



Consultation Document for the
Introduction of PBN Approaches

CAP1616 Stage 3



ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
AMS	Airspace Modernisation Strategy
ANG	Air Navigation Guidance
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATM	Air Traffic Management
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CDA	Continuous Descent Arrival
CoDA	City of Derry Airport
DfT	Department for Transport
DME	Distance Measuring Equipment – a radio navigation aid used by pilots
eAIP	Electronic Aeronautical Information Publication
FA	Final Approach
FOA	Full Options Appraisal
GA	General Aviation
GNSS	Global Navigation Satellite System
IAA	Irish Aviation Authority
ICCAN	Independent Commission on Civil Aviation Noise
IFP	Instrument Flight Procedures
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IOA	Initial Options Appraisal
LNAV	Lateral Navigation
LPV	Localiser Performance with Vertical Guidance
MA	Missed Approach
MAP	Missed Approach Procedure
MoD	Ministry of Defence
NATS	Primary UK Air Navigation Service Provider
PBN	Performance Based Navigation
RNP	Required Navigation Performance
RWY	Runway
SoN	Statement of Need
VFR	Visual Flight Rules
VNAV	Vertical Navigation
WebTAG	UK Government Online Transport Analysis Guidance Tool

City of Derry Airport (CoDA) is located seven miles northeast of Derry/Londonderry and serves as the main gateway for the entire North-West of Ireland. It provides a vital air access link for the local community and performs a pivotal role in the economics of the region.

The past decade has seen a revolution in the European aviation market; 'Open Skies', globalisation and the advent of low-cost carriers has resulted in a proliferation of air travel. The low-cost model has provided a safe and affordable alternative to the traditional full-service carriers, opening up the market to a new generation of traveller. CoDA has benefited from this proliferation and now provides an essential link to the UK and Ireland. It is expected that the recent downturn caused by the COVID-19 pandemic will recover and therefore the long-term demand facing the sector is expected to remain.

CoDA is undertaking an Airspace Change Proposal (ACP) to introduce satellite-based approach procedures which will utilise Performance Based Navigation (PBN), meet the governments [Airspace Modernisation Strategy](#) (AMS), and provide a contingency for the existing ground based navigational aid infrastructure. As part of this ACP, CoDA is proposing the following:

- To introduce satellite-based (PBN) approaches to RWY 08 & RWY 26.
- To introduce satellite-based (PBN) direct arrival procedures to compliment the above.
- To introduce satellite-based (PBN) Missed Approach Procedures, Aircraft Holds and holding procedures.

As much as possible, the aim is to design PBN approaches and arrival procedures to replicate the existing routes which would result in little or no noticeable change to stakeholders.

This airspace change proposal is not proposing any changes to the way in which aircraft depart from CoDA

What we are asking you

As part of this Consultation, we are asking for your feedback on our **one** proposed Airspace Change Option, and its associated **three** missed approach options.

This document, outlines the work that has been undertaken to reach these options before providing an overview of the benefits and costs of each.

There are two further documents that are published alongside this Consultation Document:

Full Options Appraisal

The Full Options Appraisal provides detailed technical information about our Airspace Change Options and explains the methodology and outcomes of the appraisal.

Summary Document

The document provides a quick read summary of this Consultation document.

Airspace Modernisation

The UK's airspace is some of the busiest in the world. The Department for Transport (DfT) has notified aviation stakeholders that, with the demand for aviation forecast to continue growing, delays and environmental impacts are expected to increase if the UK's airspace is not upgraded to introduce additional capacity. In response, the Government tasked the CAA to develop the [UK Airspace Modernisation Strategy \(AMS\)](#), which was published in December 2018 and describes the changes that the industry should make to meet the growing demand from aviation in a safe, efficient and environmentally sustainable way.

The overall programme of changes required to implement the AMS is considered one of the most significant airspace and air traffic management (ATM) developments ever undertaken. Some of the most important changes described in the AMS concern the widespread adoption of satellite-based navigation technology (known as Performance based Navigation or PBN).

Performance-Based Navigation (PBN)

The introduction of PBN is the key to achieving airspace modernisation. PBN improves the accuracy of where aircraft fly by moving away from outdated conventional navigation using ground-based beacons, to modern satellite navigation. PBN is being introduced across the world. The new technology allows more flexible positioning of routes and enables aircraft to fly them more accurately. This helps improve operational performance and reduce delays.

As part of the European Union, the UK was required to follow regulation [EU 2018/1048](#), which lays down airspace usage requirements and operating procedures concerning performance-based navigation and describes the wider implication for UK airports and airfields. To comply with the EU regulation, specifically AUR.PBN.2005, the City of Derry Airport was to introduce PBN by 2024.

The EU (Withdrawal) Act 2018 converts existing EU law into UK law and preserves existing UK laws that implement EU obligations. CoDA understands that the AUR.PBN.2005 requirement was not incorporated into that Act, but CoDA still wish to implement PBN procedures owing to the significant operational resilience they bring.

In order to implement PBN procedures, CoDA is required to follow the CAA's CAP1616 regulatory guidance. Further information about this process is on the next page.

CAP1616

In December 2017 the Civil Aviation Authority (CAA) published [CAP1616 Airspace Design: Guidance](#) on the regulatory process for changing airspace design, including community engagement requirements. The guidance sets out the process for the airspace change process, which a change sponsor of any permanent change to the published airspace design must follow. The airspace change process is split into 7 Stages;



CAP1616 - 7 Stages

This consultation is part of Stage 3 of this process; details about Stage 1 and Stage 2 are shown on the following pages.

CoDA Airspace Change Proposal

This CoDA Airspace Change Proposal is required to follow the CAP1616 process detailed in the section above. The table below summarises the CAP1616 stages already undertaken for this ACP and the stage where we are at now, providing links to previous submission documents with further information.

Airspace Change Stage	Summary	Link to Documents (Also available on the ACP portal)
Stage 1A	<p>CoDA submitted a statement of need (SoN) to the CAA. The SoN explained that aircraft currently operate using the Instrument Landing System (ILS) when arriving at Derry and this is a ground based navigational system. CoDA would like to introduce satellite based PBN approach procedures for contingency purposes that, as far as practicable, replicate the existing procedures at EGAE.</p> <p>To ensure that the required contingencies are available, CoDA intends to introduce GNSS approach procedures (now known as RNP Approach) to both Runway 26 and Runway 08 as follows:</p> <ul style="list-style-type: none"> • Introduction of PBN approaches to RWY 08 and RWY 26; • Introduction of PBN direct arrival procedures to compliment the above; • Introduction of PBN Missed Approach Procedures, Aircraft Holds and holding procedures. 	<p>Full Statement of Need</p>
	<p>CoDA participated in an assessment meeting with the CAA on the 20th March 2019 as part of Step 1A of the CAP1616 process. The purpose of the assessment meeting is for the change sponsor to present and discuss their SoN and to enable the CAA to consider whether the proposal falls within the scope of the formal airspace change process.</p>	<p>Assessment meeting minutes</p>
Stage 1B	<p>At Stage 1B CoDA developed a set of design principles with identified Stakeholders.</p> <p>The aim of the design principles is to provide high-level criteria that the proposed airspace design options should meet. They also provide a means of analysing the impact of different design options and a framework for choosing between or prioritising options.</p> <p>The final design principles outlined within the Stage 1B submission, and also shown here in this document, were given a priority order as this will help with the comparison of different design options developed at Stage 2 of the ACP process.</p>	<p>Stage 1B Design Principles Submission Report</p>

Continued on next page

CoDA Airspace Change Proposal

Airspace Change Stage	Summary	Link to Documents (Also available on the ACP portal)
<p>Stage 2A</p>	<p>Stage 2A requires change sponsors to develop and assess options for the airspace change.</p> <p>In Stage 2A, we first developed a comprehensive list of options that address the Statement of Need and that align with the design principles from Stage 1.</p> <p>We then shared those options with our Stakeholder representatives (the same ones engaged with on the Design Principles). Feedback from the engagement could then be used to generate further options where proposed, or feedback used to understand their impacts and feed into the Design Principle Evaluation.</p> <p>Finally, we qualitatively assessed all options developed against the Design Principles and produced a Design Principle Evaluation. This evaluation allowed us to discount certain options.</p> <p>The remaining options following the Design Principle Evaluation were grouped together into ‘Airspace Design Options’ and were brought forward to Stage 2B.</p>	<p>Stage 2A Design Principles Evaluation</p>
<p>Stage 2B</p>	<p>At Stage 2B an Airspace Change Sponsor is required to undertake an Initial Options Appraisal (IOA) of the airspace change options which proceed from Stage 2A.</p> <p>The IOA document initially describes the options under assessment and the baseline option, followed by explaining the methodology used to assess each option, and then the IOA outcome. At the end of the document we explain, based on the IOA, the options which we intend to take forward to Stage 3 and our preferred option.</p>	<p>Stage 2B Initial Options Appraisal</p>
<p>Stage 3</p>	<p>At Stage 3A, an Airspace Change Sponsor is required to plan for a stakeholder consultation and engagement by preparing a Consultation Strategy, Consultation documents, and a Full Options Appraisal (FOA). This is where we are now.</p> <p>This document is the main Consultation Document. It describes how we have developed our Airspace Change Options, what options form part of this consultation, and how to respond to our consultation. It also provides an easy to understand summary of the analysis undertaken as part of our Full Options Appraisal, outlining the benefits and impacts of each option and how this compares against the ‘do nothing’ current day.</p>	<p>Stage 3 Consultation Strategy</p> <p>Stage 3 Consultation Document (This document)</p> <p>Full Options Appraisal</p>

Reversion Statement

CAP1616 requires sponsors to be clear with stakeholders the extent to which the proposed airspace change once implemented is reversible if it does not meet the objectives it’s designed to achieve as part of the post-implementation review at Stage 7. As this ACP looks to introduce RNP approaches alongside the existing conventional procedures, it is possible for this change to be reversed if required. For more details, please see the FOA.

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This ACP aims to introduce Performance Based Navigation (PBN) arrival procedures which replicate the existing routes and/or profiles actually flown as closely as possible. We therefore first need to understand how aircraft arrive at CoDA today.

CoDA has one main runway for Instrument Flight Rules (IFR) arrivals which, depending on the direction of operations, is either called Runway 08 or Runway 26. In the summer of 2019, around 27% of arrivals operated on Runway 08 (landing from the west towards the east, known as 'Easterly operations'), and 73% of arrivals operated on Runway 26 (landing from the east towards the west, known as 'Westerly operations'). For safety and performance reasons, aircraft take-off and land into the wind and therefore the wind direction is the key reason for which direction is used for landing.



Runway use (arrival direction) during summer 2019

Flight Paths

The figures in the following sections illustrate the existing Instrument Flight Procedures (IFPs) that are published today for aircraft arriving at CoDA. These have been generated using procedure charts published on the [eAIP](#) (Electronic Aeronautical Information Publication).

Due to the way aircraft are directed by Air Traffic Control (ATC) when arriving at Derry, and the accuracy of the navigation infrastructure available, aircraft do not necessarily follow the exact procedure centreline as shown within the charts published in the eAIP. We have therefore also included a section of figures which show publicly available flight track data overlaid over the existing published procedures.

For more information about our baseline year, please see the [movement numbers section](#) and for more information about the track data we have available for CoDA, please see our [Flight Track data section](#).

Final Approach and Missed Approach

A final approach procedure instructs a pilot on how to align with the runway and descend for landing using the navigation aids associated with the procedure. There are currently 8 published final approach procedures at CoDA which utilise various ground-based navigation aids, including the Instrument Landing System (ILS), Localiser (LOC), Distance Measuring Equipment (DME) and a Non-Directional Beacon (NDB).

Wherever possible, the final approach is aligned with the extended centreline of the runway. Due to the location of the localiser and NDB on the aerodrome, runway 08 has an offset ILS approach as well as an offset NDB approach; this means that the aircraft are initially slightly offset from the extended runway centreline when they fly an approach to runway 08. As aircraft descend towards the airport, once the pilot can see the runway, a small adjustment to the aircraft's course is made to align with the runway before landing.

A final approach procedure always has an associated missed approach procedure; this is flown when an aircraft is unable to land and the approach cannot be continued. It provides a procedure to reconnect to the final approach to perform another landing. As missed approaches are only operated on rare occasions where it is not possible to land, they are flown very infrequently (around 5 per month on average at the airport, the majority of which are flown for training purposes).

On the figures opposite, the published final approach procedures are shown in white and the missed approach procedures are green. Air Traffic Control (ATC) report that when operating a missed approach on runway 26, aircraft are often directed to turn left (to the south) before re-positioning for another approach.



Runway 08 Final Approach and Missed Approach Procedures



Runway 26 Final Approach and Missed Approach Procedures

Holds

Aircraft are sometimes put into holds or holding patterns whilst they are waiting to land. Holds are typically used when there is bad weather, at the request of the pilot, or if there are multiple aircraft waiting to land and ATC need to delay an aircraft whilst another is landing.

CoDA has holds available at four locations shown in the figure below. The holds are linked to the final approach by 'direct arrival' procedures as shown in the bottom figure. There is more information about direct arrivals in the next section. These holds are defined by conventional navigation but are already flown as area-navigation (RNAV) holds which are a type of performance-based navigation. Therefore, whilst this airspace change will formally define the same holds as RNAV hold, this will not change the tracks over the ground flown of holding aircraft.

ATC report that the most utilised holds are the overhead hold (above the aerodrome (EGT)), COLRE and LUNEX holds.



Current holds at CoDA



Current holds at CoDA with connected procedures

Direct Arrivals

The published direct arrivals shown in the figures below are used by ATC when there are multiple aircraft arriving around the same time, to accommodate some delay and ensure safe spacing between aircraft. Direct arrivals utilise three holds that aircraft are directed to before being cleared to fly along an arc that is determined by the distance from navigation aid called a DME (Distance Measuring Equipment) before landing.

CoDA ATC report that aircraft are typically routed directly to LUNEX when on easterly operations (runway 08) or COLRE when on westerly (runway 26). ATC most often clear arrivals straight onto the final approach procedure however they may instruct aircraft to stay in the holds, in order to keep the required procedural separations (spacing between aircraft) before clearing them to land. The DME arc is also sometimes used as a way to delay arrivals and therefore ensure safe separation.



Direct Arrival Procedures



CoDA Holds, Direct arrivals and final approach procedures.

All Approach Procedures with Flight Track Data

The figures on the following page show all of the published arrival procedures (direct arrivals and final approach) for runway 08 and runway 26 overlaid with flight track information. These drawings of published procedures have been generated using procedure charts published on the eAIP (Electronic Aeronautical Information Publication).

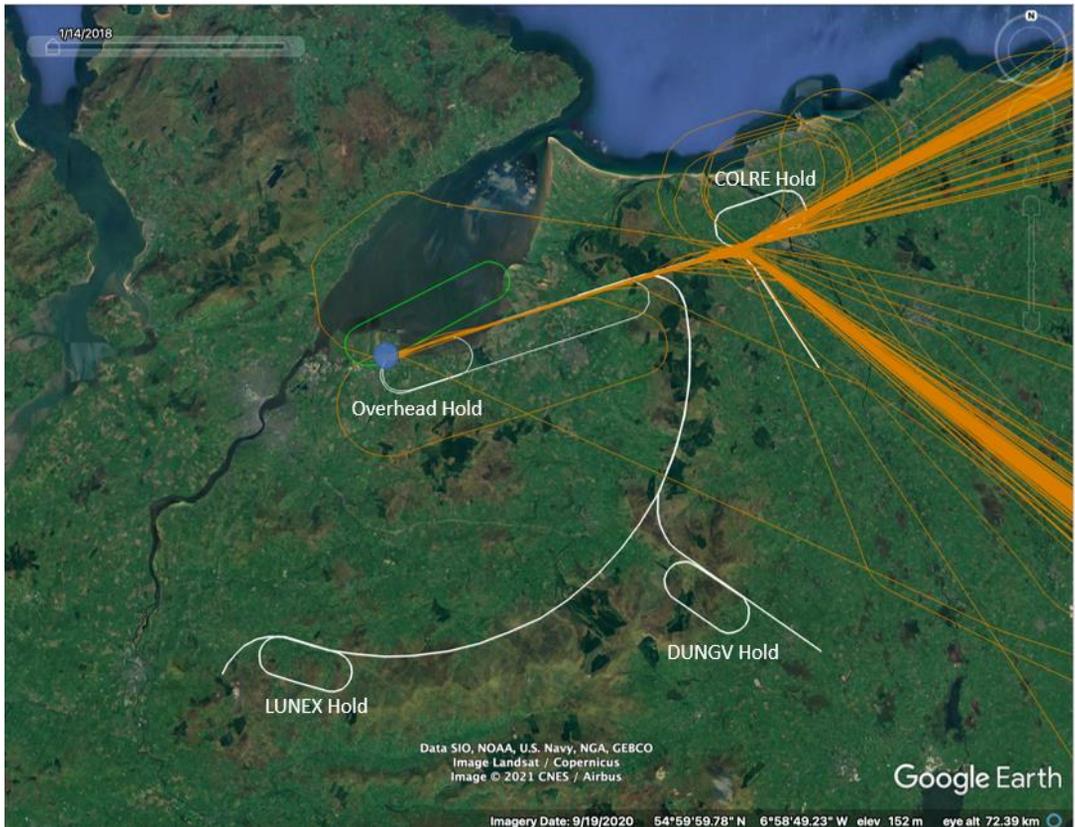
Radar is not available at CoDA so we have used publicly available information from a website called Flightradar24 to generate a sample of tracks from commercial and business flights. It is important to note that Flightradar 24 is not as accurate as actual radar and doesn't track all aircraft, only those aircraft that carry certain equipment on board. Due to this, the sample used is taken between 2018 - 2020 in order to provide a more comprehensive overview of the typical tracks over the ground flown by aircraft in relation to the procedures that are published.

As outlined in the direct arrivals section above, CoDA ATC report that the full direct arrivals arc is rarely used and aircraft are typically directed straight to LUNEX and COLRE before either holding, or directly joining the final approach. The flight track information shown in the figures supports the information provided by ATC, as it shows that most aircraft take a more direct course to the final approach, and very few aircraft are flying the full direct arrivals via the DME arc (especially for runway 26) or entering the holding patterns.

All Approach Procedures with Flight Track Data.



All Runway 08 arrival procedures overlaid with flight track data



All Runway 26 arrival procedures overlaid with flight track data.

Airspace

The airspace around CoDA borders UK and Irish airspace. The majority of the procedures are within UK airspace, however parts of the approach procedures and the direct arrival for runway 08 are within the Irish Shannon Flight Information Region (FIR).

The Irish Aviation Authority (IAA) requires Instrument Flight Procedures (IFPs) to be contained within their controlled airspace and therefore parts of the existing 08 procedures that fall within Irish Airspace are contained within Class C airspace as shown west of the airport on the figure below. The base of this airspace varies between CTA 1 (1500 – Flight Level (FL)75), CTA 2 (2000-FL75) and CTA 3 (3000 - FL75).

All parts of the procedures that are contained within UK airspace are within Class G airspace. CoDA's Aerodrome Traffic Zone (ATZ) is wholly contained within UK, Class G airspace.

The figure below takes the procedure centrelines from the figures shown in the previous sections and overlays them on a chart showing the airspace around CoDA. For full details of the controlled airspace around Derry, please refer to the published charts in Part 3 EGAE AD 2.24 of the [eAIP](#).



Airspace around CoDA with indicative arrival procedures

Airspace

The [eAIP](#) (ENR 5.1) also contains further information about the Danger Area EG D505 shown in red in the north east corner of the previous figure. This operates from SFC to 2000 and occasionally up to 6500ft.

To the east of the aerodrome, there is a private airfield site at Movenis, with a parachute drop zone located overhead Movenis. A separate Drop Zone site is also located at Killykergan for the use of Movenis students.

Ulster Gliding Club operate out of Bellarena airfield to the north east of the aerodrome. Gliding activity often occurs to the south of Bellarena in the vicinity of the high ground at Binevenagh adjacent to the CoDA Runway 26 ILS centreline. Ulster Gliding Club have a contingency operating site at Benone Strand, 3nm East of the Bellarena site.

Causeway Airfield is situated 20nm east of CODA. Causeway Airfield operates microlight aircraft for private flying and training.

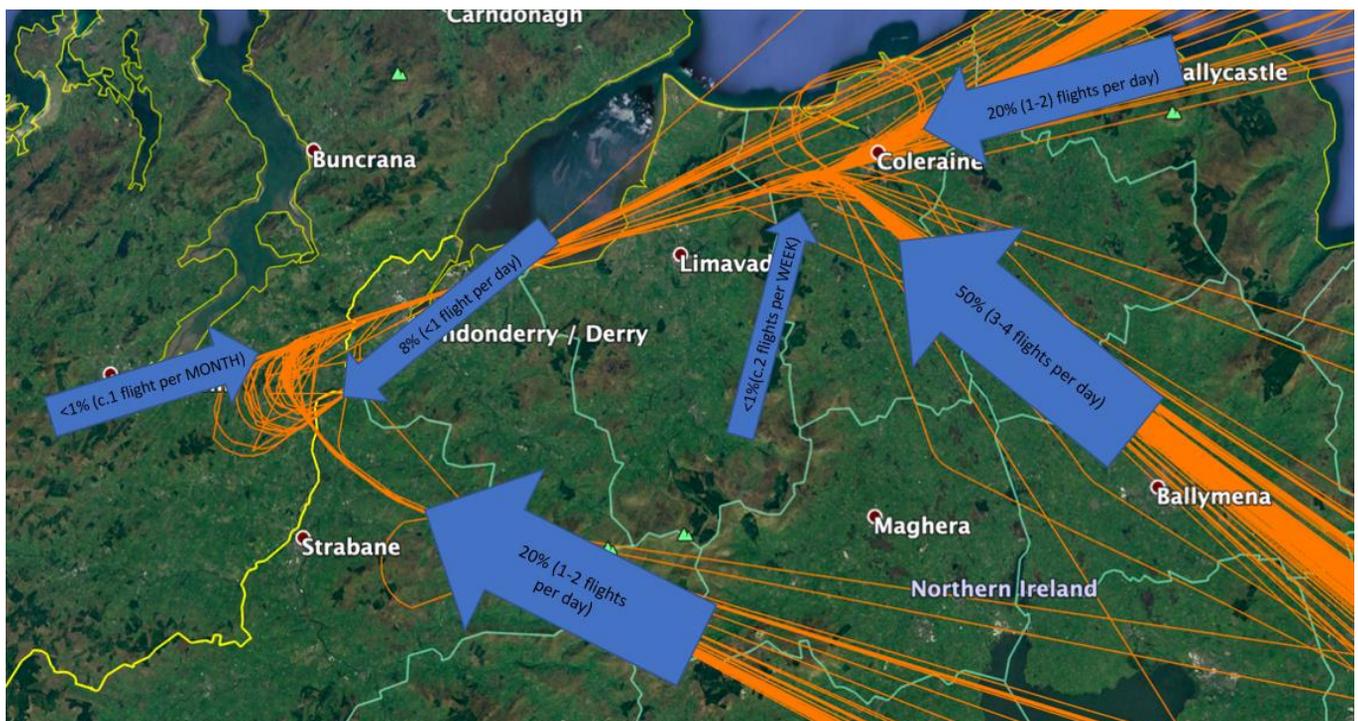
The disused aerodrome of Ballykelly is 5 nm to the east-north-east of the aerodrome, under the runway 26 extended centerline.

In recent years, there has been significant increase in the number of wind farm developments surrounding CoDA. Although these developments are not a typical 'airspace user' they do have the potential to influence airspace design and they have therefore been considered throughout the process.

Movement numbers

As part of the Initial Options Appraisal and Full Options Appraisal CAP1616 requires airspace change sponsors to analyse movement data for a 92-day summer period for the purposes of environmental analysis. We have therefore based the below data on the 92-day period between 16 June and 15 September in 2019. We have selected 2019 as our baseline year, due to the impacts of COVID in 2020. There is more information about this within our Full Options Appraisal document.

The figure below shows a sample of aircraft paths overlaid with information about the average percentage of traffic that arrive from that direction based on the 92 day summer period data. It shows Instrument Flight Rules (IFR) flights only, as these are the flights that are within the scope of this ACP.



Average arrival directions across 2019 summer period

More information about movement numbers and our baseline year are included in our Full Options Appraisal document.

PBN and RNP Approaches

PBN improves the accuracy of where aircraft fly by using modern satellite navigation rather than outdated ground-based navigation aids (conventional navigation). All of CoDA's flight paths described in the previous section use conventional navigation.

The CoDA ACP is looking to introduce PBN Required Navigation Performance (RNP) Approaches, a type of PBN, that replicate the existing conventional procedures flown today.

The RNP Approaches developed as part of this ACP are intended to support the following types of PBN approach:

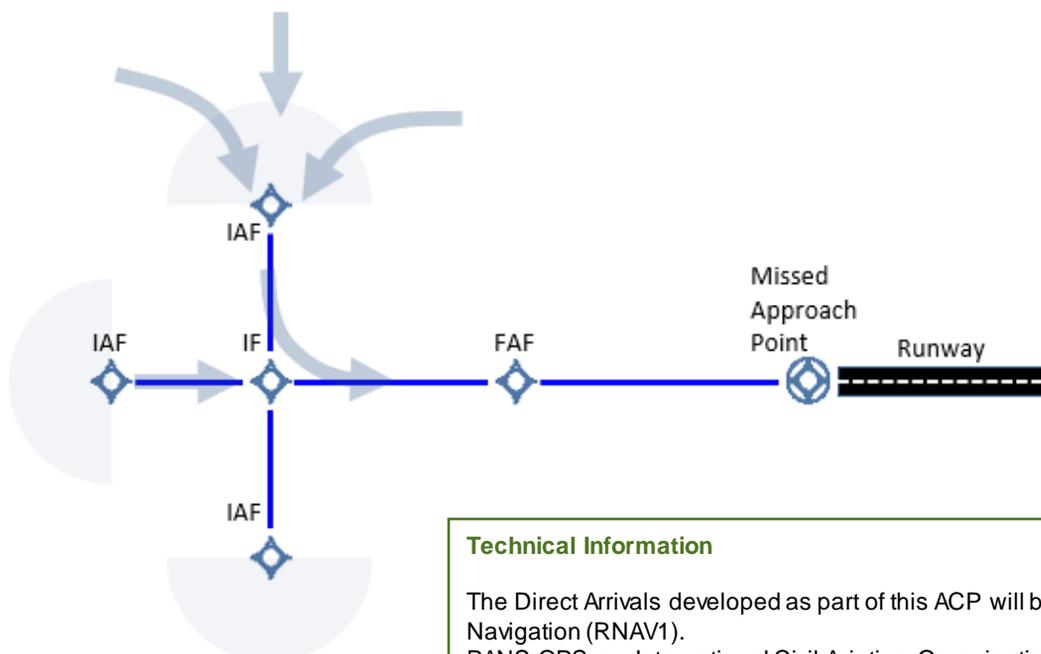
- LNAV (Lateral-NAVigation)
- LNAV/VNAV (Lateral-NAVigation/Vertical-NAVigation)

RNP approaches use a series of satellite-based waypoints which aircraft follow to fly the overall Instrument Approach Procedure (IAP). Aircraft join the IAP at the Initial Approach Fix (IAF) waypoint before proceeding to the Intermediate Fix (IF), the final approach fix (FAF) and then descending to either land or undertake a missed approach.

PBN offers different types of waypoint which mean that sometimes aircraft predict the turn (flyby) before a waypoint rather than navigating directly overhead the waypoint before turning (fly over).

When designing RNP approaches, certain layouts of the waypoints are considered in order to optimise arrivals. These are often referred to as T-bars and Y-bars. The 'bars' of these layouts can be designed to suit the requirements of the approach and they do not have to be symmetrical, although the layouts do have to follow the rules contained within PANS-OPS.

An illustrative example of a T-Bar layout is shown in the figure. The light blue semi circles show the directions from which aircraft can join the Initial Approach Fix (IAF). Aircraft then follow the waypoints which are designed, where possible, to allow for continuously descent before landing.



Technical Information

The Direct Arrivals developed as part of this ACP will be Area-Navigation (RNAV1).
PANS OPS are International Civil Aviation Organisation (ICAO) rules used for designing instrument approach and departure routes.

Expected PBN Route Usage

The proposed RNP approach procedures are intended to be published alongside the existing ILS procedures used by IFR flights. Even with RNP approaches available, most arrivals will still elect to use the existing ILS procedures. As such, **we anticipate that a maximum 25% of IFR flights would use these approaches. Based on 2019 numbers this equates to around 1-2 flights per day. It will most likely be a lower number than this.**

As part of our Full Options appraisal (FOA) we are required to provide data and analysis for the year of implementation, and a 10 year forecast following implementation. For the CoDA ACP, if successful, we would expect to implement in 2022 and therefore our 10-year forecast year would be 2032. The table below shows the forecast data.

The proposed changes do not increase capacity or result in an increase in aircraft arriving at the airport; the main focus of this ACP is to meet the governments Airspace Modernisation Strategy (AMS) and provide a contingency for the existing ground based navigational aid infrastructure.

As it does not increase capacity or the number of movements at CoDA the information provided in the previous figure regarding the % split of aircraft directions will apply throughout all the assessment years, as well as the high-end estimate of 25% of IFR flights using the RNP approaches.

Year	2022 Implement	2032 10 year
Forecast Total Movements per year (Arrivals and Departures)	3414	7159
PBN arrivals (25% of total arrivals high-end estimate)	427	895
Average PBN <u>per day</u>	1-2 (On average less than 1 per day on runway 08 and less than 2 per day on runway 26)	2-3 (On average less than 1 per day on runway 08 and less than 3 per day on runway 26)
Total estimated missed approach <u>per year</u>	66	138
Average PBN missed approach <u>per year</u>	17 (Around 5 <u>per year</u> on runway 08 and around 12 per year on runway 26)	35 (Around 9 <u>per year</u> on runway 08 and around 26 per year on runway 26)

The increase in forecast movements between 2022 and 2032 is based on CoDA's highest growth scenario from our long term business plan which is driven by forecast growth in charter flights and private business aviation. As stated above, the ACP does not increase the number of arrival and departure movements at CoDA.

For more information regarding the expected PBN usage and future movement forecasts, please see our [Full Options Appraisal](#) documents

Stage 1A

Stage 1A of CAP1616 first requires Airspace Change sponsors to develop a statement of need. Our statement of need explained that we would like to introduce satellite-based approach procedures which will utilise Performance Based Navigation (PBN), meet the governments [Airspace Modernisation Strategy](#) (AMS), and provide a contingency for the existing ground based navigational aid infrastructure. As much as possible, the aim is to design PBN approaches and arrival procedures to replicate the existing routes which would result in little or no noticeable change to stakeholders. The full statement of need is available [here](#).

Stage 1B

Following the submission of the Statement of Need and an assessment meeting with the CAA, we progressed to Stage 1B where we were required to develop a set of Design Principles. Design Principles provide the criteria which airspace design options should meet and are used to assess options in the later stages of the CAP1616 process. We developed our design principles through engagement with stakeholders, including representatives from the Aviation Industry, NATMAC, CoDA based General Aviation (GA) and other airspace users, Ministry of Defence, Local Councils and AONBs.

The final list of design principles for the CoDA ACP are shown in the table below.

	Design Principle
1	The proposal must maintain a high level of safety for all airspace users
2	The proposal should avoid overflight of densely populated areas where possible ¹
3	The proposal must be in accordance with the Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it ²
4	The proposal should replicate the current tracks over the ground as much as possible, to avoid placing new flightpaths over areas not currently overflown
5	Minimise impact on other airspace users and limit any requirement for additional Controlled Airspace (CAS)
6	Improve operational efficiency and resilience
7	Design options will investigate approach angles greater than 3.0°, subject to Regulatory acceptance
8	Options should not increase and should aim to reduce the CO ₂ emissions of aircraft operating at CoDA.

¹ This is in line with the government's policy to limit and, where possible, reduce the number of people in the UK adversely affected by aircraft noise and the impacts on health and quality of life associated with it.

² This design principle is mandated by the CAA

Our [Stage 1B Submission document](#) has further information about how our design principles were developed and the stakeholder groups involved in the engagement.

Stage 2A

Our Comprehensive List of Options

At Stage 2A of the ACP, we developed a comprehensive list of options which addressed the statement of need and aligned with the design principles developed with our Stakeholders at Stage 1B. This comprehensive list of options were then shared with the same stakeholders engaged at Stage 1B, to ensure they were satisfied that the design options were aligned with the design principles and that we properly understood and accounted for their concerns, specifically related to the design options.

Details of our Comprehensive List of Options can be found on the CAA Portal [here](#).

Design Principles Evaluation

Following the stakeholder engagement, we undertook a Design Principles Evaluation. The Design Principles Evaluation involves taking all the options developed as part of the comprehensive list of options and qualitatively evaluating them against the Design Principles, to understand how they respond.

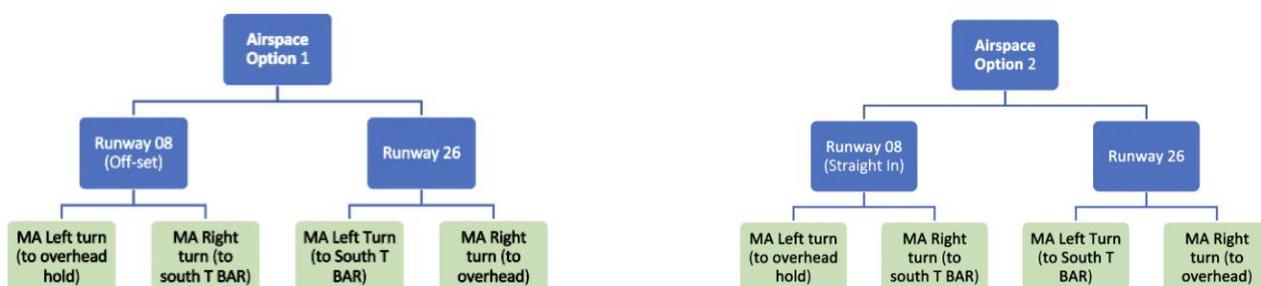
This helps to determine which options best meet the design principles and can therefore proceed to the next stage of the airspace change process.

Details of our Design Principles Evaluation can be found on the CAA Portal [here](#).

Stage 2B

Initial Options Appraisal

The next stage of the ACP process involved undertaking an Initial Options Appraisal (IOA) of the remaining options. In preparation for the IOA, we grouped the component parts we took forward from the DP evaluation into two airspace options; Airspace Option 1 and Airspace Option 2. Within each airspace option, there is a subset of missed approach options (two for each runway).



The Initial Options Appraisal demonstrated that there were very small differences between the two main options in terms of the benefits and impacts, and it would be valuable to analyse both in detail once the options have been developed into detailed IFPs. Throughout the IOA we indicated where we will build upon the qualitative assessment in order to quantitatively evidence potential benefits and impacts in the Full Options Appraisal.

We therefore choose to take both options, Airspace Option 1 and Airspace Option 2, and all associated missed approach options forward to Stage 3 of the CAP1616 process.

Stage 3

Instrument Flight Procedure (IFP) Development

As part of our Initial Options Appraisal (IOA), we explained that we had chosen to progress both airspace change options through to Stage 3, as the IOA had demonstrated that there were very small differences between the two options in terms of the benefits and impacts and it would be valuable to analyse both further. We therefore next turned to IFP Design development for the options.

When designing new procedures, UK CAA Approved Procedure Design Organisations (APDOs) follow the International Civil Aviation Organisation (ICAO) rules used for designing instrument approach and departure routes, which are outlined in a document called PANS-OPS.

On completion of Stage 2B, we considered further the technical detail of the two options and their associated sub-set of missed approach options with regards to PANS-OPS. Following the IFP development and analysis, Airspace Option 1 was discontinued as the off-set 08 RNP approach could not be developed to meet PANS-Ops criteria. One of the missed approach options (Runway 26 MA right turn) was also discontinued as it could not be replicated and it would require additional controlled airspace. There is detailed information about the work undertaken within our Full Options Appraisal document.

We also considered approach angles greater than 3.0° (the standard approach angle at CoDA) to understand the benefits and impacts of developing Airspace Option 2 to meet Design Principle 7: Design options will investigate approach angles greater than 3.0°, subject to Regulatory acceptance. We therefore reviewed the possibility of increasing the approach angle from 3.0° to 3.2° as there is an example of this already operating within the UK.

Our review found that due to the very low number of aircraft expected to operate RNP approaches, (and that the majority of these will be over the water) any incremental noise advantages of a slightly steeper approach would be so negligible that it is not considered beneficial compared against the costs that the project would incur in being able to demonstrate whether 3.2° approaches were operationally safe and acceptable. In addition to this, as the RNP approaches would be introduced alongside the conventional 3.0° procedures, there would also be no benefit to controlled airspace or airspace users under the final approach as other aircraft in Class G airspace would not be aware of which approach a particular aircraft was flying.

On balance, it was therefore concluded the possibility of increasing the approach angle from 3.0° would not be continued into Stage 3 of this ACP. We therefore took Airspace Option 2 (details shown on the next page) with standard 3.0° approaches through to Stage 3 of the ACP.

Stage 3

Instrument Flight Procedure (IFP) Development

Airspace Option 2 was evolved into our proposals which were taken forward to the Stage 3 Full Options Appraisal. (Blue = proposed approach, Red = proposed missed approach)



Airspace Option 2

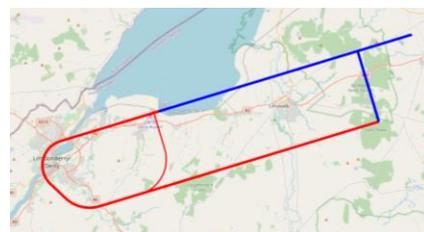
(Runway 26 replication of published procedures
Runway 08 broad replication of published procedures however with a PANS-OPS compliant straight in final approach from the Final Approach Fix (FAF))



Runway 08 Missed Approach Option 1
(Left turn to overhead hold)



Runway 08 Missed Approach Option 2
(Right turn to T-Bar)



Runway 26 Missed Approach
(Left turn to T-Bar)

The following page outlines our Full Options Appraisal methodology, before we provide details of the outcomes.

As part of our Full Options Appraisal, we compared the benefits and impacts of our proposal against the baseline ‘do nothing’ scenario. The below table shows the groups and impacts, as per the CAP1616 requirements, and provides a brief summary of how we assessed the options.

Group	Impact	FOA Methodology Summary
Communities	Noise impact on health and quality of life	<p>As part of our FOA analysis of noise, we have modelled two types of noise contour and provided information about the population within the contours and how this might change as a result of the ACP. These are the L_{Aeq} contours, which look at the average annual noise levels across a day and night period, and N_{65} contours, which look at the number of noise events greater than 65 decibels during the day. We’ve also modelled overflight contours which show the frequency, pattern and dispersion of aircraft below 7000ft. The information from this noise modelling has then been used to inform our qualitative analysis of the benefits and impacts of Airspace Option 2.</p> <p>Due to the very low number of aircraft that will operate the missed approaches, we have provided qualitative analysis of these options.</p>
	Air Quality	Government guidance outlines that impacts to air quality are considered for changes below 1000ft. We’ve therefore looked at what changes might occur below 1000ft when assessing our options.
Wider Society	Greenhouse gas impact	As emissions of greenhouse gases arise from the combustion of aviation fuel, we have used the information from the fuel burn assessment below to understand any benefits/impacts.
Wider Society	Capacity / resilience	As this ACP is not seeking to increase capacity, we have qualitatively appraised whether the option improves resilience.
	Tranquillity	CAP1616 outlines the consideration of impacts upon tranquillity is with specific reference to National Parks and Areas of Outstanding Natural Beauty (AONB). We’ve therefore used the noise assessment to review whether there will be any impacts to Binevenagh, Sperrin or the Causeway coast AONB.
	Biodiversity	Research shows Biodiversity disturbance effects associated with aircraft typically occur during the landing and take-off stage, when an aircraft is flying at or below 500m (1,640 feet). We’ve therefore looked at what changes might occur below 1640ft when assessing our options.
General Aviation	Access	New procedures have the potential to impact General Aviation users by requiring more controlled airspace (CAS), or adjusting the boundaries of existing airspace. We’ve therefore looked at CAS requirements as well as any broader impacts on general aviation of the proposed options.
General Aviation/ Commercial Airlines	Economic impact from increased effective capacity	We qualitatively assessed any economic impact from increased capacity.
	Fuel burn	As the combustion of fuel is linked to track length, we assessed the track length of baseline against the nominal tracks of the option. We also reviewed whether there was any potential for the option to impact thrust which can burn more fuel.
Commercial airlines	Training & other costs	We have qualitatively appraised whether there will be any costs associated with this ACP.
Airport / ANSP	Infrastructure, operational, and deployment costs	
All	Safety	We have provided a qualitative safety assessment.

Full Options Appraisal Summary

Negative impacts or costs compared to baseline FOA has identified significant impacts or costs	Neutral impact compared to baseline FOA has identified minor benefits or impacts which overall are considered neutral	Positive benefits compared to baseline FOA has identified significant benefits
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Group	Impact	Our Core Proposal (Airspace Option 2, our preferred)	Runway 26 Missed Approach (Our Preferred)	Runway 08 Missed Approach Option 1	Runway 08 Missed Approach Option 2 (Our Preferred)
Communities	Noise impact on health and quality of life	Minor impacts and benefits	Minor impacts and benefits	Minor impacts and benefits	Minor impacts and benefits
	Air Quality	Minor impacts and benefits	No impact	No impact	No impact
Wider Society	Greenhouse gas impact	Minor impacts and benefits	Minor benefits	Minor impacts or benefits	Minor benefits
Wider Society	Capacity / resilience	Improves resilience	Improves resilience	Improves resilience	Improves resilience
	Tranquillity	No impact	Minor impacts	Minor benefits and impacts	Minor benefits
	Biodiversity	Minor impacts and benefits	No impact	No impact	Minor benefits and impacts
General Aviation	Access	No impact	No impact	No impact	Minor benefits
General Aviation /Commercial Airlines	Economic impact from increased effective capacity	No impact	No impact	No impact	No impact
	Fuel burn	Minor impacts and benefits	Minor benefits	Minor impacts or benefits	Minor benefits
Commercial airlines	Training costs	No costs	No costs	No costs	No costs
	Other costs	No costs	No costs	No costs	No costs
Airport / Air Navigation Service Provider	Infrastructure costs	No costs	No costs	No costs	No costs
	Operational costs	Ongoing maintenance of the new procedures estimated £4-10k every five years.			
	Deployment costs	Business as usual – no additional costs			
All	Safety	Improves safety	Minor benefits	No impact	Minor benefits

If you would like to read further details about our Proposals and the Full Options Appraisal, please continue reading this section or click [here](#) if you'd like find out how to respond to our consultation.

Airspace Option 2



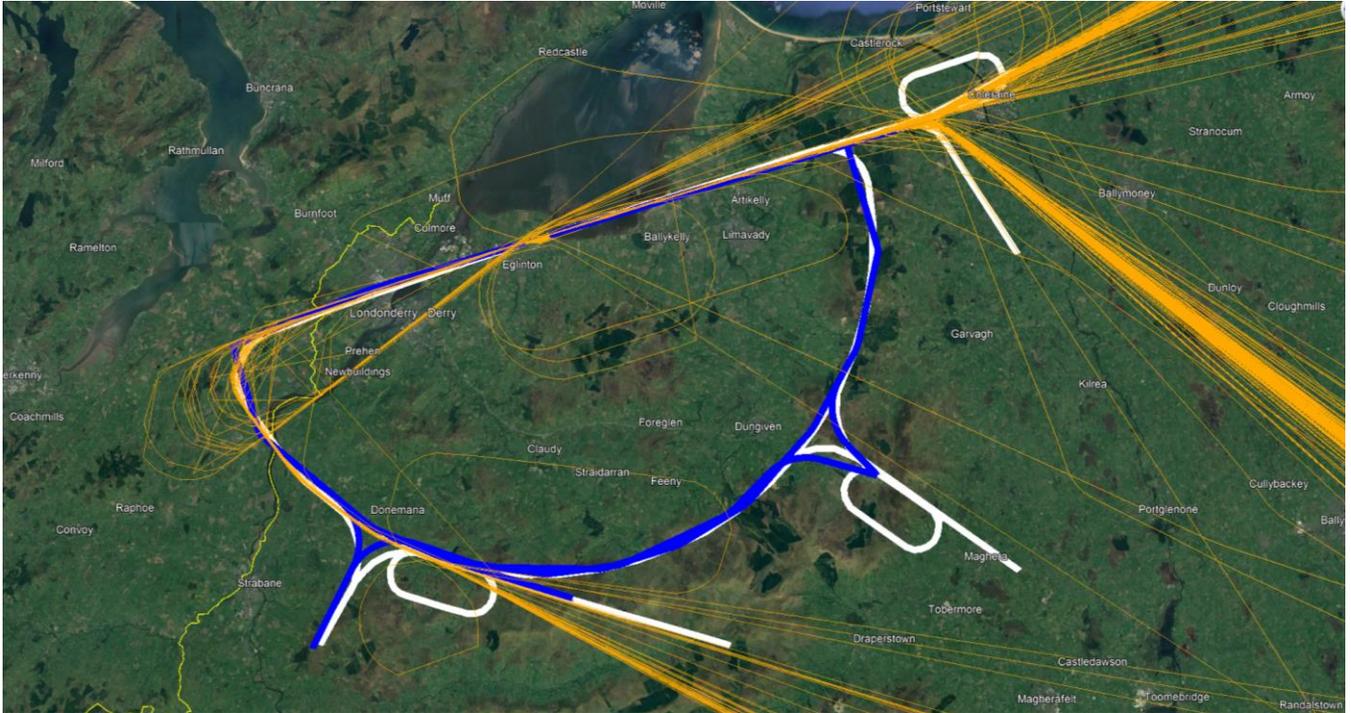
Blue: Our proposal (25% of future operations) Green: Nominal tracks of existing procedures.

Airspace Option 2 closely replicates what happens today however there are some minor amendments to the procedures to make them compliant with PBN requirements.

Our proposal estimates that 25% of current CoDA IFR arrivals will use these new PBN procedures. This equates to about 1-2 arrivals per day rising to 2-3 per day by 2032. The existing procedures will continue to be flown by the majority of arrivals.

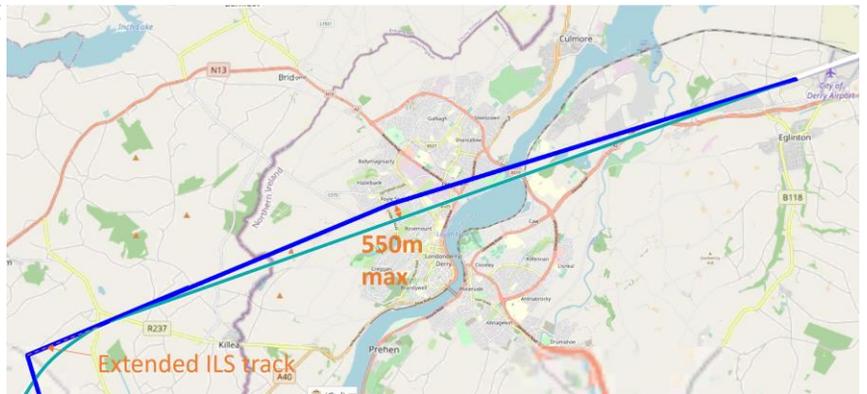
- Key**
- Green Nominal track of existing procedure operated at CoDA
 - Blue Nominal track of proposed approach and/or direct arrival (25% of future operations)

Airspace Option 2



Blue: Our proposal (25% of future operations) White: Nominal tracks of existing procedures. Orange: Current tracks (FR24 2018-2020)

On runway 08 (easterlies), aircraft have the option of the southern T-Bar which replicates where most aircraft operate today. The final approach is initially aligned with the Instrument Landing System (ILS); this allows aircraft flying a direct arrival to undertake an ILS or PBN approach. At the Final Approach Fix (FAF), which is around 6.1nm from the runway, aircraft are aligned with the runway centreline rather than



offset like the ILS approach used today. This means that at this point the track is about 550m further north than today as shown in blue in the figure above. Runway 08 is used 27% of the time and therefore over the course of a year, less than 1 flight on average per day is expected to fly these approaches.

On runway 26 (westerlies), aircraft have the option of joining from an eastern T-Bar, which replicates aircraft flying directly to COLRE as most do today, or the southern T-Bar, which replicates the published Direct Arrival procedure. The final approach track replicates the current ILS final approach. Runway 26 is used 73% of the time and therefore over the course of a year, less than 3 flights on average per day are expected to fly these approaches based on expected movements in 2032.

The direct arrival transitions for runway 08 and runway 26 replicate current day, however there are some very minor changes to make the procedures meet PBN design requirements.

For indicative aeronautical charts please see [Appendix B](#)

For detailed technical information please see our [Full Options Appraisal](#) document

Our Proposal: Benefits and Impacts

Full Options Appraisal Summary: Airspace Option 2

Group	Impact	FOA Summary
Communities	Noise impact on health and quality of life	<p>The noise analysis of Airspace Option 2 has demonstrated that there will be no impact to the L_{Aeq} 16hr or 8hr contours. As changes to population within the L_{Aeq} contours are primary measure of noise impact for ACPs, and in the case of Airspace Option 2 there is no change, we can conclude that implementation of this option will not change the number of people adversely affected by the impacts from aircraft noise. The data from the L_{Aeq} metrics is also the main input into WebTAG, the Department for Transport’s appraisal guidance for health impacts associated with noise, and therefore there is also no monetary difference between the Airspace Option 2 and the ‘do nothing’ scenario.</p> <p>As part of our noise analysis we have also reviewed secondary metrics presented as Overflight contours and N65 contours and data tables. Secondary metrics are those that are not being used to determine significant impacts but which are still able to convey noise effects. Our analysis of the N65 and overflight contours showed that the small change in approach to runway 08 would result in a change in the distribution of aircraft noise, however owing to the scale of the change and the number of aircraft expected to fly the runway 08 PBN approach, this would lead to very marginal adverse impacts. There will be no change in noise to the runway 26 approach, or either direct arrival as a result of implementing Airspace Option 2.</p> <p>We therefore conclude that Airspace Option 2 will have no impact on population adversely affected by the impacts of aircraft noise. There will however be a very small change in distribution under the runway 08 final approach however any adverse impacts of this are so marginal that they will not lead to any significant effects.</p>
	Air Quality	<p>The air quality analysis of Airspace Option 2 has demonstrated that there would be no significant impact to Air Quality due to the majority of the procedures replicating current day. The very small lateral change of the runway 08 approach may result in some impacts (both positive and negative) to pollutant concentrations however due to the number of aircraft expected to operate these approaches and the scale of the lateral change, these will be very small and will not lead to any significant effects.</p>
	Greenhouse gas impact	<p>Our Greenhouse gas impact analysis has shown that there will be no material changes to track length and fuel burn. A change in track length would increase or decrease fuel burn (see fuel burn section below) and increase or decrease carbon emissions accordingly. There is therefore no significant impact to carbon emissions if Airspace Option 2 were to be implemented.</p>

Our Proposal: Benefits and Impacts

Full Options Appraisal Summary: Airspace Option 2

Group	Impact	FOA Summary
Wider Society	Capacity / resilience	The introduction of RNP approaches to both runway ends improves resilience for CoDA. This option, and the overall airspace change, is not expected to have an impact on airport and airspace capacity.
	Tranquillity	<p>CAP1616 outlines the consideration of impacts upon tranquillity is with specific reference to National Parks and Areas of Outstanding Natural Beauty (AONB). As this ACP does not increase movements, we have appraised impacts to tranquillity based on changes to overflight over AONBs.</p> <p>Westerly approaches onto runway 26 currently overfly the Binevanagh AONB. Westerly approaches as part of Airspace Option 2 will replicate current day and therefore continue to fly over Binevanagh. Our FOA has demonstrated that there are no changes in overflight and noise metrics over Binevanagh AONB.</p> <p>The initial parts of Easterly approaches overfly the Sperrin AONB and this is replicated as part of Airspace Option 2. Our FOA has demonstrated that there are no changes in overflight and noise metrics over Sperrin AONB.</p> <p>Aircraft also overfly the Causeway Coast AONB however they are above 7000ft at this point and therefore outside the scope of this ACP.</p> <p>The small changes in overflight which occur as a result of the RNP approach into runway 08 lie outside of the Sperrin and Binevanagh AONB.</p> <p>Our FOA therefore concluded that there would be no impact to tranquillity as a result of Airspace Change Option 2.</p>
	Biodiversity	The biodiversity assessment of Airspace Option 2 has demonstrated that there would be no significant impact to Biodiversity as the majority of the procedures replicate current day. The very small lateral change of the runway 08 approach does not impact the L_{Aeq} contours which are used as an indicator of biodiversity disturbance. The lateral change could lead to some very small impacts positive and negative as shown in the N65 and overflight contours, however due to the number of aircraft expected to operate these approaches and the scale of the lateral change, these are considered to be so minor that the ACP will result in no effects to biodiversity.
	Access	Airspace Option 2 does not require any new controlled airspace (CAS) or amendments to the existing CAS. As this option closely replicates what happens today, it is not expected to have any impact to general aviation.
General Aviation		

Our Core Proposal

Our Proposal: Benefits and Impacts

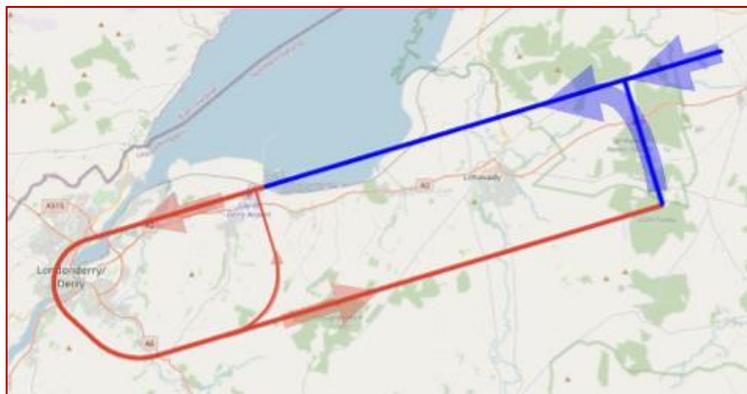
Full Options Appraisal Summary: Airspace Option 2

Group	Impact	FOA Summary
General Aviation/ Commercial Airlines	Economic impact from increased effective capacity	It is not intended that this ACP will facilitate any future growth for the airport or offer any increased capacity; the purpose of the change is to provide resilience and meet the requirements of the Airspace Modernisation Strategy. We therefore do not expect any economic impact as a result of the implementation of Airspace Option 2.
	Fuel burn	<p>Our fuel burn analysis looked at track length and whether the PBN procedures introduced any other changes that would increase fuel burn. A change in track length would increase or decrease fuel burn.</p> <p>The FOA found that overall there will be some very small benefits in flight by flight track length associated with a change from an ILS to RNP approach, but averaged across the annual arrivals at Derry Airport this will not significantly affect average track length (either by shortening or lengthening) and will therefore not affect fuel burn. The procedures that form Airspace Option 2 do not involve other changes that would affect aircraft thrust and therefore fuel burn. As such, the influence of the proposed ACP on fuel burn is expected to be not significant.</p>
Commercial airlines	Training costs	There are no training costs anticipated as a result of the introduction of Airspace Option 2.
	Other costs	There are no other known costs anticipated as a result of the introduction of Airspace Option 2.
Airport / Air Navigation Service Provider	Infrastructure costs	PBN procedures are not dependent on ground based infrastructure and will not require any change of existing infrastructure and therefore there are no anticipated infrastructure costs as a result of this option.
	Operational costs	The RNP approaches and transitions require maintenance of the approach procedure on a five yearly basis. This ongoing cost is estimated to be £4-10k.
	Deployment costs	Costs associated with the RNP approaches are ANSP training costs which will be covered within the normal operating costs of the ATC unit.
All	Safety	<p>There are no safety concerns related to Airspace Option 2. Further safety assessment, including IFP validation will be undertaken in the later stages of the ACP.</p> <p>Introducing PBN precision approaches may result in improvements to safety in the event of ILS unserviceability.</p>

Runway 26 Missed Approach

Runway 26 missed approach involves aircraft continuously climbing straight ahead for 5.8nm (10.7km) to a minimum of 3500ft. The aircraft then turns left before either flying back to the start of the Final Approach, or joining the hold over the airport. This option is different to the published procedure however it partially replicates how some aircraft fly today.

It is expected that if this option was implemented, it would be flown by only around 12 flights per year. By 2032 this would rise to around 26 per year.



Blue: 26 Approach Red: Proposed missed approach

The following table summarises the outcomes of our appraisal of this missed approach option:

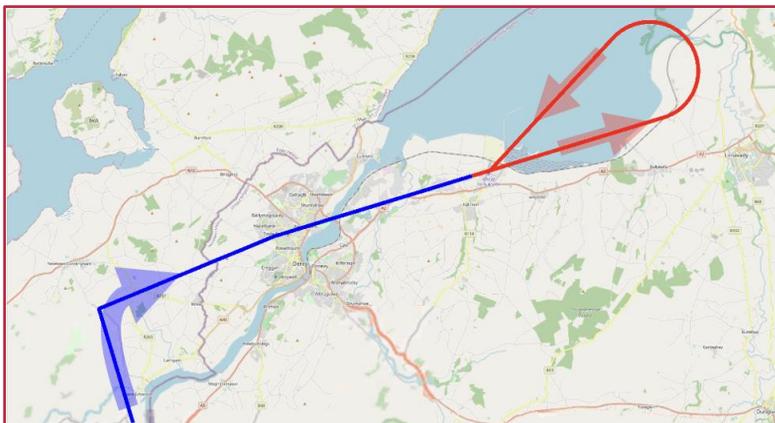
For more information about this missed approach please see our FOA. Indicative charts are shown in Appendix B

Full Options Appraisal Summary: 26 MA Option 1

Group	Impact	FOA Summary
Communities	Noise impact on health and quality of life	There will be a very small change in missed approach track compared to the how aircraft are directed today, however due to the very low number of missed approach movements (26 per year by 2032) there will be negligible impact to noise.
	Air Quality	There is no anticipated change or impact to air quality.
Wider Society	Greenhouse gas impact	This missed approach offers a more direct route to re-join final approach compared to current day. There may therefore be some improvements to greenhouse gas emissions however due to the low number of movements, any benefits will be negligible.
	Tranquillity, Biodiversity	No significant impact to tranquillity or biodiversity is expected as a result of this missed approach.
General Aviation	Access	No additional CAS or amendments to existing CAS are required. This missed approach introduces a new published track however due only around 26 flights per year operating it, it is not anticipated to impact General Aviation.
General Aviation/ Commercial Airlines	Fuel burn	This missed approach offers a more direct route to re-join final approach compared to current day. There may therefore be some improvements to fuel burn however due to the low number of movements, any benefits will be negligible.
Commercial airlines	Training costs, Other costs	None anticipated.
Airport / Air Navigation Service Provider	Infrastructure, Operational, & Deployment costs	Please see analysis of our core proposal which describes the overall costs of the ACP. There are no costs specifically relating to the missed approach options.
All	Safety	There are no expected safety issues as this option would closely replicate how aircraft are directed today. There are some considerations for ATC which are outlined in our Full Options Appraisal.

Runway 08 Missed Approach Option 1 (not our preferred option)

Runway missed approach option 1 involves aircraft climbing straight ahead to 3500ft or 5.9nm, whichever is later. Aircraft then turn left before joining the hold overhead the airport. This option as closely as possible replicates the published procedure and how aircraft fly missed approaches today however there are some small differences.



Blue: 08 Approach Red: Proposed missed approach

It is expected that if this option was implemented, it would be flown by only around 5 flights per year. By 2032 this would rise to 9 per year.

For more information about this missed approach please see our FOA. Indicative charts are shown in Appendix B

Full Options Appraisal Summary: 08 MA Option 1

Group	Impact	FOA Summary
Communities	Noise impact on health and quality of life	There will be a very small change in missed approach track compared to how aircraft are directed today, however due to the very low number of missed approach movements (9 per year by 2032) there will be negligible impact to noise.
	Air Quality	There is no anticipated change or impact to air quality.
Wider Society	Greenhouse gas impact	Any marginal changes to track length (see fuel burn below) will be so small, and as the missed approaches are only expected to be flown 9 times per year, there is no significant impact on greenhouse gas emissions.
	Tranquillity, Biodiversity	No significant impact to tranquillity or biodiversity is expected as a result of 08 MA Option 1.
General Aviation	Access	No additional CAS or amendments to existing CAS are required. As this missed approach largely replicates current day, and due to the very low numbers of aircraft expected to operate it, no impacts to General Aviation are anticipated.
General Aviation/ Commercial Airlines	Fuel burn	This option aims to replicate the published ILS procedure however there may be some marginal differences in track miles compared to current day. Any changes, either adverse or beneficial will be very small and therefore the impacts to fuel burn will be negligible especially given that only 9 flights per year are expected to operate these missed approaches by 2032.
Commercial airlines	Training costs, Other costs	None anticipated.
Airport / Air Navigation Service Provider	Infrastructure, Operational, & Deployment costs	Please see analysis of our core proposal which describes the overall costs of the ACP. There are no costs specifically relating to the missed approach options.
All	Safety	There are no expected safety issues as this option would largely replicate what happens today. The procedure developed meets design criteria however it is a new configuration which will require simulator validation.

Our Proposal for Missed Approaches

Runway 08 Missed Approach Option 2 (Our Preferred)

08 MA Option 2 involves aircraft continuously climbing to 3500ft straight ahead for 5.9nm (10.9km). The aircraft then turns right before either flying back to the start of the Final Approach or joining the hold over the airport. This option is different to the published procedure and how aircraft fly today.



Blue: 08 Approach Red: Proposed missed approach

It is expected that if this option was implemented, it would be flown by only around 5 flights per year. By 2032 this would rise to 9 per year.

The following table summarises the outcomes of our appraisal of this missed approach option:

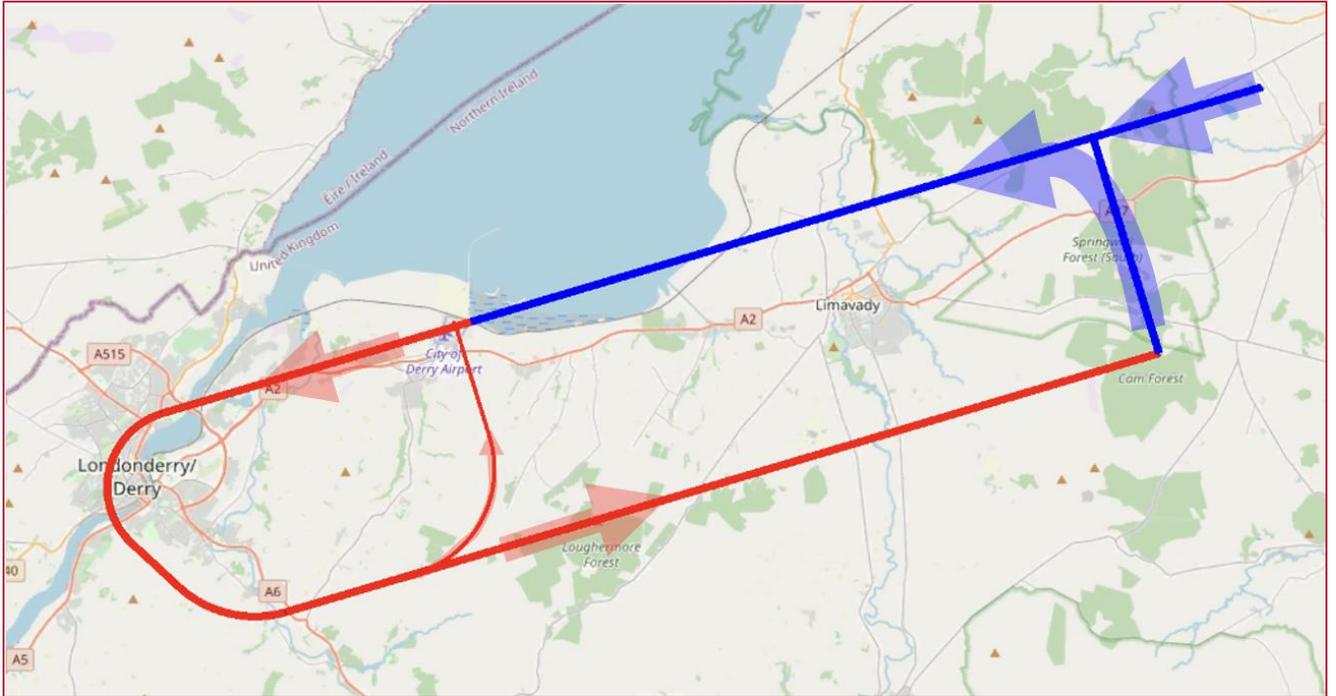
For more information about this missed approach please see our FOA. Indicative charts are shown in Appendix B

Full Options Appraisal Summary: 08 MA Option 2

Group	Impact	FOA Summary
Communities	Noise impact on health and quality of life	There will be a change in missed approach track compared to how aircraft are directed today, however this change avoids Londonderry compared to 08 MA Option 1 and overall avoids densely populated areas. Due to the very low number of missed approach movements (9 per year by 2032) any small benefits to noise will be negligible.
	Air Quality	There is no anticipated change or impact to air quality.
Wider Society	Greenhouse gas impact	The fuel burn assessment below has identified that there may be some marginal benefits in track mileage however and as the missed approaches are only expected to be flown 9 times per year, there are no significant benefits on greenhouse gas emissions.
	Tranquillity, Biodiversity	No significant impact to tranquillity or biodiversity is expected as a result of 08 MA Option 1.
General Aviation	Access	No additional CAS or amendments to existing CAS are required. This missed approach turns and avoids an area used by Ulster Gliding Club. As this missed approach largely replicates current day, and due to the very low numbers of aircraft expected to operate it, no impacts to General Aviation are anticipated.
General Aviation/ Commercial Airlines	Fuel burn	This option offers a more direct route and so offers an improvement compared to current day in terms of track mileage. There may therefore be some marginal benefits to fuel burn for this missed approach option, however given the number of flights per year, these are expected to be negligible.
Commercial airlines	Training costs, Other costs	None anticipated.
Airport / ANSP	Infrastructure, Operational, & Deployment costs	Please see analysis of our core proposal which describes the overall costs of the ACP. There are no costs specifically relating to the missed approach options.
All	Safety	08 MA Option 2 is expected to slightly enhance safety. The procedure developed meets design criteria however it is a new configuration which will require simulator validation.

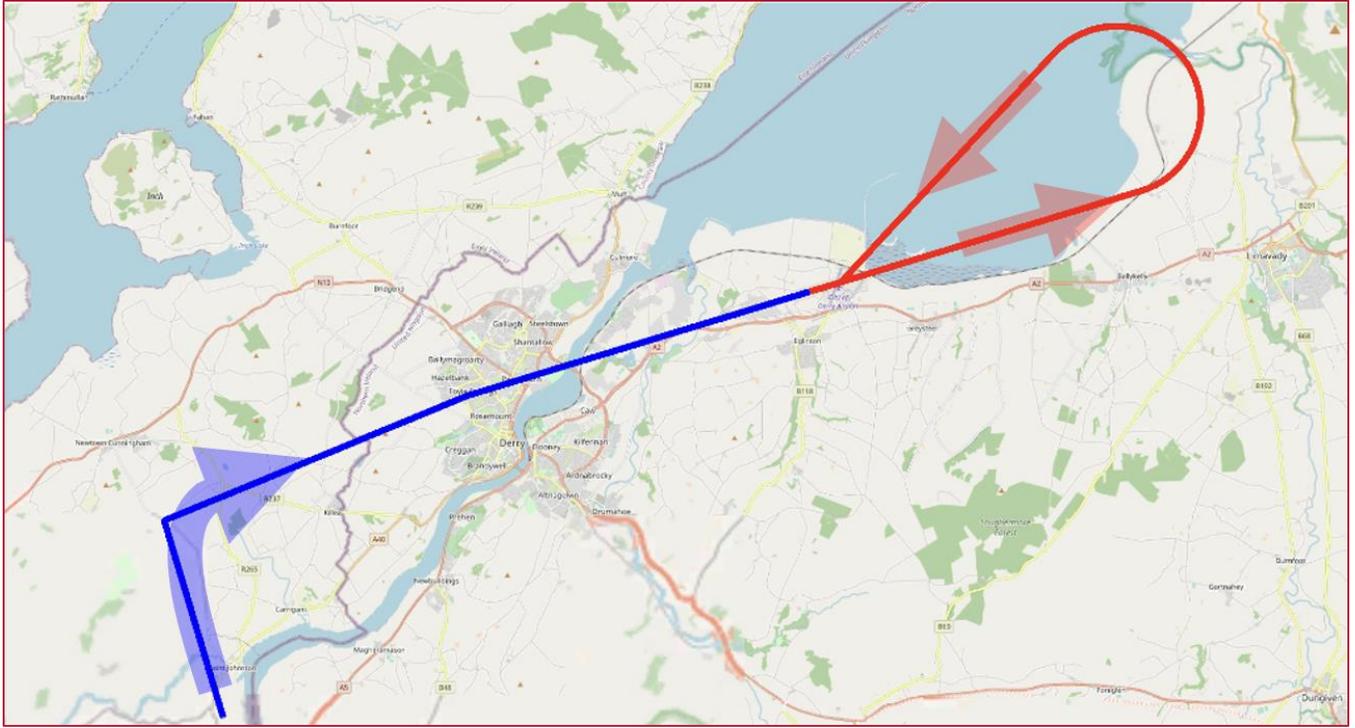
Our Proposal for Missed Approaches

Runway 26 Missed Approach (Large Map)

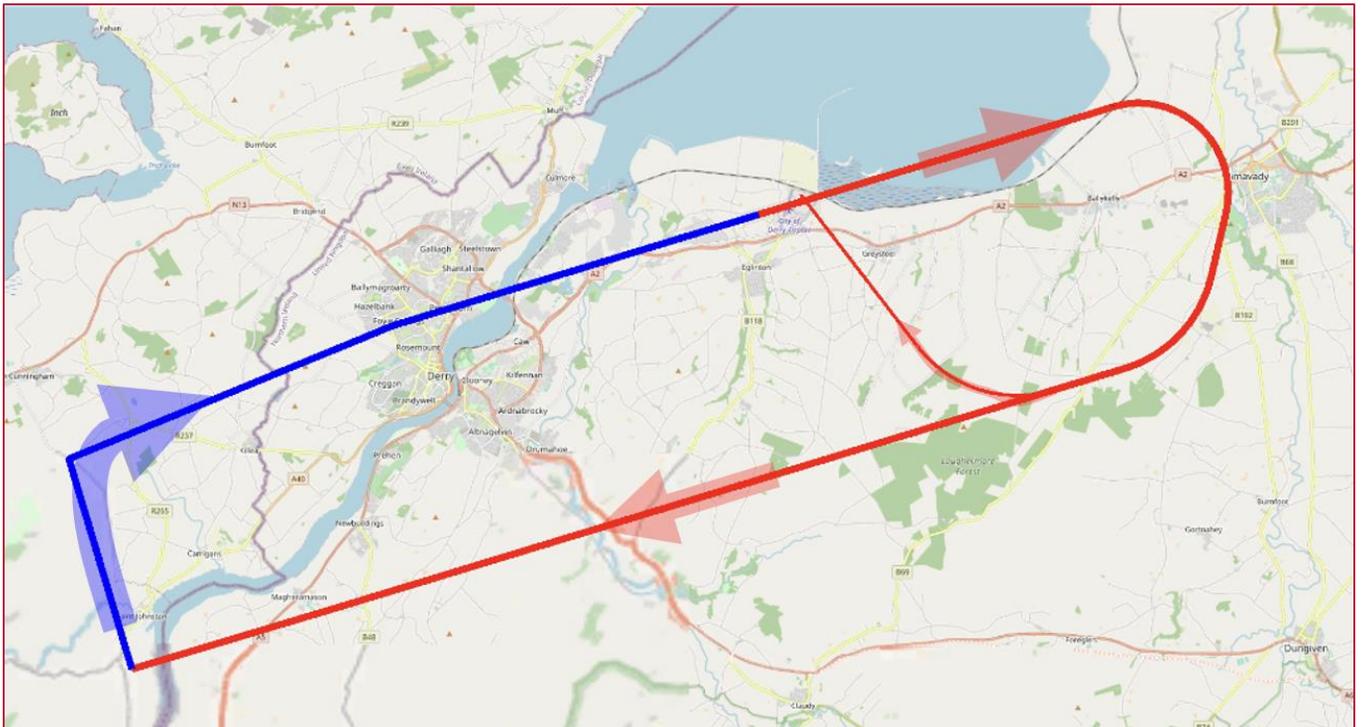


Our Proposal for Missed Approaches

Runway 08 Missed Approach Option 1 (Not our preferred option)



Runway 08 Missed Approach Option 2 (Our preferred option)



Our Preferred Option

The Full Options Appraisal, summarised here in this document, has demonstrated that Airspace Option 2 meets the aims of the ACP which are to:

- Design PBN approaches and arrival procedures to replicate the existing routes which would result in little or no noticeable change to stakeholders,
- Provide a contingency for the existing ground based navigational aid infrastructure, and
- Meet the governments Airspace Modernisation Strategy (AMS).

We therefore plan to proceed with our proposal to implement Airspace Option 2 at CoDA (to be operated alongside the existing conventional approaches), and this is our preferred option for this ACP.

The analysis of the Missed approach sub options has shown that there are only very marginal differences between the options and they too meet the overall aims of the ACP. In terms our preferred missed approach option:

- Our preferred option for runway 26 is to proceed with 26 Missed Approach Option 1 as the full options appraisal demonstrated that there are no significant impacts to stakeholders and when combined with the runway 26 approach that forms part of Airspace Option 2, this improves resilience at CoDA.
- Our preferred option for runway 08 is 08 Missed Approach Option 2 however due to operational considerations we are aware that Option 1 may be more suitable, and we will be guided by the outcome of the consultation together with IFP Validation activity. Option 2 is our preferred due to the small benefits in safety and track mileage as outlined in the full options appraisal. When combined with the runway 08 approach that forms part of Airspace Option 2, this also improves resilience at CoDA.

Our consultation details

The consultation on the introduction of PBN approaches runs for 14 weeks from;

18 October 2021 – 21 January 2022

All responses to the consultation should be submitted online via the CAA's Citizen Space Portal. The portal is available via the link below, via the CoDA website, or at the following web address: <https://consultations.airspacechange.co.uk/city-of-derry-airport/introduction-of-pbn-approaches>. If you are unable to respond online, you can respond in writing using the feedback form in Appendix A. Any written responses will be manually uploaded onto Citizen Space and published.

All responses will be redacted and published on the Citizen Space portal as the consultation progresses and we will be reviewing the responses and keeping a 'Frequently Asked Questions' document up to date during the consultation. The deadline for responding to this consultation is **21 January 2022**. Feedback received after this date will not be taken into consideration.

Online Events

Due to the scale of this airspace change this is an online consultation only however we will be holding 2 online events, where we will brief you on our consultation material and you will have the opportunity to ask questions. These events will be held online via Microsoft TEAMS on;

- Wednesday 3 November 2021 1300-1430hrs
- Thursday 9 December 2021 1800-1930hrs

To book a place at one of these events, please email coda-acp@traxinternational.co.uk.

Our consultation questions

We are asking the following questions about our Airspace Change Options:

Our Core Proposal (Airspace Option 2)

Do you have any concerns, or are there any further considerations we should take into account for our core proposal?

Runway 26 Missed Approach

Do you have any concerns, or are there any further considerations we should take into account for our runway 26 missed approach proposal?

Runway 08 Missed Approach Option 1

Our preferred Runway 08 missed approach is option 2 where the missed approach turns to the right (the south). Do you agree with this? Please provide more details if required.

Runway 08 Missed Approach Option 2 (Our preferred)

Do you have any concerns, or are there any further considerations we should take into account for the runway 08 missed approach options?

There is also an additional question, for you to provide feedback on any concerns or if there are any further considerations, we should take into account for this airspace change proposal.

How to Respond

If you are unable to view the material online, you can request a hard copy of the consultation documents by phoning the CoDA telephone line (0287 1810784) or by emailing us at coda-acp@traxinternational.co.uk. Please note this email address is for consultation questions or requests only; we are unable to accept email responses to this consultation and all consultation responses must be submitted through the website link.

[CoDA ACP Consultation Site](#)

Further Questions?

This Consultation document forms part of a set of three documents created for our Stage 3 consultation. To read our other documents, please use the above link to our Consultation site. To respond to the consultation, please also use the link.

We have created a 'Frequently Asked Questions' document, which is on our Consultation Site. This will be updated throughout the consultation, based on any questions or points that are raised in consultation responses. If you have any questions about the consultation, you can send an email to; coda-acp@traxinternational.co.uk. Please note we cannot accept email consultation responses.

What happens next

Once our Consultation has closed on 21 January 2022, we will collate, review, and categorise the consultation responses. Responses will be categorised into those which present information that may lead to a change in the design and those that could not.

The CAA will review our categorisation and the categorisation document will then be published on the CAA portal; this forms part of Step 3D of the airspace change process.

Feedback Form

The consultation on the introduction of PBN approaches runs for 14 weeks from **18 October 2021 – 21 January 2022**. To respond to this consultation, please use our [CoDA ACP Consultation Site](#). If you are unable to respond online, please use the below form to answer the questions and return it to:

FAO ATS MANAGER
City of Derry Airport
Airport Road
Eglinton
Co. Derry
BT47 3GY

All responses will be moderated by the CAA and published online. If you wish your response to be published anonymously, your personal details (name, postcode, email) will be redacted and only be seen by CoDA and the CAA. Please select below:

YES – Publish my response with my details

NO – Publish my response anonymously

Name: _____

Representing (Self/Organisation): _____

Postcode: _____

Email (if available): _____

QUESTIONS

Q1. AIRSPACE OPTION 2: Do you have any concerns, or are there any further considerations we should take into account for our core proposal?

Q2. 26 Missed Approach: Do you have any concerns, or are there any further considerations we should take into account for our runway 26 missed approach proposal?

Feedback Form (continued)

Q3. 08 Missed Approach Option 1/08 Missed Approach Option 2: Our preferred Runway 08 missed approach is option 2 where the missed approach turns to the right (the south). Do you agree with this? (Please tick)

Yes

No

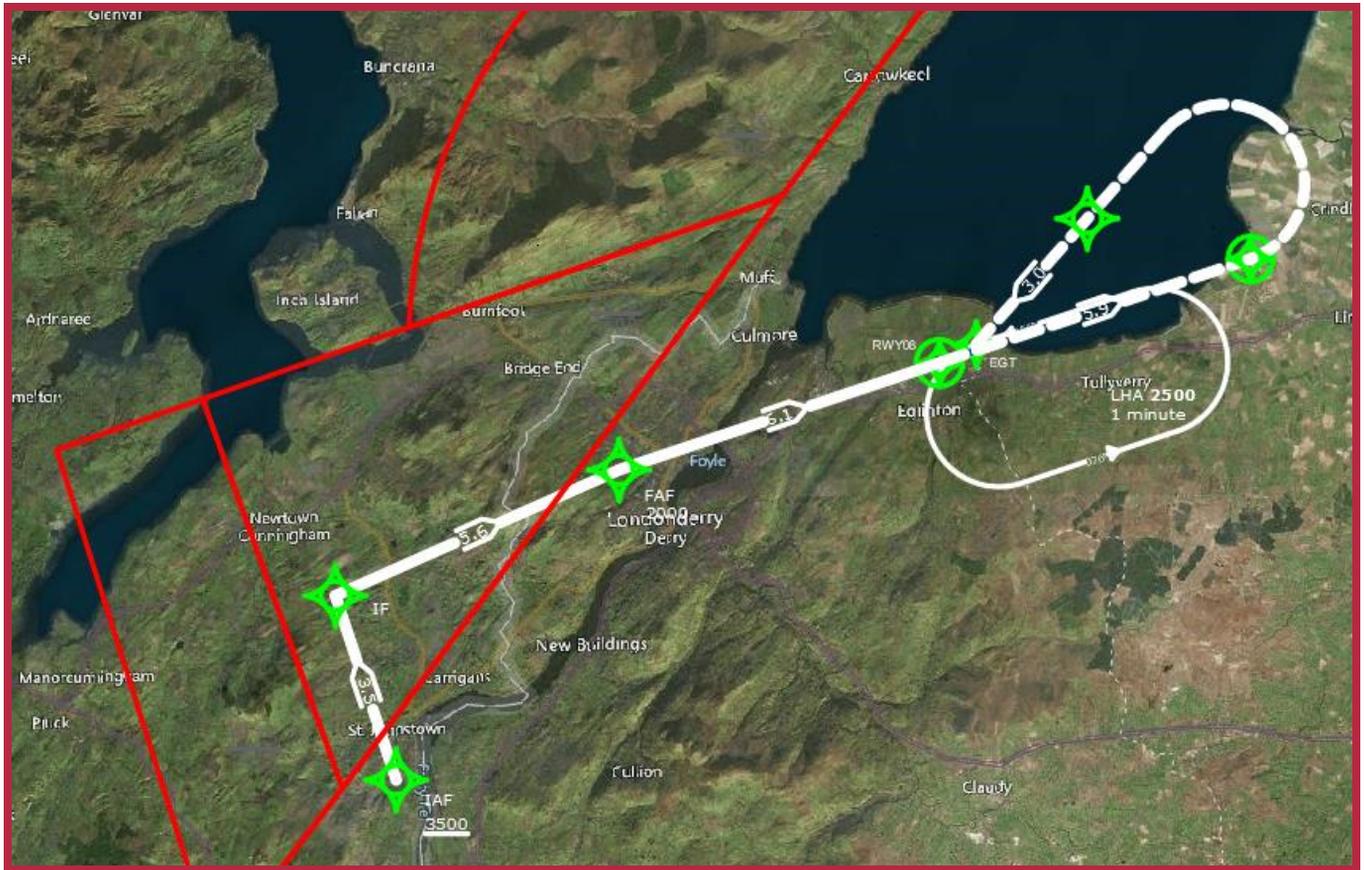
Not interested in this aspect

Q4. If you answered Yes or No to Question 3, please provide us with more details.

Q5. Do you have any concerns, or are there any further considerations we should take into account for the runway 08 missed approach options?

Q6. Do you have any further feedback on this airspace change proposal?

Runway 08 RNP Approach - Missed Approach Option 1



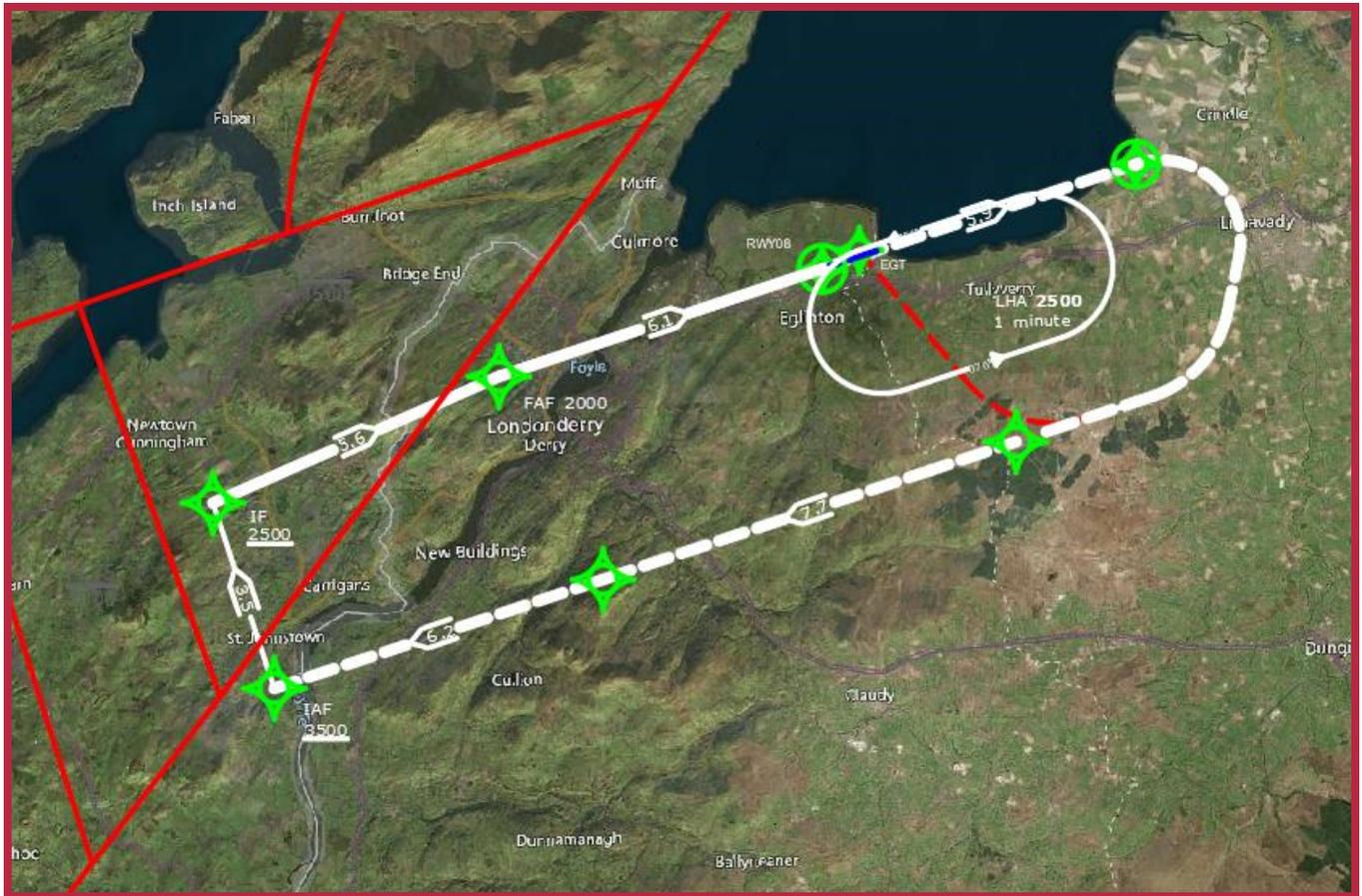
Unfortunately the CAA do not permit Airspace Change Sponsors to publish draft IAP charts or full chart details of the missed approach, however the above image shows an indicative part of the chart overlaid on a satellite map. Below is indicative text describing the missed approach:

Indicative Missed Approach Text

MAPt: RW08

Climb straight ahead to 3500 or XX waypoint, whichever is later, then turn left to XY waypoint and EGT to join the hold or as directed by ATC.

Runway 08 RNP Approach - Missed Approach Option 2



Unfortunately the CAA do not permit Airspace Change Sponsors to publish draft IAP charts or full chart details of the missed approach, however the above image shows an indicative part of the chart overlaid on a satellite map. Below is indicative text describing the missed approach:

Indicative Missed Approach Text

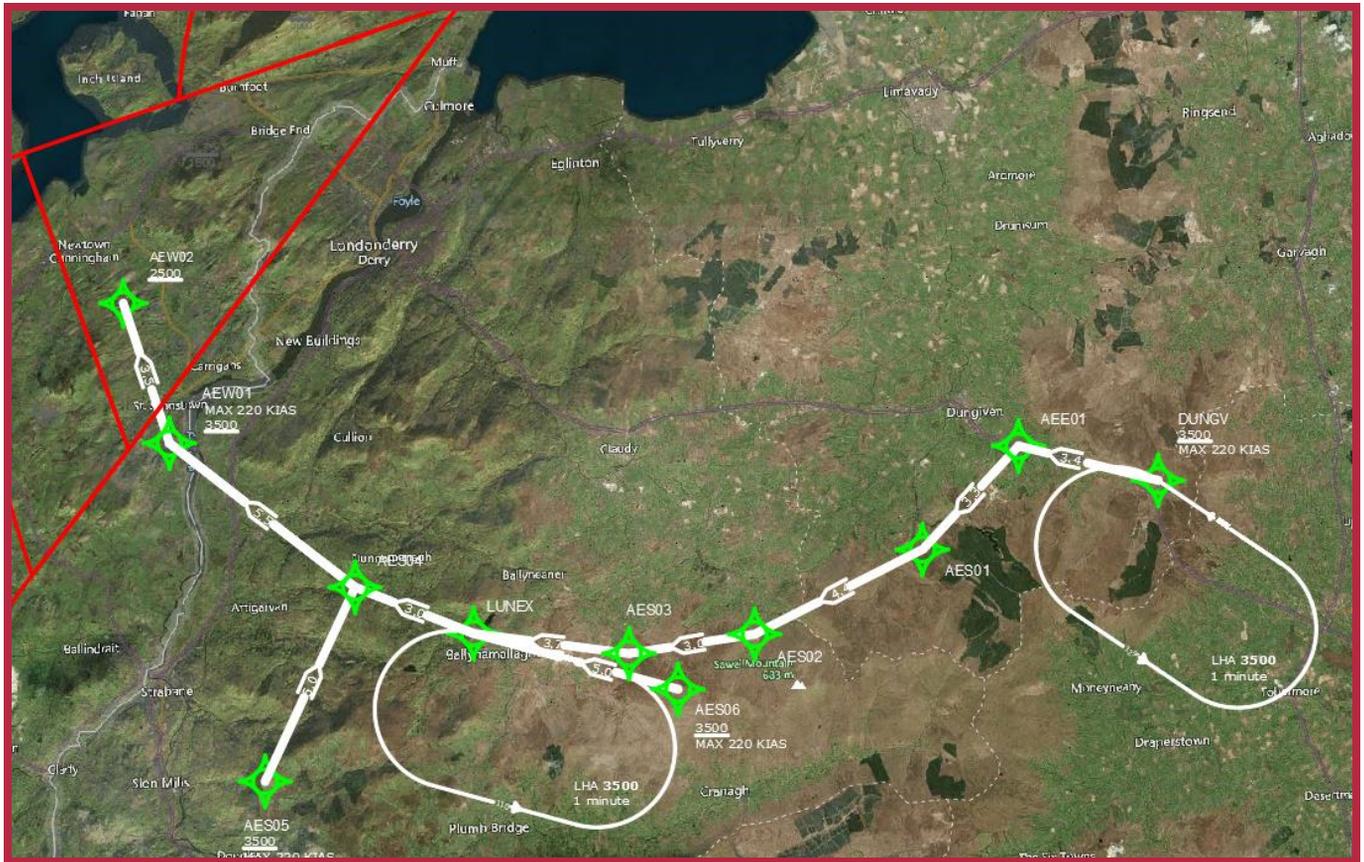
MAPt: RW08

Continuous Climb to 3500, initially climb straight ahead to XX waypoint, then turn right to XY waypoint, direct to XZ waypoint – XA waypoint to join the IAF or as directed by ATC.

If Holding is required, route XB waypoint – XC waypoint - EGT.

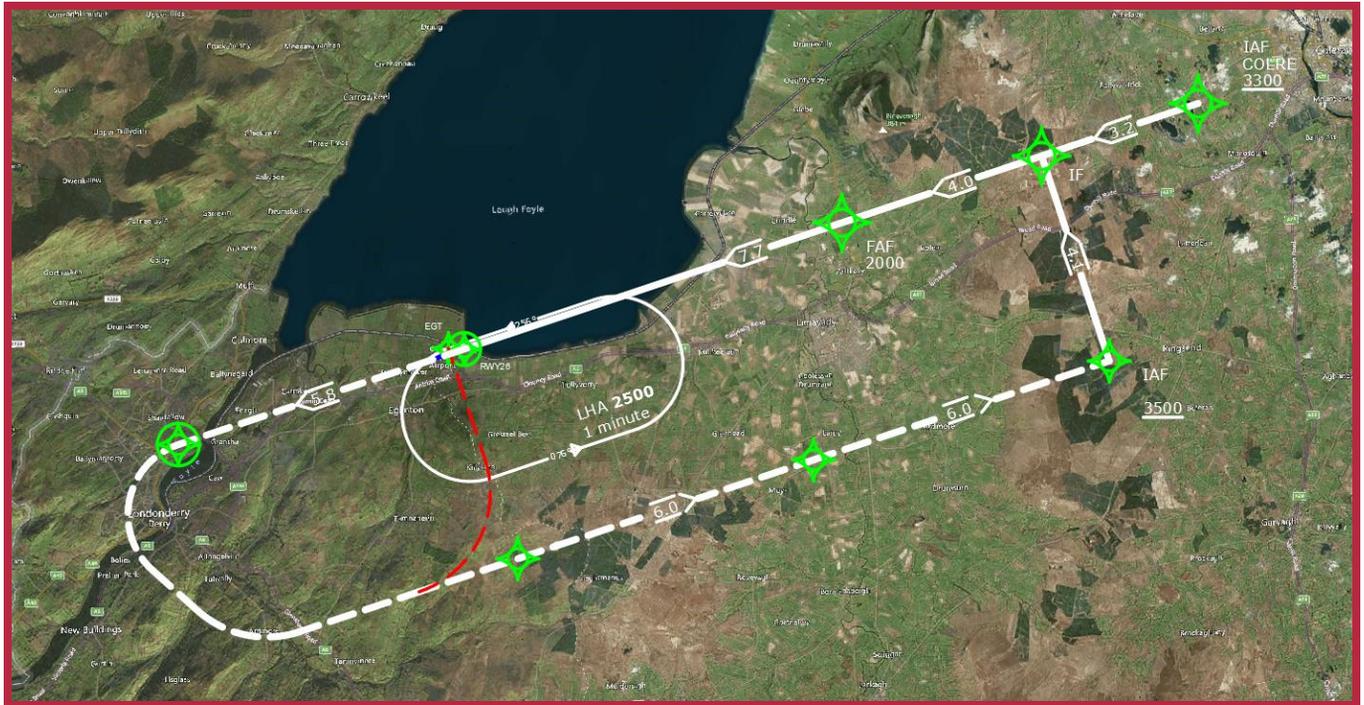
Our Options for Consultation

Runway 08 Direct Arrivals Transitions



Unfortunately the CAA do not permit Airspace Change Sponsors to publish draft IAP charts, however the above image shows an indicative part of the chart overlaid on a satellite map.

Runway 26 RNP Approach



Unfortunately the CAA do not permit Airspace Change Sponsors to publish draft IAP charts or full chart details of the missed approach, however the above image shows an indicative part of the chart overlaid on a satellite map. Below is indicative text describing the missed approach:

Indicative Missed Approach Text

MAPt: RW26

Continuous Climb to 3500, initially climb straight ahead to waypoint XX, then turn left to waypoint XY – XZ waypoint – XA waypoint to join the IAF or as directed by ATC.

If Holding is required, route waypoint XX – waypoint XY - EGT.

