Realignment of Q36 and Q37 to accommodate Dublin Runway 2

Gateway documentation:
Stage 2 Develop and Assess

Options Appraisal
(Phase 1 Initial)
including Safety Assessment
V1.1

NATS Unclassified

Roles

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Issue 1	December 2019	First issue released to SARG.
Issue 1.1	December 2019	Grammatical change to Section 2.2

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

1.3 Previous documents have reduced the number of design concepts to one, known as Option 1. This is the preferred option.

2. Change Level

2.1 The changes in this ACP only impact flights over the high seas. Hence in accordance with the Levels 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 This ACP proposes to realign (straighten) the ATS routes Q36/Q37 at the FIR boundary between UK and Irish airspace. Two new co-ordination points (COP's) BOFUM and FEXSI will be implemented on the FIR boundary. These have been created and reserved by the Irish Aviation Authority (IAA), as the end points of the new SIDs serving the proposed Dublin Airport dual runway configuration. The IAA has taken the lead with this proposal and as such the changes on the UK side of the FIR boundary (sponsored by NATS) are driven by the IAA designs, and coordinated to support them.

3.2 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.

3.3 One option is therefore proposed which fulfils the design principles:

- Option 1: Realign ATS Routes Q36/Q37 to accommodate Dublin Runway 2

3.4 The detailed makeup of both the baseline option and Option 1, including evaluation is detailed in Stage 2 Develop and Assess: Stage 2A(i) (ii) Airspace Change Design Options and Evaluation.

3.5 Baseline (Do Nothing) Option – Option 0

The do-nothing option assumes the changes proposed in the ACP are not implemented. Table 1: Options Appraisal – Do Nothing Option below indicates the effects on communities and 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	Monetise and 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 sector 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.

3.6 Realignment of ATS Routes Q37/Q37 – Option 1

This design proposal is for the realignment of ATS routes Q36/Q37 at the London-Shannon FIR boundary, which sees the implementation of two new COP's, namely BOFUM and FEXSI.

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	Qualitative	The proposed changes to commercial air traffic patterns are over the high seas. As such there are no populations or communities impacted.
Communities	Air quality	Qualitative	No changes in aircraft trajectories below 1,000ft
Wider society	Greenhouse gas impact	Quantified	The realignment of the departure routings will shorten both Q36 and Q37 by 0.3nm. This will provide commensurate savings in per flight CO_2 emissions.
Wider society	Capacity/ resilience	Qualitative	Improved sector systemisation
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	Quantify	By providing dual departure routes without convergence at LIFFY there is anticipated to be an increase in once the new runway and associated SIDs from Dublin airport are operational. Relative difference in forecasted capacity is not likely to affect ATC sector monitor values.
General Aviation/ commercial airlines	Fuel burn	Monetise	There is expected to be a reduction in fuel burn for commercial airlines as the realigned departure tracks from Dublin will be 0.3nm shorter.
Commercial airlines	Training cost	N/A	N/A – there is not expected to be any airline training cost associated with the realignment of Q37/Q37
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	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 – Option 1.

4. Safety Assessment

4.1 Safety Assessment – Do nothing

If there was to be no change to the current route structure once the new runway becomes operational, the forecasted increase in traffic will begin to constrain sector capacity. This in turn will increase controller workload and sector complexity for the region, specifically IOM Sector, Sector 7 and Sector 4. With a 30% increase in traffic expected by 2030, the approach of doing 'nothing' is seen to be not a viable option.

4.2 Safety Assessment – Option 1

The Option 1 design to realign the Q36/Q37 route structure is proposed as the optimum solution for this ACP. With traffic forecasted to grow 2%/year in 2020/2021, increased to 4% following introduction of the new runway, the route realignment will cater for additional departing traffic and deliver the following impacts:

- Improved systemisation within IOM sector
- Increased predictability of SID allocation for Dublin with a seamless interface between Q36 and Q37.

A qualitative high-level safety appraisal indicates that nothing is presently foreseen with this proposed option that may have the potential to negatively impact on the level of safety achieved within the current operation.

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

5. Conclusion and Next Steps

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

> In order to meet the interface requirements for new SIDs proposed by the IAA from the new Dublin Runway 2 (EIDW 28R/10L) routes Q36 & Q37 will need to be realigned to new points on the FIR boundary (instead of LIFFY).

5.2 This document describes options which address the Statement of Need with the proposed realignment of ATS routes Q36/Q37 at the London-Shannon FIR boundary.

5.3 A single design option (Option 1) has been appraised and will be carried forward for further development and consultation. This option has been developed thus far with significant assistance, input, feedback and effort from the IAA (Dublin and Shannon) and senior MoD staff. NATS thanks all these stakeholders and looks forward to continuing the development of this proposal.

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

End of document