

Free Route Airspace Deployment 3

Consultation

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Prepared by NATS
Airspace Change Compliance & Delivery

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1 Executive Summary

- 1.1.2 Free Route Airspace (FRA) is a key deliverable of the UK CAA's Airspace Modernisation Strategy (AMS) (CAP 1711) (Ref 1). It was mandated in European Law¹, and encompassed in UK domestic law under the European Union (Withdrawal) Act 2018 following the withdrawal from the European Union. FRA implementation is required as a part of the EUROCONTROL Single European Sky ATM Research (SESAR) programme.
- 1.1.3 The purpose of this change is to deliver against the legal mandate for FRA and the AMS. The introduction of FRA will enable environmental benefit by allowing airline operators to reduce CO₂ emissions per flight, which in turn generates economic benefit due to reduced operating costs.
- 1.1.4 FRA enables aircraft in upper airspace to flight plan and fly between waypoints and not be constrained to follow the current network of routes. The concept will also enable the opportunity to flight plan across the airspace managed by Borealis Alliance² member air navigation service providers (ANSPs) unconstrained by the route network in each ANSP's airspace with free crossing at boundaries not limited to fixed entry/exit points.
- 1.1.5 NATS is introducing FRA across UK airspace in multiple deployments. This deployment of FRA will extend current Scottish FRA (D1, introduced in Dec 2021) further south to encompass the entire Scottish UIR and into the London UIR. The changes proposed in this ACP will only affect flights above 25,500ft (FL255).
- 1.1.6 This change is limited to a single design option, aligning with current FRA, to ensure optimised safety and reduced complexity for controllers and airlines. The geographic boundaries are constrained by current technological limitations. In this consultation, NATS is seeking your views on the proposed FRA deployment.
- 1.1.7 The change from a network of routes to FRA represents a significant change for aircraft operators and Air Traffic Control (ATC); NATS welcomes your feedback to develop this proposed deployment. Future deployments will be consulted on through separate ACPs.
- 1.1.8 NATS also proposes reforming current Flightplan Buffer Zones (FBZs) (implemented in FRA D1) which are on the border of this deployment area. The safety evidence presented in the subsequent FRA D2 ACP reduces the requirement for certain FBZs to be 1NM rather than 5NM, where no High Energy Manoeuvres are present within the Danger Area. The CAA has recommended that NATS review the application of FBZs across all UK FRA areas to provide a consistent approach where possible. NATS has identified 2 FBZs which overlap the border of this ACP and which could be revised. Given the proximity of the airspace, NATS propose to encompass this revision within this ACP. This is the most efficient and expeditious means to implement this change. We specifically seek views from our stakeholders on this aspect of the change proposal.
- 1.1.9 The consultation for this ACP opens on 5 June 2023 and ends on 16 July 2023, a period of 6 weeks.
- This consultation document and response questionnaire are available via the CAA airspace change consultation portal at: <https://consultations.airspacechange.co.uk/nats/fra-d3>
- 1.1.10 If the proposal is approved by the CAA, implementation of the airspace change will occur not before March 2024.

¹ EU716/2014 has been superseded within the EU. However, the UK has retained the requirements under UK (EU) 716/2014.

² The Borealis Alliance includes the ANSPs Avinor (Norway), EANS (Estonia), Fintraffic ANS (Finland), IAA (Ireland), ISAVIA (Iceland), LGS (Latvia), LfV (Sweden), NATS (UK), Naviair (Denmark)

2 Introduction and Overview

This consultation relates to changes to airspace and the ATS route structure which will change aircraft flight profiles above FL255. We are seeking feedback from any stakeholders who may be affected by the proposal. Primarily this is likely to be users of the airspace and other aviation stakeholders. Nonetheless we welcome feedback from any interested parties.

Your feedback at this stage will help us explore the potential impacts of the proposed changes to the FRA Deployment 3 (D3) airspace. We invite considered responses supported by evidence where possible.

2.1 About this Airspace

2.1.1 This third deployment adjoins current FRA (Deployment 1, D1) in Scottish upper airspace, and extends FRA further south. Figure 1 shows current UK upper airspace, with current FRA and the proposed area for this deployment.

2.1.2 The airspace is used extensively by aircraft arriving at and departing from UK airports, as well as overflights such as transatlantic flights to/from continental Europe. The deployment area spans Scottish and London Upper Information Regions (UIR), and neighbours the upper Dutch Flight Information Region (ATS provided by Maastricht Upper Area Control Centre, MUAC).

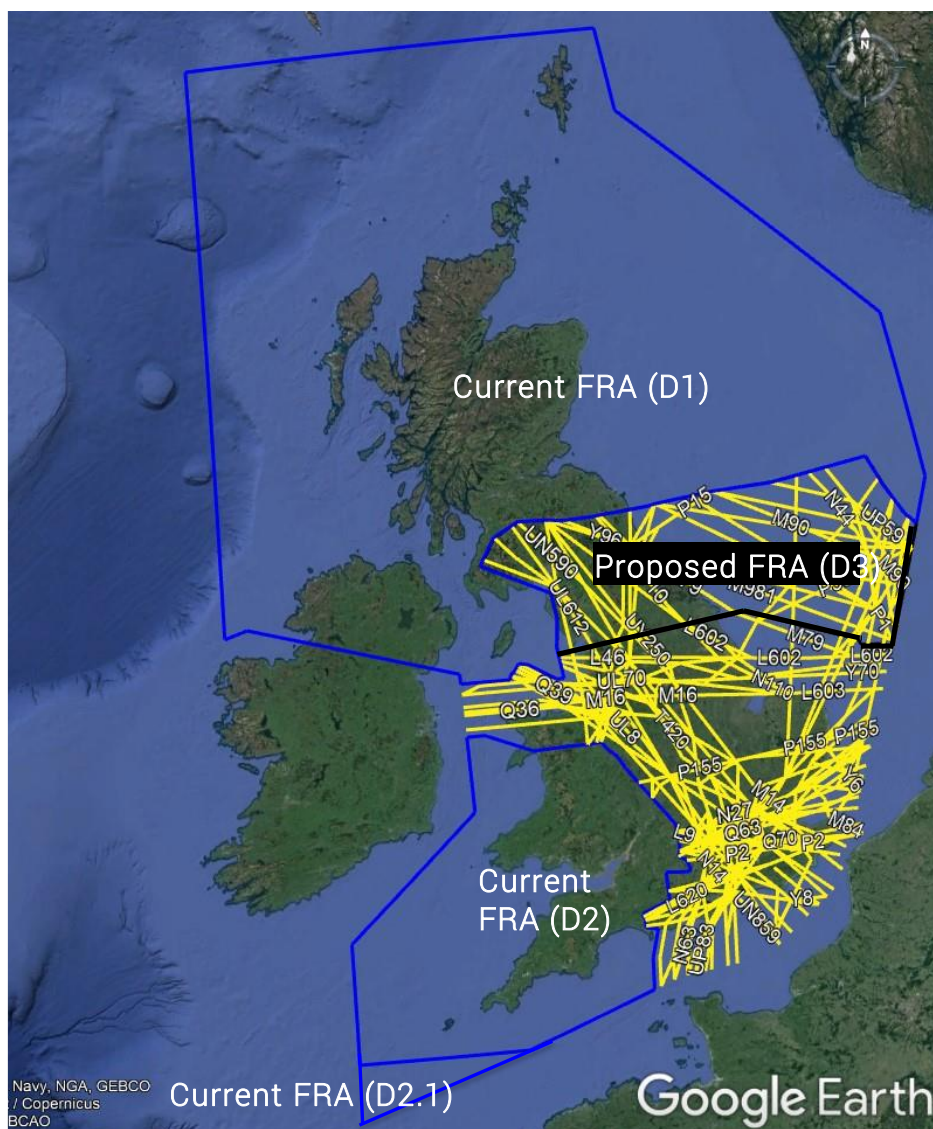


Figure 1 Current UK Upper airspace (Source: NATS/GoogleEarth)

2.2 Why must this change happen now?

- 2.2.1 This ACP aims to continue the implementation of FRA across UK airspace. The removal of high-level route structures, supported by flexible use of airspace management techniques that segregate operations where necessary, is a key component of the delivery element ‘UK-ABN/1: Trajectory-based operations’ in the AMS. This will facilitate flight efficiency benefits by enabling aircraft to flight-plan and fly user-preferred routes, where possible.
- 2.2.2 The implementation of FRA by European Union (EU) member states was mandated in European law under the EU Implementing Regulation EU716/2014 (Pilot Common Project)(Ref 2), which has been superseded within the EU after the UK left the EU. EU716/2014 is retained and amended in UK domestic law (referred to as ‘the mandate’ throughout this document). UK FRA implementation will align with the requirements of UK Reg (EU) 716/2014.
- 2.2.3 FRA is being implemented throughout European airspace and is already in operation in most neighbouring States, as shown in Figure 2. NATS, along with other Borealis Alliance ANSPs, has committed to implement a consistent and integrated FRA (cross-border) volume extending across neighbouring national airspace boundaries, from the eastern boundary of the North Atlantic to the western boundary of Russian airspace in the North of Europe; without the need for crossing boundaries at mandated Co-Ordination Points (COPs).

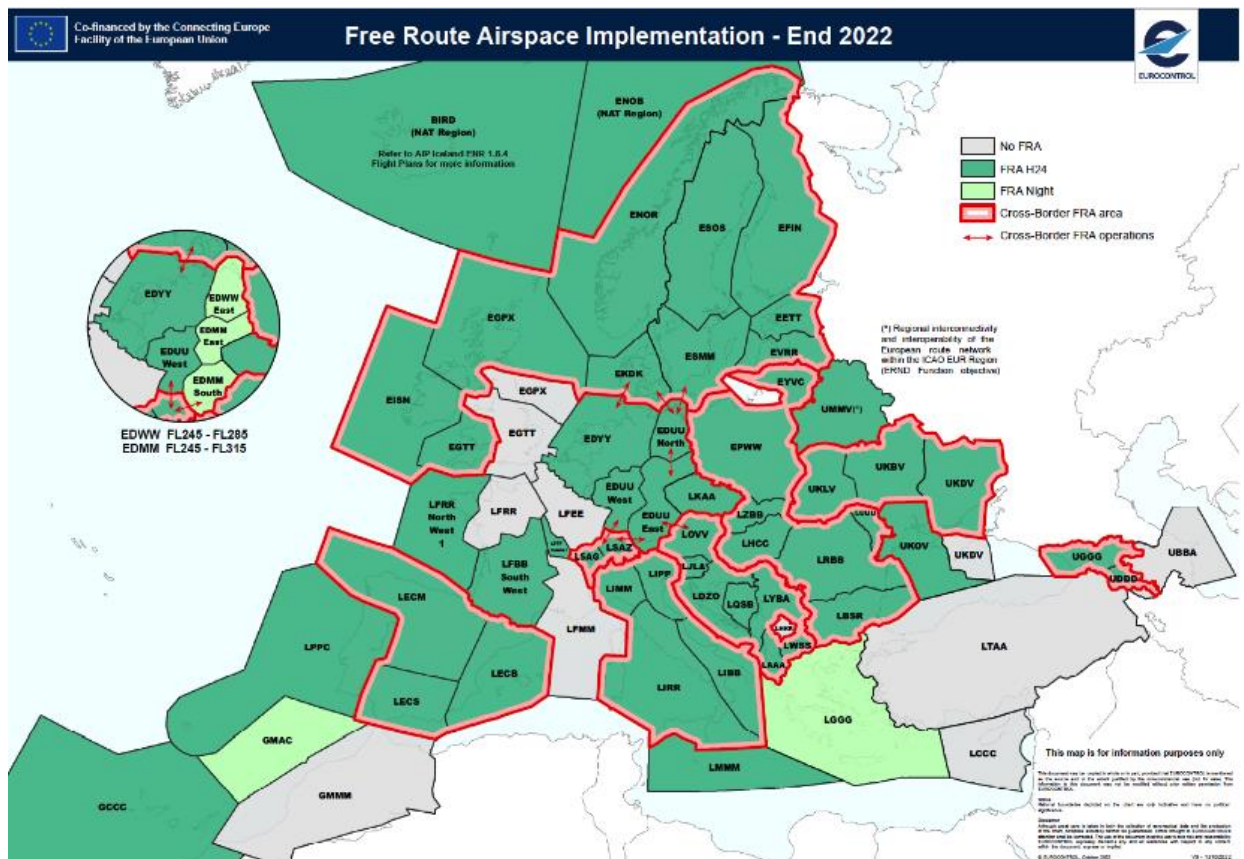


Figure 2 Free Route Airspace European Implementation - end 2022 (Source: Eurocontrol.int)

- 2.2.4 NATS is undertaking this ACP to ensure the UK meets the legal mandate, and that it delivers the AMS, whilst enabling airline operators to optimise their flight profiles and enable environmental benefit.

2.3 About this document

2.3.1 This consultation document explains the history, impacts and benefits of the proposal. There are two complementary documents published on the portal, providing more details on how the option has been appraised and how this consultation will be conducted:

- Stage 3 Consultation Strategy, which provides details on how we will conduct the consultation
- Stage 3 Full Options Appraisal, which provides analysis of the benefits for the proposed option in comparison to the baseline

2.3.2 This ACP is consulting upon the proposed option for implementing FRA in this deployment area and seeks feedback from stakeholders on the proposed design option.

2.3.3 The FRA D3 ACP has been categorised under CAP1616 as a Level 2B change as it only proposes changes above FL255.

2.3.4 A further FRA Deployment within UK airspace is planned, this will be progressed under a separate ACP (ACP-2021-072)(Ref 3).

2.4 Where are we in the airspace change process?

2.4.1 We are currently at Stage 3 in the Airspace Change Process (CAP1616, Ref 4).

2.4.2 At Stage 1 we engaged with stakeholders to develop and define the design principles (DPs) for this proposal, using the DPs from previous FRA deployments as a basis for consistency.

2.4.3 Stage 2 Develop and Assess developed the potential design concept. Feedback was obtained from stakeholders and this option evaluated against the DPs. An initial appraisal illustrates the benefits and impacts of the design option.

2.4.4 Supporting documentation for this proposal (including Stage 1 and Stage 2) can be found on the CAA's airspace change portal by clicking on this [link](#) (Ref 5).

2.4.5 A single design option has progressed to this current stage. Option 1 (all ATS routes are removed) is now at Stage 3 Consult, where stakeholders are asked for feedback on this option.

2.5 Stakeholders

2.5.1 A stakeholder is a third party with an interest in an airspace change proposal. This ACP is proposing changes within controlled Class C airspace above FL255. Due to the flight levels at which the changes are proposed, the primary focus of this consultation is aviation stakeholders, and this document uses common aviation technical language.

2.5.2 The primary stakeholder groups for this consultation are:

- Air Navigation Service Providers (ANSPs) who border the FRA D3 area
- Airlines
- Airports
- Ministry of Defence
- Computerised Flight-planning Service Providers (CFSP)
- National Air Traffic Management Advisory Committee (NATMAC) Members
- General Aviation/Sport aviation

2.5.3 The stakeholders proactively targeted by NATS for involvement in this consultation are listed in Appendix A. However, we welcome responses from any organisation or individual.

2.6 Proposed UK FRA Deployment Plan

- 2.6.1 FRA is being deployed across the UK in 4 staged deployments, to accommodate several influencing factors, such as system requirements, simultaneous airspace modernisation projects (e.g., Future Airspace Strategy Implementation (FASI) changes), traffic flow complexity, Borealis Alliance commitments and the requirements of neighbouring ANSPs. These factors necessitated a geographically phased implementation to enable the introduction of FRA throughout UK airspace.
- 2.6.2 In consultation with the CAA, the decision was taken to submit individual ACPs for each planned FRA deployment. FRA Deployment 1 (FRA D1) (Scottish) and FRA D2.1 (PEMAK Triangle/ TAKAS Box) were implemented in December 2021³. FRA Deployment 2 (FRA D2) (West) was implemented in March 2023. Current UK FRA is shown in Figure 1.
- 2.6.3 This deployment (FRA D3) proposes to introduce FRA, and associated changes to the underlying airspace structure, to adjoin current Scottish FRA (FRA D1). The deployment area extends FRA south (from the FRA D1 boundary) to the upper airspace Control Centre boundary of responsibility between the NATS ATC Centres serving Scottish (Prestwick) and London (Swanwick) UIRs, as shown in Figure 3. The boundary is currently constrained by ATC technological factors which limits the deployment of FRA across ATC Centre boundaries.
- 2.6.4 Whilst current ATC Systems are compatible between centres, they are not sufficiently integrated to safely undertake cross-centre FRA operations. As a result, this boundary marks the maximum extent of Upper Airspace that can be safely included within a unified FRA environment at this current time. The implementation of a new technology platform, Deployment Point – En route⁴, will address this and facilitate the final further FRA deployments across UK airspace.
- 2.6.5 To expedite the delivery of additional FRA and enable improved environmental and economic benefits to UK airspace users, NATS seeks to implement FRA in the D3 airspace volume, with a limited proposed lateral area which aligns with the current Area of Responsibility (AOR) for the NATS Prestwick Centre Upper operation.

2.7 UK FRA Design Development

2.7.1 Since this change is mandatory under UK law and an agreed strategic aim of the Single European Sky initiative, the options developed in previous deployments were limited to the following:

- Option 0: Baseline: do nothing – maintain the current high level ATS route structure.

Implement FRA in accordance with UK Reg (EU) No 716/2014

- FRA Option 1. In which all ATS routes are removed.
- FRA Option 2. In which the ATS route structure is partially retained.
- FRA Option 3. In which the ATS route structure is retained, but aircraft are not constrained to flight plan the routes within the FRA.

2.7.2 These options were developed from the mandated FRA PCP requirements and their development is described in detail in the Stage 2 documents for FRA D1, FRA D2.1 and FRA D2 (Ref 6, 7 & 8). Engagement and consultation with stakeholders for previous deployments

³ FRA D2.1 covers UK airspace with ATS provision delegated to (DSNA) France and (IAA) Ireland. It was initially included in the scope of D2, but it became a separate ACP (D2.1) to align with DSNA and was implemented with D1 in December 2021. For the purposes of programme management, this current ACP is still considered the 'third deployment' of FRA albeit it is the fourth FRA area in UK airspace.

⁴ This platform will enable the system requirements for cross centre FRA operations.

resulted in 'Option 1 All ATS routes removed' being implemented in FRA D1, FRA D2.1 and FRA D2 deployment areas.

2.7.3 This proposal is adjacent to the FRA D1 airspace. NATS propose that the construct of FRA D3 must be compatible with the design and methodologies used in FRA D1 to ensure a contiguous volume with the same flight planning principles and requirements. This means upper airspace controllers and airlines would be operating using a single concept of operation, minimising complexity, maximising efficiencies and ensuring the highest levels of safety.

2.7.4 As such, NATS propose there is only one design option for this FRA deployment:

- Option 1: Remove all upper routes and implement FRA.

2.7.5 This is consistent with all current UK FRA. Route Availability Document (RAD) restrictions would be introduced in order to safely manage the flow of traffic transitioning into and out of FRA, in line with the design guidelines provided within the European Route Network Improvement Plan (ERNIP) Part 1 (Ref 10). Further detail on this proposed option is below in Sections 4 & 5.

2.7.6 The underlying route structure will be revised as required. In order to maintain connectivity between the proposed FRA airspace and the extant routes below FL245, the vertical limits of some lower FIR routes will be extended to FL255. This will be amended in the AIP, in line with the principles undertaken and approved for FRA D1 (ACP-2019-012).

2.7.7 Option 0: 'Do nothing' was discounted at Stage 2 as it does not meet the Priority A Design Principle 'to fulfil the requirements of the AMS'.

3 Current Airspace (Baseline)

3.1.1 The following section describes the current airspace which forms the baseline (do nothing) scenario. It should be noted that “Doing nothing” is useful as a baseline for comparison, but it does not meet the legal mandate or the AMS objectives, so it is not considered a viable option.

3.1.2 The lateral area covered by this ACP is shown below in Figure 3. The change area interfaces with current FRA (D1, airspace above the top blue line) and extends below to the black line, which is the boundary line for the upper AOR for Prestwick ATC centre. FRA D1 base level is FL255.

3.1.3 The airspace comprises both the Scottish Upper Flight Information Region (UIR) and London UIR (red lines). This airspace also interfaces with the Dutch (Amsterdam) UIR, with Air Traffic Service (ATS) provision provided by Maastricht Upper Area Control (MUAC). Maastricht already operate FRA on this boundary at FL250+.

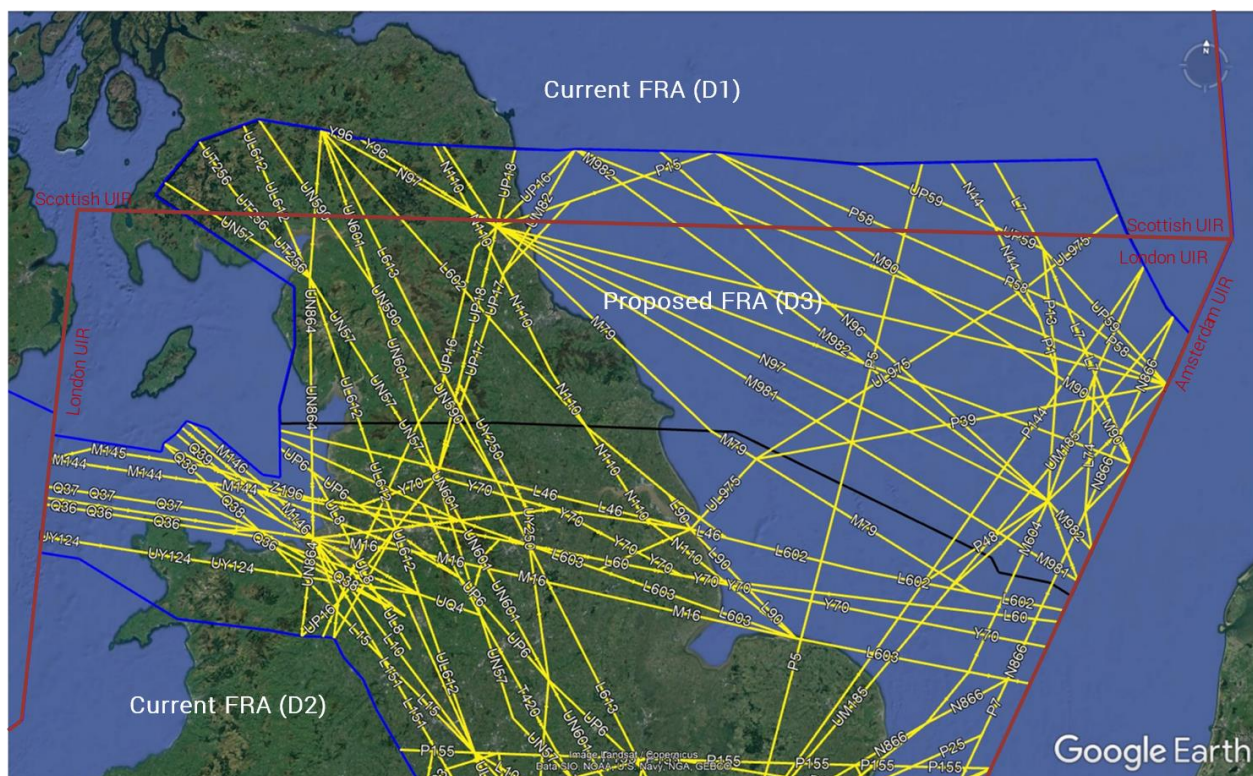


Figure 3 Current UIR airspace/routes within FRA Deployment 3 area (Source: NATS/Google Earth)

3.1.4 The traffic in this airspace is comprised of aircraft arriving/departing UK airports, and overflights such as transatlantic flights to/from continental Europe.

3.1.5 Figure 4 overleaf shows the current ATS routes and the density distribution of flights within this upper airspace for a typical summer week (8-14th August 2022).

3.1.6 Currently all aircraft flight plan to fly along the published ATS route structure or on published Direct routings (DCTs), which are trajectories between specified waypoints. Satellite navigation now makes navigation between any points possible. Air Traffic Control (ATC) routinely instruct aircraft to route direct to a point (termed a tactical direct), to improve efficiency as aircraft transit through UK upper airspace. The use of the designated entry/exit points (COPs) at the UIR boundary, and the ATS route structure can be seen in Figure 4. This diagram shows current flight-path density plots (2022 data), presenting the typical busy flows of traffic in the upper airspace in the proposed deployment area.

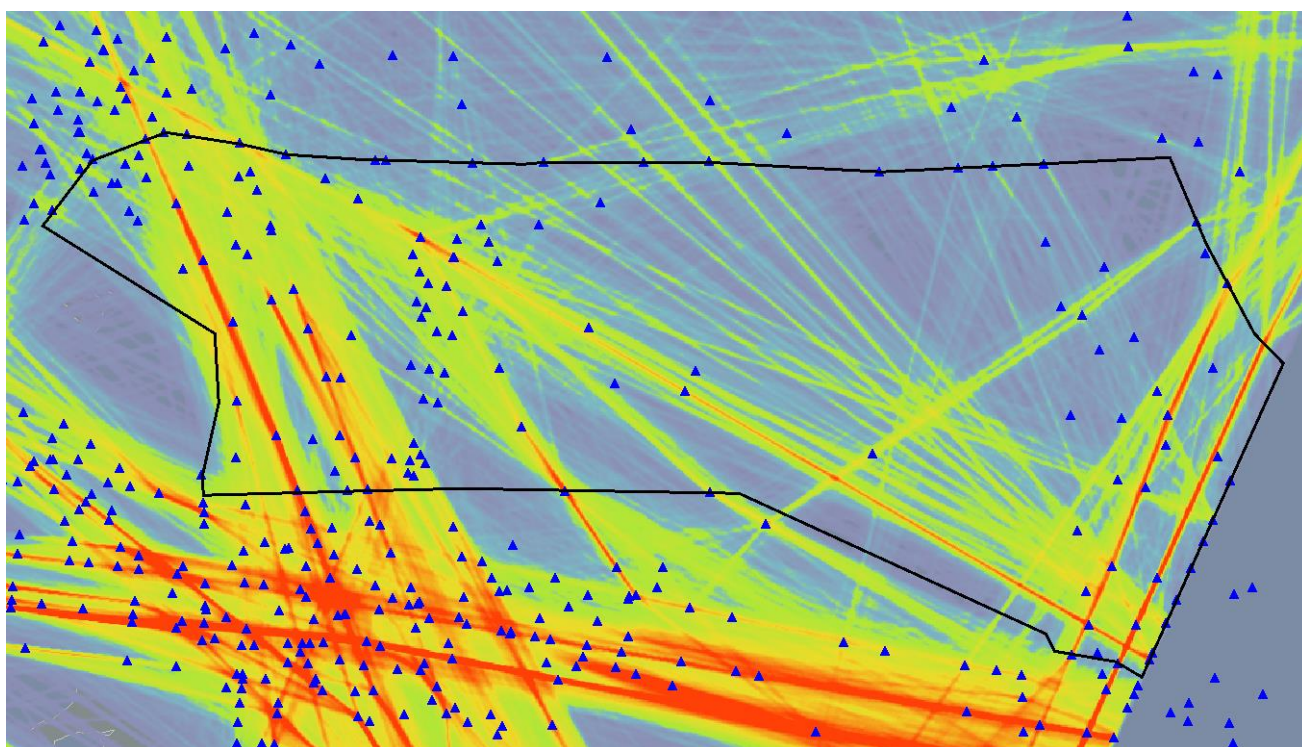


Figure 4 Typical current day traffic flows in FRA D3 region (above FL255) 8-14 August 2022 (Source NATS/ATC Playback)

3.1.7 For reference, the extant UK route structure is defined in detail in the following sections of the UK Aeronautical Information Publication (AIP) (Ref 9): ENR 3.3 AREA NAVIGATION ROUTES

3.1.8 Table 1 shows the current and forecast traffic for the baseline within the proposed deployment area. This is based on a sample of traffic data from 2022 and uses the NERL October 2022 STATFOR forecast⁵.

3.1.9 In 2022, approximately 447,000 aircraft used this airspace, with a modelled total fuel burn of 6,862KT and 21,821KT CO₂.

3.1.10 Extrapolating the baseline using traffic forecast figures would present the 'Do Nothing' option.

Year	Traffic	Fuel burn (KT)	CO ₂ (KT)
2022	447,283	6,862	21,821
2023	507,510	7,786	24,759
2024	549,206	8,426	26,794
2025	562,473	8,629	27,441
2026	573,634	8,800	27,985
2027	583,110	8,946	28,448
2028	594,060	9,114	28,982
2029	605,347	9,287	29,532
2030	616,849	9,463	30,094
2031	628,569	9,643	30,665
2032	640,512	9,826	31,248
2033	652,682	10,013	31,842
2034	665,083	10,203	32,447

Table 1 Forecast traffic, fuel, and CO₂ emissions for baseline scenario + 10 years

⁵ This is derived from the EUROCONTROL STATFOR October 2022 Base forecast model which presents an anticipated growth in traffic until 2027. From 2028, traffic is forecast using a long-term average growth rate of 1.9% (EUROCONTROL STATFOR October 2022 Extended forecast).

4 Proposed Airspace: Free Route Airspace – Option 1 FRA with all routes removed

4.1.1 As described in Section 2, NATS propose the construct of FRA D3 must be compatible with the design and methodologies used in FRA D1 to ensure a contiguous volume with the same flight planning principles and requirements. There is therefore only one design option for this FRA deployment:

- Option 1: Remove all upper routes and implement FRA above FL255.

4.1.2 The purpose of this consultation is to allow you to give your feedback on our proposal. This section presents the design option considerations for FRA D3.

4.2 FRA Concept: Overview

4.2.1 FRA is defined as “a specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) waypoints, without reference to the ATS route network, subject to airspace availability.” (EUROCONTROL, ERNIP Part 1, Ref 12). Within this airspace, flights remain subject to air traffic control.

4.2.2 Within FRA, air traffic will be able to flight plan user-preferred trajectories without reference to a route structure; therefore, flows of traffic are able to change hour by hour, month by month and year by year in a manner which is not constrained by airspace design and is therefore less predictable. Short- and long-term factors which can have an influence on the routings chosen by aircraft operators include:

Short Term Factors

- weather/winds (jet stream position),
- industrial action,
- events such as large sporting events (e.g. football matches, Olympics etc),
- military activity,
- ATC traffic regulations (used to manage flows).

Long Term Factors

- relative route charges between neighbouring countries,
- fuel prices,
- company business models/ fleet mix,
- seasonal route preferences,
- changing destinations and emerging markets,
- political factors,
- tourism preferences/marketing/fashion.

4.3 FRA Significant Points

4.3.1 Within FRA airspace, waypoints can be assigned as one or more FRA significant points depending on their intended use as follows:

- FRA Entry Point (E) A published Significant Point on the horizontal boundary of the FRA from which FRA operations are allowed.
- FRA Exit Point (X) A published Significant Point on the horizontal boundary of the FRA to which FRA operations are allowed.
- FRA Intermediate Point (I) A published Significant Point via which FRA operations are allowed.

- FRA Arrival Point (A) A published Significant Point to which FRA operations are allowed for arriving traffic to specific aerodromes.
- FRA Departure Point (D) A published Significant Point from which FRA operations are allowed for departing traffic from specific aerodromes.

4.3.2 EUROCONTROL ERNIP FRA Guidance (Ref 12) describes how these should be used.

4.4 FRA D3 Design - Deployment Area

4.4.1 The proposed deployment area for FRA D3 is depicted in Figure 5 and described fully in Section 3 (Baseline). The area adjoins current UK FRA (D1) to the north and west (above FL255), shown by the blue boundary line, and Dutch FRA to the east (FRA above FL250, ATS provision MUAC), shown by the red line.

4.4.2 The southern boundary adjoins with the ATS route network. FRA Entry and Exit points will be designated along this boundary. As described in paragraphs 2.6.3 -2.6.5, the lateral boundary is currently constrained by ATC technological factors which limit this deployment of FRA to the Prestwick ATC AOR (black line).

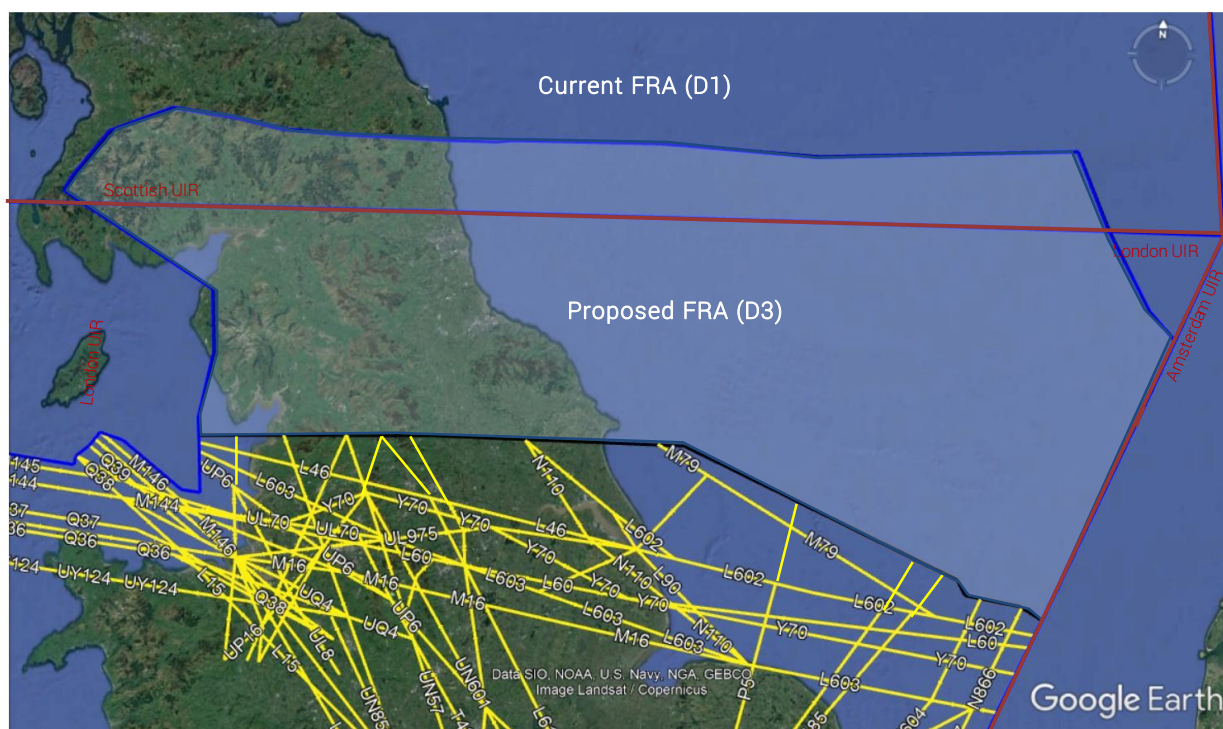


Figure 5 Proposed deployment area for FRA D3 (Source: NATS/Google Earth)

4.4.3 The vertical boundary will be commensurate with FRA D1, with FRA implemented above FL255, so upper airspace controllers and airlines would be operating using a single concept of operation. This maximises the highest levels of safety and minimises complexity, creating a consistent environment for air traffic controllers, whereby all conflict points are determined by aircraft trajectory, and encourages more efficient flight planning behaviour, thus increasing the likelihood of benefit realisation.

4.4.4 All routes will be removed in the FRA area. Where flow management is regularly required in a specific volume of airspace (for example between Danger Areas), then structural limitations may be used to manage traffic flows and capacity.

4.4.5 Currently, this is the maximum area of upper airspace that can be included within this proposal for technical, safety and staffing reasons. We propose to implement FRA to this extent to maximise the potential benefits of FRA within the constraints of this deployment.

4.5 FRA D3 Design - Significant Points

- 4.5.1 **FRA Entry and Exit points:** will be situated on or close to the lateral boundary of FRA⁶, to align with current traffic flows and route connectivity. We will introduce additional waypoints as required to optimise connectivity with the adjoining network as set out within the requirements of the ERNIP Part 1. NATS will continue to work closely with Maastricht Control to determine the optimal position to provide efficient connectivity across the network.
- 4.5.2 **FRA Intermediate points** will be assigned where appropriate within the FRA volume. We will introduce additional intermediate points as required for the purposes of navigating around SUAs, as well as removing points that are no longer required.
- 4.5.3 **FRA Arrival Points:** Each airport below or immediately adjacent to the FRA volume will have a defined set of FRA Arrival points for descending out of FRA to arrive at an airport, in accordance with ERNIP Part 1 which describes FRA arrival connectivity. These may link to Standard Terminal Arrival Routes (STARs) (where available) for the destination airport.
- 4.5.4 The FRA D3 deployment area affects arrivals for several airports. The arrival points for all airports affected by the FRA D3 area will be determined by NATS to optimise descent profiles based on existing STARs or route connection. We will introduce additional waypoints as required to optimise connectivity with the relevant airport. To calculate the position of FRA Arrival points, a gradient of c.3⁰ (300ft per NM) (c.80 nautical miles from the airport) will be assumed.
- 4.5.5 These will be published in the AIP in accordance with ERNIP guidance.
- 4.5.6 **FRA Departure Points:** Each airport below or immediately adjacent to the FRA volume will have a defined set of points for departures (FRA Departure points) to transition (climb) from the lower ATS route structure into FRA. Where Standard Instrument Departures (SIDs) are available at the departure airport the transition from the SID to the lower ATS route network will be unchanged from today. We will introduce additional waypoints as required to optimise connectivity with the network.
- 4.5.7 The FRA D3 deployment area affects departures for several airports. The departure points for all airports affected by the FRA D3 area will be determined by NATS to optimise climb profiles based on existing route connection. For FRA Departure points, a climb gradient of c.7% (ICAO Standard, 425ft per NM, c.60 nautical miles from the airport) will be assumed⁷. These will be published in the AIP in accordance with ERNIP guidance.
- 4.5.8 RAD restrictions would be introduced to manage the flow of traffic in complex areas and transitioning into and out of FRA. The RAD is a dynamic document, which is managed by NATS in conjunction with EUROCONTROL Network Management. Any RAD restriction change which impacts on neighbouring ANSPs will be applied through standard activity as part of the day-to-day management of the network.
- 4.5.9 There will be no changes to current interface arrangements or airspace delegation as a result of this proposal.

⁶ Taking into account the ERNIP and EUROCONTROL guidance.

⁷ Subject to ATC procedures and structural limitations

4.6 FRA D3 Design - Special Use Airspace (SUA) - Flight plan Buffer Zones (FBZ)

- 4.6.1 In line with PCP Requirement 8 and AMS ABN/1, flight plan trajectories will need to be managed to maintain a safe distance from Special Use Airspace (SUA). FRA D1 and FRA D2 has implemented Flight plan Buffer Zones (FBZs) around SUA within FRA.
- 4.6.2 An FBZ is an area (always associated with an SUA) utilised to ensure adequate flight plan trajectory separation from active Danger Areas or other SUA. The CAA's SUA – Safety Buffer Policy for Airspace Design Purposes (Buffer Policy) (Ref 11) stipulates the requirement for a buffer between ATS Routes and SUA. Within the Buffer Policy no specific separation criteria are specified for FRA trajectories.
- 4.6.3 The FRA D2 ACP (ACP-2019-70, Ref 7) demonstrated that applying the Buffer Policy separation criteria to FRA would have a significant impact to route/trajectory flight plan availability and would limit the ability to deliver environmental benefits and/or negatively impact defence and security objectives.
- 4.6.4 NATS presented a safety argument and evidence (supported by the MoD) requesting dispensation from the Buffer Policy for FRA implementation, revising the size of FBZs to be:
- 1NM: Standard lateral buffer requirements used for SUA activity, other than where autonomous high energy manoeuvres (HEM) are present.
 - 5NM: Buffer requirement for autonomous high energy manoeuvres
 - The required 2,000ft vertical buffer would be applied to all areas where appropriate (in line with the Buffer Policy)
- 4.6.5 This safety argument was accepted by the CAA. The FBZ design described above was approved and implemented within FRA D2 airspace.
- 4.6.6 Within the FRA D3 volume, FBZs are already established around Danger Areas that will interact with the Free Route Airspace (EG D323 Complex), and these are in line with the approved FBZ design (5NM due to HEM activity within). There are no additional FBZs required as part of this proposal.

4.7 FBZs in adjacent FRA – revision to ACP scope

- 4.7.1 Following the approval of FRA D2 ACP, and acceptance of the FBZ safety argument as described in 4.6.4, the CAA made a recommendation to NATS that *'they review the application of FBZs across all UK FRA areas to provide a consistent approach where applicable'* (FRA D2 Regulatory Approval - CAA Recommendation to NATS).
- 4.7.2 Working with the MoD, NATS has reviewed the current FBZs (implemented in FRA D1, which is adjacent to this current proposal) and identified two FBZs which are currently 5NM. The military activity within supports the reduction to 1NM, consistent with other FBZs. These overlap the FRA D3 deployment area, as shown in Figure 6 and described in Table 2.

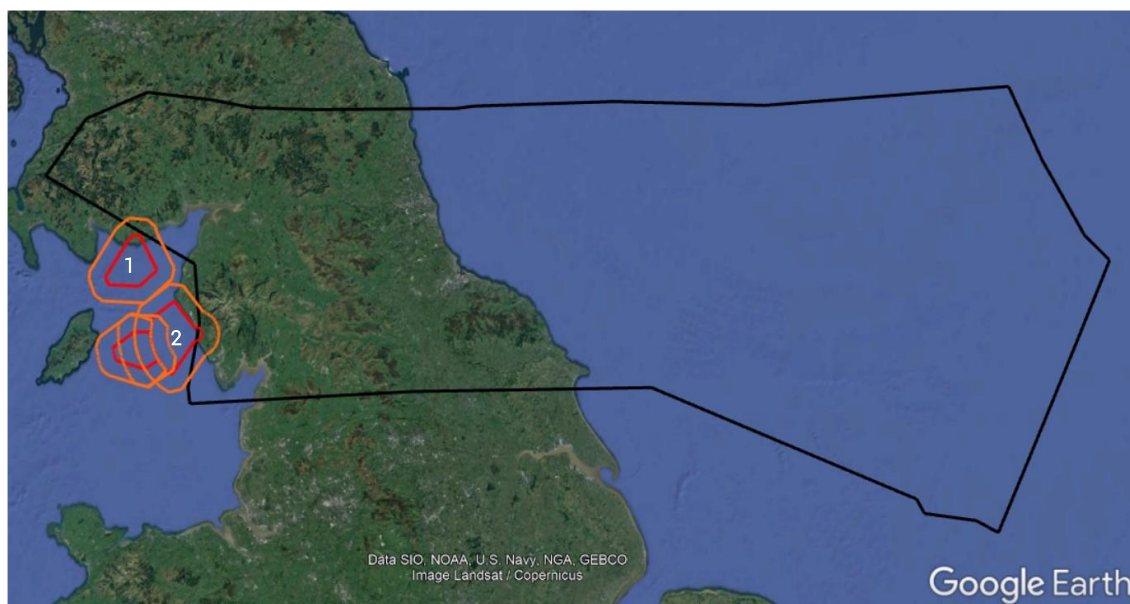


Figure 6 Current FBZs in FRA airspace which require revision in line with CAA recommendation (Source: NATS/Google Earth)

Special Use Airspace	Proposed Changes
1) EG D405Z KIRKCUDBRIGHT FBZ	Current 5NM FBZ. No HEM activity. Revise to 1nm FBZ
2) EG D406AZ – CZ ESKMEALS FBZ	Current 5NM FBZ. No HEM activity. Revise to 1nm FBZ
	Current 5NM FBZ. No HEM activity. Revise to 1nm FBZ
	Current 5NM FBZ. No HEM activity. Revise to 1nm FBZ

Table 2 Special Use Airspace and proposed FBZ revisions to be undertaken within the scope of this ACP

4.7.3 Given the proximity of this airspace, NATS propose to amend the scope of this ACP to encompass this revision to current FBZs as described in Table 2. A full safety assessment would be provided within the Stage 4B Airspace Change Proposal.

4.7.4 These revisions would provide for more efficient airspace, with no detriment to safety, and is the most efficient and expeditious way to implement this reform at the earliest opportunity NATS seek feedback from stakeholders specifically regarding this additional change.

4.8 FRA D3 Design - No Planning Zones

4.8.1 No Planning Zones (NPZs) have been utilised with previous FRA deployments, to restrict flight plans and manage traffic flows. An NPZ is a defined airspace volume which may be used to restrict flight plans and thus prevent undesirable traffic flows in a particular area. They can also be used where gaps in ATM capability exist i.e. Geographical Radio Communication or Radar Surveillance Coverage Gaps.

4.8.2 The process to determine the requirement for NPZs is primarily based on the outcome of flight plan validation simulation conducted by the EUROCONTROL Network Manager (NM). To complete a flight plan simulation, it is necessary for the NM to replicate the proposed airspace design within their test systems. Due to the cost, time and effort required to achieve this activity it would be disproportionate to conduct this simulation prior to consultation, as the final design may be amended depending on the consultation responses which would potentially require further simulation. Therefore, it is not possible to consult on where and how NPZs may be used within the design.

4.8.3 At this stage it is not anticipated we will require additional NPZs for this deployment, however this will be confirmed following further simulation and safety activities.

4.8.4 Should they be required, the proposed deployment of FRA will comply with guidelines for NPZs as set out within Section 3.10 of the EUROCONTROL NM Flight Planning Requirements - Guidelines issued Dec 2022 (Ref 12), and any impacted neighbouring ANSPs would be engaged in the development process.

4.9 Cross Border FRA & Borealis Alliance

4.9.1 The Borealis Alliance members have worked cooperatively since 2012 to develop a common FRA concept of operations. The FRA design implemented in D1 & D2 reflects engagement with Borealis Alliance members as well as other Stakeholders and Air Navigation Service Providers (ANSPs).

4.9.2 The intention of the cross-border FRA concept is to secure unconstrained cross-border FRA operations at the ANSP interfaces, in accordance with ERNIP Part 1 (Ref 10) and North Atlantic Documents e.g. ICAO Doc 7030. This concept will enable airspace users to flight plan a preferred trajectory, regardless of national FIR boundaries, and portions of airspace within which the provision of ATS is delegated to the participating states⁸.

4.9.3 The only border associated to this deployment is that with Maastricht (not a Borealis member). NATS is working closely with Maastricht Control to understand the viability or limitations associated to cross-border operations.

4.9.4 Cross border application for this deployment will be undertaken in accordance with UK AIP ENR1.3 para. 4.3.3.

4.9.5 The current status of FRA implementation across Europe is shown in Figure 2. The border for this deployment is between the London UIR and the Amsterdam UIR.

4.10 Flight Planning Examples

4.10.1 Figure 7 shows examples of flight plans transiting the blue FRA area. The example includes an indication of new reporting points that will be introduced (shown as FRA01/FRA02/FRA03). All new points would be allocated ICAO names (i.e.5LNC).

- 1) Overflights: Join FRA at FRA Entry point (E) RIBEL. Transit between FRA E point and a FRA Exit point (X) on the UIR boundary (e.g. RIBEL-X) with no intermediate points in between.
- 2) Overflights: Join FRA at FRA Entry point on UIR boundary (current FRA). Transit between FRA E and FRA Exit point (X) on FRA D3 boundary with no intermediate points in between (eg E – FRA01).

⁸ Subject to structural limitations that may be required to manage traffic flows or system limitations.

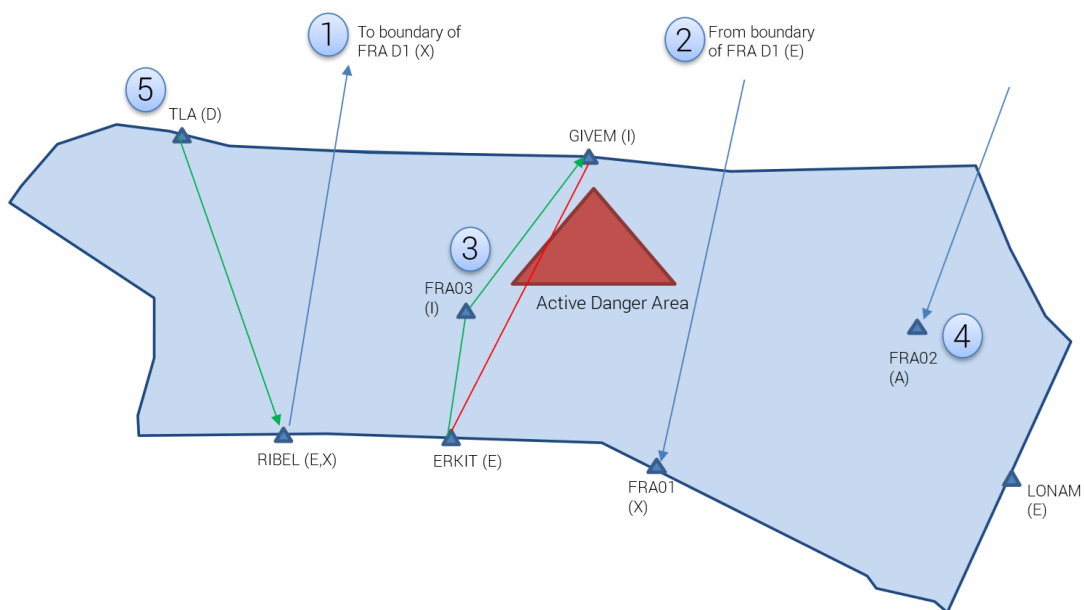


Figure 7 An indicative diagram to demonstrate examples of FRA routings and significant points (Source: NATS)

- 3) Special Use Airspace: To avoid a volume of active segregated Special Use Airspace, route via Intermediate point (I) to circumnavigate the SUA (e.g. ERKIT – FRA03 – GIVEM). A flight plan which would not be permitted would be ERKIT – GIVEM.
- 4) Arrivals: Transit through FRA. Leave FRA through FRA Arrival point (A) to join network for airport connectivity (e.g E – FRA02).
- 5) Departures: Join FRA at airport Departure point (D) and transit between FRA D point and FRA X point (e.g TLA – RIBEL)

4.11 Route Availability Document (RAD)

- 4.11.1 The RAD is a common reference document containing the description for route and traffic orientation. It includes route network and free route airspace utilisation rules and availability. The RAD is also an Air Traffic Flow and Capacity Management (ATFCM) tool that is designed as a sole-source flight-planning document, which integrates both structural and ATFCM requirements, geographically and vertically.
- 4.11.2 The content of the RAD shall be agreed between the EUROCONTROL Network Manager and the Operational Stakeholders through an appropriate cooperative decision making (CDM) process. The RAD is a dynamic tool managed by ANSPs and EUROCONTROL and therefore changes to it are outside of the scope of the CAP1616 process.
- 4.11.3 A key process to determine the requirement for RAD restrictions associated with an airspace design is the outcome of flight plan validation simulation conducted by the EUROCONTROL Network Manager (NM). To complete a flight plan simulation, it is necessary for the NM to replicate the proposed airspace design within their test systems. Due to the cost, time and effort required to achieve this activity it would be disproportionate to conduct this simulation prior to consultation. Therefore, it is not possible to consult on where and how RAD restrictions may be used.

4.12 Simulations

- 4.12.1 Real time ATC simulations of the FRA concept and design option have been undertaken by NATS over a total of four days. These simulations best inform control procedures associated with changes in aircraft trajectories.

4.13 Design Principles

4.13.1 The proposed FRA options have been designed in accordance with the design principles as detailed in the Stage 1B Design Principles document.

4.14 PBN equipage

4.14.1 Equipage requirements for operations within FRA are detailed in UK AIP ENR 1.3 Sec 4 (Free Route Airspace - General Procedures) (Ref 9) and will remain extant.

4.15 ATC Traffic Management

4.15.1 The proposed FRA will be managed by NATS Prestwick Centre ATC. Flights will be monitored by ATC with the assistance of medium- and short-term conflict detection tools. These will alert ATC if aircraft trajectories are in conflict and hence ATC intervention is required. Optimisation of traffic flows will be achieved in areas of high traffic density and complexity through the use of RAD restrictions which may require that flight plans pass through designated waypoints depending on origin/destination e.g. requirements for entering or exiting designated FRA Airspace

4.16 Full options assessment

4.16.1 The Options Appraisal (Phase II – Full) including safety assessment as required by CAP1616 (Ref 4), accompanies this document and is published on the CAA portal for this airspace change (Ref 5).

4.17 Implementation Timetable

4.17.1 The earliest implementation of any of the changes proposed herein would be March 2024, subject to CAA approval.

5 Impacts of this proposal

This section describes the impacts and/or benefits of the proposed FRA option.

5.1 Noise, visual intrusion, the general public, stakeholders on the ground

5.1.1 The changes proposed impact flights above 25,500ft. This is well above the 7,000ft threshold stipulated by the DfT, below which overflights are deemed to have significant impact on stakeholders on the ground. As such, we assess that there would be no significant change to noise, tranquillity or visual intrusion and no change in impact to stakeholders on the ground due to any of the proposed FRA change options.

5.2 CO₂ emissions

5.2.1 CO₂ emissions analysis has been performed using computer simulations which modelled the operation of the FRA D3 airspace, forecasting an enabled reduction in CO₂ emissions. The extent and impact of structural limitations is not fully determined at this stage so the benefit for this change is presented as a range⁹, as shown in Table 3.

FRA Option	2024 CO ₂ saving	2034 CO ₂ saving
Option 1 – All routes removed	7.6 – 15.2KT	9.2 – 18.4KT

Table 3 CO₂ emissions (reduction) for implementation year and 10 years post-implementation

5.3 Fuel Burn

5.3.1 Fuel burn analysis has been performed using computer simulations which modelled the operation of the FRA D3 airspace, forecasting an enabled reduction in fuel burn. The extent and impact of structural limitations is not fully determined at this stage so the benefit for this change is presented as a range, as shown in Table 4.

FRA Option	2024 Fuel burn saving	2034 Fuel burn saving
Option 1 – All routes removed	2.4 – 4.8KT	2.9 – 5.8KT

Table 4 Fuel burn (reduction) for implementation year and 10 years post-implementation

5.4 Airspace capacity

5.4.1 The flight-plan flexibility this proposal creates would enable airlines to avoid capacity constrained areas within the proposed FRA volume and avoid consequential delay and cost. However, this is not quantifiable and no specific change in capacity is assumed or claimed by this proposal.

5.4.2 FRA implemented with no restrictions could result in a reduction in the airspace capacity. Hence RAD restrictions are likely to be used to manage the flow of traffic transitioning into and out of FRA, and to provide some optimisation in areas of high traffic complexity and around SUAs.

⁹ The range presents 50% (lower) to 100% (upper) range of the modelled benefit. This reflects the uncertainty on how airline operators will utilise FRA and is in line with analysis produced for FRA D1.

5.5 MoD

- 5.5.1 As was the case for FRA D1, the proposed FRA D3 volume is expected to have a minimal impact on MoD operations. Operational Air Traffic (OAT) flight plans will not be affected by NPZ & FBZ, which form part of the (International Flight Plan System) IFPS.
- 5.5.2 Where temporary large scale military exercises occur, flight plan restrictions would be instigated associated to the agreed volume of airspace to be used. NATS is aware of the MOD's ACP to introduce TDA597 into permanent use (ACP-2020-026), and the ACP to formally designate the Joint Warrior Exercise areas as Danger Areas (ACP-2020-092). These are both examples of where FRA is able to accommodate such requirements.
- 5.5.3 NATS proposes to align the FRA D3 volume with the existing FRA D1 volume, so that a contiguous environment is created. To support this, NATS intend to align the existing and effective coordination principles used within the FRA D1 volume throughout this single volume of airspace.
- 5.5.4 In FRA D1 airspace, the North Sea Reduced Coordination Area (RCA) was reduced in size and the entirety of the subsequent FRA volume designated as a Reduced Coordination Area. It is proposed to extend this into the entirety of the FRA D3 airspace, reducing the existing North Sea RCA and extending the FRA RCA to encompass the whole volume. This would ensure a single coordination principle is employed between Civil and Military ATS providers within FRA airspace.

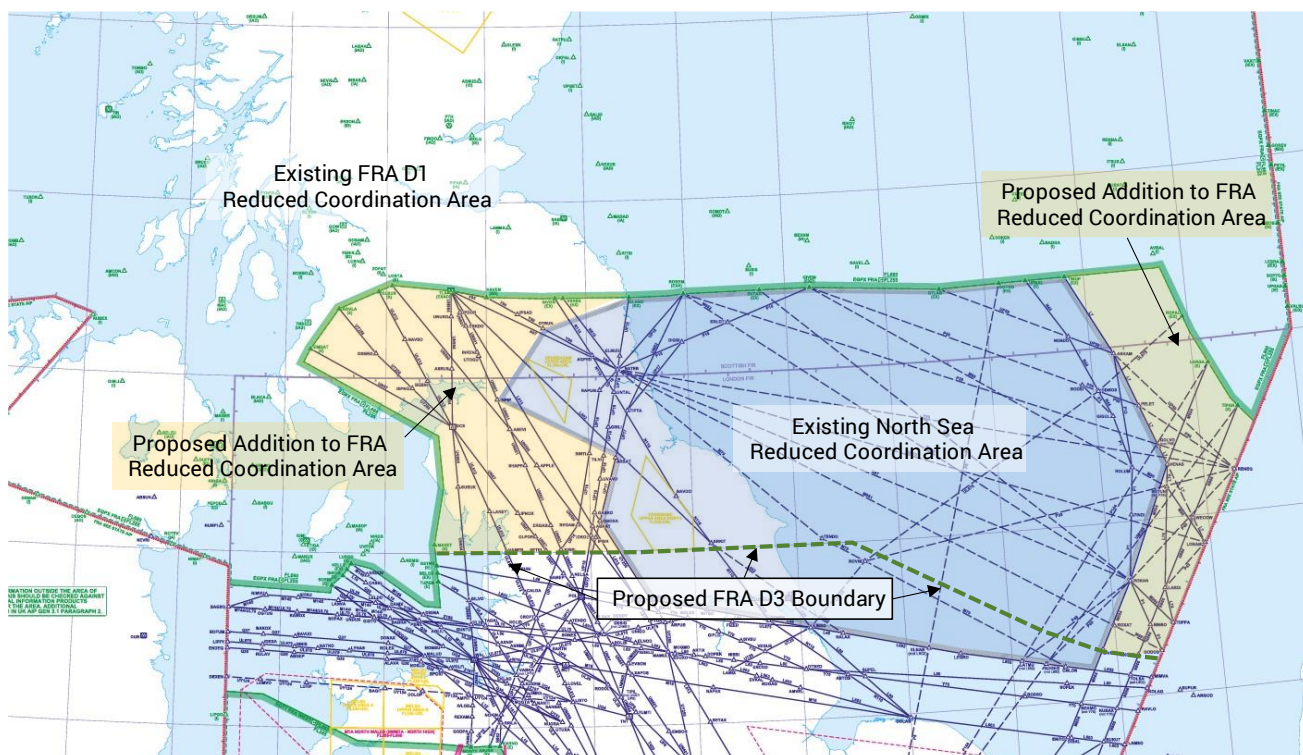


Figure 8 Proposed Reduced Coordination Area amendments (Source: NATS)

- 5.5.5 This proposal seeks to incorporate existing proven safe principles of operation throughout the FRA volume and would require updates to existing Letters of Agreement (LOAs).
- 5.5.6 NATS seek feedback from the MoD as to whether the proposed changes would be acceptable.

5.6 General Aviation (GA) airspace users

- 5.6.1 There is not expected to be any impact on general aviation or sport aviation airspace users. Arrangements for the activation and management of Upper Gliding Areas within the deployment area will be unaffected by the introduction of FRA. The details of this can be found in the Letter of Agreement between NATS and affected parties, to which no revisions are proposed (Ref 13).

5.7 Commercial Airlines

- 5.7.1 There is expected to be a positive impact on the operations of commercial airlines. FRA will enable increased flexibility in flight planning. Flight plans will more closely reflect the tactical directs provided today. As such it is forecast that benefits in reduced distances flown and reduced fuel uplifts will be enabled. Because of the flexibility of flight planning which FRA will facilitate, and how the airlines will choose to use this flexibility, it is difficult to predict and quantify the benefits to airlines with certainty.

5.8 Impact on Aviation Safety

- 5.8.1 Project activities so far have included a Key Assurance Risk review, a Pre-Simulation Hazard review and a Real Time Development Simulation conducted in April 2023.
- 5.8.2 The initial work that has been done has indicated that the Air Traffic Controllers regard the FRA mode of operation as being similar to that experienced today, in particular similar with the current FRA D1 already in operation. Key factors underlying this are that direct routings that are (tactically) provided today are expected to be reflected in flight plans and that the tools will continue to support Controllers in foreseeing and resolving potential conflicts. Although reduced familiarity as to where conflicts may occur is a possibility (due to the ability to flight plan user-preferred trajectories) however, the tools are designed to provide adequate support in discerning and managing changes in this aspect.
- 5.8.3 It is expected that the existing level of safety performance undertaken within the current operation would be maintained. This would be verified, and assurance provided in further stages of the project.

5.9 Reversion Statement

- 5.9.1 Due to the removal of ATS Routes the changes proposed would permanently and significantly change the airspace structure, hence making reversion complex and very difficult.
- 5.9.2 In the unlikely event that there are unexpected issues caused by this proposal, then short notice changes could be made via NOTAM or by adding Route Availability Document (RAD) restrictions. For a permanent reversion, the changes would have to be reversed by incorporating this into an appropriate future AIRAC date. Due to the limitations of NATS Area System (NAS - flight and radar data processing) large scale airspace changes are only implemented four times a year.

6 How to respond to this consultation

6.1.1 The consultation begins on 5 June 2023 and ends on 16 July 2023, a period of 6 weeks.

6.1.2 Consultation material is available on the CAA's airspace change consultation portal at:

https://consultations.airspacechange.co.uk/nats/fra_d3

6.1.3 The list of stakeholders targeted for this consultation is given in Appendix A. These stakeholders have been directly informed of this consultation.

6.1.4 The consultation is not limited to these stakeholders - anyone may respond.

6.1.5 A feedback questionnaire is provided on the consultation portal.

6.1.6 It is recommended (and preferred by the CAA) that responses are made via the portal.

6.1.7 Submissions via the portal are sent direct to the CAA. Supporting documents may also be submitted via the portal.

6.1.8 Please note that when submitting feedback, you will be asked to provide the following information:

- Your name, and your role if you are responding on behalf of an organisation.
- Your contact details (email)
- Your response to specific aspects of the change proposal i.e. Strongly Support, Support, Ambivalent, Object, Strongly Object, No Comment
- Any comments you have on the change proposal.

6.1.9 If this proposal does not affect your operation, please respond as that fact itself is useful data.

6.1.10 Note that all responses go direct to the CAA who will moderate submissions. Responses will be publicly visible by being published on the CAA airspace change portal after submission.

7 Compliance with process, and what happens next

7.1 Compliance

7.1.1 If you have questions or comments regarding the conduct of the airspace change process (e.g. adherence to CAP1616) please contact the CAA at:

Airspace.policy@caa.co.uk (Ref: NATS FRA-D3 ACP 2021-071)

or you can write to the below postal address

Airspace Regulation
Ref: NATS FRA-D3 ACP 2021-071
Safety and Airspace Regulation Group
Aviation House
Beehive Ring Road
Crawley
West Sussex
RH6 0YR

Form FCS 1521 can be used for this purpose

Note: These contact details must not be used for your response to this consultation. If you do so, your response may be delayed or missed out.

7.2 What happens next?

7.2.1 All feedback from this consultation will be collated and published on the CAA's Airspace Change Portal. The portal will maintain a transparent and complete record of online consultation responses, and of any other responses which we will upload on behalf of the respondent. Within the portal we will monitor all feedback.

7.2.2 Alongside this review of responses, we will collate and categorise all responses into those which may impact the final proposal, and those which may not, following the process outlined in CAP1616. We will publish this in a Step 3D document.

7.2.3 During Stage 4 of the CAP1616 process, Update and Submit, we will produce a report showing how consultation responses have shaped the final airspace change proposal, alongside a final options appraisal and the final design.

7.2.4 The CAA will then assess the proposal and will publish a decision on its website.

7.2.5 If the CAA approves this proposal, we plan to implement the changes not before March 2024.

8 References

1. CAP1711 Airspace Modernisation Strategy
2. [Commission Implementing Regulation \(EU\) No 716/2014](#)
3. [FRA D4 CAA Portal Page](#)
4. [CAP1616 Airspace Design](#): CAA Guidance on regulatory process for changing airspace design.
5. [FRA D3 CAA Portal Page](#)
6. [FRA D1 CAA Portal Page](#)
7. [FRA D2 CAA Portal Page](#)
8. [FRA D2.1 CAA Portal Page](#)
9. [UK Aeronautical Information Publication \(AIP\)](#)
10. [EUROCONTROL European Route Network Improvement Plan \(ERNIP\)](#) – Part 1: European Airspace Design Methodology - Guidelines - Edition 2.6 6 July 2022
11. [SARG Policy Special Use Airspace – Safety Buffer Policy for Airspace Design Purposes \(2014\)](#)
12. [Eurocontrol Network Management Flight Planning Requirements – Guidelines - edition 3.0 issued Dec 2022](#)
13. Letter of Agreement: NATS, British Gliding Association, 78 Squadron, BAE Systems Warton

9 Glossary of Terms

ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication (where airspace and route definitions are published)
AIRAC	Aeronautical Information Regulation And Control
AMS	(CAA's) Airspace Modernisation Strategy
ANSP	Air Navigation Service Provider
AOR	Area of responsibility
ATC	Air Traffic Control
ATFCM	Air Traffic Flow and Capacity Management
ATM	Air Traffic Management
ATS	Air Traffic Services
Baseline	'As is' situation against which proposed changes are measured
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	the UK Civil Aviation Authority
CAP	Civil Aviation Publication (publications produced by the CAA)
CDM	Cooperative decision making
CFSP	Computerised flight-planning service providers
CO ₂	Carbon dioxide
COP	Co-ordination Point
D1	Deployment One, the first deployment of FRA across the area shown in Figure 1.
D2	Deployment Two, the second deployment of FRA across the area shown in Figure 1.
DCT	(Direct) Waypoint to waypoint routing, which does not use an airway
DfT	Department for Transport
DP	Design principle
ERNIP	European Route Network Improvement Plan
EU	European Union
EUROCONTROL	European Organisation for the Safety of Air Navigation; with 41 members it seeks to achieve safe and seamless air traffic management across Europe.
FASI	Future Airspace Strategy Implementation
FBZ	Flight Plan Buffer Zones – areas for flight planners to avoid to provide separation from Special Use Airspace.
FIR	Flight Information Region (Airspace below FL255)
FL	Flight level, the altitude reference which aircraft use at higher altitudes using standard pressure setting, essentially units of 100ft, i.e. FL255 equates approximately to 25,500ft
FRA	Free Route Airspace
GA	General Aviation
HEM	High energy manoeuvres
ICAO	International Civil Aviation Organisation – an agency of the United Nations
IFPS	Integrated Flight Plan System
LOA	Letter of Agreement
LNC	Letter name code
MoD	Ministry of Defence
MUAC	Maastricht Upper Area Control
NAS	NATS Area System
NATMAC	National Air Traffic Management Advisory Committee
NM	Nautical mile or Network Management
NOTAM	Notice to Airmen

NPZ	No Planning Zone – area where a flight plan is not permitted to enter at all or only when meeting prescribed criteria.
OAT	Operational Air Traffic
PCP	SESAR Pilot Common Project.
PBN	Performance Based Navigation – international requirements which standardise accuracy, safety and integrity for satellite navigation systems.
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.
RCA	Reduced Coordination Area
SESAR	Single European Sky ATM Research A collaborative project to completely overhaul European airspace and its air traffic management
SID	Standard Instrument Departure.
STAR	Standard Terminal Arrival Route
SUA	Special Use Airspace – areas designated for operations of a nature that limitations may be imposed on aircraft not participating in those operations (i.e. military training areas)
UIR	Upper Information Region (Airspace above FL255)

10 Appendix A List of Stakeholders

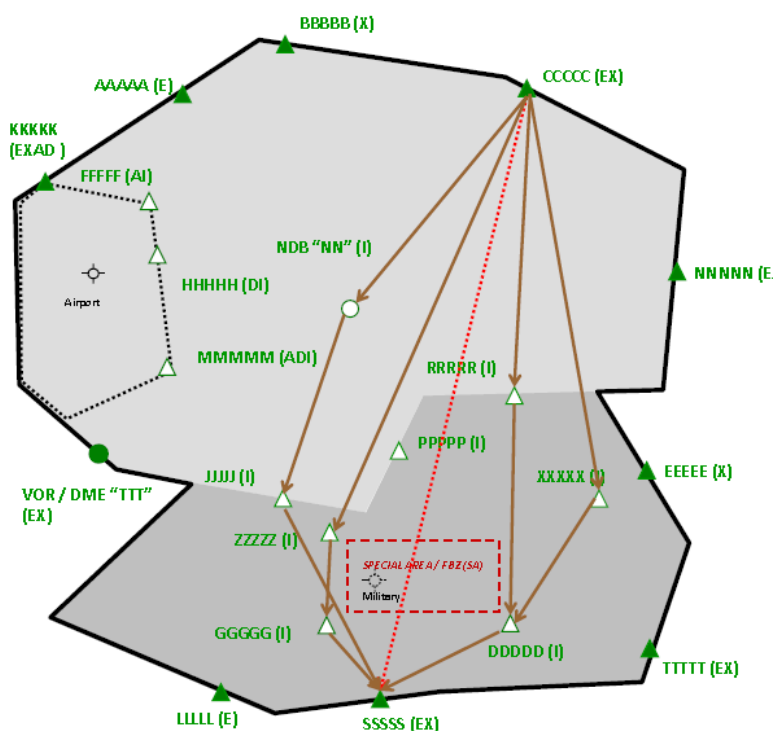
Airlines	Etihad FedEx FinnAir Gama Aviation Iberia Airlines Iceland Air Jet2.com JetBlue KLM Loganair Ltd Lufthansa Lufthansa Cargo Malaysia Airlines NetJets Norwegian Air Novair Qantas Qatar Airways	Ryanair Scandinavian Airlines – SAS Scandinavian Airlines Ireland Saudi Arabian Airlines Singapore Airlines Swiss TAG Aviation (UK) Ltd TAP Air Portugal Titan Airways TUI Turkish Airlines United Airlines UPS Europe Virgin Atlantic Airlines West Jet WizzAir Hungary Ltd Wizz Air UK
Air Navigation Service Providers (ANSPs)		
Eurocontrol Maastricht Upper Area Control Centre (MUAC) Eurocontrol Central Flow Management Unit (CFMU)		NAVIAIR (Denmark) Borealis Alliance Executive LVNL (Netherlands)
Data Houses/ Flight-planning providers		
Air Support Aviation Cloud Flight Keys		Jeppesen Lido / Lufthansa Systems NavBlue Sabre
National Air Traffic Management Advisory Committee (NATMAC) Members		
Airlines UK Airspace4All (formerly FASVIG) Aviation Environment Federation (AEF) Airport Operators Association (AOA) Aircraft Owners & Pilots Association (AOPA UK) Association of Remotely Piloted Aircraft Systems (ARPAS UK) British Aerospace Systems (BAE Systems) British Airline Pilots Association (BALPA) British Balloon & Airship Club (BBAC) British Business & General Aviation Assoc (BBGA) British Gliding Association (BGA) British Hang Gliding & Paragliding Assoc (BHPA) British Microlight Aircraft Association (BMAA) British Parachute Association (BPA)		British Helicopter Association (BHA) European UAV Systems Centre Ltd General Aviation Safety Council (GASCo) General Aviation Alliance (GAA) Guild of Air Traffic Control Officers (GATCO) Helicopter Club of Great Britain (HCGB) Heavy Airlines Honourable Company of Air Pilots Light Aircraft Association (LAA) Low Fares Airlines (LFA) Ministry of Defence (MoD) via the Defence Airspace and Air Traffic Management (DAATM) PPL/IR
Airports¹⁰		
Edinburgh Liverpool Coventry Hawarden Glasgow Newcastle		Prestwick Birmingham Teesside International Humberside Manchester East Midlands Leeds Bradford
Other		
Airlines for America AIRE (Airlines International Representation in Europe) Airline Operators Committee Heathrow (AOC Heathrow)		United Kingdom Space Agency (UKSA) Black Arrow Space Tech Board of Airline Representatives (BAR)

¹⁰ MoD Airfields are not included since consideration of these is incorporated in the DAATM joint response.

11 Appendix B: FBZs & NPZs explained

11.1 Flight plan Buffer Zones

11.1.1 A Flight plan Buffer Zones (FBZ) is a flight planning tool (always associated with SUA) used to provide a flight planning buffer around SUA.



11.1.2 A Flight-plan Buffer zone (FBZ) is an area in which flight plans will be rejected if the flight would interact with the FBZ. They are usually used to ensure adequate flight plan trajectory separation from active Danger Areas or other SUA. The example above shows the desired direct route (dotted red line from CCCCC to SSSSS) would be rejected due to the rectangular FBZ. This can be avoided by flight planning via the intermediate points (e.g. DDDDD or ZZZZZ+GGGGG).

11.2 No Planning Zones

11.2.1 An NPZ is a flight planning tool to restrict flight plans to prevent undesirable traffic flows.

11.2.2 The guidelines below are set out within Section 3.10 of the EUROCONTROL NM Flight Planning Requirements - Guidelines issued Dec 2022:

- When and where required to prevent inappropriate flight trajectory airspace crossings or to properly manage ATC operationally sensitive areas inside or across relevant FRA area/s establishment of No Planning Zone/s (NPZ) might be considered in accordance with provisions in ERNIP Part 1, Chapter 9.
- Within the airspace volume representing such zone the planning of flight trajectory is either not permitted or allowed under certain specified conditions. In order to assist the airspace users in the presentation of the intended flight operation, the flight planning limitation/s shall be defined in the Route Availability Document (RAD).
- Airspace users can avoid such zone by flight planning via appropriate significant points around it or in accordance with allowed conditions.
- NPZ are published in the AIP "ENR 2.2 Other regulated airspace". They are created in the NM system on the request of the AMC/FMP and are designated as AMA/NAM.