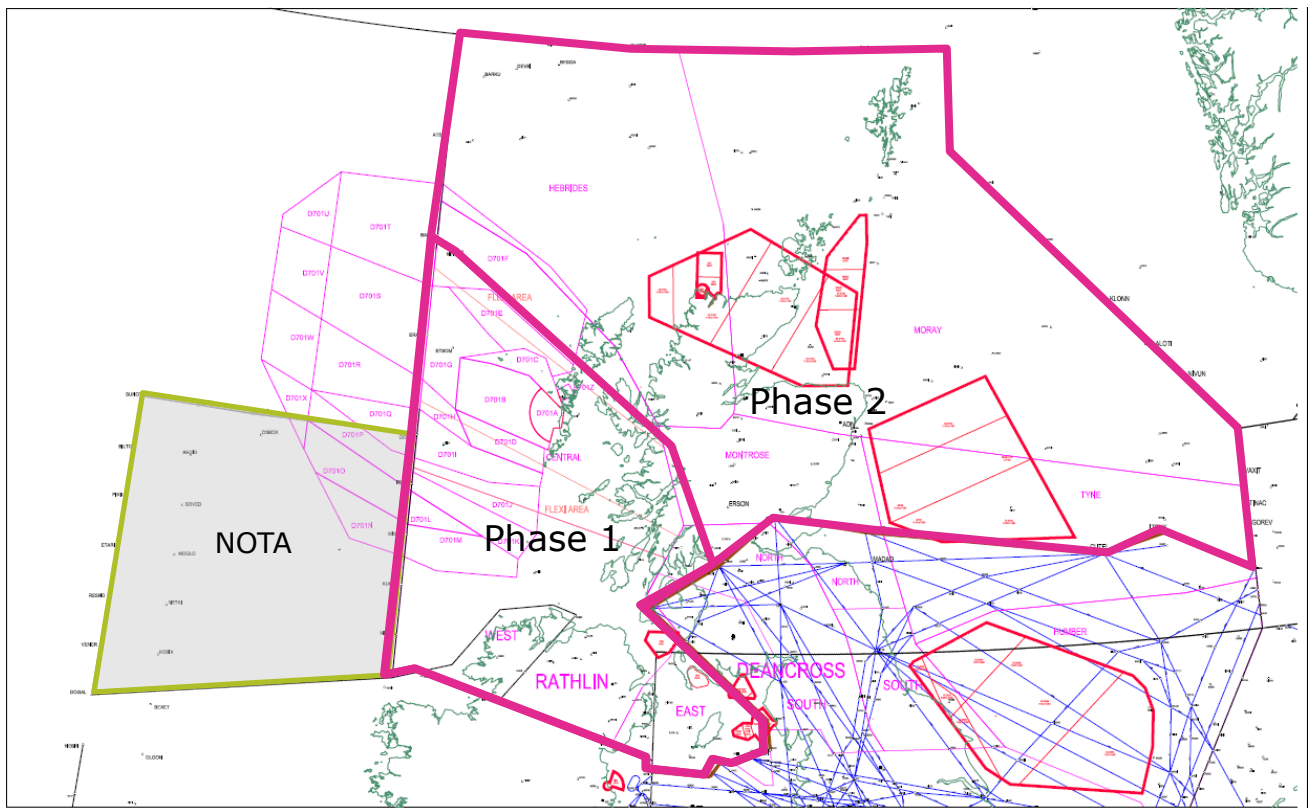


## STAKEHOLDER CONSULTATION

### Prestwick Centre - Route Free Airspace Airspace Change Proposal



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## Executive Summary

This document explains changes proposed by NATS Prestwick Centre to the upper airspace (FL255 and above) in the Scottish UIR and a portion of Irish Airspace where ATS is delegated to Prestwick Centre (Donegal Fillet). The objective of these changes is to remove all ATS routes and establish a portion of the airspace as "Route Free Airspace" (RFA). This will enable aircraft to be able to flight plan and fly direct from point to point.

Currently flight plans must use the established network of ATS routes, but usually in flight the aircraft are allowed to route direct. Hence there is a difference between what is flight-planned and what is flown. Removing all routes and allowing RFA operations will give fuel saving benefits to operators, and give the environmental benefit of reducing CO<sub>2</sub> emissions.

This document contains information from which stakeholders identified as consultees in this process can gain an understanding of the proposal and hence give informed feedback.

This consultation follows a process agreed by the Civil Aviation Authority (CAA) which gives consideration to the nature of this proposed airspace change. In accordance with the guidance (Ref.1), NATS is consulting with aviation stakeholders including representatives of airlines, the Ministry of Defence and bordering Air Navigation Service Providers.

Guidance has been provided from the CAA that consultation with non-aviation stakeholders is not required on the basis that all changes are above FL255 and the change involves no environmental disbenefit.

The period of consultation commences on **31<sup>st</sup> January 2014** and ends on **31<sup>st</sup> March 2014**, a period of eight weeks. If the proposal is approved by the CAA, implementation of the airspace change will occur at an appropriate opportunity but, in any event, not before September 18<sup>th</sup> 2014 for phase 1.

Please send any comments on the airspace change proposal by email to:

[AirspaceConsultation@nats.co.uk](mailto:AirspaceConsultation@nats.co.uk)

Or by mail to:

Consultation Co-ordinator  
NATS, Mailbox 10a  
4000 Parkway,  
Whiteley, Fareham,  
Hampshire,  
PO15 7FL

## 1. The purpose of consultation

The primary purpose of the consultation exercise is to allow stakeholders to consider the proposal and provide NATS with feedback. We ask that you consider the extent of the proposed Route Free Airspace, and what impact, if any, it would have on your operations.

At the end of the consultation NATS must demonstrate to the CAA that the best balance possible has been achieved between conflicting demands and objectives. The CAA requires that changes are made only "after consultation, when it is clear that an environmental benefit will accrue or where airspace management considerations and the overriding need for safety allow for no practical alternative" (Ref. 1). It is on this basis that the CAA will decide whether or not to approve the proposed change.

This consultation has been carried out in accordance with guidance provided by the Government and the CAA. (See Ref. 1 & Appendix E: Cabinet Office Code of Practice on Consultation).

Any matters raised during the consultation period that are deemed not to have been adequately considered during the development of the proposed design may require NATS to make changes to the proposal. Any such changes may require further consultation.

## 2. The scope of consultation

The details of this consultation exercise have been agreed in principle with the CAA in accordance with the requirements of the CAP725 airspace change process (Ref 1). This includes the rationale for who should be involved in the consultation for this proposal.

The full list of stakeholders who have been identified as consultees for this proposal is as follows:

### **Regulators/ANSPs**

CAA  
IAA (Dublin ACC)  
Isavia (Reykjavik ACC)  
Avinor (Stavanger ACC)  
Naviair (Copenhagen ACC)

### **Airline representatives**

Via OPA

### **NATMAC**

BAe Systems  
BALPA  
BATA  
BBGA  
Heavy Airlines  
Light Airlines  
Low Fares Airlines  
MOD (DAATM)

### **Others**

QinetiQ (Hebrides Range),

### **Non Aviation Stakeholders**

Guidance from the CAA has been provided (as referenced in CAP 724 and CAP 725) that consultation with non-aviation stakeholders is not required. This is on the basis that the changes are at high altitude (above FL255) and that there will be no detriment to the environment if the proposal is implemented.

### 3. Description of Proposal

NATS has a long term strategy to establish all upper airspace as Free Route Airspace (FRA). This is in accordance with Eurocontrol SESAR targets<sup>1</sup> and CAA FAS targets<sup>2</sup> for establishing Free Route Airspace.

The aim of FRA is to increase airspace efficiency; enhance flexibility; bring financial and operational benefits to airspace users; bring environmental benefits; and optimise the use of existing and foreseen airborne systems. There are technical limitations which exist in the extant flight-plan data processing systems which make it impossible to implement unrestricted Free Route operations from the outset. Hence as outlined in the phased implementation programme below the initial implementations (Phases 1 & 2) will make use of "Route Free Airspace" operations. The subtle difference being that these allow direct routings, but only between defined points. Phase 1 will allow the maximum number of DCT routings within the defined RFA that will cater for the vast majority of likely DCT permutations.

The airspace under consideration and the existing ATS route structure is shown in Figure 1 below. The list of routes to be removed in Phases 1 & 2 is given in Appendix A.

The objective of the Route Free Airspace (RFA) project is to remove all promulgated ATS routes within the areas shown in Figure 1. The project is planned to be implemented in four phases, however this consultation is only concerned with the Phase 1 and 2 implementations.

**Phase 1** will remove all upper ATS routes from Rathlin East, Rathlin West & Central ATC sectors. The RFA implementation will allow direct routing between all entry/exit points and between defined intermediate points. The proposed implementation date is 18-Sep-2014. This is designed to coincide with the end of the Dynamic Sectorisation Trial<sup>3</sup> which is currently on-going.

**Phase 2** will extend the RFA area to remove routes from Hebrides, Moray High, Montrose North and part of Tyne sectors (making the route free area cover approximately two thirds of PC airspace). This is targeted to be operational in 2016, but due to other dependencies the exact date has not yet been fixed.

**Phase 3 (for info only - outside scope of this consultation)** The remaining Scottish FIR airspace to be transitioned to Free Route operations. This cannot be achieved until after the introduction of a new flight plan processing system and new ATC controller Tools.

**Phase 4 (for info only - outside scope of this consultation)** Extend FRA functionality to make Scottish FIR airspace available for full cross-border direct routing availability, subject to Danger Area operations.

### 4. Justification

#### Environment

The primary justification for this project is the environmental benefit. Phase 1 will allow improvements in flight planning which will result in operators being able to uplift less fuel as a result of the change. This will reduce the weight of the aircraft during flight and hence will give a benefit of reduced fuel burn and CO<sub>2</sub> emissions during the whole flight.

Phase 2 will enable reduced fuel uplift as described for Phase 1, and some routes will benefit from reduction in track mileage, giving further CO<sub>2</sub> and fuel burn savings.

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<sup>1</sup> [http://www.eurocontrol.int/eec/public/standard\\_page/WP\\_MTV\\_SDA\\_DODs.html](http://www.eurocontrol.int/eec/public/standard_page/WP_MTV_SDA_DODs.html)

<sup>2</sup> <http://www.caa.co.uk/docs/2408/FAS%20Deployment%20Plan.pdf>

<sup>3</sup> The Dynamic Sectorisation Trial is trialling flexible control of the RFA Phase 1 sectors across the UK/Ireland Functional Airspace Block (FAB). During this trial, at some times the Irish Aviation Authority (IAA) is given control of these sectors. Since all IAA upper airspace is operated as Route Free Airspace, during the trial, operators are permitted to flight-plan using RFA direct routings. By coordinating the RFA implementation date with the end of the trial, route free operations will be able to continue in the airspace, and will be formalised by the necessary changes to the Aeronautical Information Publication (AIP).

### **Safety**

There is not anticipated to be any significant change in safety, but it is imperative to ensure that the overall ATS provided remains “at least as safe as” prior to the implementation of this airspace development. By bringing the flight plan and actual route of flight into closer alignment, there is some safety benefit.

### **Network Efficiency**

RFA will significantly reduce complexity of the route structure and flight planning. There is also opportunity to rationalise some legacy inefficiencies in the network.

### **Capacity**

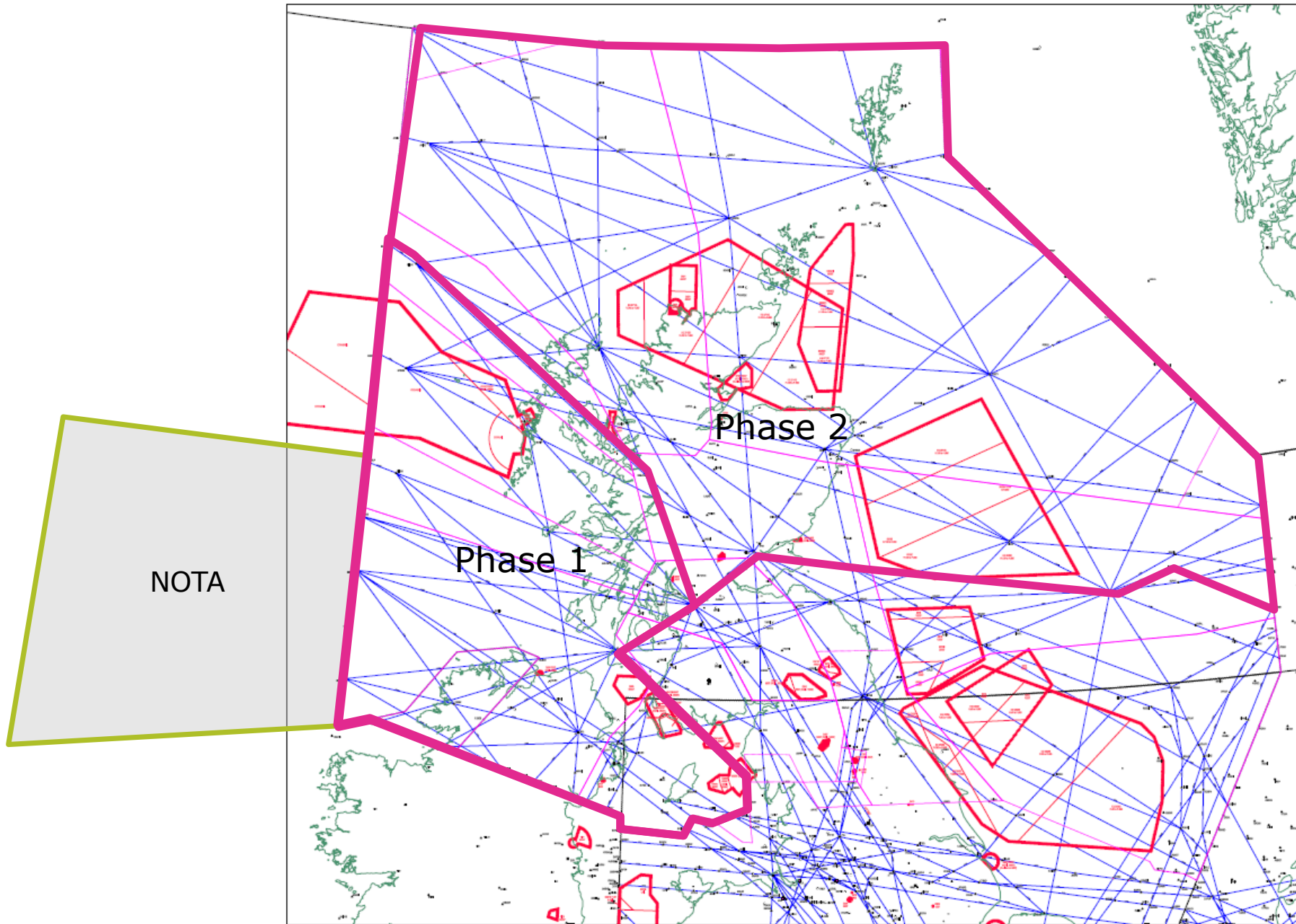
Capacity is not a driver for this project and no capacity gains are claimed.

## **5. Impact on other Airspace Users.**

The change to the controlled airspace structure being sought by this airspace development is described in Table 1 below.

<b>Description of change</b>	<b>NATS justification</b>	<b>Impact on airspace users not controlled by NATS</b>
Phase 1 area removal of upper ATS routes (FL255-FL660).	Enable operators to flight plan using point to point direct routings across the entire extent of the area. This will reduce the flight plan track mileage, which will benefit fuel planning by reducing the overall fuel load required. This will reduce the weight of the aircraft during flight and hence will give a benefit of reduced fuel burn and CO <sub>2</sub> emissions during the whole flight.	Due to the altitude (FL255 and above), GA traffic is not impacted by these changes. Military activity will not be affected. Flight plan data processing systems will ensure that Danger Areas will be avoided when active, by “rubber banding” the direct routes via waypoints 5nm outside their extremities.
Phase 2 area removal of upper ATS routes (FL255-FL660).	As above	As above

**TABLE 1: Summary of proposed changes**



**Figure 1 Existing upper airspace route structure with the Phase 1 & Phase 2 Route Free Airspace outlined**

## 6. Design options

RFA would allow all aircraft in the upper airspace to flight plan and fly direct great circle routes within and across the airspace. There are many technical challenges associated with introducing this method of operations, in particular how this can be achieved using existing systems. Hence it has been necessary to plan an incremental transition with the following design options being considered for Phase 1 & 2:

1. "Do nothing" - keep the route structure as it is
2. Keep ATS routes, but overhaul the route network to make the routes more direct
3. Remove all routes and allow direct routing, but only between certain points
4. Remove all routes and allow unrestricted direct routing between any points

Option 1: "Do Nothing", was considered and rejected. This was because the proposed change would bring significant benefits which are of value to many airspace users. These benefits are in accordance with NATS, CAA and Eurocontrol airspace improvement strategies.

Option 2: "Keep ATS routes", was considered and rejected. This was due to it not giving such significant benefits, and maintaining an inflexible structure. Since the objective is to give airspace users the maximum flexibility without the constraints inherent in the use of ATS routes. This option was not considered sufficiently ambitious.

Option 4: Remove all routes and allow unrestricted direct routing between any points. This option was considered, and while it is the end goal, there are technical constraints which mean that it is not possible to implement unrestricted free routing with the current flight plan processing system, and ATC controller tools. Once these key operational systems have been upgraded the goal of unrestricted Free Route Airspace will be able to be realised.

Option 3: Remove all routes and allow direct routing, but only between specified points. This option was judged to give the best medium-term solution whilst paving the way to the ultimate goal of unrestricted free routing. This solution can be implemented within the constraints of the existing systems and will be able to deliver a large proportion of the benefits in a relatively short timescale. Hence this design option is being proposed herein for Phases 1 and 2.

## 7. Environmental effects

### Exhaust emissions and fuel burn

A significant effect of this change is the environmental benefit of reduced CO<sub>2</sub> emissions. Currently within the area encompassed by Phase 1 most flights are given direct routings by ATC on a tactical basis. Phase 1 will allow improvements in flight planning such that the flight plans will more closely reflect the shorter flight paths flown. This will result in operators being able to uplift less fuel as a result of the change. This will reduce the weight of the aircraft during the whole flight, and hence will give a benefit of reduced fuel burn and CO<sub>2</sub> emissions during the whole flight.

Phase 2 will enable reduced fuel uplift as described for Phase 1, and some routes will benefit from reduction in track mileage, giving further CO<sub>2</sub> and fuel burn savings.

### Noise, Tranquillity, Visual Intrusion, Local Air Quality

The proposed Route Free Airspace is all above FL255, and any changes to flight trajectories will be imperceptible from the ground.

For these reasons, as agreed with the CAA, analyses of Noise, Tranquillity, Visual Intrusion and Local Air Quality have not been undertaken.

## 8. Frequently Asked Questions

### What will happen to current waypoints within the RFA?

Currently within the AIP, waypoints are associated with ATS routes or instrument procedures. The introduction of RFA will enable a considerable simplification of the AIP with the removal of a large number of upper ATS routes. Many of the existing waypoints associated with these routes will be removed. However it will be necessary to have some waypoints within the RFA airspace which act as anchor points. For example this will be necessary at the corners of Danger Areas (DAs) that are active within the RFA so that when the DAs are active the flight planning systems will ensure that aircraft have an option to route around the DA. These “anchor waypoints” will be defined within the AIP.

### How will entry/exit to the RFA be managed?

Entry/exit points to the RFA will be defined in the AIP. All flight plans will have to enter and exit via one of these points. Usually the flight plan will simply read XXXXX DCT YYYYYY.  
(Where XXXXX is the entry point and YYYYYY is the exit point.)

We will also allow specific DCTs from points just outside the RFA i.e. FINDO DCT ERAKA will be ‘Allowed’ even although FINDO is outside the RFA. If it is not done this way then we would need to run some UAR’s up to the RFA boundary and create a new 5LNC point at the termination point.

### Has RFA has been designed with the new DA design proposed by QinetiQ for the Hebrides Range?

Yes RFA has been designed with the new range configurations in mind. New anchor waypoints will be introduced to enable operators to FPL around the various DA combinations. Also the Landfall Fix ETSOM may need to be moved to ensure that the FPL DCT routes eastbound from ERAKA are a minimum of 5nm from the edge of D701B under the new design.

### Why is the RFA base FL255 not FL245 which is the upper/lower airspace division FL?

The base of the RFA has been set at FL255 to coincide with the vertical division of the ATC sectors. If the base of the RFA was at FL245 this would change the balance of ATC sector’s workload, which could, in turn, have a detrimental impact on the capacity of the airspace. The corollary of setting the base at FL255 is that where there is an associated lower ATS route, the ceiling of this lower route will be raised from FL245 to FL255 so that the airway is joined to the RFA. (see Appendix A for list of routes so affected,; 7 in Phase 1, and 2 in Phase 2).



## 9. Next Steps

The period of consultation commences on 31<sup>st</sup> January 2014 and closes on 31<sup>st</sup> March 2014 which is a period of 8 weeks. Due to the altitude and nature of the proposed changes, consultation is limited to specific aviation stakeholders as listed in Section 2. Wider consultation was not deemed necessary as agreed with the CAA.

We request that stakeholders consider the proposal and provide a written response to us. We request that you reply to this consultation even if you have no objection to the proposal.

When responding, please specify the grounds for supporting or objecting to the proposal.

Details of the consultation exercise will form part of the airspace change proposal that NATS will submit to the CAA for its consideration. Copies of all responses will be provided to the CAA, including any personal information contained in them, except where the respondent requests otherwise. If the proposal is approved by the CAA, implementation of the airspace change will take place at an appropriate opportunity but, in any event, not before Sept 18<sup>th</sup> 2014.

This implementation date may be affected by the following:

- the length of time taken by the CAA in reaching its decision;
- the need for any revision of the airspace change proposal identified by the consultation process and any further period of consultation required for such revisions and;
- operational constraints.

Responses should be sent by email to:

**[airspaceconsultation@nats.co.uk](mailto:airspaceconsultation@nats.co.uk)** (please include "Route Free Airspace" in the subject)

Or by mail to:

Consultation Co-ordinator  
 NATS, Mailbox 10a  
 4000 Parkway,  
 Whiteley, Fareham,  
 Hampshire, PO15 7FL

Having considered the consultation responses, once NATS is satisfied that the proposal achieves the appropriate balance between all the stakeholder requirements, a formal airspace change proposal will be submitted to the CAA for consideration as per the airspace change process (Ref 1). This will include a full record of all feedback from this consultation.

Comments regarding NATS' compliance with the consultation process as set out in the CAA's guidelines for airspace change process (Ref 1) and the Cabinet Office Code of Practice (ref 3) should be directed to the CAA at:

Head of Business Management  
 Directorate of Airspace Policy  
 CAA House  
 45-59 Kingsway  
 London, WC2B 6TE  
 E-mail: [businessmanagement@dap.caa.co.uk](mailto:businessmanagement@dap.caa.co.uk)

**10. References**

1. CAP 725, CAA Guidance On The Application Of The Airspace Change Process, March 2007, CAA Directorate of Airspace Policy  
<http://www.caa.co.uk/docs/33/CAP725.PDF>
2. CAP 724, CAA Airspace Charter which defines the authorities, responsibilities and principles by which the CAA Director of Airspace policy conducts the planning or airspace and related arrangements in the UK.  
<http://www.caa.co.uk/docs/33/CAP724.PDF>
3. Cabinet Office Code of Practice on Consultation  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/255180/Consultation-Principles-Oct-2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/255180/Consultation-Principles-Oct-2013.pdf)

### Appendix A: Routes to be removed

Routes to be removed in <b>Phase 1</b>	Routes to be removed in <b>Phase 2</b>
<ul style="list-style-type: none"> <li>UL10 (KELLY-MIMKU)</li> <li>UL15 (DUFFY-SOSIM)</li> <li>UL18 (ERNAN-MIMKU)</li> <li>UL602 (GOW-ETSOM)</li> <li>UL603 (IOM-REMSI).</li> <li>UM132 (TLA-IBROD)</li> <li>UM83 (RUGID-ETSOM)</li> <li>UN34 (NEVRI-BEN)</li> <li>UN517 (MAC-DEGOS)</li> <li>UN537 (MAC-NIPIT)</li> <li>UN545 (MAC-MOLAK)</li> <li>UN551 (NELBO-NIBOG)</li> <li>UN552 (MAC-NIBOG)</li> <li>UN562 (MAC-MIMKU)</li> <li>UN563 (GOW-MIMKU)</li> <li>UN57 (MAC-GINGA)</li> <li>UN570 (BEL-GINGA)</li> <li>UN572 (FINDO-GOMUP)</li> <li>UN581 (ADN-ETSOM)</li> <li>UN583 (STN-ETSOM)</li> <li>UN584 (BAMRA-ETSOM)</li> <li>UN590 (GOW-NINEX)</li> <li>UP58 (NEVIS-ERAKA)</li> <li>UP6 (REMSI-MIMKU)</li> <li>UP600 (ROTEV-TRN)</li> <li>UP620 (BLACA-NIMAT)</li> <li>UP857 (MAC-IBROD)</li> <li>UP858 (GOW-IBROD)</li> <li>UP867 (NIPIT-NATEB) CDR2.</li> </ul>	<ul style="list-style-type: none"> <li>UL613 (GONUT-FINDO) CDR</li> <li>UL619 (CUTEL-AKIVO) CDR</li> <li>UL7 (LIRKI-CUTEL)</li> <li>UM125 (GONUT-ORVIK)</li> <li>UM82 (NIVUN-ROBEM) CDR</li> <li>UM83 (REKNA-RUGID) CDR</li> <li>UM86 (FORTY-AKIVO) CDR</li> <li>UM89 (ALOTI-SAB) CDR</li> <li>UN581 (VAXIT-ADN) CDR</li> <li>UN591 (RIVOT-NINEX)</li> <li>UN593 (BAMRA-NINEX)</li> <li>UN601 (TLA-AKIVO)</li> <li>UN603 (BEREP-AKIVO)</li> <li>UN610 (FINDO-RATSU)</li> <li>UN614 (OLKER-STN)</li> <li>UN615 (MATIK-GOW)</li> <li>UP18 (NEXUS-ADN)</li> <li>UP24 (NEVIS-NINEX)</li> <li>UP5 (NIVUN-CUTEL)</li> <li>UP59 (NEXUS-BALIX)</li> <li>UP60 (VAXIT-ATSIX)</li> <li>UP600 (KLONN-FINDO)</li> <li>UP61 (BAMRA-RATSU)</li> <li>UP612 (PEPIN-RATSU)</li> <li>UZ105 (RIGVU-FORTY)</li> <li>UZ107 (BEREP-ADN)</li> </ul>

Routes in **green** are complete routes so the designator can be released.  
 Routes in **red** have a co-incident Lower ATS route where the top level would need to be raised to FL255.