Revised Position of Y124

Gateway documentation:
Stage 2 Develop and Assess

Options Appraisal
(Phase 1 Initial)
Including Safety Assessment
V1.0

NATS Unclassified

Roles

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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 2 Develop and Assess Gateway, Step 2B Options Appraisal Safety Assessment.

2. Change Level

2.1 The changes in this ACP impact flights over the high seas. Hence in accordance with the ACP Level as defined in CAP1616, it is expected that this proposal is categorised as a Level 2C change.

2.2 In line with the requirements for a Level 2C change the environmental impact assessment has been conducted on the basis of CO_2 emissions. There would be no impacts to stakeholders on the surface, since this change is over the high seas; hence no noise analysis has been undertaken.

3. Options Appraisal (Phase 1 Initial)

3.1 ATS route Y124, located in between the Republic of Ireland and the UK, over the Irish Sea and north Wales, is currently utilised by eastbound commercial traffic in limited standard operational hours, usually between 18:00 – 08:00 (and weekends + public holidays). Outside of these times the route is unavailable in order to allow MOD access to the North Wales Military Training Area (NWMTA) and to conduct activities within Danger Area 201B. This limits the effectiveness of the route for commercial traffic during weekdays, in that it is only available to the early first rotation departures from Dublin. All further traffic is routed via ATS routes L975, Q36 & Q37.

3.2 There is an opportunity to amend ATS route Y124, so it is RNAV 1 compliant and for it to be available to commercial traffic for longer periods independent from the NWMTA and Danger Area 201B. Therefore allowing an additional solution for managing Dublin departure traffic.

3.3 Previous documents have reduced the number of design concepts to a short-list of four options, these are:

- Option 1 – Amend MTA Times
- Option 2 – ATS Route Y124 to become RNAV 1 & Amend NWMTA/D201B Northern Boundary
- Option 3 – Move ATS Route North by 3 Miles – H24 Operations (RNAV 1)
- Option 6 – Flexible Use of Airspace (FUA) of NWMTA/D201B Northern Boundary – H24 Operations (RNAV 1)

3.4 The baseline (do nothing) option does not achieve any improvement or modernisation from today's operations and is used as the benchmark against which the benefits of the proposed change can be measured. The Design Principles are either not met or met by default for this option, i.e. 'no change'. As such this option is not being progressed.

3.5 The detailed makeup of the baseline option and the six concept options, including evaluation is detailed in Stage 2 Develop and Assess: Stage 2A(i) Design Options and Stage 2A(ii) Design Options Evaluation.

4. Option 0 – Baseline (Do Nothing) Option

The do-nothing option assumes the changes proposed in the ACP are not implemented. Table 1 below indicates the effects on stakeholders should this be the case.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	No change in noise impact from today's operations.
Communities	Air quality	Qualitative	No change in air quality from today.
Wider society	Greenhouse gas impact	Quantify	There would be no change in greenhouse gas emissions. This is due to no change in aircraft trajectories.
Wider society	Capacity/ resilience	Qualitative	An increase in forecasted traffic would increase sector complexity, constrain neighbouring sectors (IOM & Lakes) capacity and increase controller workload,
General Aviation	Access	Qualitative	No change from today.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	No change from today.
General Aviation/ commercial airlines	Fuel burn	Qualitative	No change from today.
Commercial airlines	Training cost	Qualitative	There would be no training required.
Commercial airlines	Other costs	Qualitative	There would be no associated costs for airlines.
Airport/ Air navigation service provider	Infrastructure costs	Qualitative	There would be no associated infrastructure costs.
Airport/ Air navigation service provider	Operational costs	Qualitative	There would be no associated operational costs.
Airport/ Air navigation service provider	Deployment costs	Qualitative	There would be no associated deployment costs.

Table 1 Options Appraisal – Do Nothing Option

5. Option 1 – Amend MTA Times

This design proposes to adjust the activation times of the NWMTA from 08:00 to 09:00 (weekdays only) to allow civil traffic 1 additional hour of usage of the airspace at peak time, when there is no MOD demand. This removes disparity in times between the North and South Wales MTA's.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	No significant change in noise impact. The proposed changes to commercial air traffic patterns are either over the high seas or at altitudes of FL195+ (i.e. well above the 7,000 ft threshold below which noise impacts are considered significant and analysis is required). Hence there will be no change in noise impact on communities, therefore, no noise analysis has been undertaken.
Communities	Air quality	Qualitative	No changes in aircraft trajectories below 1,000 ft
Wider society	Greenhouse gas impact	Quantified	With the increased availability those flights enabled to route via Y124 will have shortened track mileage by 5.4 Nm (compared to the alternative route via LIFFY, then onto ATS routes UL975/Q36/Q37). This reduction in track mileage will provide commensurate savings per flight CO_2 emissions.
Wider society	Capacity/ resilience	Qualitative	Marginally improved sector systemisation with an extra hour of utilisation for civil traffic. Capacity and resilience improved however limited scope for future proofing.
General Aviation	Access	N/A	GA access to the higher-level airspace affected by this ACP would remain unchanged.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	By delaying MTA activation time by one hour from 08:00 – 09:00 it is perceived this would increase the effective capacity of the sector. This will ease capacity constraints on nearby routes, since greater numbers of Dublin departures will be able to be routed on Y124 before MTA becomes active
General Aviation/ commercial airlines	Fuel burn	Qualitative	With the increased availability those flights enabled to route via Y124 will have shortened track mileage by 5.4 Nm (compared to the alternative route via LIFFY, then onto ATS routes UL975/Q36/Q37). This reduction in track mileage will provide commensurate fuel burn savings per flight.
Commercial airlines	Training cost	N/A	N/A – there is not expected to be any airline training cost associated with amendments to MTA activation times
Commercial airlines	Other costs	N/A	N/A
Airport/ Air navigation service provider	Infrastructure costs	Qualitative and quantitative	There would be no associated infrastructure costs to the ANSP
Airport/ Air navigation service provider	Operational costs	N/A	N/A – this proposal would not lead to changes in operational costs
Airport/ Air navigation service provider	Deployment costs	Qualitative and quantitative	There would be no associated deployment costs

Table 2 Options Appraisal – Amend MTA Times

6. Option 2 – ATS Route Y124 to become RNAV 1 & amend NWMTA/D201B Northern Boundary

Option 2 makes amendments to the northern boundary of the NWMTA/D201B special use airspace. The amendments would move the boundary south, enabling civil operators to flight plan Y124 H24. The route will also become RNAV 1 compliant.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	No significant change in noise impact. The proposed changes to commercial air traffic patterns are either over the high seas or at altitudes of FL195+ (i.e. well above the 7,000 ft threshold below which noise impacts are considered significant and analysis is required). Hence there will be no change in noise impact on communities, therefore, no noise analysis has been undertaken.
Communities	Air quality	Qualitative	No changes in aircraft trajectories below 1,000 ft
Wider society	Greenhouse gas impact	Quantified	With the increased availability those flights enabled to route via Y124 will have shortened track mileage by 5.4 Nm (compared to the alternative route via LIFFY, then onto ATS routes UL975/Q36/Q37). This reduction in track mileage will provide commensurate savings per flight CO_2 emissions. This option provides greater benefit that option 1 due to the increased hours of availability.
Wider society	Capacity/ resilience	Qualitative	Improved sector systemisation as capacity constrained IOM and Lakes sectors will be relived of traffic as Dublin departures will be able to be flexibly allocated SIDs based on flight plan. Additional capacity will be unlocked as the proposed Y124 route will become independent from MTA activation and will be flight plannable H24 for civil operators.
General Aviation	Access	N/A	GA access to the higher-level airspace affected by this ACP would remain unchanged.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	Y124 will become flight plannable H24, which will result in increased capacity. The Option 2 design is a future-proof concept that aligns with Dublin's second parallel runway project and will accommodate the forecast increase in traffic demand. Minimal training is required as flights will remain on same trajectories as they do currently.
General Aviation/ commercial airlines	Fuel burn	Qualitative	Increased capacity provided from Y124 H24 availability means aircraft on Y124 appropriate flight plans can avoid SID allocation inefficiencies toward COP LIFFY. This 5.4 Nm reduction in track mileage will provide commensurate fuel burn savings per aircraft.
Commercial airlines	Training cost	N/A	N/A No airline training costs necessary.
Commercial airlines	Other costs	N/A	N/A – there are no other known costs which would be imposed on commercial aviation
Airport/ Air navigation service provider	Infrastructure costs	Qualitative and quantitative	Adaptation system changes as the MTA northern boundaries are amended.
Airport/ Air navigation service provider	Operational costs	N/A	N/A – this proposal would not lead to changes in operational costs
Airport/ Air navigation service provider	Deployment costs	Qualitative and quantitative	Controller training cost will be minimal. Training will be by briefing.

Table 3 Options Appraisal – Amend NWMTA/D201B Northern Boundary

7. Option 3 – Move ATS Route Y124 North by 3 Miles

This design proposes to move Y124 north by 3 miles. This will enable Y124 to be available permanently as an ATS route. H24 flight plannability for civil traffic enables greater flexibility for Dublin departures to be routed appropriately, based on individual flight plan. This option also allows the military to activate MTA airspace without reference to civil operators. The route will also become RNAV 1 compliant.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	No significant change in noise impact. The proposed changes to commercial air traffic patterns are either over the high seas or at altitudes of FL195+ (i.e. well above the 7,000 ft threshold below which noise impacts are considered significant and analysis is required). Hence there will be no change in noise impact on communities, therefore, no noise analysis has been undertaken.
Communities	Air quality	Qualitative	No changes in aircraft trajectories below 1,000 ft
Wider society	Greenhouse gas impact	Qualitative	With the increased availability those flights enabled to route via Y124 will have shortened track mileage by 3.9 Nm (compared to the alternative route via LIFFY, then onto ATS routes UL975/Q36/Q37). This reduction in track mileage will provide commensurate savings per flight CO_2 emissions.
Wider society	Capacity/ resilience	Qualitative	Improved sector systemisation as capacity constrained IOM and Lakes sectors will be relived of traffic as Dublin departures will be able to be flexibly allocated SIDs based on flight plan. Additional capacity is gained as route will become independent from MTA activation and will be flight plannable H24 for civil operators.
General Aviation	Access	N/A	GA access to the higher-level airspace affected by this ACP would remain unchanged.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	With Y124 available permanently it allows greater flexibility of use for Dublin departures, as aircraft can be aligned to appropriate SID's based on flight plan. Movement of the route north will enable H24 operations. Systemisation improvements for IOM and Lakes sectors, in addition enabling the military to activate MTA areas without reference to civil operators.
General Aviation/ commercial airlines	Fuel burn	Qualitative	Increased capacity provided from Y124 H24 availability means aircraft on Y124 appropriate flight plans can avoid SID allocation inefficiencies toward COP LIFFY. This 5.4 Nm reduction in track mileage will provide commensurate fuel burn savings per aircraft.
Commercial airlines	Training cost	N/A	N/A – none
Commercial airlines	Other costs	N/A	N/A –
Airport/ Air navigation service provider	Infrastructure costs	Qualitative	Adaptation system changes required as Y124 route would be moved. New route name and COP point also required as a result of this proposal.
Airport/ Air navigation service provider	Operational costs	N/A	N/A – this proposal would not lead to changes in operational costs.
Airport/ Air navigation service provider	Deployment costs	Qualitative	Minimal controller training required – briefing only.

Table 4 Options Appraisal – Move Y124 North by 3 Miles

8. Option 6 – Flexible Use of Airspace (FUA) of NWMTA/D201B Northern Boundary – H24 Operations

The final option proposes to flexibly adjust the MTA northern boundaries, this is so it can be sub-divided between civil and military to accommodate airspace user demand. This would enable Y124 to be flight-plannable for civil traffic H24, subject to clawback when there is military demand. The route will also become RNAV 1 compliant.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	No significant change in noise impact. The proposed changes to commercial air traffic patterns are either over the high seas or at altitudes of FL195+ (i.e. well above the 7,000 ft threshold below which noise impacts are considered significant and analysis is required). Hence there will be no change in noise impact on communities, therefore, no noise analysis has been undertaken.
Communities	Air quality	Qualitative	No changes in aircraft trajectories below 1,000 ft
Wider society	Greenhouse gas impact	Quantified	With the increased availability those flights enabled to route via Y124 will have shortened track mileage by 5.4 Nm (compared to the alternative route via LIFFY, then onto ATS routes UL975/Q36/Q37). This will provide commensurate savings per flight CO_2 emissions.
Wider society	Capacity/ resilience	Qualitative	Improved sector systemisation as capacity constrained IOM and Lakes sectors will be relived of traffic as Dublin departures will be able to be flexibly allocated SIDs based on flight plan. Additional capacity is unlocked as route will become independent from MTA activation and will be flight plannable H24 for civil operators.
General Aviation	Access	N/A	GA access to the higher-level airspace affected by this ACP would remain unchanged.
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Qualitative	Flights will become flight plannable H24 as capacity is increased, subject to clawback when there is military demand for the airspace. This option is a future proof concept that aligns with Dublin's second parallel runway project and will accommodate the forecasted increase in traffic demand. Minimal training costs required as flights will remain on same trajectories as they do currently. Sophisticated levels of agreements on airspace usage to be agreed between civil and military.
General Aviation/ commercial airlines	Fuel burn	Qualitative	Increased capacity provided from Y124 H24 availability means aircraft on Y124 appropriate flight plans can avoid SID allocation inefficiencies toward COP LIFFY. This 5.4 Nm reduction in track mileage will provide commensurate fuel burn savings per aircraft.
Commercial airlines	Training cost	N/A	N/A – none
Commercial airlines	Other costs	N/A	N/A
Airport/ Air navigation service provider	Infrastructure costs	Qualitative	There would be no associated infrastructure costs to the ANSP.
Airport/ Air navigation service provider	Operational costs	N/A	N/A – this proposal would not lead to changes in operational costs.
Airport/ Air navigation service provider	Deployment costs	Qualitative	Minimal controller training required – briefing only.

Table 5 Options Appraisal – Sub-divide MTA Northern Boundaries (FUA)

9. Safety Assessment

9.1 Safety Assessment – Do nothing

The implementation of the new Dublin Runway is forecast to result in an increase in traffic. If there were no amendments to the current route structure of Y124, once the new Dublin Airport runway becomes operational, the capacity constraints in the Irish Sea route network would result in significantly increased controller workload and sector complexity (specifically IOM and Lakes sectors). With a 30% increase in traffic expected by 2030, the approach of doing 'nothing' is not a viable option.

9.2 Safety Assessment – All Four Concept Options

This proposal aims to introduce systemisation benefits for airspace contained over the Irish Sea. With forecast traffic growth expected once Dublin's 2nd parallel runway is implemented in 2021, the ideology of 'doing nothing' is seen to negatively impact safety, as already capacity constrained airspace, would involve ever increasing tactical actions for controllers and pilots.

Each concept option devised would provide additional capacity at varying levels for the region's airspace and would cause a reduction in complexity, for both ATC and pilots. Increased usage of Y124 provides Dublin with additional flexibility with regards to SID allocation, meaning traffic can be appropriately distributed based on filed flight plans.

A qualitative high-level safety appraisal indicates that nothing is presently foreseen with these proposed options that may have the potential to negatively impact on the level of safety achieved within the current operation. Engagement will continue with MOD/QinetiQ to ensure that the changes proposed by this ACP will not negatively impact safety to civilian or military operations.

NATS' first priority is safety (and is committed to transparently demonstrating its commitment to safety). NATS will construct an appropriate safety case in accordance with standard practice during Stage 4.

10. Conclusion and Next Steps

10.1 This proposal has been developed following the submission of a Statement of Need. Its text was:

Current Situation
(U)Y124 RNAV5 ATS route between DEXEN and MOGTA is currently classified as CDR 1, 2 & 3 with limited standard operational hours usually 1800 - 0800. This allows the MOD access to the NWMTA 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.
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 PC IoM and Swanwick S7 sectors in addition to further demands on the wider network .

Issue to be addressed
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.

Associated Factors
The impact on MOD/Qinetiq operations is dependent on the requirements of Special Use Airspace.
The current CAA Safety Buffer Policy for Airspace Design is undergoing review; however, this along with the CAA CAS Containment Policy is used to determine route positioning as part of airspace design process.
Changes may be required to the COP on the UK/Ireland FIR boundary. A separate Statement of Need captures this requirement for Q36 & Q37.
TRAG Welsh Gliding Area will also be a consideration.

10.2 This document describes options which address the Statement of Need with the proposed amends to ATS Route Y124.

10.3 Four concept design options (Option 1, 2, 3 & 6) have been appraised and will be carried forward for further development and consultation. These options have been developed thus far with assistance, input, feedback and effort from the IAA (Dublin and Shannon), associated AONB's/NP's and senior MoD/QinetiQ staff. NATS thanks all these stakeholders and looks forward to continuing the development of this proposal.

10.4 Subject to CAA approval at the Stage 2 Gateway Assessment, this proposal will then move on to Stage 3 – Consult.

End of document