Swanwick Airspace Improvement Programme Airspace Development 3 LAC S21/ Jersey/ Brest Interface

SAIP AD3 Jersey Interface Consultation Document



NATS Uncontrolled



Publication history

Issue	Month/Year	Change Requests in this issue	
Issue 1.0	May 2018	Published	

References

Ref No	Name	Hyperlink
1	SAIP AD3 CAA web page - progress through CAP1616	(<u>link</u>)
2	Stage 1 Assessment Meeting – slide pack	(<u>link</u>)
3	Stage 1 Assessment Meeting Minutes	(<u>link</u>)
4	Stage 1 Define, Step 1B Design Principles	(<u>link</u>)
5	Stage 2 Develop and Assess, Airspace Change Design Options	(<u>link</u>)
6	Stage 2 Develop and Assess, Design Principle Evaluation Options Assessment	(link)
7	Stage 2 Develop and Assess, Options Appraisal Safety Assessment	(<u>link</u>)
8	Stage 3 Consult, Consultation Strategy	(<u>link</u>)
9	Stage 3 Consult, Options Appraisal	(<u>link</u>)

Airline Glossary

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Airline Callsign Abbreviation	Name	Airline Callsign Abbreviation	Name			
AUR	Aurigny Air Services	EZY	easyJet			
BAW	British Airways	RYR	Ryanair			
BCI	Blue Islands	SSZ	Specsavers Aviation			
BEE	Flybe	SWN	West Atlantic Cargo			

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1. Introduction

1.1 The airspace change process

This document forms part of the document set required in accordance with the requirements of the CAP1616 airspace change process. This document aims to provide adequate evidence to satisfy Stage 3 Consult Gateway, Step 3C Publish Consultation Document.

For previous stages of the airspace change process, including the statement of need, design principles and design options please see the <u>CAA website</u> (Ref 1) detailing the progress of this proposal (also see the reference table on previous page).

1.2 The purpose of consultation

This consultation allows NATS to gather or confirm views and information, about the potential impact of this Airspace Change Proposal.

Each stakeholder is given the opportunity to provide relevant feedback, which may conflict with that of other stakeholders. NATS will design the airspace in line with current government guidance¹ unless there is a clear, justified remit across affected stakeholders to do differently, or if the needs of other air navigation service providers (ANSPs) take primacy, in order to progress the proposal.

Stakeholders therefore have a crucial role in providing relevant and timely feedback to the Change Sponsor (NATS) in the form of their views and opinions on the impact of a particular Airspace Change Proposal.

2. About this consultation

2.1 Overview

NATS' Swanwick Airspace Improvement Programme (SAIP) is undertaking a number of modular airspace changes within the London Flight Information Region (FIR), managed by NATS Swanwick. It aims to modernise each region via airspace deployments (AD) in different regions of the FIR.

This module, SAIP AD3, seeks to introduce new RNAV routes to improve connectivity at the southern FIR boundary. It aligns with a simultaneous, coordinated change to the Channel Islands Control Zone (CICZ) which will facilitate new SIDs and STARs serving Jersey and Guernsey Airports. NATS is one of three (ANSPs) in this coordinated change. CICZ is managed by the Port of Jersey (PoJ) ANSP, and the surrounding airspace south of the FIR boundary is managed by France's DSNA ANSP, in Brest. All three ANSPs have an interest in the FIR coordination waypoints (COPs) LELNA, ORTAC and ORIST. PoJ is the driver of the change and is working with DSNA to secure it, with NATS adapting our routes to 'fit'.

The proposed changes in the UK's area of interest would occur within existing controlled airspace (CAS) managed by London Area Control (LAC) Sector 21, over the English Channel south of the Isle of Wight. The changes will alter some traffic flows over the sea between the UK and CICZ, detailed fully in Section 4 of this document.

NATS believes that these proposed changes offer the best compromise between supporting the planned introduction of new SIDs and STARs into the CICZ, coordinating that introduction across three ANSPs, whilst minimising the impact due to airspace change within the UK.

Please consider the proposed routes in this document and send us your feedback on these changes.

Department For Transport, Air Navigation Guidance 2017 (Oct 2017)



2.2 Stakeholders

Stakeholders are defined as an interested third party in an airspace change proposal. The Ministry of Defence (MoD) must always be consulted on matters of airspace change.

NATS does not plan to consult organisations whose primary interest is local or national environment (e.g. noise, local air quality). The proposal occurs over the English Channel at high level. General Aviation (GA) airspace users will not be targeted as there would be no change in impact to them; the proposed changes only apply to commercial IFR traffic at high level. NATS will also not target airport operators as this is an en-route proposal with no proposed changes in impact to airport operations. GA users and airport operators are not currently impacted from operations in this area of airspace today.

This is all in accordance with our engagement plan^(Ref 3) and consultation strategy^(Ref 8). In those documents we stated that we would engage the major operators flying between Southampton or Bournemouth airports (known as the Solent Airports), and the Channel Islands. These major stakeholders are AUR, BCI and BEE²; they make up 80% of all flights between the Solent airports and the Channel Islands. All three airlines have been engaged, and we are targeting their responses in this consultation.

Following additional engagement activities described in our consultation strategy^(Ref 8), the following five airlines have also been identified as stakeholders: BAW, EZY, RYR, SSZ and SWN⁽²⁾. These five stakeholders will be included in the consultation and encouraged to respond.

Other operators using the COPs LELNA, ORTAC and ORIST are also stakeholders, but they have not been specifically targeted. A link to the consultation will be available on the public NATS website and the NATS Customer Affairs website, used by our customer airlines. Everyone is welcome to respond, however our target for this consultation is to acquire responses from the aforementioned eight airlines.

2.3 Engagement Activities

NATS has undertaken general stakeholder engagement prior to, and throughout, SAIP AD3's development to date as described in the consultation strategy $^{(Ref \ 8)}$.

The three primary target airlines have been engaged, individually briefed, and feedback sought on the initial proposal's concept. That initial feedback confirmed the Option 2 (simple) concept is favoured by all three target airlines, over the Option 1 (complex) concept – that option was removed at Stage 2 during the development and assessment phase. We received suggestions that modifying some of the level caps at the FIR boundary could further reduce fuel disbenefit caused by the partial systemisation proposed in Option 2 and we will consult on this.

BAW, EZY and RYR⁽²⁾, who regularly use the airspace in this region, requested further information following on from operational (OPA) and flight partnership (FEP) meetings where NATS presented on the changes. We have provided these three airlines with a briefing pack prior to the consultation. In addition to the OPA and FEP, NATS also engaged with SSZ and SWN⁽²⁾ because their operations were identified as highly Channel Islands-oriented. These additional five airlines confirmed that they would like the opportunity to respond to the consultation

All of the above stakeholders and engagement activities have been described fully in our consultation strategy document (Ref 8).

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 $^{^{2}}$ See airline glossary of callsign abbreviations, page 2



3. Current Airspace

3.1 Solent Group and Channel Islands Interface

Jersey Port Authority (PoJ) is the ANSP for the Channel Islands Control Zone (CICZ) and manages all traffic in that region on behalf of France's DSNA (Brest). The UK, via NATS LAC, currently feeds traffic to and receives traffic from the CICZ via PoJ. The Solent airports of interest are Southampton (EGHI) and Bournemouth (EGHH), alongside the CICZ airports of Jersey (EGJJ), Guernsey (EGJB) and Alderney (EGJA).

Within this area of airspace, data transfer and transfer of control occur between all 3 ANSPs – NATS LAC, DSNA Brest and PoJ. These traffic flows are defined by route, direction of flight and when the communications, or control, are transferred between ANSPs i.e. before/ after a waypoint.

The current Solent and CICZ traffic flows most relevant to this airspace proposal are:

From	Direction	То	Flight Level	RNAV spec	Relevant Route Segment
EGH# ³	South	EGJ#	Up to FL120 FL130-FL190	RNAV5 RNAV1	THRED Q41 ORTAC THRED Z171 ORTAC
EGH#	South	Non-EGJ# (Brest centre)	Up to FL120 FL130-FL190	RNAV5 RNAV1	THRED Q41 ORTAC THRED Z171 ORTAC
Non-EGH#	South	EGJ#	Up to FL120 FL130-FL190 FL200+	RNAV5 RNAV1 RNAV5	THRED Q41 ORTAC THRED Z171 ORTAC MARUK N621 LELNA
EGJ#	North	EGH#	Up to FL120 FL130-FL170	RNAV5 RNAV1	ORTAC Q41 THRED ORTAC Z171 THRED
EGJ#	North	Non-EGH# (London centre)	Lower (variable) Higher (variable) Higher (variable) Higher (variable)	RNAV5 RNAV1 RNAV5 RNAV1	ORTAC Q41 THRED ORTAC Z171 THRED ORTAC L980 DOMUT ORTAC Y113 ERGUM L982 ROXOG

Table 1: Current route segments relevant to this proposal

Other flows exist within the same region of airspace however they would not change significantly:

- Brest northbound traffic to Solent Airports
- Brest northbound traffic to non-Solent Airports
- UK (non-Solent Airport) southbound traffic to Brest (non-CICZ Airports)

This area of airspace requires controllers to use tactical vectoring in order to manually split the different traffic flows, as mentioned above. Controllers also often have to intercept climbing and descending flights which are stepped by default, in order to reduce the likelihood of arrivals and departures levelling off at intermediate levels. This creates a swathe of Solent flights between THRED and ORTAC (and vice-versa) which varies in form dependent on several factors such as the Solent airport runway in use.

³ The '#' refers to all applicable Solent airports (EGHH [Bournemouth] and EGHI [Southampton]) and all applicable Channel Island airports (EGJA [Alderney], EGJB [Guernsey] and EGJJ [Jersey])



3.2 Current usage

The proportion of airline stakeholders has previously been described in the consultation strategy document (Ref 8).

Table 2 below shows the aircraft types in the 95th percentile which flew between the Solent (Bournemouth and Southampton) and Channel Island Airports (Alderney, Guernsey and Jersey) in 2017. There were a total of 10,400 flights which matched these criteria, using historic flight plan data for 2017.

AC Type	Generic AC Type	Total	Proportion
AT75	Heavy Turboprop	4,344	41.77%
D228	Medium Turboprop	2,039	19.61%
DH8D	Heavy Turboprop	1,426	13.71%
DA42	Piston	597	5.74%
B350	Small Turboprop	473	4.55%
PA31	Piston	248	2.38%
AT45	Medium Turboprop	236	2.27%
AT43	Medium Turboprop	158	1.52%
C510	Small Jets	141	1.36%
C25C	Small Jets	118	1.13%
BE20	Small Turboprop	109	1.05%

Table 2 Top Channel Island - Solent Aircraft Types (specific), 2017

Table 3 below shows all of the 10,400 flights categorised by a generic aircraft type; of which Turboprops made up over 85%.

Generic Aircraft Type	Total	Proportion
Heavy Turboprop	5,771	55.49%
Medium Turboprop	2,433	23.39%
Piston	1,044	10.04%
Small Turboprop	686	6.60%
Small Jets	426	4.10%
3 Engine Small	31	0.30%
2 Engine Small Jet	6	0.06%
Medium Airbus	2	0.02%
Medium Boeing	1	0.01%
Total	10,400	

Table 3 Channel Island - Solent Aircraft Types (generic), 2017

The proportion of aircraft types is not anticipated to change as a consequence of this proposal.



3.3 Traffic patterns

Figure 1 below shows a traffic density plot of all flights in the region of interest. It was created using radar data from the month of June 2017. This shows the main traffic flows alongside the wide swathe within which ATC typically direct aircraft. This will include all of the above current flows, including those which would not change from the proposed changes presented herein.

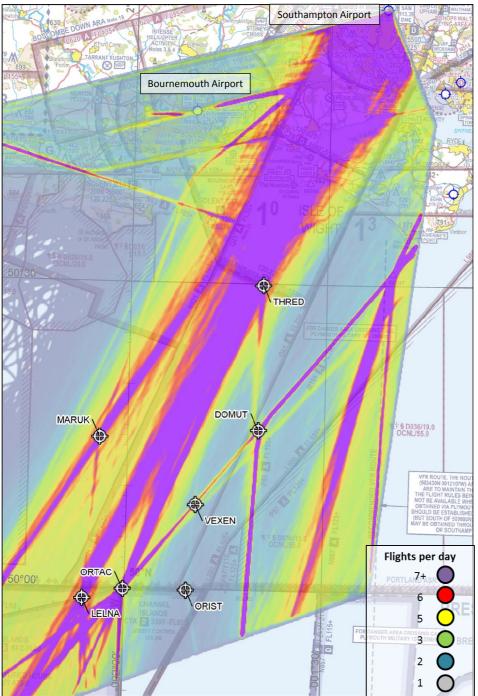


Figure 1: All traffic flows in the region



Figure 2 below is a filtered version of Figure 1, only showing traffic which flew between the Solent Airports and the CICZ. A clear swathe of traffic between THRED and ORTAC can be seen – this is a two-way flow.

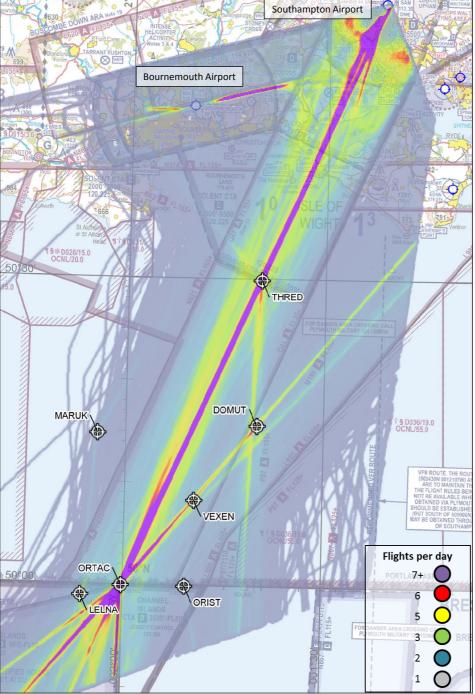


Figure 2 Traffic routing between the Solent airports and the Channel Islands airports only

Figure 3 on page 9 provides a schematic of how each traffic flow is handled, and relates directly to Table 1 on page 5.



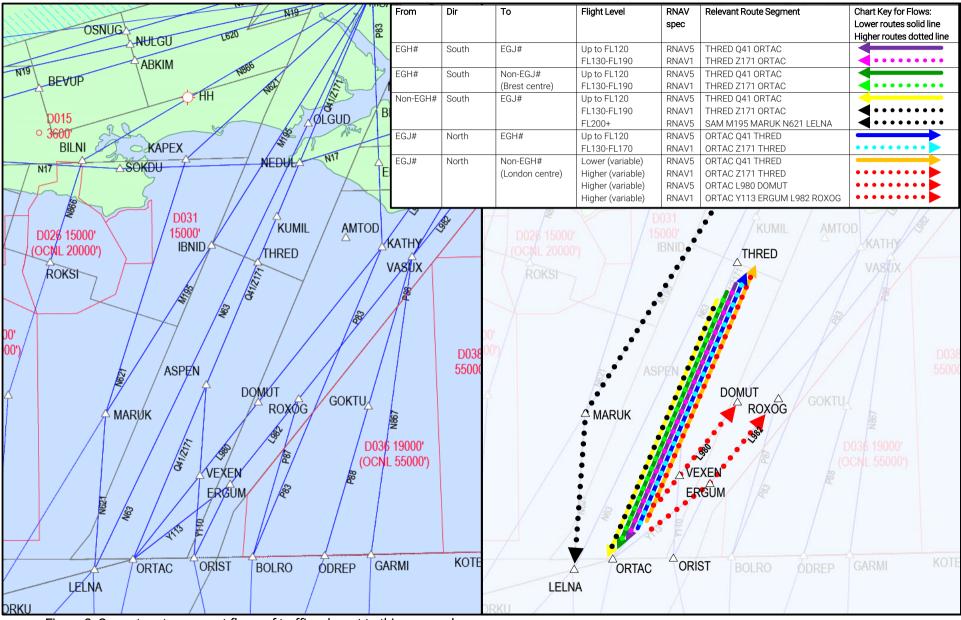


Figure 3 Current routes, current flows of traffic relevant to this proposal



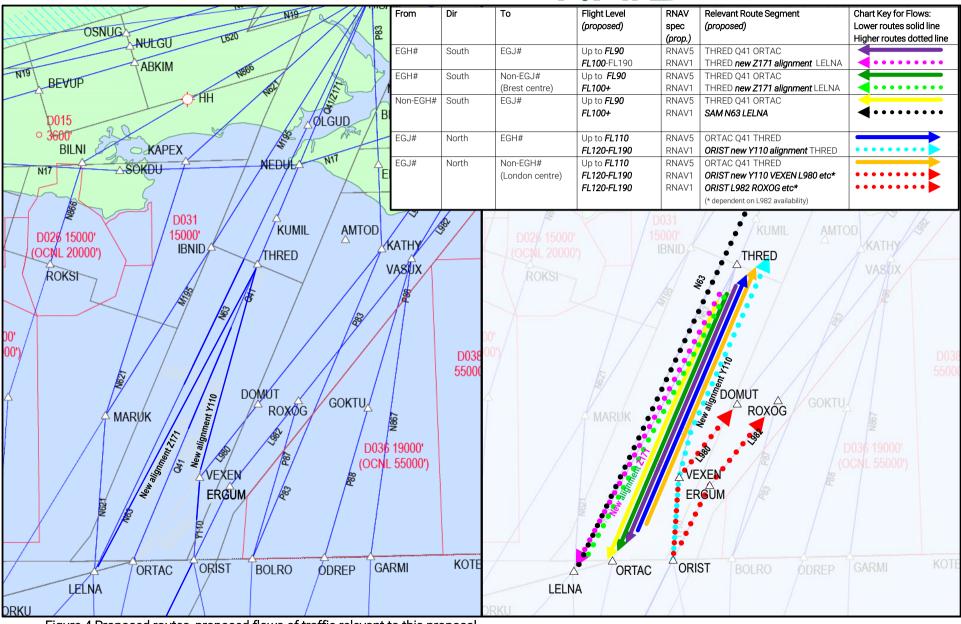


Figure 4 Proposed routes, proposed flows of traffic relevant to this proposal



4. Proposed Changes

4.1 Justification

The Port of Jersey (PoJ) ANSP and France's DSNA have agreed to an extension of the CICZ in order to facilitate the introduction of new SIDs and STARs serving Jersey and Guernsey Airports – this arrangement was made between those two non-UK ANSPs.

This change will alter the traffic flows in both directions through the existing waypoints ORTAC, ORIST and LELNA which lie on the FIR boundary.

NATS' proposed changes have been designed to minimise the scale of airspace change in the UK. It allows for an effective alignment of UK ATS routes with the changes south of the FIR boundary. This is our justification.

4.2 Design principles, evolution to date, and options appraisal

Previous work and documents, fully described in the Stage 2 documents^(Refs 5, 6, 7), explained the principles we used to influence the design decisions, and each design option was evaluated and appraised^(Ref 6).

This process reduced the number of design concepts to one, known as Option 2. The "do nothing" option has been discounted as it did not fully meet any of the 11 design principles, including categorically not meeting the highest priority principle of achieving ANSP agreement (Ref 6). There is still scope for feedback on the specific details of the concept option upon which we are consulting – the removal of other concepts.

Option 2 has been appraised in more detail; this can be found in the Stage 2 Options Assessment ^(Ref 6). This option involves a minimal restructure of the LAC S21 airspace, with no new CAS or changes to low-level flightpaths.

This is considered a Level 2A airspace change as it would only alter ATS routes above an altitude of 7,000ft. Aircraft tracks below 7,000ft will not be impacted; this includes the UK airspace north of THRED. The proposed changes would align with PoJ's planned airspace change with DSNA, and would also help to reduce the conflictions between opposite-direction traffic flows near the FIR boundary, in turn reducing the need for controllers to manually intervene.

Typically, we would expect to consider 'doing nothing' as an option – i.e. leaving the airspace arrangements and procedures unchanged from today. In this case, doing nothing is not a realistic option because the structures south of the UK boundary, in PoJ's CICZ airspace, are changing and would not align with the current UK structures. Our justification for this proposal is to align UK routes with PoJ's CICZ routes at the same time.

In the unlikely event that there are unexpected issues caused by this proposal, it will not be possible to simply revert to today's structure because that would not align with PoJ's new structure.

4.3 Proposed changes

No new waypoints are being created. All the waypoints discussed below are already described in the UK AIP and would simply be used in a different way.

Table 4 below summarises all of the proposed changes, highlighted in bold italics.

These have been split into the five traffic flows affected by the proposed changes. Table 1 on page 5 can be used to compare the proposed changes against what is flown today.

All traffic departing southbound (towards CICZ and Brest) from the Solent Group would continue to flightplan via THRED. The new alignment of Z171 would route RNAV1 departures to LELNA, rather than ORTAC used today, in order to better segregate and distribute traffic. Solent RNAV5 departures to CICZ would continue to flightplan



via ORTAC at lower flight levels. All other arrivals to the Channel Islands would also flightplan via the new Z171 alignment to LELNA. RNAV5 arrivals to the Channel Islands from other departure points would also continue to route via ORTAC or LELNA, as today.

Channel Islands departures to Solent Airports would all continue to fly to THRED. RNAV1 departures would now flightplan via ORIST from the realignment of Y110; in order to better segregate and distribute traffic. ORTAC would continue to be used by CICZ RNAV5 departures at lower flight levels. All RNAV1 CICZ northbound departures towards the UK (not arriving at Solent Airports) would flightplan via ORIST (instead of ORTAC) which again, would improve the distribution of traffic compared to today. Lower-flight-level RNAV5 departures would continue to flightplan via ORTAC and THRED.

Any proposed changes to Flight Level restrictions for the bidirectional interfaces have also been described (changes shown in bold italics) which, for most route segments, have been lowered. These lowered restrictions were noted discussion points during the engagement with our primary stakeholders – please tell us how the proposed lower levels would impact your operation, and whether higher level restrictions would have different impacts.

From	Direction	То	Flight Level (proposed)	RNAV spec (prop.)	Relevant Route Segment (proposed)
EGH#	South	EGJ#	Up to FL90	RNAV5	THRED Q41 ORTAC
			FL100 -FL190	RNAV1	THRED new Z171 alignment LELNA
EGH#	South	Non-EGJ#	Up to <i>FL90</i>	RNAV5	THRED Q41 ORTAC
		(Brest centre)	FL100+	RNAV1	THRED new Z171 alignment LELNA
Non-EGH#	South	EGJ#	Up to FL90	RNAV5	THRED Q41 ORTAC
			FL100 -FL190	RNAV1	THRED new Z171 alignment LELNA
			FL200+	RNAV5	MARUK N621 LELNA (no change)
EGJ#	North	EGH#	Up to FL90	RNAV5	ORTAC Q41 THRED
			FL110-FL190	RNAV1	ORIST new Y110 alignment THRED
EGJ#	North	Non-EGH#	Up to FL90	RNAV5	ORTAC Q41 THRED
		(London centre)	FL110-FL190	RNAV1	ORIST new Y110 VEXEN L980 etc.*
			FL130-FL190	RNAV1	ORIST L982 ROXOG etc.*
					(* dependent on L982 availability)

Table 4 Proposed route segments relevant to this proposal

We believe the changes presented here offer the best balance in supporting the PoJ's planned CICZ SIDs and STARs whilst minimising the scale of airspace change within the UK. NATS is not proposing any changes to low-level flightpaths over land; no new CAS; and minimal changes to existing airspace structures; as listed above.

As a by-product of aligning with the PoJ's planned CICZ changes, our design also provides a reduction in conflictions leading to a decrease in complexity within LAC S21 airspace. Although this option would only provide partial systemisation it is significantly less costly and complicated; as well as having less of an effect on other airspace users than a fully systemised operation would do.

4.4 Proposed route usage

We do not anticipate that these proposed changes would alter the totals or proportions of airlines or aircraft types.



4.5 Dependencies

Presuming approval, the timeline to implement this proposal is fixed by an agreed target implementation date for the new PoJ SIDs and STARs serving Jersey and Guernsey Airports, on the 6th December 2018. There is limited time available in which to align our proposal with PoJ's.

Typically, a consultation would have a 12-week duration. That period would push the timeline for implementation beyond the agreed target implementation date for the new SIDs and STARS serving the CICZ. This is accounting for the fixed periods of CAA decision-making and AIS data lead time for a single AIRAC cycle. NATS is confident that four weeks is sufficient time for stakeholders to respond; who are already well informed about the proposed changes from significant stakeholder engagement activities.

There would be significant consequences for UK connectivity and its interface with the Channel Islands if this proposed airspace change is not in place by the 6th December 2018. The current airspace does not support the revised airspace changes due to the built-in complexities and conflictions which arise from the operation being highly tactical.

To reduce the risks of a short consultation period, we have targeted the primary stakeholders and engaged them so they are well-briefed in advance. Our other stakeholders have also been advance-briefed on this proposal – see paragraphs 2.2-2.3.

If the UK and Channel Islands route changes are not implemented coincidently, there could be significant issues with airlines filing acceptable flight plans. The most likely workaround would be to use DCTs which would probably match what we are planning with this proposal however it would duplicate effort for flight plan software providers, airlines and ANSPs.

The Route Availability Document (RAD) would restrict appropriately equipped aircraft to the relevant route at the relevant flight level. Flights filing as RNAV5 will be level-capped as described in Table 4 above – please describe the impacts these level caps may have on your operation.

Should the proposal be approved and implemented, it would be very difficult to simply revert to today's structure in the unlikely event that there are issues caused by this proposal. This is due to the simultaneous implementation of new SIDs and STARs serving the Channel Islands, which will permanently change the CICZ airspace structure with which NATS shares an FIR boundary. The proposed changes have been designed to align with the CICZ changes, hence why reverting back would be very difficult.



5. Impacts of this proposal

5.1 Noise and visual intrusion

The proposed changes are all above 7,000ft and over the sea. There would be no noise or visual intrusion impact to stakeholders on the ground.

5.2 Fuel and CO₂

Table 5 below shows the forecast fuel burn and CO_2 emission differences for the proposed changes in the first full year of implementation (2019) and ten years hence (2029).

It describes the same flows as Table 1 on page 5 and Table 4 on page 12.

From	Direction	То	Annual Fuel Change 2019 (T)	Annual CO ₂ Change 2019 (T)	Annual Fuel Change 2029 (T)	Annual CO ₂ Change 2029 (T)
EGH#	South	EGJ#	+8.2	+26.1	+9.6	+30.5
EGH#	South	Non-EGJ# (Brest centre)	+13.5	+42.9	+14.3	+45.5
Non-EGH#	South	EGJ#	-6.5	-20.7	-6.9	-21.9
EGJ#	North	EGH#	+16.2	+51.5	+19.0	+60.4
EGJ#	North	Non-EGH# (London centre)	-2.6	-8.3	-2.9	-9.2
		Total	+28.8	+91.6	+33.1	+105.3

Table 5 Fuel burn and CO₂ forecast changes

This analysis concluded there would be a small annual increase of 28.8 tonnes fuel and 91.6 tonnes CO_2 in 2019 due to the design and forecast route usage. The further increase of fuel and CO_2 by 2029 is due to a forecast increase in flights, as shown in paragraph 5.3 below.

The increase in fuel usage and CO_2 emissions from the proposed route changes is a result of an increase in track mileage from realigning the Y110 and Z171 route segments. Whilst changes to the LAC S21 route segments are necessary in order to support the introduction of SIDs and STARs in the CICZ; minimising the track mileage and extent of these changes has been prioritised. This was one of the key drivers behind the design principle evaluation options appraisal (Ref 6).

A UK government transport analysis, known as 'WebTAG', has been completed in order to quantify the monetary value of the impact on the environment due to greenhouse gas emissions (specifically using CO_2 as the measure). Details of the WebTAG results are given in the Full Options Appraisal (Ref 9).



5.3 Proposed Route Usage

Based on the same data used for the environmental assessment, we have analysed the current traffic within Sector 21 and anticipate the following forecast route usage.

It describes the same flows as the other flow-based tables in this document.

From	Direction	То	Flights (2019)	Flights (2029)
EGH#	South	EGJ#	3,827	4,478
EGH#	South	Non-EGJ# (Brest centre)	3,508	3,725
Non-EGH#	South	EGJ#	3,855	4,519
EGJ#	North	EGH#	6,763	7,219
EGJ#	North	Non-EGH# (London centre)	11,221	12,553
		Total	29,174	32,494

Table 6: Forecast route usage 2019 and 2029



6. Consultation Participation

6.1 How to respond

This consultation commences on Wednesday 2nd May 2018 and ends on Wednesday 30th May 2018; a period of 4 weeks.

This consultation is being conducted by NATS. The Civil Aviation Authority's Safety and Airspace Regulation Group (SARG) will oversee the consultation and ensure that it adheres to the CAP1616 process and government quidelines.

NATS is conducting this consultation via the CAA's online consultation portal. This portal is also where responses to this consultation can be submitted through a feedback questionnaire. On submission, this is submitted direct to the CAA.

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
- A feedback category: SUPPORT NO COMMENT AMBIVALENT OBJECT
- Your level of support for the following aspects of this proposal:
 - Use of RNAV;
 - o Segregation and distribution of traffic flows;
 - o Realignment of Y110;
 - o Realignment of Z171;
 - o Lowered level restrictions.
- Your general feedback comments with an opportunity to provide more detailed comments on the above specific aspects. There will also be the opportunity to upload a document containing further information relevant to your feedback.

You may upload a document as part of your response.

All responses will be analysed, with any common themes extracted and summarised. NATS will actively monitor the consultation portal and will formally respond back to any queries, alongside including any generic queries under a FAQ section. All responses will be passed on to the CAA.

6.2 What happens with the responses, and what happens next

Responses will be managed and uploaded to the consultation portal as appropriate. However, should any responses contain commercially sensitive data then we would expect the CAA to redact that information as part of the CAA's moderating practice.

On completion of the consultation, we will analyse the feedback and produce a feedback report, summarising themes arising from the feedback, alongside NATS' response to any issues raised. The feedback report will be uploaded onto the consultation portal. Any new requirements identified will be considered in the on-going design process, leading to the production of a formal airspace change proposal (ACP). The ACP will detail the



final design being submitted and make reference to changes that have been made to take account of consultation feedback.

Subject to achieving approval, we plan to implement the final version of this proposal on 6^{th} December 2018, in coordination & aligned with PoJ's CICZ restructure.



End of document