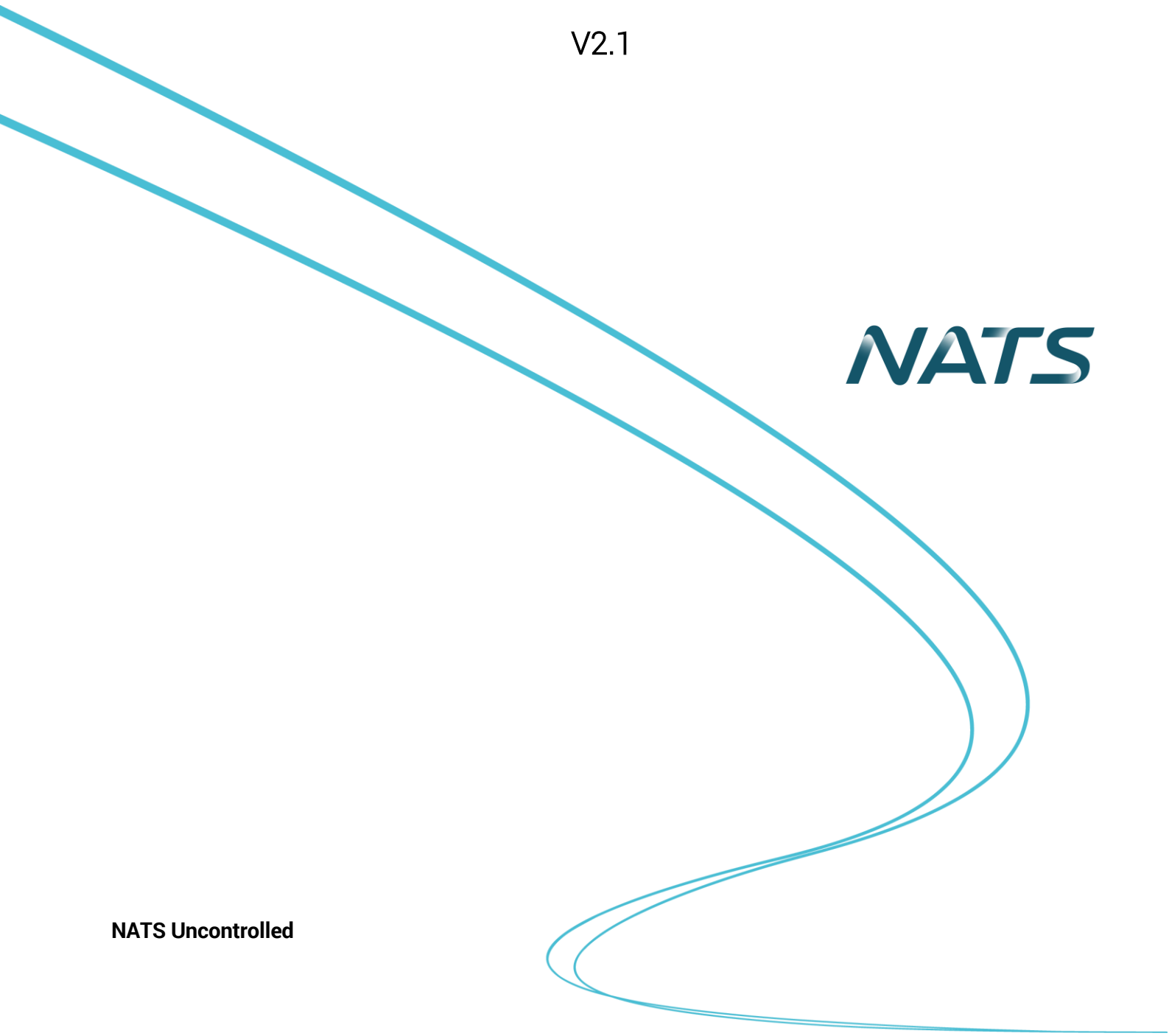
CAP1616 Gateway documentation
Stage 1: Define Gateway

Design Principles
Revised Position of ATS route Y124

V2.1



NATS Uncontrolled

Publication history

Issue	Month/Year	Change Requests in this issue
Issue 1.0	Oct 2019	First issue submitted to the CAA
Issue 1.1	Oct 2019	Updated following feedback from the CAA; the following sections were updated: - Generic SARG/ DfT design requirements removed, could cause confusion against the Design Principles - Updated wording in Sections 1.4 – 1.5 to explain the required ANSP agreement - Appendix A updated to include the email which was sent out to stakeholders
Issue 2.0	Nov 2019	Resubmission of this document due to there not being enough information on our engagement evidence. The following additional information has been provided: - Note added to DP8 that the IAA have confirmed no requirement to lower CAS east of the UK/ Irish boundary The following changes have been made within Section 3: - Further background engagement information and justification behind the targeted stakeholders - Information on what the email to stakeholders contained - Justification behind the length of review and extension period - Note on the low response rate - Confirmation that the engagement was completed via email - Informal face to face with the MoD added to engagement - Note on why the Design Principles did not change as a result of feedback received
Issue 2.1	Dec 2019	Paragraph removed from Section 3: - Reference to DP3 and DP6 that applies to the Q36/Q37 Airspace Change Proposal, not Y124.

Contents

1. Introduction

1.1 This document forms part of the document set required in accordance with the requirements of the CAP1616 airspace change process.

1.2 This document aims to provide adequate evidence to satisfy Stage 1 Define Gateway, Step 1B Design Principles.

1.3 This project relates to ATS route Y124 which crosses the UK-Ireland FIR boundary in the Irish Sea.

1.4 As part of this cross-border collaboration, there are ongoing negotiations and inter-ANSP operational development agreements between NATS and the Irish Aviation Authority (IAA). NATS have undertaken design work in consideration of the planned Dublin implementation timescales. Following early engagement with MOD and at their request NATS have commenced two ACPs for work associated with Dublin Airspace project (this ACP for Y124 and another for changes to Q36/Q37).

1.5 There must be agreement between both ANSPs that the design concept being progressed suits all operations.

1.6 The following Statement of Need was submitted to the CAA in March 2019:
Traffic over the Irish Sea has continued to experience high demand throughout the day. The implementation of parallel RNAV1 ATS routes in November 2017 has assisted in reducing controller workload (by removing complexity) and raising capacity. However, the Dublin Airport Authority has embarked on the Dublin Airspace Project to develop and implement a 2nd parallel runway which will create additional demand from 2021 onwards. This demand will place additional pressure on the Isle of Man (IoM) and Swanwick S7 ATC sectors, in addition to further demands on the wider route network.

The forecast growth and additional runway at Dublin presents an opportunity to review and further modernise the airspace in the North Wales and Irish Sea areas that interface with Irish airspace, as part of the CAA Airspace Modernisation Strategy. This should include the airspace sharing arrangements with the MoD, to ensure that the airspace design is optimised and able to accommodate the forecast demand in the region.

The impact on MOD/QinetiQ operations is dependent on the requirements of Special Use Airspace. The current CAA Safety Buffer Policy for Airspace Design (Ref 1) is undergoing review, however, this along with the CAA CAS Containment Policy (Ref 2) is used to determine route positioning as part of airspace design process. Changes will be required to the COPs[1] on the UK/Ireland FIR boundary. A separate Statement of Need captures this requirement for Q36 & Q37. The Temporary Reserved Area (Gliding) (TRA(G)) Welsh Gliding Area will also be a consideration.

(U)Y124 RNAV5 ATS route between DEXEN and MOGTA is currently classified as CDR 1, 2 & 3[2] with limited standard operational hours usually 1800 – 0800. This allows the MOD access to the North Wales Military Training Area (NWMTA) during the day, and to conduct activities within D201B (managed by QinetiQ). From an ATM perspective this limits the effectiveness of the route to the first rotation from Dublin and all further departures are positioned within the confines of L975, Q36 & Q37.

[1] COP is a coordination point on the international boundary where control of aircraft under ATC is passed between the IAA/NATS. DEXEN is the COP on Y124.

[2] CDR is a Conditional Route available at times published in the Route Availability Document (RAD).

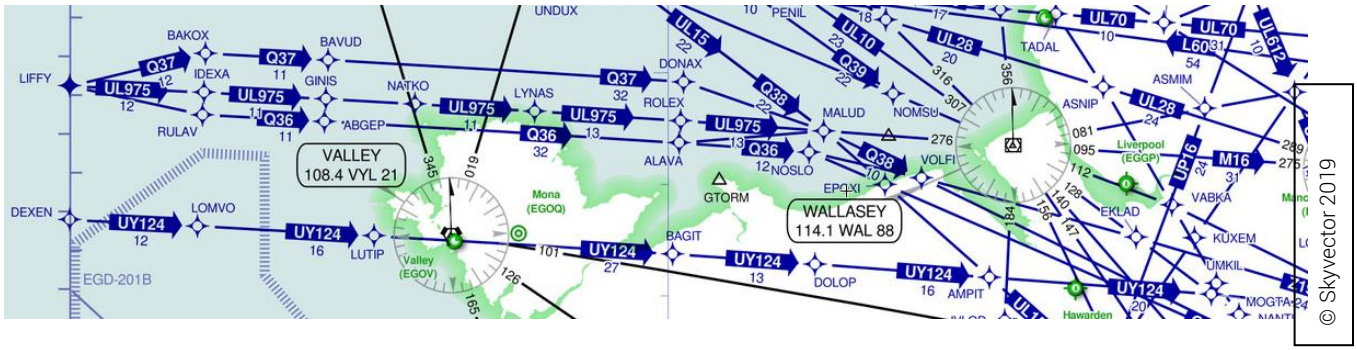


Figure 1: Current (U)Y124 location

2. Airspace Design Principles (DP) and Evaluation

2.1 Safety

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

2.2 Operational

DP1 Resilience (B): The proposed Y124 airspace design will maintain or enhance operational resilience of the ATC network.

DP2 Capacity (B): The proposed Y124 airspace design will enhance benefits from additional systemisation.

DP3 Dublin Rwy 2 (B): The proposed Y124 airspace design will provide a compatible interface with the Dublin 2nd parallel runway project.

DP11 Training (B): The Y124 design minimises the operational impact to airspace users (ATC/ Airlines – minimal training).

2.3 Economic

DP4 Network Performance (B): The proposed Y124 airspace will facilitate optimised network economic performance (Flight plannable H24).

2.4 Environmental

DP5 CO2 Emissions (B): The proposed Y124 airspace will facilitate the reduction of CO2 emissions per flight.

DP6 Impact to Stakeholders on the Ground (C): Minimise environmental impacts to stakeholders on the ground (all changes are above 7000ft).

2.5 Technical

DP7 MoD Requirements (B): The Y124 airspace will be compatible with the requirements of the MoD/QinetiQ.

DP8 Minimise CAS (B): The volume of controlled airspace required for the Y124 should be the minimum necessary to deliver an efficient airspace design, taking into account the en-route connectivity required for Dublin ANSP operation.

It is worth noting that the IAA have no requirement to lower any existing CAS east of the UK/ Irish boundary.

DP9 Use of PBN (B): The Y124 airspace will enhance the use of PBN (RNAV 1 proposed).

2.6 Policy

DP10 CAA Requirements (B): The Y124 design option will take cognisance of UK CAA SUA Safety Buffer Policy & Controlled Airspace Containment Policy.

3. Stakeholder Engagement in Developing Design Principles

The Irish Aviation Authority (IAA) have been involved in this proposal since it commenced in 2017; as it is being proposed solely to accommodate the new SIDs proposed by the IAA, as part of the new Dublin Runway 2 (EIDW 28R/ 10L). The Design Principles were reviewed as part of a NATS/ IAA interface meeting on 27th June 2019. The IAA confirmed that they had no issues with the Design Principles and were therefore not engaged with again.

Since the start of this proposal, the IAA have completed regular engagement with the airlines based at Dublin Airport; including attendance at Dublin simulations and updates on this proposal. The IAA have also had an on-going dialogue and very regular contact with Dublin Airport (ATC/ Tower) and have kept them up to date on this proposal.

Alongside the IAA and their engagement with airlines and Dublin Airport; NATS also identified the below aviation stakeholders to engage with. These organisations are part of the National Air Traffic Management Advisory Committee (NATMAC) forum.
These overarching aviation organisations cover a wide group of stakeholders who could potentially be interested in this proposal such as the wider airline community, General Aviation users and Air Traffic Controllers. We included BAE Systems (under aviation stakeholders) as they are a significant user of the airspace and operate within CAS. The MoD were also contacted as a mandatory stakeholder, via DAATM.

Stakeholders contacted:

Airlines
Airlines UK, British Airline Pilots Association (BALPA), British Airways (BA), easyJet, Low Fare Airlines, Virgin

Aviation Stakeholders
BAE Systems, Defence Airspace and Air Traffic Management (DAATM), Guild of Air Traffic Control Officers (GATCO), Gulf Aviation Academy (GAA)

Environmental Stakeholders
Aviation Environment Federation (AEF)

General Aviation Stakeholders
Aircraft Owners and Pilot Association (AOPA), Airspace 4 All (A4A, formally FASVIG), Association of Remotely Piloted Aircraft Systems (ARPAS), British Business and General Aviation Association (BBGA), British Gliding Association (BGA), British Helicopter Association (BHA), Light Aircraft Association (LAA)

This group of targeted stakeholders were sent a set of draft Design Principles on 6th August 2019 (see Figure 2 below). The email contained an attached document containing the draft Design Principles alongside a link to the page for this proposal on the CAA's online portal.

Stakeholders were asked to provide comments by 30th and send them to the NATS Airspace Consultation mailbox. This gave stakeholders over 3 weeks to provide any comments against a short list of our high-level draft Design Principles which we felt was an appropriate amount of time. This was also based on the project timeline which had been agreed with the CAA.

The deadline for comments was extended by a week to the 6th September and a prompt email was sent to all stakeholders on the 3rd September for final comments (there were no further reminders sent). The deadline was extended by a week as we had only received a few responses (summarised below) and we wanted to give stakeholders further opportunity to submit a response; alongside this being in the summer holiday period. The extension was not based on a specific request but simply to extend the response window for stakeholders.

Responses received:

There were three responses received from this engagement which are summarised below; the original responses can also be found in Appendix B. Although this response rate was low, we were not anticipating a large number of responses or objections, due to the simple nature of this proposal which is in support of the Dublin Runway 2 project.

- BAE Systems confirmed that they had no comments on the draft Design Principles.
- British Helicopter Association confirmed that they had no comments on the draft Design Principles.
- A response was received from the MoD with a number of comments which NATS responded to:
    - Clarity was sought on the Design Principle priorities. NATS confirmed the order of priority (A – C).
    - The MoD suggested that there be an additional DP regarding Flexible Use of Airspace, relating to MoD and civil operations. NATS explained that inclusion of such a Design Principle would contradict the Statement of Need.
    - The MoD sought reassurance that all available options will be considered in the ACP, including any alternatives to Y124 changes. Further detail on route usage was also requested. NATS explained that the Statement of Need specifically relates to Y124 as it is a key route for Dublin traffic; and that further detail on flight usage and timings will be developed as part of Stage 3 (design options).
    - The MoD sought clarification that issues around spacing and technical issues could be resolved as part of this ACP, and assurance be explored. NATS explained that any technical constraints and opportunities will be identified and reviewed in Stage 3 of the ACP process.
    - The MoD also commented that at the meeting on 24/01/19 at CAA, they stated concerns over any changes to Y124 which would result in a reduction in the size and availability of the NWMTA. NATS advised that all feedback will be included in the Design Principle evidence documentation (this document).
    - DP6 - the MoD sought clarification that subsequent impacts to other airspace users below 7,000ft, will be considered if they are displaced as a result of any change. NATS replied that this would be the case.
    - DP7 – the MoD suggested that there will be an increase in all military flying including training, which is considered the highest priority for the RAF, and often government policy. MoD raised a concern that there will be an overall reduction in airspace for the MoD. NATS noted this and replied that this will be considered in Stage 2 of the ACP.
    - DP10 – the MoD sought clarification on the intent of this DP (cognises of UK SUA safety buffer policy and CAS containment policy); highlighting that operations within D201B and routine operations within NWMTA are potentially very different. NATS responded that proposed

design(s) will take into consideration full use of relevant areas of airspace, including dimensions and activities.

- DP11 – the MoD suggested that different designs may require education/training of aircrew and controllers. NATS noted this; it will form part of the design impact analysis.
- The MoD replied that they were content with the responses provided by NATS.

Table 1 below gives a summary of the ongoing engagement that has taken place between NATS and aviation stakeholder groups. The Design Principles engagement has been accomplished through email correspondence rather than face to face meetings, or otherwise.

Date	Meeting	Attended by
04/12/2018	NATS – MOD NWMTA/Y124 Meeting	NATS, MoD, QinetiQ
24/01/2019	Meeting at CAA House	CAA, MoD, NATS
27/06/2019	Meeting at NATS Prestwick	IAA, NATS
07/08/2019	Email Engagement Response	Email from British Helicopter Association
14/08/2019	Informal face to face catch-up (during a Free Route Airspace meeting)	MoD, NATS
28/08/2019	Email Engagement Response	Email from MoD
09/09/2019	Email Engagement Response	Email from BAE Systems

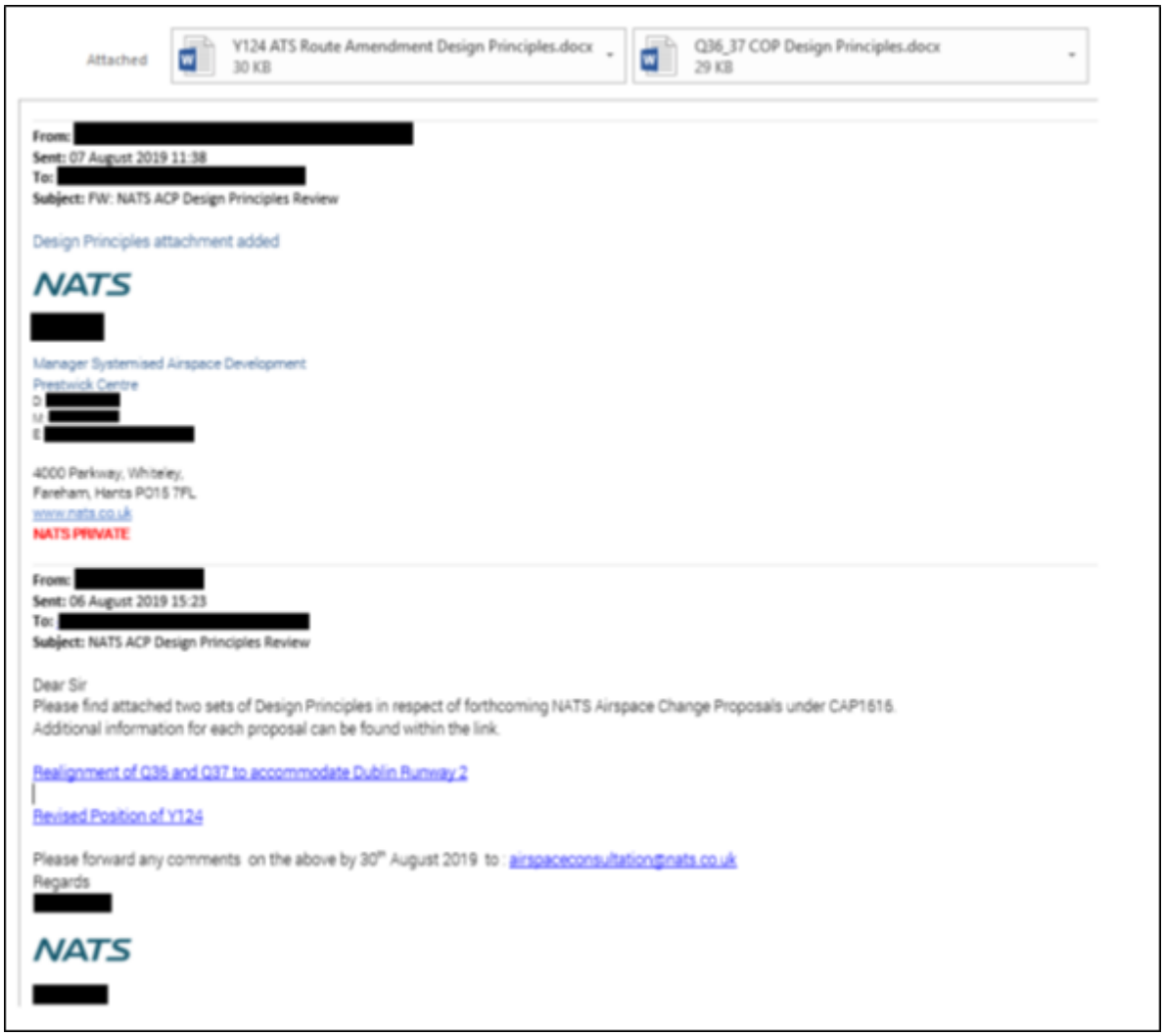
Table 1: Summary of Stakeholder Engagement Activity

During this series of engagement, the proposed Design Principles were provided to stakeholders who were asked to provide feedback on them. The Design Principles were first presented to the IAA on the 27th June 2019, for which there was no objections. There was no feedback received from stakeholders which suggested or had the potential to change the Design Principles. There was therefore no change to the Design Principles as a consequence of the engagement.

4. References

1. CAA Policy Statement: SPECIAL USE AIRSPACE - SAFETY BUFFER POLICY FOR AIRSPACE DESIGN PURPOSES (22 August 2014)
2. CAA Policy Statement: CONTROLLED AIRSPACE CONTAINMENT POLICY (17 Jan 2014)

5. Appendix A: Stakeholder Engagement Evidence



Attached Y124 ATS Route Amendment Design Principles.docx 30 KB Q36_37 COP Design Principles.docx 29 KB

From: [redacted]
Sent: 07 August 2019 11:38
To: [redacted]
Subject: FW: NATS ACP Design Principles Review

Design Principles attachment added

NATS

[redacted]

Manager Systemised Airspace Development
Prestwick Centre
D [redacted]
M [redacted]
E [redacted]

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk
NATS PRIVATE

From: [redacted]
Sent: 06 August 2019 15:23
To: [redacted]
Subject: NATS ACP Design Principles Review

Dear Sir
Please find attached two sets of Design Principles in respect of forthcoming NATS Airspace Change Proposals under CAP1616.
Additional information for each proposal can be found within the link.

Realignment of Q36 and Q37 to accommodate Dublin Runway 2

Revised Position of Y124

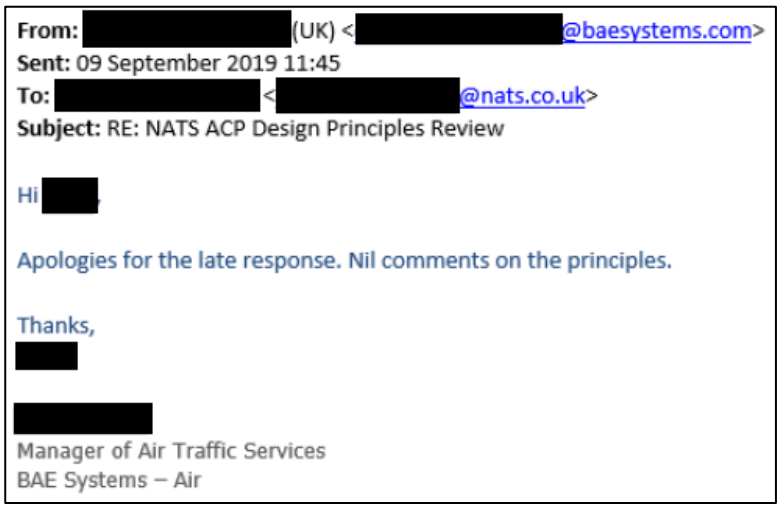
Please forward any comments on the above by 30th August 2019 to : airspaceconsultation@nats.co.uk
Regards
[redacted]

NATS

[redacted]

Figure 2: Stakeholder Engagement Email Evidence

6. Appendix B: Stakeholder Engagement Feedback



From: [redacted] (UK) <[redacted]@baesystems.com>
Sent: 09 September 2019 11:45
To: [redacted] <[redacted]@nats.co.uk>
Subject: RE: NATS ACP Design Principles Review

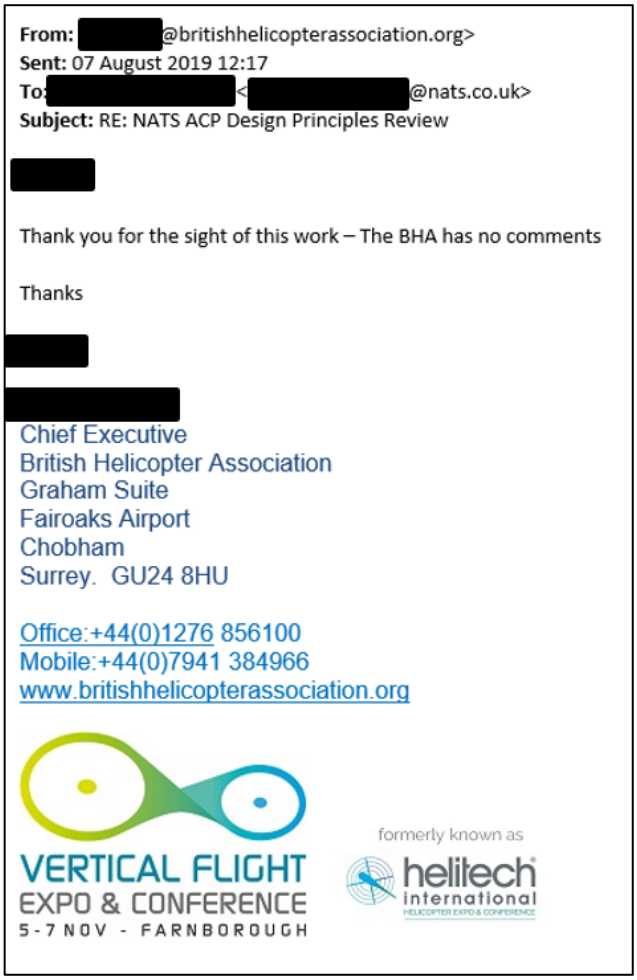
Hi [redacted],

Apologies for the late response. Nil comments on the principles.

Thanks,
[redacted]

[redacted]
Manager of Air Traffic Services
BAE Systems – Air

Figure 3: BAE Systems Response



From: [redacted]@britishhelicopterassociation.org>
Sent: 07 August 2019 12:17
To: [redacted] <[redacted]@nats.co.uk>
Subject: RE: NATS ACP Design Principles Review

[redacted]

Thank you for the sight of this work – The BHA has no comments

Thanks

[redacted]

[redacted]
Chief Executive
British Helicopter Association
Graham Suite
Fairoaks Airport
Chobham
Surrey. GU24 8HU

Office:+44(0)1276 856100
Mobile:+44(0)7941 384966
www.britishhelicopterassociation.org

VERTICAL FLIGHT EXPO & CONFERENCE
5-7 NOV - FARNBOROUGH

formerly known as helitech international

Figure 4: British Helicopter Association Response

Ministry of Defence

Defence Airspace & Air Traffic Management
CAA Aviation House, 1E
Gatwick Airport South
West Sussex
RH6 0YR

Telephone: [redacted]

Email: [redacted]@mod.gov.uk

[redacted]
Manager Systemised Airspace Development
4000 Parkway, Whiteley
Fareham
Hants
PO15 7FL

28 Aug 19

Dear [redacted]

MINISTRY OF DEFENCE (MOD) RESPONSE TO NATS ACPs: Y124 AND Q36/Q37

1. Thank you for your recent correspondence regarding the design principles for ACPs: Realignment of Q36 and Q37 to accommodate Dublin Runway 2 and the revised position of Y124. Specific comments related to each of the design principles for both ACPs can be found at Annex A and Annex B respectively.

2. Given the information provided, it is unclear the priority that each design principle will be given. It is assumed that group A is top priority, followed by those in Group B and the Group C. It would be beneficial to have clarification on how the DPs will be prioritised.

The following comments relate specifically to the Y124 ACP:

3. The MOD would wish consideration of an additional DP to be added regarding Flexible Use of Airspace. MOD believe this should be considered due to the time-bound nature of MOD operations as well as the peaks in flow rate for civil operations.

4. The MOD would like to highlight the following comment from the Y124 ACP assessment meeting minutes, Item 7: *"Engagement with the MoD has already started and has received positive feedback."* The MOD wishes to clarify that a meeting took place on 24 Jan 19 at CAA House, London where MOD stated there were concerns over any changes to Y124 which would result in a reduction in the size and availability of the NWMTA.

5. The MOD seeks reassurance that this ACP will consider all available options to resolve the issue. Is a change to Y124 the only solution to what NATS are trying to achieve? The MOD would be grateful for more information to aid understanding of the issue e.g. the expected increase in numbers of flights, expected flow rates, routings and timings and how these will impact requirements.

6. With respect to one of the issues highlighted as part of the Y124 ACP, *"Minimum spacing between Q36 and 'revised Y124' could be 5.8nm. However, due to current Swanwick MOPS constraint (IFACTS based) 7nm spacing will be required."* The MOD seeks clarification whether resolving this equipment constraint and its potential impact to operations and airspace design, is

being considered within this ACP. MOD seeks reassurance from NATS that all avenues will be explored and considered in order to ensure an optimal airspace design for all parties concerned.

7. The MOD welcomes continued engagement on both ACPs. If you require any further information, please do not hesitate to contact the undersigned.

Yours faithfully,

[*signed electronically*]

[redacted]
Squadron Leader
SO2 Airspace Plans

Figure 5: MoD Response Header

Annex B to
MOD Response to NATS
ACPs Y124 and Q36/Q37
Dated 28 Aug 19

MOD RESPONSE TO DESIGN PRINCIPLES FOR Y124 ATS ROUTE AMENDMENT ACP

The design principles provided by NATS are black text, with MOD comments provided in red text.

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

DP1 Operational (Resilience) **(B)**
The proposed Y124 airspace design will maintain or enhance operational resilience of the ATC network. MOD has no comment.

DP2 Operational (Capacity) **(B)**
The proposed Y124 airspace design will enhance benefits from additional systemisation. MOD has no comment.

DP3 Operational (Dublin Rwy 2) **(B)**
The proposed Y124 airspace design will provide a compatible interface with the Dublin 2nd parallel runway project. MOD believe this should be a lower priority than DP6.

DP4 Economic (Network Performance) **(B)**
The proposed Y124 airspace will facilitate optimised network economic performance. (Flight plannable H24) MOD has no comment.

DP5 Environmental (CO2 Emissions) **(B)**
The proposed Y124 airspace will facilitate the reduction of CO2 emissions per flight. MOD has no comment.

DP6 Environmental (Impact to Stakeholders on the Ground) **(C)**
Minimise environmental impacts to stakeholders on the ground (all changes are above 7000ft)
MOD seeks clarification on whether there will be consideration of any subsequent impacts to other airspace users below 7000ft, if they are displaced as a result of any change.

DP7 Technical (MoD Requirements) **(B)**
The Y124 airspace will be compatible with the requirements of the MoD/Qinetiq
The MOD are engaged with NATS through the FSP and future airspace requirements. There will be a continued increase in all aspects of military flying, including for Basic and Advanced Fast Jet Training at RAF Valley, which is currently the Air Force Board's highest priority for the RAF. Qinetiq requirements are often as a direct result of government policy, which should be considered. The MOD is concerned about the overall impact of change which will see an overall reduction of available airspace available for defence. It should be noted that MOD/Qinetic operations require airspace of specific dimensions to meet specific operational requirements.

DP8 Technical (Minimise CAS) **(B)**
The volume of controlled airspace required for the Y124 should be the minimum necessary to deliver an efficient airspace design, taking into account the en route connectivity required for Dublin ANSP operation Agree; all options for airspace classification should be considered. See comments re DP11

DP9 Technical (Use of PBN) **(B)**
The Y124 airspace will enhance the use of PBN (RNAV 1 proposed) No comment

B-1

DP10 Policy (CAA Requirements) **(B)**
The Y124 design option will take cognisance of UK CAA SUA Safety Buffer Policy & Controlled Airspace Containment Policy The MOD seeks clarification on the intent of this DP. It should be noted that operations within D201B and routine operations within the NWMTA are potentially very different.

DP11 Operational (Training) **(B)**
The Y124 design minimises the operational impact to airspace users (ATC/ Airlines – minimal training) All airspace designs should be considered for an optimal solution. There should be an acknowledgement from NATS that this may require education and training of aircrew and controllers, if necessary, to provide the most optimal solution for all parties concerned.

The MOD would wish consideration of an additional DP to be added regarding Flexible Use of Airspace. MOD believe this should be considered due to the time-bound nature of MOD Operations as well as the peaks in flow rate for civil operations.

Figure 6: MoD Response