatible with Brest ACC's FDP.

#### **7. DP3 Operational (Impact to Stakeholders – Shannon ACC)**

##### 7.1 Original discussion text

The proposed FRA airspace will be consistent with the airspace design requirements of IAA Shannon ACC.

##### 7.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed. Priority A assigned because it is critical that the FRA design within the TAKAS box is consistent with the rest of the Shannon ACC FRA airspace.

## **8. DP4 Policy (PCP)**

### 8.1 Original discussion text

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

### 8.2 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, or no comment, on this DP hence it remains as originally proposed.

Priority A assigned because the PCP requirements are mandatory.

## **9. DP5 Technical (MoD Requirements)**

### 9.1 Original discussion text

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

### 9.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed.

Priority B assigned because MoD requirements are high priority.

## **10. DP6 Operational (Flexible Use Airspace Concept)**

### 10.1 Original discussion text

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

### 10.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed.

Priority B assigned because compatibility with the FUA concept is high priority.

## **11. DP7 Operational (Adjacent ANSPs (NATS))**

### 11.1 Original discussion text

Connectivity to adjacent airspace (FRA or non-FRA) will be maintained or enhanced. Even though NATS is the sponsor of this proposal, NATS is the adjacent ANSP because ATS in the region is provided by Brest and Shannon ACCs.

### 11.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed.

Priority B assigned because efficient connectivity with adjacent ANSPs' airspace is high priority.

## **12. DP8 Operational (Impact to Stakeholders –AOs)**

### 12.1 Original discussion text

The proposed FRA airspace will be consistent with the requirements of aircraft operators (AOs) and flight planning service providers.

### 12.2 How has feedback influenced this DP?

There was agreement, or no comment, on this DP hence it remains as originally proposed.

Priority B assigned because consistency with the requirements of AOs and flight planning service providers is high priority.



### 13. Engagement Evidence

- 13.1 Engagement was undertaken in the development of these Design Principles for FRA D2.1.
- 13.2 We received design principle feedback from stakeholders for FRA D2.1, with most responses indicating contentment with the draft design principles.
- 13.3 *We Asked* - Emails to relevant aviation industry interested parties, on draft proposed DPs.  
Emails were sent on 28<sup>th</sup> July 2020 to fourteen organisations, based on National Air Traffic Management Advisory Committee (NATMAC) contacts, adjacent ANSPs, and data houses. DSNA head office plus DSNA's Brest ACC were counted as two separate stakeholders for the purposes of this document. A response date of 7<sup>th</sup> August 2020 was set. On 10<sup>th</sup> August a hastening email was sent to non-responsive stakeholders, setting a final return date of 14<sup>th</sup> August. Two responses were received by the final return date and the Stage 1 engagement session was closed, to write this document.
- 13.4 Table 1 overleaf provides a summary of the engagement activity for FRA D2.1. Evidence is provided in an Annex where relevant.
- 13.5 *You Said* – Stakeholder Responses  
The response rate was 57% (8 stakeholders responded out of 14 canvassed).  
4 (29%) returned either an email read-receipt or out-of-office reply, with no further response after hastening.  
2 (14%) did not respond at all.  
2 (14%) indicated that they did not wish to provide a comment at all.  
7 (50%) indicated that they were content with the draft design principles, with no specific comments.  
1 (7%) provided a comment on DP0 (see the next paragraph, and also Section 4 p.7).
- 13.6 *We Did* – Action taken following feedback  
Jeppesen provided a comment on DP0 Safety, which was considered but did not ultimately change the DP (see Annex B)  
A final draft of this document was sent to all stakeholders on 14<sup>th</sup> August 2020.  
This demonstrated the two-way engagement, feedback receipt, consideration of that feedback, and confirmation of the DPs following this first round of engagement.  
Final comments on this document were invited, and stakeholders were advised there was no need to respond if they had no additional comments. No further comments were received.

## 14. FRA D2.1 Key Stakeholders Engagement Summary

14.1 Note: any organisation or individual was welcome to provide input to the DP development process.

	Stakeholder	No comment	Accepted without comment	Total responses	Read Receipts/ out of office	No response
NATMAC	BAE Systems		1			
	Airlines UK					1
	BBGA					1
	BGA	1				
	Low Fares Airlines				1	
	MoD via DAATM		1			
Data houses, flight plan service providers	Jeppesen		1 (comment on DPO Safety)			
	Lufthansa Systems				1	
	NavBlue				1	
	Sabre				1	
ANSPs	Eurocontrol MUAC	1				
	DSNA Airspace HQ		1			
	DSNA ACC Brest		1			
	IAA Shannon ACC		1			
Total and %		2	6	8	4	2
14		14%	43%	57%	29%	14%

Table 1 FRA D2.1 PEMAK Triangle and TAKAS Box, Stage 1B Engagement Statistics

## 15. Conclusion

- 15.1 Throughout the design principles engagement, we supplied stakeholders with a set of draft design principles to provoke discussion, and welcomed feedback.
- 15.2 We received feedback on one of the draft design principles (DPO), which was not amended as a result. We wrote to all stakeholders confirming that no changes were made following feedback, requesting final comments before publication and submission of CAP1616 Stage 1 documentation to the UK CAA.
- 15.3 There were no material responses to this final Stage 1 engagement request, and this document was published on the CAA's airspace change portal ([link](#)).

## 16. Next steps

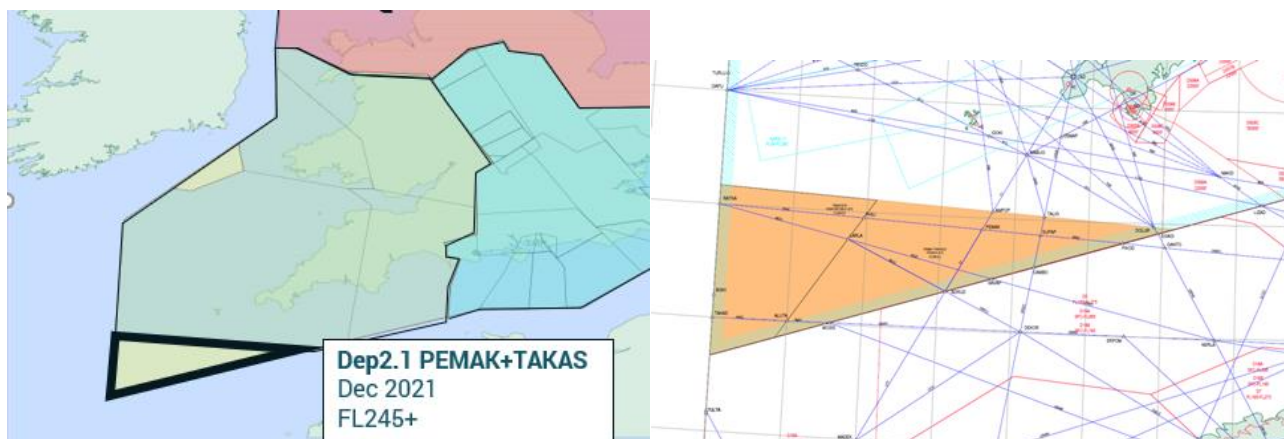
- 16.1 The publication of this document on the CAA's airspace change portal concludes the submission of documentation required for Stage 1 of the CAP1616 airspace change process.
- 16.2 The CAA will study all published Stage 1 documents and decide, at a Gateway Assessment to be held on 25<sup>th</sup> September 2020, whether the airspace change process has been followed appropriately.
- 16.3 The CAA's airspace change portal will be updated with the result.
- 16.4 If this proposal passes the Gateway Assessment, progression to Stage 2 would be approved. If not, the CAA will provide feedback on any shortcomings, NATS would negotiate a resubmission date, and the proposal's timeline would be adjusted accordingly.

## Annex A: Engagement emails (outgoing – launch and hastening)

Launch email to all stakeholders sent 28/7/20

From: Airspace Consultation  
Sent: 28 July 2020 16:50  
Cc: Airspace Consultation <redacted\_email@nats.co.uk>  
Subject: Free Route Airspace PEMAK triangle (deployment FRA 2.1)  
Dear Stakeholder

NATS has initiated an Airspace Change Proposal to introduce Free Route Airspace (FRA) within airspace where the provision of ATS has been delegated to Brest and Shannon ACCs. Specifically the PEMAK triangle and TAKAS box – specific details of which are available in the UK AIP ENR 2.2 available [here](#).



The following Design Principles have been developed to inform the airspace design process (CAP1616 Stage 1). We have identified you as a key stakeholder and we would welcome your feedback and/or suggested amendments to the proposed design principles. 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.

NATS NERL is the sponsor of this change, however the airspace will be operated DSNA and the IAA, using FRA principles.

### 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 Operational (Impact to Stakeholders) (A)

The proposed FRA airspace will be consistent with the airspace design requirements of DSNA Brest ACC.

### DP3 Operational (Impact to Stakeholders) (A)

The proposed FRA airspace will be consistent with the airspace design requirements of IAA Shannon ACC.

### DP4 Policy (PCP) (A)

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

### DP5 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.

### DP6 Operational (Flexible Use Airspace) (B)

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

**DP7 Operational (Adjacent ANSPs (NATS)) (B)**

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

**DP8 Operational (Impact to Stakeholders) (B)**

The proposed FRA airspace will be consistent with the requirements of airline operators and flight planning service providers.

Note: There is no Design Principle that specifically considers General Aviation because the airspace Class C, FL245 and above, and wholly over the sea.

If you are content with these Design Principles please respond "ACCEPT" or use the voting buttons.

We also welcome any comments or suggestions you may have.

Please respond before 7th August 2020.

Regards



Manager, Airspace Change Compliance & Delivery    Directorate of Airspace & Future Operation

---

**Hastening email to stakeholders who did not respond by 07/08/2020, sent 10/08/2020:**

Dear colleagues,

We sent an email asking for a response on Design Principles, (copy below, sent 28 July).

Please respond to this email, this week if possible (by Fri 14 August), so we can complete the paperwork for the airspace change process Stage 1, to submit to our regulator the UK CAA.

Thank you in advance.

Best wishes



Senior Airspace Change Specialist

NATS Airspace & Future Operations

[Trail includes launch email, as above]

## Annex B: Engagement Activity – Stakeholder Responses (redacted emails)

BAE Systems:

RE: Free Route Airspace PEMAK triangle (deployment FRA 2.1)

PA

@baesystems.com>

To

Airspace Consultation

Cc

Follow up.

Completed on 10 August 2020.

ACCEPT

Deputy SATCO  
Air Traffic Control  
Warton Aerodrome

**T:** 
**E:** [@baesystems.com](mailto:@baesystems.com)  
 Air Traffic Control W240, Warton Aerodrome, Preston, PR4 1AX

British Gliding Association:

RE: Free Route Airspace PEMAK triangle (deployment FRA 2.1)

PS

@gliding.co.uk>

To

Airspace Consultation







Follow up.


Completed on 10 August 2020.


Thanks you for consulting with the BGA on this proposal.  
We do not intend to comment as sailplanes do not fly in the affected area.  
Kind regards

MoD via DAATM:

**RE: Free Route Airspace PEMAK triangle (deployment FRA 2.1)**

  Sqn Ldr (DAATM-AirspacePI)    


To  Airspace Consultation Mon 10:31



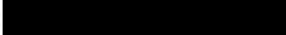
 Follow up. Completed on 10 August 2020.  
You replied to this message on 10/08/2020 11:29.

Good morning,

Apologies for the delayed response. MOD ACCEPT these design principles.




Many thanks,





Sqn Ldr  SO2 Airspace Plans | Defence Airspace and Air Traffic Management | CAA Aviation House | Gatwick, RH6 0YR | Civilian Telephone:   
E-Mail:  [@mod.gov.uk](mailto:mod.gov.uk)

Jeppesen, regarding DP0 Safety and priorities A and B:

**Re: Free Route Airspace PEMAK triangle (deployment FRA 2.1)**

  <@jeppesen.com>

To  Airspace Consultation

 Follow up. Completed on 10 August 2020.


Good Morning

Whilst I ACCEPT this..... :

1. I have added "by" in red below which may or may not be a typo on your part
2. The A or B method seems a bit blunt. Surely nothing is equal to safety....


Just my opinion


Thanks








Eurocontrol MUAC:

**RE: Free Route Airspace PEMAK triangle (deployment FRA 2.1)**



HENN Andreas <[REDACTED]@eurocontrol.int>  
To  Airspace Consultation

 Follow up. Completed on 10 August 2020.

29/07/2020

Dear [REDACTED]

Thanks for your message.


Similar to the feedback which Maastricht UAC provided to the consultation process of Deployment 2, we respond that the design principles seem reasonable to us but since MUAC is not directly adjacent to this airspace change, we do not want to formally approve or disapprove the principles.



Kind Regards


[REDACTED]

DSNA Airspace HQ and Brest ACC (counted as two responses):

**Re : URGENT Free Route Airspace PEMAK Triangle [REDACTED]**



[REDACTED]@aviation-civile.gouv.fr  
To  Airspace Consultation; [REDACTED]@aviation-civile.gouv.fr  
Cc  [REDACTED]@aviation-civile.gouv.fr; [REDACTED] [REDACTED]

 You replied to this message on 11/08/2020 14:26.

Dear [REDACTED], Dear all,

Thank you for your DP proposition.  
I've had a chance to talk to [REDACTED] this morning during his holidays.

We agree with all the proposed Design Principles.

Don't hesitate to get back to me if you need some more input regarding the ACP.

--

Kind regards,

[REDACTED]

Brest FRA Project Lead.



IAA Shannon ACC:

## RE: URGENT Free Route Airspace PEMAK Triangle



[Redacted] <[Redacted]@IAA.ie>

To Airspace Consultation

Cc [Redacted]

You replied to this message on 14/08/2020 09:05.

Hi [Redacted]

The IAA ACCEPT the design principles for the PEMAK triangle.

Best Regards

[Redacted]

[Redacted]

ATC Operations Manager

Irish Aviation Authority

Ballycasey Cross

Ballycasey

Shannon

County Clare

Ph: [Redacted]

Mob: [Redacted]





## Annex C: Engagement Activity – Confirmation of DPs (redacted email)

Free Route Airspace PEMAK triangle (deployment FRA 2.1) Stage 1 Engagement

AC

Airspace Consultation

To

Airspace Consultation

Bcc

[Redacted]

13:07

This message was sent with High importance.

FRA D2.1-St1-DesPrin-v0.9.docx

2 MB

Dear colleague,

Thank you for participating in UK FRA D2.1 Stage 1 Design Principles Engagement for the PEMAK Triangle-TAKAS Box region.

Attached is a final draft of the document that NATS intends to send to the UK CAA in September.

We invite you to provide final comments by **Thursday 27 August**.

If you have no comments, no response is necessary.

Best wishes

[Redacted]

**NATS**

[Redacted]

Senior Airspace Change Specialist

[Redacted]

NATS Airspace & Future Operations

M: +44 [Redacted]

D: +44 [Redacted]

[Redacted]@nats.co.uk

www.nats.aero

4000 Parkway, Whiteley, Fareham, Hants PO15 7FL

No further material comments were received.

## Glossary of Terms

**ACP:** Airspace Change Proposal

**ANSP:** Airspace Navigation Service Provider

**ATC:** Air Traffic Control

**ATS:** Air Traffic Services

**Borealis Alliance:** Alliance amongst north-west European Air Navigation Service Providers to drive better performance for stakeholders through business collaboration. The Alliance includes the ANSPs of Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Norway, Sweden and the UK.

**CAA:** Civil Aviation Authority – UK Airspace regulator

**CAP:** Civil Aviation Publication

**CAP1616:** guidance on the regulatory process for changing airspace design including community engagement requirements. The UK's airspace change process, regulated by the CAA.

**DAATM:** Defence Airspace & Air Traffic Management, the Ministry of Defence's central coordination for airspace changes.

**DP, Design Principles:** these encompass the safety, environmental and operational criteria and the strategic policy objectives that the change sponsor seeks to achieve in developing the airspace change proposal.

**Eurocontrol:** European Organisation for the Safety of Air Navigation; with 41 members it seeks to achieve safe and seamless air traffic management across Europe. (note Eurocontrol is independent of the European Community)

**FRA:** Free Route Airspace - a specified volume of airspace in which users may freely plan a route between a defined entry and exit point. Subject to airspace availability, routeing is possible via intermediate waypoints, without reference to the air traffic service (ATS) route network. Inside this airspace, flights remain subject to air traffic control.

**ICAO:** International Civil Aviation Organisation – an agency of the United Nations.

**NATMAC:** National Air Traffic Management Advisory Committee - NATMAC is a non-statutory advisory body sponsored by the CAA. The Committee is consulted for advice and views on any major matter concerned with airspace management.

**NATS:** UK Air Navigation Service Provider

**RAD:** Route Availability Document - contains the policies, procedures and descriptions for route and traffic orientation. Includes route network and free route airspace utilisation rules and availability.

**Statement of Need:** sets out what airspace issue or opportunity this proposed change seeks to address

**Systemised Airspace:** Use of procedure-based methods used to manage aircraft rather than tactical control.

End of document