

# Realignment of Q36 and Q37 to accommodate Dublin Runway 2

## Consultation Document V1.0

***NATS***

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## Roles

Action	Role	Date
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0.5	March 2020	Draft submitted to the CAA for Stage 3A Gateway

## References

Ref No	Description	Hyperlinks
1	Realignment of Q36/Q37 CAA web page – progress through CAP1616	<a href="#">Link</a>
2	Stage 1 Assessment Meeting Presentation	<a href="#">Link</a>
3	Stage 1 Assessment Meeting Minutes	<a href="#">Link</a>
4	Stage 1 Design Principles	<a href="#">Link</a>
5	Stage 2 Design Options and Evaluation	<a href="#">Link</a>
6	Stage 2 Initial Options Safety Appraisal	<a href="#">Link</a>
7	Stage 3 Full Options Appraisal	<a href="#">Link</a>

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## 1. Introduction

Dublin Airport is currently constructing a new runway. This runway is due to enter operational service in 2021. When implemented Dublin airport will change to two parallel runway operations. In order to serve the new runway the Irish Aviation Authority (IAA) will introduce new Standard Instrument Departure routes (SIDs) from the runways to the boundary of Irish airspace with the UK (known as the Flight Information Region (FIR) boundary).

As a result, some minor route changes are required in UK airspace where the routes cross the boundary and interface with the route system in the Irish Sea.

This document forms part of the document set required in accordance with the requirements of the UK Civil Aviation Authority (CAA) CAP1616 airspace change process.

This document aims to provide adequate evidence to satisfy Stage 3 Consult Gateway, Step 3A Draft Consultation Document. The Airspace Change Proposal (ACP) reference is ACP-2018-49

Previous documents have identified a single design concept to accept for progression for this proposal. The 'do nothing' option has been discounted as it did not fully meet all of the design principles.

There is still scope for feedback on the design option upon which we are consulting. The removal of other options (in this case the 'do nothing' option) does not remove the scope for formative feedback.

Following the Stage 2: Develop and Assess Gateway Assessment, this proposal has been confirmed by the CAA as a Level 2C change (due to the proposed changes being over the high seas and not impacting any populations).

## 2. Engagement Activities Completed to Date

The NATS engagement activities have been carried out in accordance with the plan described in the Stage 1 Assessment Meeting Minutes (Ref 3) and are detailed in the Stage 1 (Ref 4) and Stage 2 (Ref 5 & 6) Documents. Note all related documentation is available on the [CAA Airspace change portal here](#).

This proposal occurs over the high seas, with minimal impact to stakeholders on the ground and General Aviation. As such, the engagement activities that have taken place has primarily targeted the following stakeholders: MoD, IAA, Airlines (through NATMAC) and QinetiQ.

A Design Options meeting between NATS and DAATM was held at NATS Swanwick on 27<sup>th</sup> January 2020. During this meeting DAATM indicated that they have no concerns with this proposal.

## 3. Current Airspace

### 3.1 Scottish FIR and Dublin CTA boundary

Currently, aircraft departing from Dublin airport are vectored within the Dublin Control Area (CTA) towards a single Co-ordination Point (COP), LIFFY, before diverging to route through the Scottish and London FIR's via ATS routes Q36, Q37 or UL975 (Figure 1).

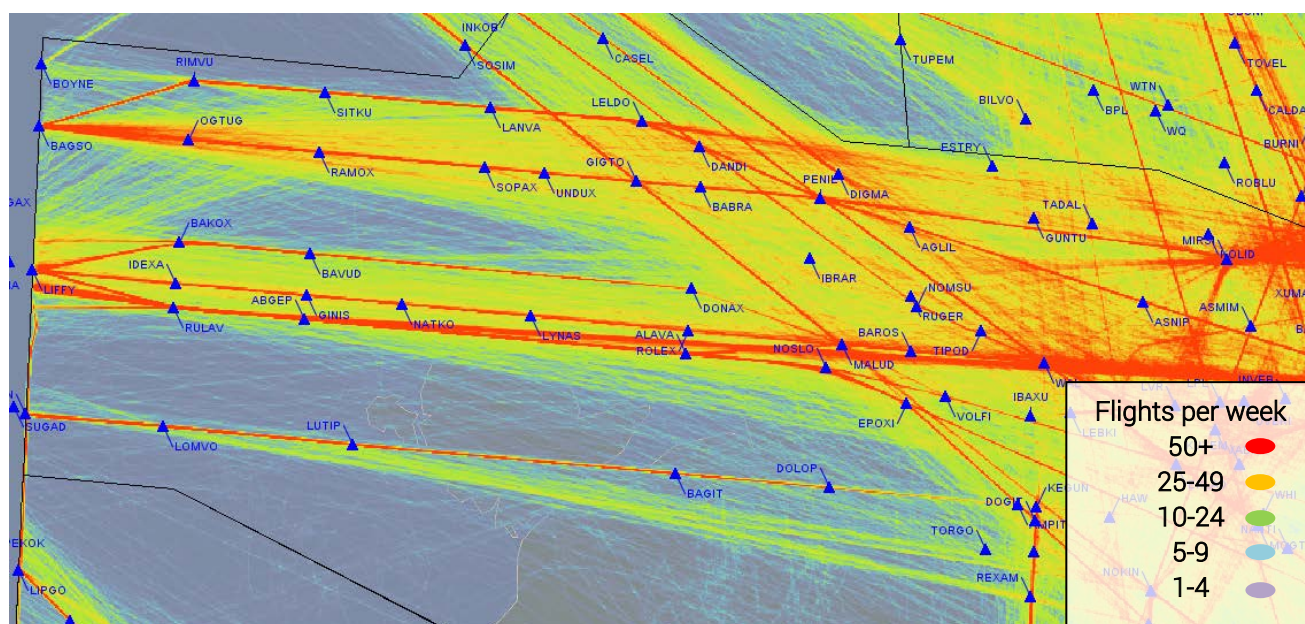


**Figure 1:** Current Q36, Q37 and UL975 route structure

It should be noted that the route structure in the Irish sea was introduced in November 2017, and this change involved close coordination and engagement with the IAA. As a result the dual routes of Q36 & Q37 were designed with the future Dublin two runway operations in mind, future-proofed to require minimal change when the new Dublin runway and associated SIDs were introduced.

### 3.2 Traffic patterns

A 1-week sample, 6 -12<sup>th</sup> August 2018, of flights routing through LIFFY is shown below (Figure 2).



**Figure 2:** Trajectory Density plot showing aircraft routing from LIFFY to BAKOX (Q37), IDEXA (UL975) or RULAV (Q36). Data is for total flights for 6-12<sup>th</sup> August 2018.

### 3.3 Current traffic numbers

The traffic details for aircraft departing Dublin in 2019 routing via Q36 or Q37 is detailed in table 1 below.

Aircraft Type	Total 2019 Movements Q37	Total 2019 Movements Q36	Aircraft Type	Total 2019 Movements Q37	Total 2019 Movements Q36
A306		194	B763		165
A319		1,013	B77L		16
A320	1194	12,009	B77W		957
A321	11	1662	B788		422
A332		52	B789		103
A343		20	E135	14	425
A359		66	E170		761
AT43	113		E190	20	2,321
AT72	240	11	E35L		79
AT76	1932	12	E45X		16
B733		45	E50P	21	65
B734		46	E55P	45	300
B735		41	E75L		72
B737		270	E75S	232	
B738	3906	19,146	F100		1,029
B739		271	F70		45
B752		14	<b>Total</b>	<b>7728</b>	<b>41648</b>

**Table 1:** 2019 Dublin departures by route and type.

## 4. Proposed Changes

### 4.1 Justification behind the proposed changes

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).

### 4.2 Design principles, evaluation to date and options appraisal

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

As the changes being proposed are very minor, only a single concept option, option 1, which fully met the Design Principles, has been considered. The “do nothing” baseline option has been discounted as it failed to increase capacity (DP2), would not support the second runway at Dublin (DP3) and offered no reduction in CO<sub>2</sub> emissions (DP4).

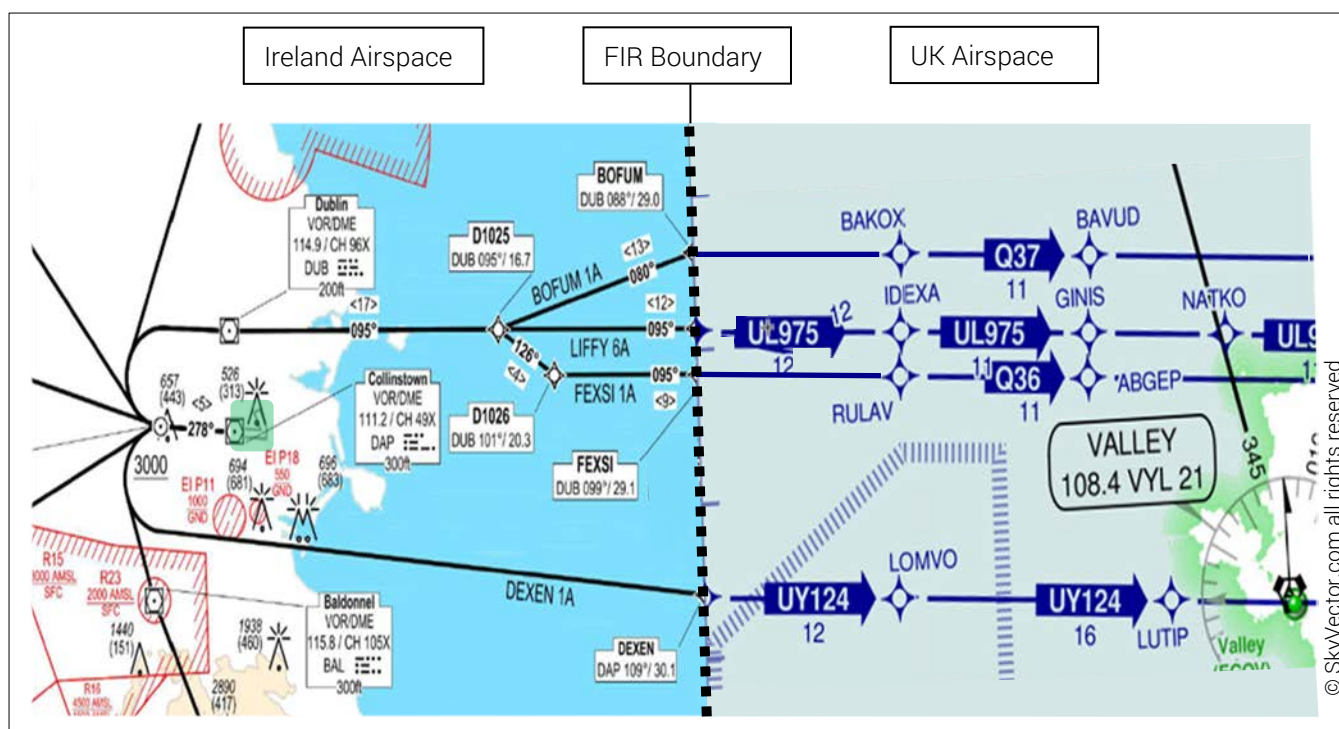
Option 1 has been appraised in more detail; this can be found in the Stage 3 Full Airspace Change Options and Appraisal document (Ref 7). This option requires minimal changes to the Isle of Man (IoM) airspace, with no new controlled airspace (CAS) or changes to low-level flightpaths.

This is considered a Level 2C airspace change as it only affects flights above an altitude of 7,000 ft and/or over the high seas. This proposal is designed to provide a seamless interface between new SID's from Dublin and ATS routes Q36 and Q37, a reduction in flight planned fuel uplift, an increased predictability of SID allocation for aircraft departing from Dublin and an extension of the existing systemisation within the IoM sector.

In the unlikely event that there are unexpected issues caused by this proposal, reversion to the pre-implementation state would be possible as the proposed changes do not introduce any new CAS or interfere with any current ATS routings.

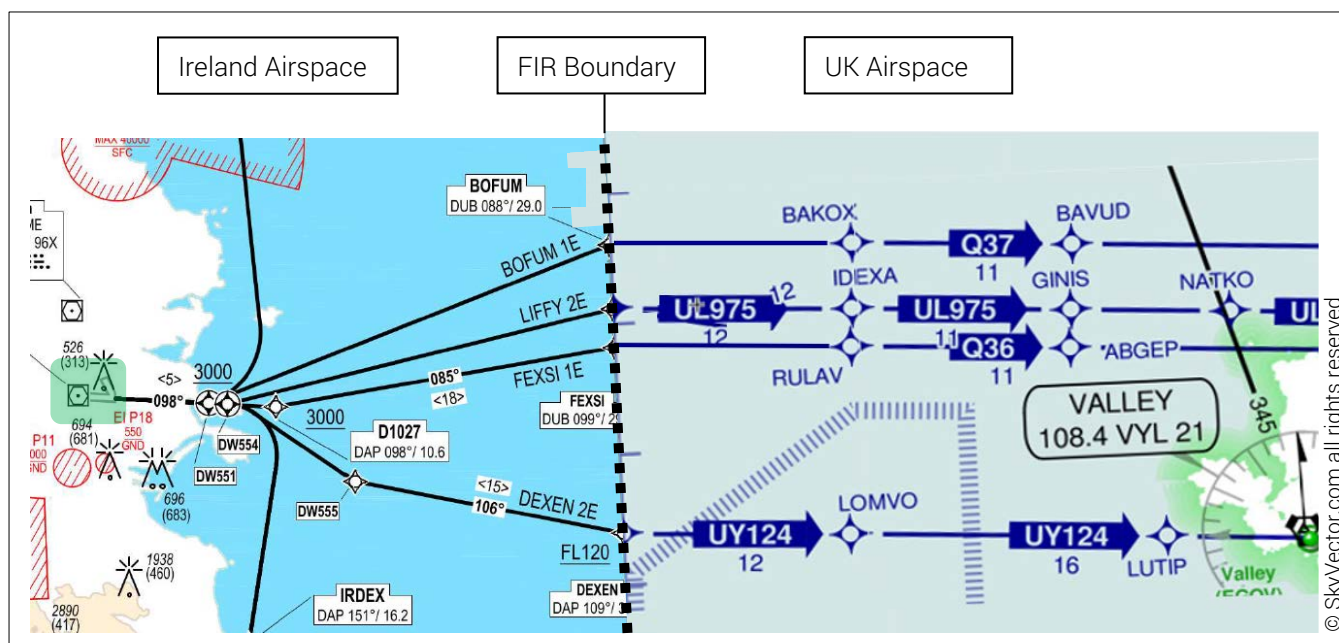
### 4.3 Proposed Changes

Option 1 proposes to realign (straighten) the Air Traffic Service (ATS) routes Q36/ Q37 from BAKOX and RULAV to the FIR boundary between UK and Irish airspace. Two new COP's, BOFUM and FEXSI, will be implemented on the FIR boundary, North and South of LIFFY. These have been created and reserved by the IAA, as the end points of the new SID's serving the proposed Dublin Airport dual runway configuration. The proposed SIDs for Runway 28L and 10R (the existing runway) are shown in Figures 3 and 4 respectively. The SIDs serving the new runway have not yet been formalised but it is anticipated that they will join the shown SID's at common points before diverging to the new COPs.



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**Figure 3:** Airspace Design Concept Option 1 – Dublin airport, highlighted green, departures Runway 28L aligning with new COPs.



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**Figure 4:** Airspace Design Concept Option 1 – Dublin airport, highlighted green, departures Runway 10R aligning with new COPs.

## 4.4 Benefits

It is expected that by implementing the changes outlined in this ACP there will be an environmental benefit resulting from a net reduction in CO<sub>2</sub> emissions per flight, enhanced safety achieved by improved

systemisation within the IoM sector, increased predictability of SID allocation for Dublin departures with a seamless interface between Q36 and Q37, as well as being able to cater for the expected growth of traffic from Dublin airport following the opening of the 2<sup>nd</sup> runway at Dublin airport.

#### **4.5 Dependencies**

The changes outlined in this ACP are dependant on the IAA implementation of new SIDs serving Dublin Airport following the implementation of their second runway (EIDW, 28R, 10L). This change is coordinated with the IAA to run parallel to the implementation of Dublin's new Runway and will provide seamless integration of their proposed new SIDs with the UK ATS route network. The implementation date of the proposed changes, will need to precede the IAA's introduction of the new SIDs serving the 2<sup>nd</sup> runway at Dublin, will be not before February 2021.

## 5. Environmental Impacts

### 5.1 Environmental Assessments

The NATS analytics team have completed a full environmental analysis on the proposed changes here. Table 2 compares the change in Fuel burn and CO<sub>2</sub> emissions for traffic departing Dublin routing Q36/ Q37 via LIFFY with traffic which has routed via the new COPs, FEXSI and BOFUM for the years 2019 and 2031.

Savings Type	2019		2031	
	Change in fuel per year (Tonnes)	Change in CO <sub>2</sub> per year (Tonnes)	Change in fuel per year (Tonnes)	Change in CO <sub>2</sub> per year (Tonnes)
Enabled Savings	-54	-169	-133	-424
Fuel Uplift	-1	-4	-3	-9
Total Savings	-55	-173	-136	-433

**Table 2:** Fuel burn and CO<sub>2</sub> forecast changes

This analysis concluded that there would have been a saving of 55 T of fuel and a reduction 173 T CO<sub>2</sub> emissions *per annum*, had this routing been available in 2019. It predicts a further saving of 136 T fuel and reduction of 433 T CO<sub>2</sub> emissions *per annum* by the year 2031.

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<sub>2</sub> as the measure) and is included in the full options appraisal document.

#### Traffic forecasts

Following the implementation of the second runway at Dublin Airport, departures numbers utilizing Q36/ Q37 are predicted to increase from 49451 per annum to 76593 per annum in 2031.

## 6. Design Evolution and Considerations

UK RNAV 1 ATS Routes Q36 and Q37 were introduced in November 2017 as part of the PLAS IOM ACP. At that time the IAA requested that these routes terminate at LIFFY so that the then current SIDs and STARs serving Dublin airport could remain unchanged. It was envisaged that when the 2<sup>nd</sup> runway at Dublin was brought into service, new SIDs and STARs would be required and new COP's could be introduced to better align the UK ATS route structure with a parallel runway operation at Dublin. Dublin runway 2 (EIDW, 28R, 10L) is due to enter service October 2021.

## 7. Consultation Timeframe

The timeline for this proposed airspace change is fixed by an agreed target implementation date of 25<sup>th</sup> February 2021. This fits in with the overall NATS change programme including target AIP and AIRAC dates.

Typically, an airspace change consultation would have a 12-week duration. However, to remain in agreed ACP timeline dates in addition to NATS perceiving the impact to stakeholders to be very low, we believe a reduced consultation period is proportionate for this proposal. We are therefore requesting a consultation period of 6 weeks.

Subject to passing the consult gateway, NATS intend to commence the consultation on 6<sup>th</sup> April 2020 and subsequently close it on the 18<sup>th</sup> May.

At the end of the requested 6-week consultation deadline the responses will be analysed and themed; any late responses may not be included in the subsequent analysis. This is dependent on CAA approval for a reduced consultation.

All of the key stakeholders (listed in Annex A) who were engaged with during Stages 1-2, will be targeted and asked to respond to the consultation.

The MoD is a mandatory stakeholder in all airspace changes, and will be consulted as a key consultation stakeholder via DAATM as per standard airspace consultations. The MoD has been specifically been engaged in relation to the impact of the proposed changes would have on military operations in the North Wales Military Training Area (NWMTA).

## 8. Consultation Participation

### 8.1 How to Respond

This consultation commences on Monday 6<sup>th</sup> April 2020 and ends on Monday 18<sup>th</sup> May 2020; a period of 6 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 guidelines.

As most people have internet access, NATS is conducting this consultation primarily via the CAA online [consultation portal here](#). We will not pre-print a large number of copies of the consultation document, However requests for a paper copy received by post will be accommodated.

We will supply a paper copy of the consultation document under the following conditions:

- Request to be sent in writing to *NATS Airspace Consultation (Ref Q36/Q37), Mailbox 11, 4000 Parkway, Whiteley, Fareham, Hampshire, PO15 7FL* and received at least fourteen days before the consultation closes.
- One copy of the consultation document will be posted in return no later than fourteen days before the consultation closes.
- We cannot accept responsibility for errors in the postal service where requests do not reach us, or where our return post does not reach the recipient.
- Due to the on-going Covid-19 crisis there is disruption to company mail deliveries. As such forwarding of any postal responses to the appropriate staff cannot be guaranteed. Hence it is strongly recommended for submissions to be made online.

Should the stakeholder require acknowledgement of receipt, we encourage the use of a recorded delivery service, or to enclose a self-addressed envelope stamped with adequate postage for a receipt slip - proof of postage is not proof of delivery and we will be otherwise unable to acknowledge receipt of responses. We will input all paper responses manually into the CAA online consultation portal.

This consultation document and links to all supporting documents can be found on this online consultation portal. It is also where responses to this consultation can be submitted through a feedback questionnaire. On submission, this is automatically 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:
  - o Realignment of Q36 and Q37 to the FIR boundary linking to the COPs (determined by the routing of the new SIDs for Dublin airports second runway)
- 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.

## **8.2 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 ACP. The ACP will detail the final design being submitted, expected 18<sup>th</sup> June 2020, and make reference to changes that have been made to take account of consultation feedback.

## 9. Reversion Statement

9.1 In the unlikely event that there are unexpected issues caused by this proposal, reversion to the pre-implementation state would be possible as the proposed changes do not introduce any new CAS or interfere with any current ATS routings.

## 10. Next Steps

There is one design option being proposed for this airspace design as described in section 4.3.

Please give your feedback to this proposal via the Consultation Portal. Once consultation is concluded and all feedback is collated the proposal will be updated accordingly and an ACP submitted to the CAA. If this proposal is approved by the CAA the proposed changes will be implemented not before 25<sup>th</sup> February 2021.

## 11. Annex A – List of Stakeholders

### Key Stakeholders:

IAA

MoD Ministry of Defence via Defence Airspace & Air Traffic Management (DAATM)  
MoD RAF Valley  
BAE Warton

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

### Additional Stakeholders:

NATMAC (GA community representatives)  
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)

Isle Of Man Civil Aviation Authority

## 12. Glossary

A4A	Airspace 4 All
ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information and Control Cycle
AOPA	Aircraft Owners and Pilot Association
ARPAS	Association of Remotely Piloted Aircraft Systems
ATS	Air Traffic Service
BA	British Airways
BALPA	British Airline Pilots Association
BBGA	British Business and General Aviation Association
BGA	British Gliding Association
BHA	British Helicopter Association
CAA	Civil Aviation Authority, the UK Regulator for Aviation Matters
CAS	Controlled Airspace, Generic term for the airspace in which an air traffic control service is provided as standard; note that there are different sub classifications of airspace that define the particular air traffic services available in defined classes of controlled airspace.
COP	Co-Ordination Point, an entry point into a neighbouring FIR
CTA	Control Area
DAATM	Defence Airspace and Air Traffic Management
FIR	Flight Information Region
IAA	Irish Aviation Authority, the Irish Regulator for Aviation Matters
IoM	Isle of Man
LAA	Light Aircraft Association
MoD	Ministry of Defence
NWMTA	North Wales Military Training Area
SARG	Safety and Airspace Regulation Group
SID	Standard Instrument Departure, A published route with climb for aircraft to follow straight after take-off
STAR	Standard Terminal Arrival Route, The published routes for arriving traffic. In today's system these bring aircraft from the route network to the holds (some distance from the airport at high levels), from where they follow ATC instructions rather than a published route. Under Performance Based Navigation it is possible to connect the STAR to the runway via a Transition.

End of document