Exeter Airport Airspace Change Proposal

Options Development

Date: 28th February 2025
Revision: Issue 5
Document Ref: 71189 031

Document Details

Reference	Description
Document Title	Exeter Airport Airspace Change Proposal
	Options Development
Document Ref	71189 031
Issue	Issue 5
Date	28th February 2025
Client Name	Exeter & Devon Airport Ltd

Issue	Amendment	Date
Issue 1	Initial Issue	19th November 2021
Issue 2	Re-submission: Update on Traffic Forecast; regulatory guidance; stakeholder list and engagement.	19th August 2022
Issue 3	Re-submission: Development of the Comprehensive List.	3rd March 2023
Issue 4	Re-submission: Development of the Comprehensive List.	30th June 2023
Issue 5	Re-submission: Development of the Comprehensive List.	28th February 2025

Table of Contents

Table of Tables

Table of Figures

Glossary

Acronym	Meaning
aal	above aerodrome level
agl	above ground level
ACP	Airspace Change Proposal
AMS	Airspace Modernisation Strategy
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATM	Air Transport Movement
ATZ	Aerodrome Traffic Zone
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Controlled Airspace
CAT	Commercial Air Transport
CTA	Control Area
CTR	Control Zone
EDAL	Exeter & Devon Airport Ltd
FAS	Future Airspace Strategy
FASI S	Future Airspace Strategy Implementation - South
ft	feet
GA	General Aviation
GNSS	Global Navigation Satellite System
IFR	Instrument Flight Rules
MOD	Ministry of Defence

Acronym	Meaning
NATS	formerly National Air Traffic Services
NERL	NATS (En Route) plc
PBN	Performance Based Navigation
RMZ	Radio Mandatory Zone
TMZ	Transponder Mandatory Zone
VFR	Visual Flight Rules

1 Introduction

1.1 Introduction

The Exeter Airport Airspace Change Proposal (ACP) project is currently at Stage 2 – Develop and Assess – of the Civil Aviation Publication (CAP) 1616 Airspace Design process. Step 2A requires the change sponsor to develop a comprehensive list of options that address the Statement of Need and that align with the Design Principles developed in Stage 1.

This document provides a narrative explanation of steps taken in Step 2A to develop the options for airspace design and arrival and departure routes at Exeter Airport. The document shows how the options have evolved from an initial list of all possible options through to a longlist of options taken forward to Step 2B Options Appraisal. The Appendices to this document contain enlarged images of the options developed. The departure and arrival route options are shown against a backdrop of an Ordnance Survey roadmap whilst the airspace options are shown against a backdrop of an aeronautical (VFR) chart. All the documents relating to this ACP can be found on the Civil Aviation Authority (CAA) airspace portal:

https://airspacechange.caa.co.uk/PublicProposalArea?pID=62

This document should be read alongside the Exeter Airport Airspace Change Proposal Design Principles Evaluation which has also been uploaded to the airspace portal.

1.2 Background

The Exeter Airport ACP concerns adapting the existing airspace structure surrounding Exeter Airport to assist Air Traffic Control (ATC) in providing enhanced levels of safety and information to aircraft operating in and out of Exeter Airport and to aircraft operating in the local area.

The principal area of concern regarding current operations at Exeter Airport is one of limited protection currently afforded to commercial aircraft, including passenger-carrying airliners, operating near the airport. In order to maintain levels of safety and enhance airspace efficiency, whilst causing minimal disruption to all aviation stakeholders, Exeter propose to establish new airspace around the existing Exeter Airport Aerodrome Traffic Zone (ATZ) that will:

- Safeguard routinely utilised flights operating under Instrument Flight Rules (IFR) at Exeter Airport.
- Ensure safe separation between the IFR traffic and promote proactive coordination of traffic operating under Visual Flight Rules (VFR) near the Airport.
- Protect aircraft operating within the Visual Circuit at Exeter Airport that routinely need to extend beyond the boundary of the ATZ.
- Enhance efficiency by providing airspace that will reduce the instances of avoiding action.
- Reduce traffic delays on the ground and in the air.

1.3 Prioritised List of Design Principles

The work undertaken during Stage 1 helped to establish a prioritised shortlist of Design Principles to act as a framework against which Design Options have been drawn up. The prioritised list of Design Principles is shown in Table 1 below.

Priority	Design Principle
1	SAFETY – Airspace design must at least maintain, and ideally enhance, aviation safety for all airspace users in the local area
2	HARMONISATION – Airspace design must accord with the CAA's published Airspace Modernisation Strategy and any future plans associated with it
3	PROTECTION – New airspace should create a known traffic environment to protect the final approach and climb-out paths at Exeter Airport
4	ACCESS – Any new airspace should facilitate fair access to all airspace users
5	MINIMISE IMPACT – Airspace designs should, where possible, minimise the impact on non-Exeter Airport aviation in the local area
6	DIMENSIONS – The size and categorisation of any new controlled airspace should be proportionate to the requirement
7	CONNECTIVITY – Airspace should connect to the airways structure to ensure Commercial Air Transport remain inside Controlled Airspace when arriving or departing from Exeter Airport
8	ENVIRONMENT – Airspace should be designed to minimise the adverse impact of aircraft noise and emissions, including any consequential impacts caused by the displacement of other air traffic outside of the Controlled Airspace

Table 1 – Prioritised Design Principles

1.4 Defining the Baseline

In accordance with CAP 1616, a baseline will be required for all environmental assessments. This will allow the change sponsor to conduct an assessment to understand the current impacts so that a comparison can be made with the impacts of the options. In most cases, the baseline will be the 'Do Nothing' option and will largely reflect the current-day scenario.

1.4.1 Do Nothing Option

The Do Nothing option represents the current situation at Exeter Airport and will be used as the baseline against which all other options are measured. The only regulated airspace currently at Exeter Airport is an Aerodrome Traffic Zone (ATZ). The Exeter Airport ATZ is the airspace extending from the surface to a height of 2,000 ft above the level of the aerodrome within the area bounded by a circle centred on the mid-point of the runway

and having a radius of 2.5 nm. Figure 1 below shows the location of Exeter Airport in relation to the current surrounding airspace profile.

Figure 1 – Exeter Airport Local Area

There are no conventional departure or arrival procedures published. Arriving and departing aircraft are to follow the procedures published in the Aeronautical Information Publication (AIP), which includes noise abatement procedures. Exeter Airport has a surveillance capability and is able to provide aircraft with an Air Traffic Service (ATS). Aircraft operating to or from Exeter Airport can receive an ATS appropriate to their flight conditions (IFR or VFR) in Class G airspace. Exeter ATC can also provide an ATS to other air traffic operating in the vicinity of the airport if the aircraft captain requests such a service. Basic Service and Traffic Service is available to flights in Class G airspace operating under both IFR and VFR, whereas a Deconfliction Service is only available to flights in Class G airspace operating under IFR.

Aircraft departing IFR from Exeter Airport will follow the published noise abatement procedures before routing direct to their nominated airways joining point. However, routes are unpredictable in length and rely on intervention from ATC in terms of height clearances and radar vectoring. Aircraft may be restricted in height to remain in Class G airspace whilst waiting for clearance to join the airways in CAS.

Aircraft arriving at Exeter Airport are routed towards the holding fix at NDB(L) EX before being vectored to join the requested approach procedure. Aircraft often require tactical ATC intervention for avoiding action in Class G airspace and subsequent radar vectoring to join the final approach.

Figure 2 below illustrates the pattern of aircraft movements to and from Exeter Airport. The data represents all commercial movements arriving at and departing from the airport during the summer period between 16th June 2024 and 15th September 2024 inclusive.

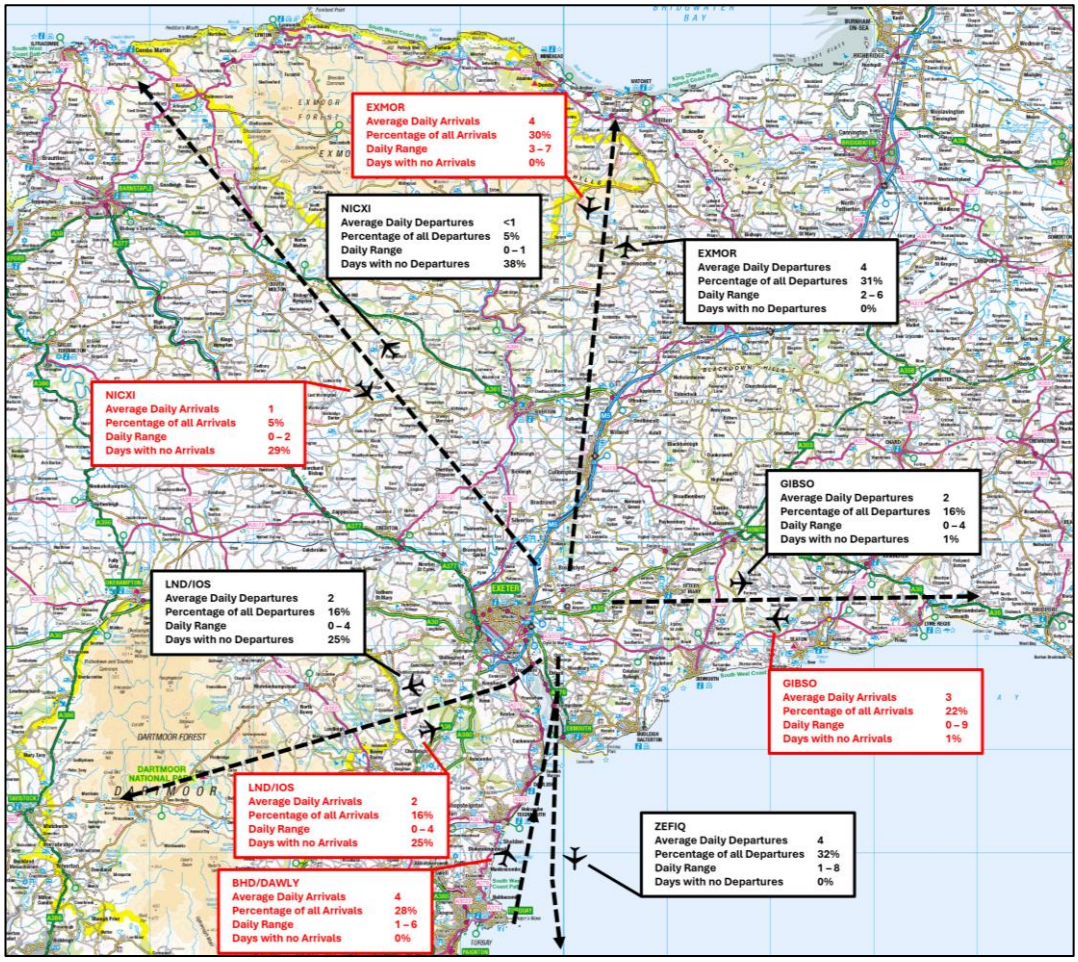


Figure 2 – Exeter Airport Operational Diagram

Runway 26 is the dominant runway, used approximately 67% of the time, due to aircraft normally taking-off and landing into the prevailing westerly wind. The predominant flow of traffic is to/from the north towards EXMOR (31%) or to/from the south towards Berry Head (32%), with the remaining traffic split between the east (GIBSO), north west (NICXI) and west (LANDS' END) of the airport. The routes are generally evenly split between UK domestic destinations and European short-haul destinations. There are no long-haul flights operated out of Exeter Airport.

The baseline operational environment includes the following list of conventional approach procedures:

- ILS/DME/NDB(L) to Runway 08 and Runway 26
- LOC/DME/NDB(L) to Runway 08 and Runway 26
- NDB(L)/DME to Runway 08 and Runway 26
- SRA RTR 2 NM to Runway 08 and Runway 26
- RNP to Runway 08 and Runway 26
- NDB(L) to Runway 26

In 2019, the majority of arriving aircraft followed the ILS procedure (78%), followed by the RNP procedure (18%). NDB and SRA procedures account for approximately 4% of approaches.

Aircraft arriving at or departing from Exeter Airport routinely experience delays both in the air and on the ground, as a result of requiring to deconflict from traffic operating VFR in Class G airspace around the airport. ATC tactical intervention is repeatedly required for Commercial Air Transport (CAT) aircraft on final approach or initial departure routes in order to maintain separation from local and transitory general aviation users.

Exeter Airport, prior to the onset of the COVID-19 pandemic, had a passenger operation of just over one million passengers per annum (2019), this was an increase of 9% versus 2018 passenger numbers. During the same time period commercial Air Transport Movements (ATMs) increased by 7% to approximately 14,000 movements. The airport has seen year-on-year growth in passenger numbers since 2013. There was a total of 26,000 non-commercial movements during 2019. Like all other airports across the UK, COVID-19 had a severe impact on traffic movements at Exeter Airport. There was a total of 23,000 movements in 2020, of which 3,000 were commercial air transport movements.

Forecast aircraft movements are shown in Table 2 below. Implementation is expected in 2027 hence, in accordance with the requirements of CAP 1616, traffic forecasts have been included for a period of 10 years from the intended year of implementation.

Forecast Aircraft Movements	**FY27[1]**	**FY28**	**FY29**	**FY30**	**FY31**
Commercial Movements	11,442	12,250	12,618	13,454	13,778
Non-Commercial Movements[2]	27,308	27,308	27,308	27,308	27,308
Total Movements	38,750	39,558	39,926	40,762	41,086
Forecast Aircraft Movements	FY32	**FY33**	**FY34**	**FY35**	**FY36**
Commercial Movements	14,734	14,854	15,374	15,494	15,881
Non-Commercial Movements	27,308	27,308	27,308	27,308	27,308
Total Movements	42,042	42,162	42,682	42,802	43,189

Table 2 – Forecast Aircraft Movements

Figures have been provided by Exeter Airport from their Business Management Case and show a year-on-year growth in traffic movements. Whilst post-COVID-19 growth in commercial ATMs is anticipated to be greater than normal, initially (13% in FY24), growth in later years is expected to vary between 1% and 7%. Non-commercial movements are not expected to vary greatly over the ten-year period.

[1] FY27 – Financial Year April 2027 - March 2028

[2] Mostly domestic GA, training, military and business aviation.

Exeter Airport's future projections for traffic growth include both an increase in passenger numbers and commercial ATMs.

2 Options Development

2.1 Step 2A – Options Development

Stage 2, Step 2A in the process concerns the development of a potential long list of procedure design options that seek to meet the original Statement of Need and are aligned with the Design Principles shown above. A comprehensive list of design options for Exeter Airport was developed initially and subsequently refined, through stakeholder input, to produce a long list of options. A copy of the Comprehensive List of Design Options document that was sent to stakeholders for Stage 2 engagement can be found on the CAA portal alongside this document. A full list of those contacted is included in Appendix A1.

2.2 Design Options

2.2.1 Standard Instrument Departures

A Standard Instrument Departure (SID) describes the route that an aircraft must fly on departure from an airport in order to connect safely with the en-route airspace structure. Aircraft will follow a designated route profile, including any altitude constraints, to a designated waypoint that forms part of the national airspace structure.

CAP 778 is the CAA's Policy and Guidance for the Design and Operation of Departure Procedures in UK Airspace. The criteria by which Standard Instrument Departures (SIDs) are designed are set out in the ICAO PANS-OPS 8168 document. However, to better reflect current aircraft performance and to satisfy specific UK operational and environmental circumstances, additional criteria for use in UK procedure design are considered necessary. CAP 778 sets out these additional national requirements. Within the UK, the term Standard Instrument Departure (SID) is the sole term to be used in the context of routes providing designated IFR departure procedures that remain wholly within CAS and permit direct connectivity with the en-route ATS system. It is a UK requirement that all SIDs must be wholly contained within CAS.

The Policy for the Design of Controlled Airspace Structures, published in August 2022, covers the requirements for airspace design and the containment of SIDs. Current UK policy is that a SID provides a specified Instrument Flight Rules (IFR) departure procedure that remains wholly within CAS and permits connectivity with the en-route Air Traffic Service (ATS) route system. For this reason, a SID must originate at an aerodrome that is also within CAS.

Initially, subject matter experts from Exeter Airport Air Traffic Control and operations, alongside representatives from the Airport's Approved Procedure Design Organisation (APDO) took part in a design workshop to generate the broad design ideas. This group were able to provide technical input that resulted in broad design options for the departure procedures at Exeter Airport, which were then shared with stakeholders, as described below. It had been identified from meetings organised by the Airspace Change Organising Group (ACOG) and attended by NERL, Bristol and Cardiff Airport's that there may be potential interdependencies between the ACP's. Due to their geographical locations, it was concluded that there would be no conflict below 7,000 ft between the design options for

Exeter Airport and Bristol Airport. However, it was identified that there was the possibility that design conflicts or enablers may arise between the Cardiff and Exeter ACPs in a small area to the north of Exeter Airport. There may however be viable options in both ACPs that do not enter this area below 7000ft and further design work would be undertaken at subsequent stages of the CAP 1616 process to ensure any conflicts would be resolved.

It is entirely possible to draw an infinite number of lines on a map to represent departure routes. However, designing route options that go in any direction, whilst being feasible, was not considered to be a good fit. There are only a limited number of destinations that aircraft departing the airport need to travel, and therefore only a limited number of directions (north, east, south, south-west and north-west). The SID design options that were developed were based around the routine departure directions that aircraft leaving Exeter Airport follow; that is, north, east, south, south-west and north-west. When developing the options, the potential environmental impact of the changes were considered in line with the Air Navigation Guidance 2017 and the government laid-out altitude based priorities. That is, the environmental priority from the ground to 4,000 ft would be to limit and, where possible, reduce the total adverse effects of aviation noise on people. Between 4,000 ft and 7,000 ft, the environmental priority would continue to be minimising the impact of aviation noise, unless that would create a disproportionate increase in CO_2 emissions. It was considered than none of the options aimed at minimising the impact of aviation noise would create a disproportionate increase in CO_2 emissions; therefore noise impact would be the priority to 7,000 ft in line with the altitude-based priorities.

These design options were shared with stakeholders and as they were only lines on a map, they are only indicative and only showed the approximate direction of travel and not the precise routings. Further detailed route designs would be completed at later stages of the process.

For the current noise abatement procedure for departures from Runway 26, aircraft climb on runway heading at the maximum rate compatible with safety to 1,000 ft above aerodrome level (aal) and then turn as soon as possible to avoid the City of Exeter. The design of the new procedures must conform to the internationally agreed criteria for flight procedure design, set down in the International Civil Aviation Organisation (ICAO) document PANS-OPS 8168 Volume 2 – Construction of Visual and Instrument Flight Procedures (PANS-OPS 8168). These criteria will mean that aircraft departing on Runway 26 will be further west, before they reach 1,000 ft aal and are able to turn, than currently and will result in aircraft being over the built-up area of the City of Exeter before commencing a turn. Departure options for Runway 26 include profiles that allowed aircraft to turn at the earliest position and options that extended the flight track further west to avoid turns over the city. Options to amend the noise abatement procedure to allow aircraft to commence a turn at 500 ft aal would still result in overflight of built-up areas of the City of Exeter. These options will also be considered for Runway 26 SIDs.

Exeter Airport have also considered Radius-to-Fix departure procedures, where aircraft fly a constant radius circular path around a defined centre point. This may have allowed an earlier turn after take-off, thereby avoiding the City of Exeter. However, not all aircraft are equipped or crew qualified to fly these procedures. Indications from operators at Exeter Airport are that these type of procedures are not suitable for operators at the airport so were not included at this stage.

Omnidirectional departures had not been considered as an option as it was considered that they would not offer any benefit over current departure procedures. However, following guidance from the CAA, omnidirectional departures have now been included in the comprehensive list of options and will be considered as a viable option for departures from Exeter airport. Further details on the inclusion of omnidirectional departures is included at paragraph 2.5 below.

A procedure for all departure options turning south initially after take-off and gaining height before turning to the north was considered but was initially discounted as it was considered that having all departing traffic concentrated to the south of the airport would not be operationally viable. The sequencing of traffic in this area could lead to delays on the ground for departing aircraft or delays in the air for arriving aircraft, which would be operationally unacceptable to the airport. However, Exeter Airport now consider for consistency that these options should be included as part of the comprehensive list of options to be taken forward to the Design Principles Evaluation.

2.2.2 Transition to Approach Procedures

The Transition to Approach procedures describe the route that the aircraft will take when arriving at an airport from the en-route network to the Initial Approach Fix for an Instrument Approach Procedure (IAP). The Transition options being developed will be designed to connect to the existing Global Navigation Satellite System (GNSS) Instrument Approach Procedures, which are not going to be changed as a result of this ACP.

The Policy for the Design of Controlled Airspace Structures also covers the requirements for Standard Arrival Routes (STARs), which are deemed to incorporate RNAV Transitions to Final Approach procedures. An RNAV Transitions to Final Approach procedure is the UK terminology to describe the RNAV initial approach segment from an RNAV Hold Fix to the Final Approach Fix which includes both lateral and vertical guidance and is designed in accordance with PANS-OPS 8168. The Policy for the Design of Controlled Airspace Structures states that these procedures should also be contained in CAS.

The same group of subject matter experts provided technical input that resulted in broad design options for arrival procedures at Exeter Airport, which were then shared with stakeholders, as described below. The design options that were shared with stakeholders were indicative only as they were lines on a map and only showed the approximate direction of travel and not the precise routings. Further detailed route designs would be completed at later stages of the process.

The Transition options that were developed were also based around the routine arrival directions that aircraft arriving at Exeter Airport follow; that is, north, east, south, south-west and north-west. Options to Runway 26 did not include an arrival transition from the north-west because it was considered that the routing that would be followed below 7,000 ft would be the same as the arrival from the north; so a single Transition from the north was considered. Also, no Transition procedure from the south was considered. Aircraft arriving from the south would not be able to route direct to the IAP due to the military Danger Areas, so the routing could either be the same as the option for arrivals from the south-west, or Exeter ATC would tactically vector the arrivals, as per today's operations, and coordinate transit through the airspace with Plymouth Military air traffic service.

2.2.3 Airspace Options

The airspace options developed were a number of different shapes and designs that could be considered to address the Statement of Need and align with some, but not necessarily all of the Design Principles. Each of the options presented showed the lateral extent of the airspace. However, there were also a number of options considered for each design for the airspace classification and vertical extent of the airspace. Different airspace classifications were also considered in some of the individual options too.

For example, a number of the options have a zone around the airport, stubs either side of this zone extending along the extended runway centreline, and a separate piece of upper airspace above these areas. The zone around the airport was initially assumed to be a Class D Control Zone (CTR), from the surface to 3,000 ft above mean sea level (amsl). The stubs either side could also be Class D airspace, from 1,500 to 3,000 ft amsl. However, the stubs could also be a different classification (Class E+, Class E, RMZ or TMZ) to the same altitude as the CTR. Above these areas, the upper airspace could also be any one of these 5 airspace classifications (Class D, Class E, Class E+, RMZ or TMZ), giving a large number of combinations for each of the options.

As stated above, current UK policy is that a SID provides a specified Instrument Flight Rules (IFR) departure procedure that remains wholly within CAS and permits connectivity with the en-route Air Traffic Service (ATS) route system. A SID must originate at an aerodrome that is also within CAS hence the airspace options taken forward must comply with the Policy for the Design of Controlled Airspace Structures.

2.3 Stakeholder Engagement

The comprehensive list of options was shared with all the stakeholders and representative bodies that contributed to the development of the Design Principles in Stage 1. These included a wide range of organisations and groups from airlines, local aviation clubs and the wider aviation industry, regional and local councils and public officials and national and regional conservation and environmental organisations. A full list of those contacted is included in Appendix A1. Changes to the stakeholder list since Stage 1 were as follows:

- Airport Consultative Committee – change in membership with Flybe, Ottery St Mary Town Council and Farringdon Parish Council no longer represented. Clyst Honiton Parish Council added to the Consultative Committee list.
- Airport Operators – changed as a result of the demise of Flybe with other operators taking up Flybe's routes. Hangar 52 now used at the airport for GA operators.
- Local Aerodromes and Aviation Organisations – Bath, Wilts and North Devon Gliding Club, Devon Strut and South Devon Hang Gliding and Paragliding Group added as local representatives of national aviation organisations.
- Air Navigation Service Providers – Swanwick Military no longer responsible for local airspace; Plymouth Military responsible for local military airspace.
- Local Authorities – West Somerset Council and Taunton Deane Borough Councils have amalgamated into a single council (Somerset West and Taunton Council).
- National Bodies – National Farmers Union and National Federation of Fisherman's Organisations no longer considered as relevant stakeholders. Local authorities considered as representing local community interests.

The purpose of the engagement was to check that stakeholders were satisfied that the design options were aligned with the Design Principles and that Exeter Airport had properly understood and accounted for stakeholder concerns specifically related to the design options.

Stakeholders were asked to provide their views to help further develop the designs to form the short list that would be taken forward to the next stage of the process. This could include, but was not limited to:

- Their route preference, where more than one option was given.
- Any suggested amendments to any of the designs shown.
- Any alternative ideas to those offered.
- Any options that they felt should not be taken forward, with reasons why.

The Design Options – Comprehensive List document was sent to stakeholders via e-mail on 18th November 2021, with a deadline date for responses of 17th December 2021. Stakeholders were also invited to attend a focus group where they had the opportunity to discuss the options that had been presented, or to ask questions about why the options had been planned as they were. Two focus groups were organised that included a variety of representatives from different stakeholder groups including Airlines, General Aviators and Air Navigation Service Providers, Exeter Airport Consultative Committee and Local Authorities. Stakeholders were able to attend and participate in the focus groups in person or to join online. Representatives of the following organisations or groups attended one of the Focus Groups:

- Exeter Airport Consultative Committee
- Hangar 52, Exeter Airport
- Devon and Somerset Gliding Club
- Farway Common Airfield
- TUI
- National Police Air Service
- Dartmoor Gliding Club
- Bath, Wilts and North Dorset Gliding Club
- NATS
- RNAS Yeovilton
- General Aviation Alliance
- Devon Strut
- Defence Airspace and Air Traffic Management (DAATM)
- British Gliding Association
- Exeter City Council
- Cranbrook Town Council
- Aylesbeare Parish Council

The focus groups planned and undertaken are detailed in Table 3 below:

Focus Group	Attendees	Date
Focus Group 1	Airport users, General Aviation, Air Navigation Service Providers	8th December 2021 - am
Focus Group 2	Exeter Airport Consultative Committee and non-aviation stakeholders	8th December 2021 - pm

Table 3 – Focus Group Details

At the end of each meeting, the participants were advised that attendance at the Focus Group did not preclude them from providing a written response to the engagement and were reminded of the deadline for responses. A Record of Discussion for each Focus Group can be found on the airspace change portal alongside this document; stakeholder comments from the Focus Groups have been captured in the feedback below.

2.4 Summary of Stakeholder Feedback

2.4.1 Devon and Somerset Gliding Club

Whilst accepting the need for protection of the final approach and climb-out paths at Exeter Airport, the Devon and Somerset Gliding Club (DSGC) raised major safety issues from all of the airspace options presented in the options document. DSGC acknowledged that whilst these may arise because of the close proximity of the two airfields and are thus almost unavoidable, a pragmatic solution would be required to mitigate the possible effects and optimise the outcomes for both parties.

DSGC stated that, from their perspective, the Do Nothing option would be preferable but acknowledged that this would not meet the most basic objective of the ACP – the protection of the final approach and climb out paths. All other options presented, apart from Option 3, were considered by DSGC to have major safety issues and were considered unviable for the following reasons:

- Some options do not meet the most basic objective of the ACP – the protection of the final approach and climb out paths.
- Some options create significant choke points and safety issues with other GA traffic.
- Options with a Class D CTR within 2 nm of North Hill airfield have safety, impact and access issues.
- Some options would have a considerable impact on the normal flying area.
- Some options would have an adverse impact on local airfields, including North Hill.
- Some options would have airspace overhead local airfields which would be totally unacceptable.
- Some options have airspace that is excessively complex.

DSGC stated that gliders operating out of North Hill are already considerably constrained with regard to access to airspace to the east, as they are obliged to circumnavigate the

majority of the Dunkeswell ATZ. Additional constraints from a nearby more restrictive airspace classification could make unrealistic, or even prevent, some of the options currently available to pilots wishing to fly to or from the east.

If any form of restricted airspace is close to North Hill's normal area for local flying and pilots need to seek a transit from ATC, or pass information on intentions to ATC, this would necessitate changing frequencies and making radio calls shortly after launch when focus should be on gaining and/or maintaining height. This is simply not possible when thermalling and is a major distraction from lookout at any time and restricts listening out on common frequency for paradropping. DSGC consider that there is a serious safety issue in more restrictive airspace classifications being in close proximity to North Hill's normal airspace.

It is likely that GA traffic transiting east-to-west or west-to-east through the wider area may choose to avoid any new airspace that carries a more restrictive classification. Such transiting traffic is likely to choose to remain north of Exeter Airport, and therefore may choose to fly between any new restricted airspace and the Dunkeswell ATZ. This will increase the risk of a mid-air collision due to the funnelling of aircraft through choke points. Application of CAA guidance on avoiding airspace infringements by remaining 200 ft' from the base of controlled airspace and/or 2 nm from the edge creates an artificial buffer, reducing the amount of Class G airspace and exacerbating choke points and funnelling due to restrictions near CAS. The 200 ft vertical buffer can be critical in areas of high terrain.

DSGC considered that Option 3 (circular zone radius 5 nm with 4 nm-wide stubs) could be viable and acceptable if the airspace was classified as an RMZ and the following amendments were made:

- The IF prior to the FAF is brought closer to the FAF, or the stub extended.
- Adjustment of the IAPs with the positioning of the Transitions to the south.
- Adjustment of the SID parameters to allow a tighter radius of turn.
- The use of time-switched Flexible Use of Airspace (FUA).

As a provisional proposal, DSGC considered that the area to the north of a line joining the northerly edges of the westerly and easterly stubs would be the most likely area where the use of time-switched FUA would be beneficial for both North Hill and Exeter Airport. DSGC has concluded that the Option 3 footprint, consisting entirely of an RMZ, could meet the primary objectives of the ACP whilst minimising the impact on DSGC and GA more generally in the area around North Hill and Dunkeswell airfields.

DSGC questioned the altitude of the bases and tops of the airspace options presented in the options document. The bases of some of the airspace options, specifically the stubs were shown to be 1,500 ft whereas the base level in Option 19 was shown as 1,700 ft. DSGC considers that the base of any re-categorised airspace in the Dunkeswell area should be no lower than 1,700 ft due to the local terrain heights and potential funnelling of traffic.

DSGC were against any requirement for the use of transponders as a pre-condition for entry into any regulated airspace. This is due to the high cost, the logistical problems of retro-fitting them as additional equipment into the already-cramped space of many glider instrument panels and cockpits and problems of increased battery power requirements. It is DSGC's view that in all options, the stubs should be classified as RMZs, unless a case is subsequently made for a higher categorisation. DSGC is strongly against the stubs becoming Class D airspace.

Although DSGC made no specific comments on the departure procedures, they suggested that the use of procedures with a tighter radius of turn, for example Noise Abatement Departure Procedures (NADP) 1 or Radius-to-Fix departure procedures, could assist in minimising the volume of re-categorised airspace. DSGC considered that an arrival route to Runway 26 via the NDB(L) EX would be more efficient than a route via the RNP approach procedure IAFs.

DSGC considered that the continued use of the historic waypoints associated with the extant RNP approaches to either runway at Exeter Airport gives rise to approach tracks which are inefficient and militate against minimising the volume of controlled airspace. DSGC requested that the design of these approach procedures be looked at with a view to revising the position of the waypoints to bring them closer to the FAF to reduce the overall airspace footprint.

DSGC proposed the use of time-switched FUA in specific areas to maximise the utilisation of the limited resource of airspace. DSGC proposed that a northerly sector of any area which is required to become part of a Known Traffic Environment should, during prescribed daytime hours, become fully open Class G airspace, and reverting to the Known Traffic Environment designation outside those hours. The proximity of any airspace close to North Hill would give rise to the need for DSGC gliders to make frequent radio calls to ATC, which would have several potentially serious consequences, as detailed above. As a provisional proposal, DSGC considered that the most likely area to be to the benefit of both parties is the area to the north of a straight line joining the northerly edges of westerly and easterly stubs as described in the alternate Option 3 above.

DSGC accepts the need for protection referred to in Design Principle 3 and believes that an RMZ within the footprint area of the Option 3 diagram balances the safety and commercial needs of EDAL with the safety requirements of all users. DSGC also noted that the safety issues described in this submission would be substantially mitigated by the adoption of a time-switched area which would essentially also reproduce the arrangements currently in place.

Exeter Airport's Response: Exeter Airport acknowledges the concerns raised by DSGC and is committed to a solution that would optimise the outcomes for both parties. Exeter Airport and DSGC have an existing Letter of Agreement (LoA) for current operations that works well for both parties. Exeter Airport would seek to amend and update this LoA to ensure that DSGC could continue to operate with the freedom they currently have.

The designs shown in the document were not the final designs, and the base heights of any new airspace will be carefully considered at the next stage of the process to ensure that they are not any lower than they need to be, bearing in mind the height of local terrain and the transitory requirements of GA aircraft. Careful consideration will also need to be given to the design of the airspace to ensure that it is not too complex whilst trying to maintain the base level as high as possible.

The use of FUA will be explored further. Instant visibility of airspace classification is required but this is not currently available within the UK Aeronautical Information System. Flexible arrangements could be considered on a local basis initially, including Dunkeswell Airfield and DSGC.

Exeter Airport already has compliant Final Approach PBN procedures in place at the airport. There are no plans to change these procedures as a result of this ACP. However, the amount of airspace required to protect these procedures will be carefully considered to

ensure the minimum amount required, noting that full containment of the existing procedures is not required.

Exeter Airport notes the comment that Option 3 as presented might be a viable option. Despite considering this option to be unviable, Exeter Airport will include this option, with extended stubs, going forward.

2.4.2 Bath, Wilts and North Dorset Gliding Club

The response from the Bath, Wilts and North Dorset Gliding Club (BWNDGC) did not provide specific feedback on the individual options presented in the Design Options document and at this stage, was designed to assist with Exeter airport's work in proposing workable airspace designs.

The BWNDGC response explained the potential impact on glider operations of CAS and why glider pilots have a strong preference for flying in Class G airspace. Cross Country gliding requires frequent changes of height, speed and direction, and this fits very poorly with the orderly flow of a controlled environment. Glider pilots are permanently busy with the tasks of navigating around airspace, finding the next available source of rising air, of exploiting it when found, and adjusting navigation decisions to take account of other aircraft, varying weather conditions and the land-ability of the terrain below and on route. Using the radio and acting under the control of others is a huge impediment to progress and potentially to flight safety. Although new CAS would not be the first choice for the gliding community, BWNDGC recognises that operating a commercial airport in Class G airspace is not without risk and the risks to both parties are real and significant.

Any CAS that would cause significant funnelling of GA traffic outside of CAS would be unacceptable. The safety of GA traffic would be radically reduced to the benefit of commercial traffic in CAS. This applies in terms of heights to be flown as well as geographical locations. Complex and large airspace designs can cause traps and cul-de sacs for uncontrolled aircraft. These must be avoided at the design stage. The alternative would be to create a barrier across all major routes to the south west for Class G traffic, resulting in a significant part of the country being cut off for the safety conscious GA pilot.

In relation to the Safety Design Principle, BWNDGC stated that funnelling of GA aircraft over higher ground and into narrower corridors has the potential for worsening the safety for those pilots and should not be a consequence of any changes to airspace design under this ACP. In relation to the Minimise Impact Design Principle, BWNDGC stated that they would consider the area local to Exeter Airport to extend at least 10 miles in a north-south direction and 20 miles east-west.

BWNDGC were surprised to see an option that replicated the proposal that was rejected by the CAA in 2017 for being disproportionate. If Exeter Airport were to propose this option again, they would need to clarify what has changed between 2017 and now which makes it a viable option. BWNDGC were encouraged that some of the options proposed bias new airspace designs towards the south of Exeter Airport in an attempt not to disturb current Class G excessively to the north.

Any airspace below 6,000 ft that extends to the north of the current Exeter ATZ and of a line from Honiton to Crediton would significantly reduce access and options for glider pilots. Specifically the gap between any new airspace and Dunkeswell airfield would cause dangerous funnelling and a reduction in safety to pilots denied the choice of routing to good gliding conditions. Any airspace restriction that forces gliders over higher ground

causes a reduction in safety margins and an increase in the likelihood of an outlanding. Any airspace extending to the west of Crediton below 6,000 ft would reduce options for cross-country gliders and would be unwelcome. In addition, although the southern side of Exeter airport towards Exmouth and Sidmouth is less-used by cross country gliders but on occasions is by far the preferred routing under specific conditions. Were this area to be in low level CAS below 4,000 ft there would be a loss of significant options currently available to glider pilots.

BWNDGC also questioned the proposal to retain the existing RNP approach procedures and specifically the position of the existing Hold. BWNDGC stated that the current hold patterns for runway 26 inevitably push aircraft movements northwards of the runway, to the detriment of local GA traffic.

Exeter Airport's Response: Exeter Airport acknowledges the concerns raised by BWNDGC, specifically the impact of CAS on glider operations. Exeter Airport does not wish to see a barrier to cross-country flying introduced in the airspace to the north of the airport and would facilitate access to any new airspace. It is acknowledged there is a view that using the radio and acting under the control of others is a huge impediment to progress and potentially to flight safety for glider operations and Exeter Airport will be cognisant of this in any design options taken forward.

2.4.3 Residents of Hangar 52[3]

As GA pilots, the residents of Hangar 52 stated that they totally supported the concept of improving safety for all airspace users and would back any reasonable proposals, providing they were seen to be proportionate, calculated to significantly reduce the risk of future safety incidents and did not adversely impact other airspace users around the local area.

They considered that the over-riding principles when designing any new airspace should be:

- Keep it as simple as possible.
- Keep the space and volume as minimum as possible.
- Avoid any pinch-points for traffic not wishing or able to enter CAS.
- Ensure that non-controlled air traffic is not forced to fly through the overheads of other small airfields, such as Farway Common and Branscombe.

It was noted that the proposal for bases of CAS down to 1,500 ft, particularly to the east of the airport, would be potentially dangerous due to the undulating terrain with hills up to 700 ft and issues with communications below 3,000 ft in that area. Flying at low altitudes is more turbulent and uncomfortable for light aircraft and any forced landing from low level is inherently more dangerous with little gliding height to manage the situation.

The response also requested further information relating to numbers of air traffic movements compared to other UK airports of a similar size, both with or without CAS and information on safety incidents at these airports. It was also requested that information relating to the incidents at Exeter Airport be provided on a chart to understand where the main geographical areas of concern are.

Exeter Airport's Response: Exeter Airport acknowledges the concerns raised by the Residents of Hangar 52 regarding airspace design and safety impacts. As previously stated,

[3] Hangar 52 is located at Exeter Airport and is the home to GA operators.

the base heights of any new airspace will be considered carefully in the future design process to ensure that safety margins below any new airspace are not unduly compromised.

2.4.4 British Gliding Association

The British Gliding Association (BGA) recognises that Exeter Airport has safety issues with existing operations and recognises that there is a risk to GA aircraft from commercial air traffic. The BGA previously proposed several solutions that were reliant on TMZs and RMZs with the aim of minimising the size of CAS and are encouraged to see that these airspace tools are being considered in this ACP. Any procedures and associated airspace design that is taken forward must minimise amount of CAS supported where necessary by use of other airspace tools including TMZ, RMZ and FUA.

The BGA stated that the plans to solve the issues at Exeter Airport should be proportionate and take full and informed account of airspace stakeholders needs. Specifically, the DSGC and BWNDGC would be significantly affected by Exeter Airport's plans, as would a number of other gliding clubs and aircraft operators that transit through the area. DSGC could be severely damaged by the introduction of new airspace. The introduction of new CAS could adversely affect a number of gliding clubs by having long-standing cross-country routes curtailed or damaged. Any new airspace to the west of Exeter Airport could adversely impact access to high-level wave soaring areas over Dartmoor.

The BGA would expect any solutions proposed to protect GA and gliding users from being funnelled into narrower corridors and over higher or dangerous ground. Any controlled airspace south of Exeter Airport should be at the highest level possible to enable GA and glider flights to continue below CAS.

The BGA also stated that the previously designed RNP approaches should be modernised with a view to minimising the amount of airspace required.

Exeter Airport's Response: Exeter Airport is committed to working with its neighbours and the wider aviation community to minimise the impact on operations. The use of different types of airspace classification will continue to be considered throughout the design process. As previously stated, the use of FUA will be explored further. Instant visibility of airspace classification is required but this is not currently available within the UK Aeronautical Information System. Any flexible arrangements may need to be considered on a local basis only initially.

2.4.5 Farway Common Airfield

Whilst broadly supporting the enhancement of safety for commercial traffic operating at Exeter Airport, the response from Farway Common Airfield stated that careful consideration should be given to other airspace users. Their main concern was the use of any form of expansive Class D airspace. In their experience, many GA pilots avoid Class D airspace wherever possible but for those that do not, permission to transit Class D airspace is increasingly becoming refused, leading to 'walls' of airspace that preclude, or make transits difficult.

A major concern was of airspace that was too expansive or too low over the airfield. The airfield is approximately 800 ft amsl and the proposed ceiling of just 700 ft above the field would mean the safety procedures at Farway would become too compromised to operate safely, for the following reasons:

- It is the CAA's recommendation to encourage a Standard Circuit and an overhead join. Farway believe 800 ft would be a reasonable and safe height, which would not be possible.
- The airspace in the vicinity of Farway is very busy at low level with many transiting aircraft running over the field. Further compressing this traffic to a maximum of 700 ft above ground level (agl) seriously increases the risk of a mid-air collision.
- With overhead airspace at 700 ft agl, Farway cannot operate a proper circuit, ensure safe joining instructions or realistically allow the circuit to be used for any kind of training.
- VFR safe flying practice require aircraft to be flown at over 500 ft from any structure or person. A 1,500 ft airspace base would further compress the available airspace to fly in to just 200 ft significantly increasing the possibility of an accident.
- Navigating below a low base of airspace in an area where the terrain is hilly with deep valleys and large areas of forest gives a restrictive letterbox with minimum space. There would be significant issues with turbulence, leading to high pilot workload and difficult navigation. In addition, in the event of engine failure at just 600 ft agl, the opportunities for a safe forced landing are seriously reduced and is in fact very dangerous. The local terrain makes the safety implications of an enforced 1500 ft ceiling an unacceptable compromise of GA safety.
- It is extremely difficult to obtain reliable two way radio contact when to the east with Exeter Radar below 1,500 ft amsl. Introducing low level airspace will create an unknown environment with pilots not being able to talk to the local LARS service. Low level airspace becomes unworkable and compromises safety.
- With terrain at 800 ft and a low airspace ceiling height, marginal VFR weather or where there is low broken cloud would make navigation impossible to execute safely. Without the airspace in place, pilots are able to climb to safely navigate over terrain and obstacles. By introducing airspace with a low base height, pilots would have this valuable safety option removed from them, significantly impacting safety.

Farway agreed with the widely supported view that any granted airspace should be as small and non-complex as possible. Any CAS should be reduced to Class E outside of airport published operating hours. Farway supported the change in approach procedures to reduce the airspace requirements.

Given the airports objective of enhancing safety and creating a known environment for commercial air traffic, Farway believe that the design of Option 5 (with the following caveats) would be least impactful on Stakeholders:

- Class D CTR, surface to FL65 Circular zone 5 nm radius (smaller due to changed procedures);
- Stubs – TMZ/RMZ extending from 2000 ft to FL65;
- All airspace reverting to Class E outside of Exeter Airport operating hours.

This would allow Farway to continue to operate an 800 ft agl circuit with compromise on overhead joins, increase the space for transit to enhance glide clear and reduce the effect

of compacting everyone into a tight letterbox of airspace and allow safe transit of obstacles and weather in marginal conditions.

Exeter Airport's Response: Exeter Airport acknowledges Farway's concerns regarding the base height in the area close to the airfield. The base height of any new airspace in this area will be considered carefully in the future design process and Exeter Airport will liaise closely with the operators of Farway Common to work to a mutually beneficial outcome. Although not previously in place, the use of a LoA or Memorandum of Understanding (MOU) could be put in place to facilitate operations.

Exeter Airport acknowledges Farway's concerns regarding access to Class D airspace. Exeter Airport would not routinely refuse transit or entry to any airspace, unless for overriding safety issues.

2.4.6 Devon Strut

Devon Strut stated that Watchford Farm, Farway Common and Branscombe airfields should be considered in addition to Dunkeswell and North Hill airfields.

None of the described departure tracks would have a negative impact on local airfields other than Farway Common, which would be mitigated by the anticipated altitude of aircraft flying the procedure.

The described Transitional approach routes from airways to Runway 08 would have no impact on local GA airfields but the Transition to Runway 26 would overfly Watchford Farm and Branscombe Airfield. Further clarification would be required to understand the height of the procedures above the circuit heights of these airfields.

It was the opinion of Devon Strut that the position of the IAFs for the RNP approach procedures should be revised and brought closer to the airport in order to reduce the size of the CAS.

Devon Strut stated that suggestions of Class D for the CTR and RMZs for the stubs and/or outer areas was possible and provided the following feedback for individual options:

- The "Do Nothing" option is agreed to be unacceptable as not providing the required protection to commercial traffic;
- Options 1-2, 6-9 and 11-19 are considered unacceptable as not protecting local airfields. Option 19 is considered unsafe as it is too complicated and would result in airspace incursions;
- Options 3 & 10 are worth further consideration. However, the suggested bases of the stubs are unacceptable and should be reconsidered to take into account the circuit heights of the local airfields and the general terrain height in the area.
- Option 10 is acceptable noting the previous comment above regarding the base height of the stubs to provide headroom for Farway Common circuit height and the to provide safety clearance over the high ground to the west.

The Devon Strut is not opposed to air space change but any such development must provide a safe environment for all airspace users with safety as the overarching factor above all else. The volume of change in CAS must be kept as small as possible and to the minimum classification possible in order to minimise the impact on other airspace users. Any new CAS must be to the lowest specification possible such as RMZ which would create

a mutually suitable known environment. RMZ classification would be preferable to Class D.

The Devon Strut is concerned for the safety of its members and other airspace users. Pilots departing from Dunkeswell Aerodrome, Farway Common, Watchford Farm and Branscombe airfields should be afforded space to leave the circuit, carry out checks and procedures and establish a safe cockpit environment before changing frequency to Exeter ATC. Likewise, VFR traffic departing Exeter Airport should be able to change frequency with sufficient time and space to make contact before joining the circuit at other airfields.

The south coast corridor should be maintained with sufficient size so as to aid the safe flow of VFR traffic. Consideration must also be given to the relationship with the Danger Area D012 and the requirements of the MOD.

By the very nature of the gliders, glider operators will have specific needs and requirements in order for them to continue to operate in a safe and efficient manner. The ACP must take into consideration their needs and work toward a harmonious and equitable solution.

Exeter Airport's Response: Exeter Airport acknowledges Devon Strut's comments relating to other airfields in the local area and the airport is committed to working closely with all our neighbours.

2.4.7 NATS

NATS was supportive of the majority of the design options presented and would continue to work with Exeter Airport as part of the Future Airspace Strategy Implementation – South (FASI-S) western deployment.

NATS commented that, in relation to Option 19 and the proposed vertical limit of FL105, consideration needed to be given to how traffic would be managed between Bristol, Cardiff and Exeter Airports. However, NATS added that they could consider the airspace becoming part of the LD1.2[4] airspace to still achieve the Exeter concept, albeit with a slightly amended design.

Exeter Airport's Response: Exeter Airport will continue to work with NATS and Bristol and Cardiff Airports as part of the FASI-S programme.

2.4.8 Exeter Airport Consultative Committee

The Exeter Airport Consultative Committee (ACC) considers that the design options being developed by Exeter Airport, with two exceptions, are both sensible and proportionate for the safe operation of commercial traffic. Whilst the current use of Class G airspace for transit between airway structures and the existing ATZ has to date been reasonably safe, the creation of defined Class D airspace will finally provide the enhanced level of control expected of a modern ATC system.

The proposed departure track from Runway 08 to GIBSO should be routed between West Hill and the town of Ottery St Mary. The arrival approach path to Runway 26 passes directly over Ottery St Mary and the ACC considered it unwise to route an easterly departure SID over the same town.

[4] NATS London Airspace Modernisation Programme 2, Deployment 1.2 ACP - this ACP will be used to implement any further changes that may be required by airport ACPs subsequent to changes to the ATS route network in the south west of England and Wales

The upwind end of Runway 26 lies approximately 1.85 nm from the densely populated eastern limits of the City of Exeter. The published Noise Abatement Procedure is adequate for maintaining a noise footprint that does not unduly impact the lives of residents. This assumption is supported by the fact that the airport has historically received very few noise complaints from residents beneath the current departure tracks that pass close to the City boundary. The necessity to design a SID to conform to ICAO standards precludes any possibility of avoiding overflying large swathes of the City. This is especially pertinent as the airfield has no current night restrictions on its operations. The alternative of creating a Radius-to-Fix initial departure procedures could solve the environmental problem so long as the current track distances to GIBSO and Berry Head are not unduly increased.

A viable alternative would be not to publish a SID for Runway 26. From an ATC point of view this remains a predictable situation and would be further enhanced by the proposed creation of local CTRs and CTAs.

Exeter Airport's Response: The routes shown in the Design Options – Comprehensive List document are indicative only and only show the approximate direction of travel. Further detailed route designs will be completed at later stages of the process. The design for the Runway 08 departure to the east will be reconsidered to avoid Ottery St Mary if possible.

Exeter Airport acknowledges the concerns regarding departures from Runway 26 overflying the City of Exeter. Any options that are taken forward to Stage 3 will be subject to a full environmental assessment to determine the impact. Exeter Airport will not look to introduce procedures at any cost, and if it is considered that the impact of any option is too great, the option will not be taken forward.

2.4.9 Exeter City Council

The City Council is supportive of implementing an ACP, as this will make airspace over and surrounding Exeter, safer for all. The City Council are supportive of introducing Option 19, as shown within the consultation document.

Without understanding the environmental impact (noise and air quality) on the city, for the different departures for Runway 08 and Runway 26, the City Council did not provide a final comment but from the information that was provided in the consultation document and from attending the consultation event, the following initial thoughts were provided:

- Runway 08 Departures – this would be the preferred option for the City Council, as this would reduce the level of air traffic movements over the city. It is anticipated that this would reduce noise and air pollution over a large, populated area, as well as improving safety. The City Council would need to see modelled data provided by the airport, to confirm our recommendation.
- Runway 26 Departures – this would be the least favourable option being implemented. As aircraft would be banking and turning over the city, this could cause additional noise and air pollution over the city;
- Runway 26 Extended Departures – this would be the City Council's second option for being implemented. The reason for this, is that aircraft would continue to climb over the city and would have less environmental impact on Exeter.

The City Council would provide additional comment once modelled data is provided on the environmental impact of the options.

Exeter Airport's Response: As stated above, the impact of Runway 26 departures over the City of Exeter will be considered during Stage 3 and if the impact is considered too great, those options will not be taken forward.

2.4.10 Individual Responses

Three additional responses were received from individual glider pilots.

All responses expressed concern that any airspace restrictions to the north of the airport would compress aircraft transiting from east to west and west to east closer together in a smaller piece of airspace. This would reduce overall safety.

One response suggested that having all aircraft routing to the south and climbing to a safe altitude before turning north would be the safest option.

The proximity of some of the options to Non-Secondary Surveillance Radar (SSR) Glider Area 5 (Dartmoor Wave Box) was highlighted and whether this area had been considered in the designs.

Exeter Airport's Response: Exeter Airport acknowledges the concerns relating to glider operations. Exeter Airport does not wish to see a barrier to cross-country flying introduced in the airspace to the north of the airport.

The Dartmoor Wave Box had not previously been considered. None of the options infringe the Wave Box, but further consideration of the airspace will be given as design work progresses.

Routing all aircraft to the south and climbing prior to turning north has now been included in the comprehensive list of options for consideration at the Design Principles Evaluation step.

2.5 Additional Design Options

2.5.1 Omnidirectional Departures

Following feedback and guidance from the Civil Aviation Authority (CAA), Exeter Airport are now including omnidirectional departures in the comprehensive list as a potential option for aircraft departing Exeter Airport.

An omnidirectional departure is a method of providing an obstacle-cleared instrument departure at aerodromes outside CAS and are designed on the basis that an aircraft maintains runway direction to a minimum height of 500 ft aal before commencing a turn. On reaching the specified height to ensure obstacle clearance, a turn in any direction may be made to join the en-route phase of flight. In some case, an omnidirectional departure may also require specific restrictions to be applied as part of the procedure including avoidance of specific sectors, or altitude or design-gradient limitations.

Within the UK, a SID provides a specified IFR departure procedure that remains wholly within CAS and permits connectivity with the en-route ATS route system. As some of the airspace options being considered by Exeter Airport would not permit departure procedures to be wholly contained in CAS, and therefore not allow a SID to be implemented, the use of omnidirectional departures is considered to be a viable alternate and is therefore now being included within our list of design options. Although further procedure development work would be required at the next stage of the CAP 1616 process,

an omnidirectional departure could also be designed to perform in a similar way to the Standard Instrument Departure procedure options that are being considered.

The inclusion of omnidirectional departures as part of the comprehensive list was shared with all the stakeholders and representative bodies that had previously been engaged with during Stage 2 on 25th May 2023. Stakeholders were given the opportunity to provide feedback on the option, with a deadline for responses of 9th June 2023.

2.5.2 Stakeholder Feedback

Devon and Somerset Gliding Club responded by stating their support for the introduction of omnidirectional departures as it would negate the requirement for CAS for departing IFR traffic at Exeter Airport. However, they also provided a comment that Exeter Airport may consider including a restriction on any departures to prevent conflict with gliding activities at North Hill airfield and with parachuting activities at Dunkeswell airfield.

Exeter Airport's Response: Exeter Airport acknowledges the support for these procedures from Devon and Somerset Gliding Club and notes the consideration for additional restrictions to prevent conflict with gliding activities.

The response from the MOD considered the impact that these procedures may have on the Danger Areas EG D012 and D013. If there was a potential to routinely infringe these areas the MOD were keen to understand how this would affect their LOA with Exeter Airport.

Exeter Airport's Response: Exeter Airport acknowledges the concerns raised by the MOD. We would not anticipate these procedures having any impact on the Danger Areas, or the LOA. We will continue to work closely with the MOD with respect to this issue.

A response from a local Member of Parliament for Exeter asked what the impact of these departures would be over the built up areas of Exeter.

Exeter Airport's Response: The impact of omnidirectional departures on the City of Exeter will not be fully known until detailed procedure design work has been undertaken. This will occur at Stage 3 of the CAP 1616 process; Exeter Airport will aim to keep any impact to a minimum.

A response from an individual stated that they would like to see Exeter Airport containing its Controlled Airspace to solely an ATZ.

Exeter Airport's Response: The Exeter Airport ACP concerns adapting the existing airspace structure surrounding Exeter Airport to assist Air Traffic Control (ATC) in providing enhanced levels of safety and information to aircraft operating in and out of Exeter Airport and to aircraft operating in the local area. This may require the introduction of Controlled Airspace.

2.6 FASI-S and Masterplan Coordination

2.6.1 FASI-S

FASI-S is the combined programme of airspace changes to the legacy air traffic route structures in the southern part of the UK. FASI-S is comprised of several change sponsors including NATS En Route Limited (NERL), the UK's en route Air Navigation Service Provider (ANSP). NERL is responsible for airspace change to the en route network above 7,000ft such as creating additional capacity to support growth and reducing airspace inefficiencies. FASI-

S also includes low-level airport changes led by a number of airports in the south of England. These are focussed on low-level designs including the better management of noise impact and reduction of environmental impacts.

During the development of our Design Principles in Stage 1, Exeter Airport was not part of the FASI-S programme. Exeter Airport is now part of the FASI West Deployment Programme specifically aimed at coordinating the programme and designs of the three ACPs in the West Deployment of the Airspace Change Masterplan – Exeter, Bristol, and Cardiff Airports.

These change sponsors are currently leading their own ACPs which often focus on similar geographical areas of airspace. It is therefore imperative that we continue to work together to develop airspace design options and manage engagement with stakeholders in a joined-up approach. Exeter Airport has been working closely with both Cardiff and Bristol Airports, alongside numerous other stakeholders to ensure that designs are progressed with other potential airspace changes in mind; allowing potential conflicts and enablers to be identified.

2.6.2 Masterplan

Commissioned by the DfT and CAA, who are the co-sponsors of the Airspace Modernisation Strategy (AMS), the Airspace Change Masterplan will be a high-level co-ordinated implementation plan that identifies which individual but interdependent airspace design changes need to be developed to deliver the range of benefits that airspace modernisation will bring. The Masterplan is strategically important for coordinating the delivery of two of the key initiatives under the AMS, one of which is the coordination of design changes in the south of the UK (FASI-S). In line with these points, Exeter Airport is coordinating their proposal in line with Bristol Airport, Cardiff Airport and NERL due to the potential interdependencies that exist.

Even before formal acceptance into the FASI-S programme, Exeter Airport has been working closely with the Airspace Change Organising Group (ACOG) throughout its Stage 2 work to ensure it is aligned with wider programme. Exeter Airport is fully supportive and aligned with ACOG's initial Masterplan and has also supported the recently approved Iteration 2 of the Masterplan. This specifically focuses on interdependencies between independent ACPs where design conflicts or enablers could arise. Exeter Airport has worked alongside and engaged Bristol and Cardiff Airports, as well as NERL throughout its Stage 2 design work. This has enabled potential conflicts to be identified early on and appropriate design decisions to be made.

Due to their geographical locations, it was concluded that there would be no conflict below 7,000 ft between the design options for Exeter Airport and Bristol Airport. However, the masterplan has identified that there is a possibility that design conflicts or enablers may arise between the Cardiff and Exeter ACPs in a small area to the north of Exeter Airport. There may however be viable options in both ACPs that do not enter this area below 7000ft. Further design work would be undertaken at subsequent stages of the CAP 1616 process and Exeter Airport will continue to work with NERL and Cardiff Airport to ensure satisfactory solutions to any conflicts are possible.

The following meetings, shown in Table 4, were attended by Exeter Airport in relation to this wider programme of airspace modernisation. They have been focussed on providing updates across the various different ACPs and the wider UK programme of airspace change.

Engagement Activity	Date	Participating Stakeholders	Summary of Engagement
LAMP Engagement	12 Feb 2020	ACOG, NERL, Exeter Airport	Requirements Capture exercise and to discuss initial design thoughts.
FASI-S Project Management/Technical Working Group	10 Mar 2020	ACOG, FASI-S sponsors	
LD1 Engagement	5 Jan 2021	ACOG, NERL, Exeter Airport	NERL pre-engagement meeting.
LD1 Engagement	18 Jan 2021	ACOG, NERL, Exeter Airport	To provide an update from NERL on the progress made to date.
LD1 airport system requirements meeting	26 Mar 2021	NERL, Bristol Airport, Cardiff Airport, Exeter Airport	To discuss the impact of LD1 on airport systems and to ascertain what the airport system changes are likely to be.
Exeter ACP Deployment Strategy	13 May 2021	ACOG, Exeter Airport	To set out the key interdependencies and constraints that should be incorporated into the deployment strategy for the ACPs
LD1 Engagement	14 May 2021	NERL, Exeter Airport	To provide an update on the LD1 design.
LD1 Stage 3 update	27 May 2021	ACOG, Exeter Airport	Update on the LD1 Stage 3 work.
Masterplan briefing	17 Jun 2021	ACOG, Bristol Airport, Cardiff Airport, Exeter Airport, MOD	ACOG provided an update on the development of the airspace change masterplan including the plan for several iterations. The requirements on ACOG and change sponsors were explained, such as working together to identify dependencies between ACPs.
West Deployment Programme Coordination Group	6 Jul 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	ACOG provided an update on the Masterplan and deployment planning. Airport sponsors provided an update on their Stage 2 design work.
LD1 Engagement	25 Jul 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	Update on LD1 design provided. Principal of doing a combined assessments discussed.

Engagement Activity	Date	Participating Stakeholders	Summary of Engagement
Masterplan development	26 Jul 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	To understand the data/information available or under development that ACOG can use to build Iteration 2 of the Masterplan and how sponsors can work together to ensure they meet the requirements in the Masterplan Accept criteria.
West Deployment Programme Coordination Group	7 Sep 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	ACOG provided an update on the Masterplan and deployment planning. Airport sponsors provided an update on their Stage 2 design work.
Cardiff Airport Stage 2 Engagement	13 Sep 2021	Cardiff Airport stakeholders	Stage 2 engagement activity – comprehensive list of options.
West Deployment Technical Coordination Group	16 Sep 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	To set out the requirements for assessing the combined and net impacts of airspace design and to discuss the considerations for CO_2 modelling. Airport sponsors provided an update on their Stage 2 design work.
LD1 Consultation webinar	17 Sep 2021	NERL, Bristol Airport, Cardiff Airport, Exeter Airport	To outline the LD1.1 and FRA Deployment 2 options as part of the ACP Stage 3 consultation.
Masterplan development	22 Sep 2021	ACOG, Exeter Airport	To agree Exeter Airport's input to the Masterplan.
West Programme Sim/ Safety Meeting	29 Sep 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	Discussion on upcoming safety and simulation activities.
Strategic engagement meeting	30 Sep 2021	ACOG, NERL, Exeter Airport	To provide an update on sponsor ACPs.
Bristol Airport Stage 2 Engagement	9 Nov 2021	Bristol Airport stakeholders	Stage 2 engagement activity – comprehensive list of options.
West Deployment Programme Coordination Group	16 Nov 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	ACOG provided an update on the Masterplan Iteration 2. Airport sponsors provided an update on their Stage 2 progress.
LD1 Engagement	3 Dec 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	NERL introduced strategy options for the LD1.2 ACP, including a co-sponsored approach.

Engagement Activity	Date	Participating Stakeholders	Summary of Engagement
West Deployment Technical Coordination Group	14 Dec 2021	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	Further discussion on cumulative impact and the setting of baselines. Airport sponsors provided an update on their Stage 2 design work. NERL provided an update on LD1.2.
LD1.1 Engagement	7 Jan 2022	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	NERL provided a summary on their LD1.1 consultation including responses received. As a result of consultation feedback, NERL provided an update and justification on a revision to the LD1.1 design.
West Deployment Programme Coordination Group	25 Jan 2022	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	ACOG provided an update on the Masterplan Iteration 2. Airport sponsors provided an update on their Stage 2 progress.
LD1.2 Engagement	29 Apr 2022	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	NERL provided an update of the LD1.2 ACP. Airport sponsors provided an update on progress, including Gateway outcomes.
West Deployment Programme Coordination Group	8 Feb 2023	ACOG, NERL, Bristol Airport, Cardiff Airport, Exeter Airport	Airport sponsors provided an update on their ACP progress.

Table 4 – FASI-S Engagement Activities

Exeter Airport appreciate the support from ACOG and are confident that this Stage 2 submission is fully aligned with both iterations (Stage 1 and Stage 2) of the Masterplan. The design options will continue to be coordinated with the other regional airspace changes within the FASI West Deployment Programme. We look forward to continuing to work alongside ACOG and the change sponsors of ongoing ACPs.

2.7 Stakeholder Feedback

2.7.1 Bristol Airport

Feedback on the design options was received from Bristol Airport on 29th June 2023, following a request from Exeter Airport. Bristol Airport had no comments on the design options and was content that the options presented aligned with the Design Principles.

2.7.2 Cardiff Airport

Despite further requests from Exeter Airport for feedback on the design options, no specific feedback was received from Cardiff Airport. Exter Airport will continue to engage with Cardiff Airport as the options develop in the future.

3 Conclusion and Next Steps

3.1 Conclusion

As part of the CAP 1616 Stage 2 – Develop and Assess – Exeter Airport has conducted comprehensive two-way engagement with the same stakeholders who were engaged during Stage 1B.

Following this stakeholder engagement, Exeter Airport has conducted the Design Principle Evaluation to show to what extent the options meet the Design Principles. These documents will be submitted to the CAA to support the assessment at the Stage 2 Develop and Assess Gateway.

As part of continuing engagement activities, Exeter Airport will contact stakeholders to update them on the progress of the ACP and to signpost the Stage 2 documentation on the airspace change portal.

3.2 Next Steps

On successful completion of the Stage 2 Gateway assessment, Exeter Airport will continue to develop the design options during Stage 3 of the CAP 1616 process. This will involve constructing scenarios that will consider each of the procedure designs in combination with other procedures and airspace options to assess the holistic options that deliver the operational requirement at Exeter Airport. This will allow us to analyse interactions between different design options and which combinations best meet our Design Principles. We look forward to engaging our stakeholders during this next phase and working towards an optimal design for Exeter Airport and our stakeholders.

A1 Stakeholder Matrix

A1.1 Aviation Stakeholder Matrix

The following tables represents the key aviation stakeholders identified by Exeter Airport as potentially being affected by the proposal. We engaged with all of these Stakeholders during the development of the design options.

A1.1.1 Exeter Airport Consultative Committee

Consultee	Organisation
[redacted] (Chairman)[5]	Woodbury Parish Council
[redacted]	Aylesbeare Parish Council
[redacted]	Exeter City Council
[redacted]	Exeter City Council
[redacted]	Exeter City Council
[redacted]	Devon County Council
[redacted]	Devon County Council
[redacted]	Cranbrook Town Council
[redacted]	DAAT
[redacted]	Rockbeare Parish Council
[redacted]	West Hill Parish Council
[redacted]	Clyst Honiton Parish Council
[redacted]	Clyst Honiton Parish Council
[redacted]	Clyst Honiton Community Association
[redacted]	East Devon District Council
[redacted]	Bishops Clyst Parish Council

[5] The Design Options Comprehensive List document was sent to the ACC Chairman who disseminated it across the committee

Consultee	Organisation
[redacted]	Broadclyst Parish Council
[redacted]	East Devon District Council
[redacted]	East Devon District Council
[redacted]	East Devon District Council EHO
ASPI@dft.gov.uk	Department for Transport

Table 5 – Consultative Committee Members

A1.1.2 Airport Operators

Airport Operators	
Air Ambulance	Aviation Southwest
BA CityFlyer	Blue Islands
Exeter Aerospace	Hangar 52 Residents
Iscavia	Loganair
NPAS	Robin Flying Group
Ryanair	Skybus
TUI	West Atlantic

Table 6 – Airport Operators

A1.1.3 Local Aerodrome and Aviation Organisations

Local Aerodromes and Aviation Organisations	
Bath, Wilts & North Dorset Gliding Club	Bristol Airport
Branscombe Airfield	Cardiff Airport
Devon and Somerset Gliding Club: North Hill Airfield	Devon and Somerset Microlight Club

Local Aerodromes and Aviation Organisations	
Devon Strut	Dunkeswell Aerodrome: Devon and Somerset Flight Training
Dunkeswell Aerodrome: SkyDive Buzz Ltd	Farway Common Airstrip
RNAS Yeovilton	South Devon Hang Gliding and Paragliding Group
Watchford Farm Airstrip	

Table 7 – Local Aerodrome and Aviation Organisations

A1.1.4 Air Navigation Service Providers

ANSP	
NATS Bristol	NATS Cardiff
NATS (En-Route) plc (NERL)	Plymouth Military
Yeovilton Radar	

Table 8 – Air Navigation Service Providers

A1.1.5 National Aviation Organisations

We have engaged with the following National Aviation Organisations through members of the National Air Traffic Management Advisory Committee (NATMAC):

National Aviation Organisations	
Aircraft Owners and Pilots Association	Airfield Operators Group
Airport Operators Association	Airspace4All
Airspace Change Organising Group (ACOG)	Association of Remotely Piloted Aircraft Systems
Aviation Environment Federation (AEF)	BAE Systems
British Airways	British Airline Pilots' Association
British Balloon and Airship Club	British Business & General Aviation Association

National Aviation Organisations	
British Gliding Association	British Hang Gliding and Paragliding Association
British Helicopter Association	British Micro-light Aircraft Association
British Model Flying Association	British Parachute Association
British Skydiving	Drone Major
General Aviation Alliance	General Aviation Safety Council
Guild of Air Traffic Control Officers	Heavy Airlines
Helicopter Club of Great Britain	Honourable Company of Air Pilots
Iprosurv	Isle of Man
Light Aircraft Association	Low Fares Airlines
Military Aviation Authority	MoD Defence Airspace & Air Traffic Management (DAATM)
National Air Traffic Services	Navy Command HQ
PPL/IR	UK Airprox Board
UK Flight Safety Committee	USAFE (3rd AF DOF)

Table 9 – National Air Traffic Management Committee

A1.2 Non-Aviation Stakeholder Matrix

The following tables represents the key non-aviation stakeholders identified by Exeter Airport to engage with during the development of the design options.

A1.2.1 Elected Local Representatives

Member of Parliament	Constituency
Ian Liddell-Grainger	Bridgwater and West Somerset
Rt Hon Mel Stride	Central Devon
Simon Jupp	East Devon

Member of Parliament	Constituency
Rt Hon Ben Bradshaw	Exeter
Anne Marie Morris	Newton Abbot
Selaine Saxby	North Devon
Sir Gary Streeter	South West Devon
Rebecca Pow	Taunton Deane
Richard Foord	Tiverton and Honiton
Kevin Foster	Torbay
Rt Hon Sir Geoffrey Cox QC	Torridge and West Devon
Anthony Mangnall	Totnes

Table 10 – Members of Parliament

A1.2.2 Local Authorities

Local Authorities	
Devon County Council	Dorset County Council
Somerset County Council	North Devon Council
Somerset West and Taunton Council	East Devon District Council
Mid Devon District Council	South Hams District Council
Teignbridge District Council	Torridge District Council
Taunton Deane Borough Council	West Devon Borough Council
Exeter City Council	Torbay Council

Table 11 – Local Authorities

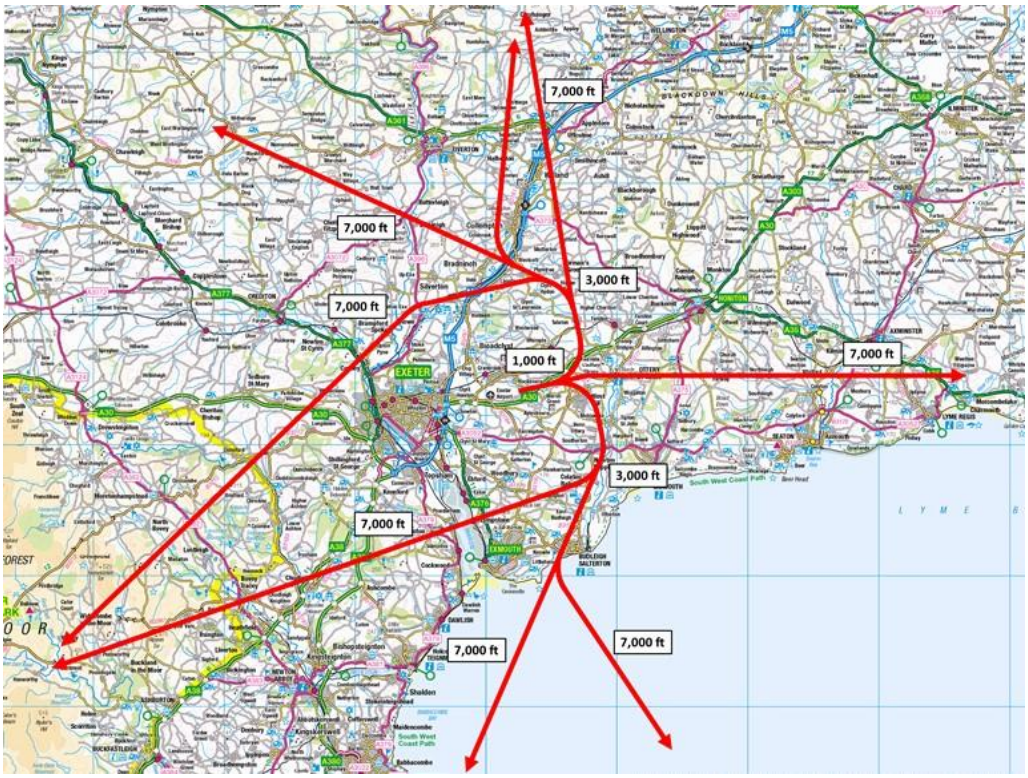
A1.2.3 National Bodies

National Bodies	
Campaign to Protect Rural England	Chamber of Commerce and Industry - Devon
Department for Transport	Friends of the Earth
Natural England	National Trust
UK Association of National Park Authorities - Dartmoor	UK Association of National Park Authorities - Exmoor

Table 12 – National Bodies

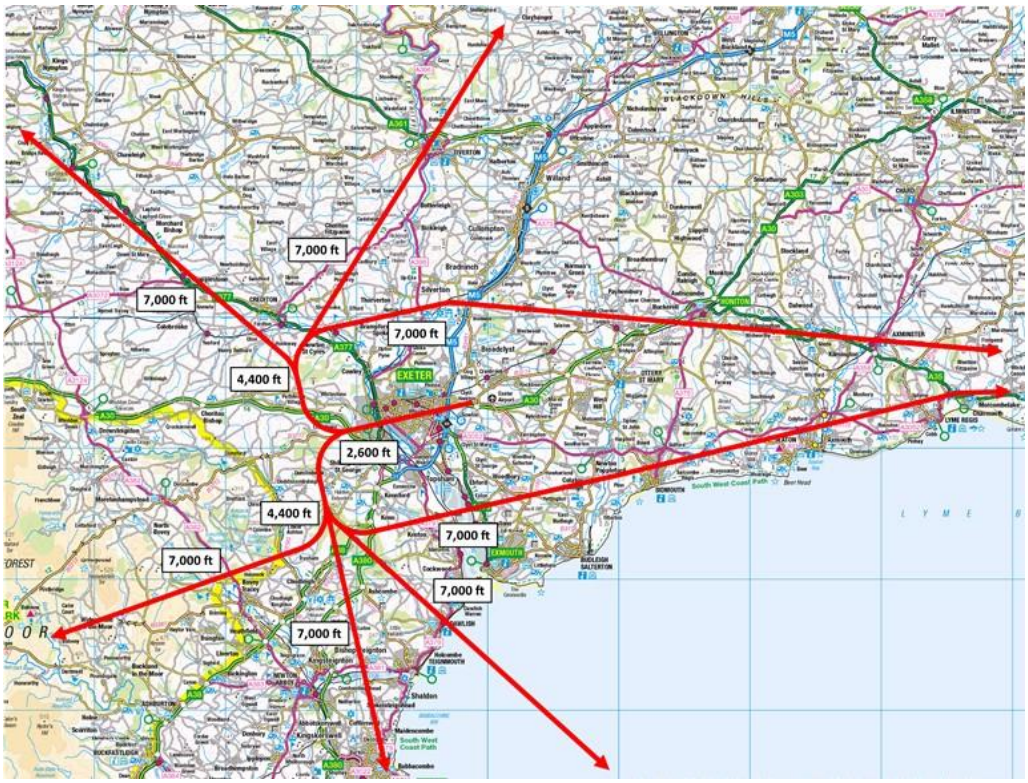
A2 Standard Instrument Departure Routes

A2.1 Runway 08 Departures



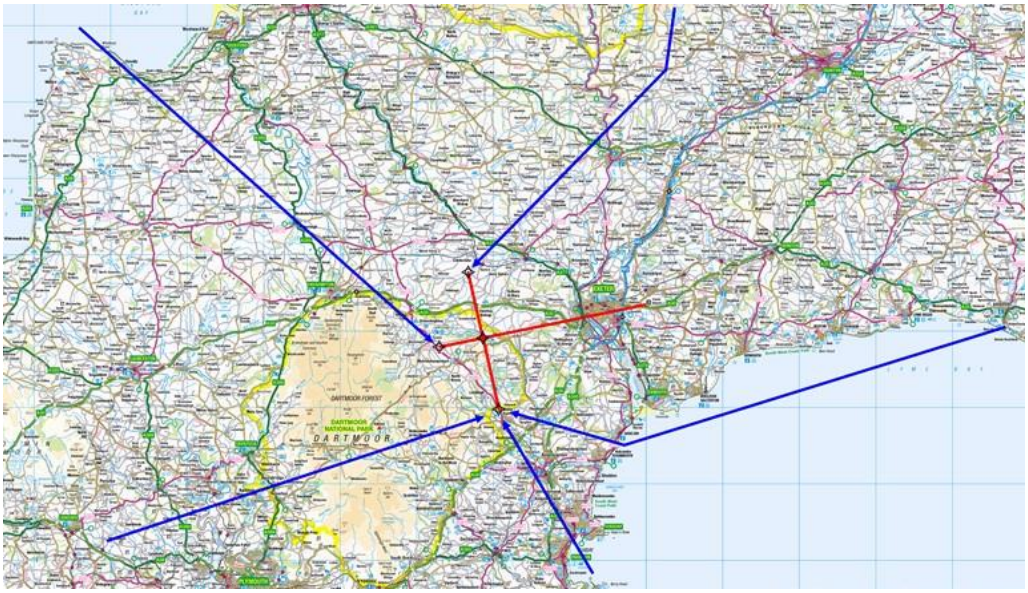
A2.2 Runway 26 Departures

A2.3 Runway 26 Extended Departures

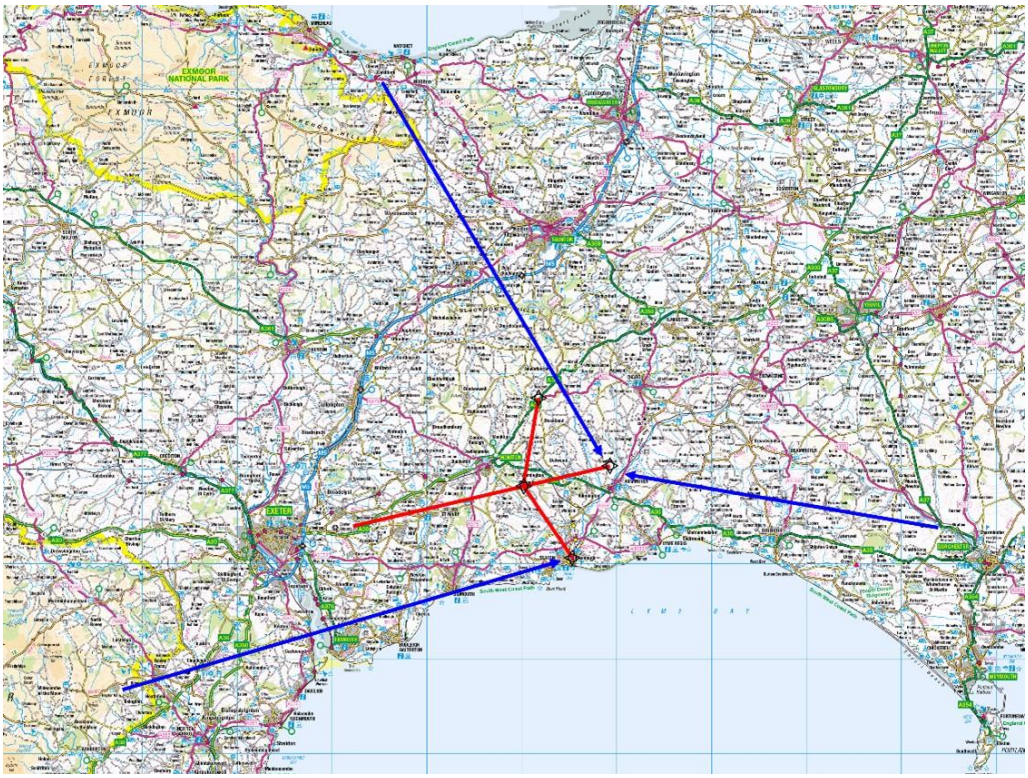


A3 Approach Transition Procedures

A3.1 Runway 08 Transitions



A3.2 Runway 26 Transitions



A4 Airspace Options

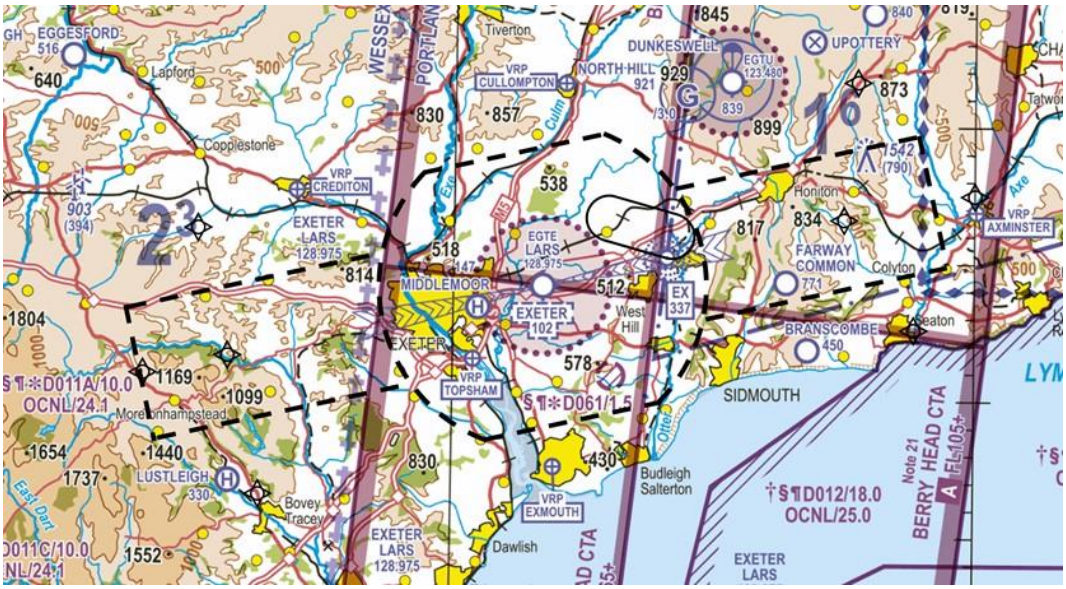
A4.1 Option 1

A4.2 Option 2

A4.3 Option 3

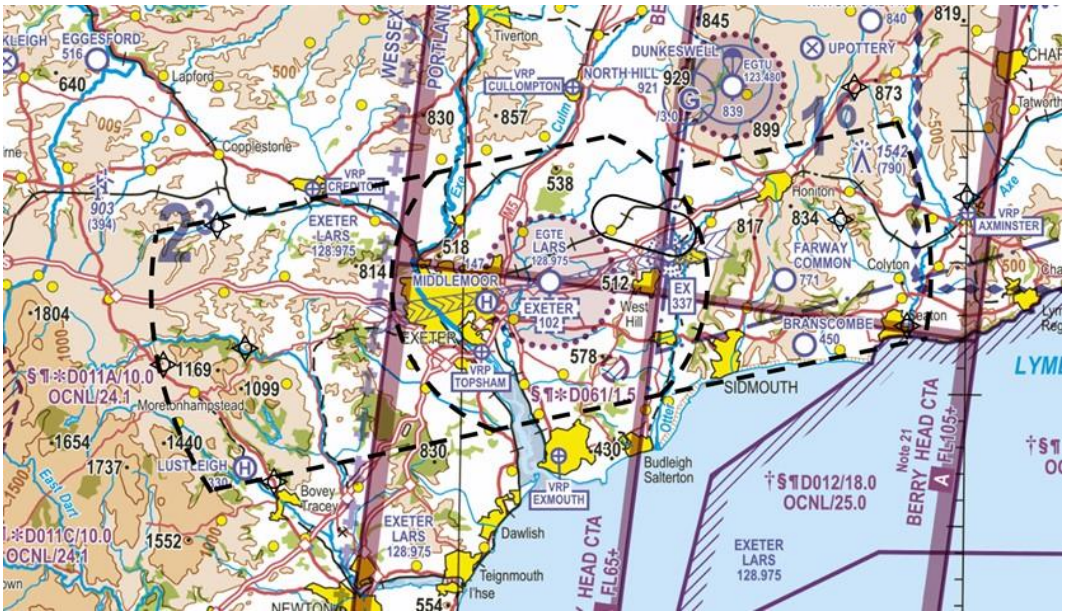
A4.4 Option 4

A4.5 Option 5

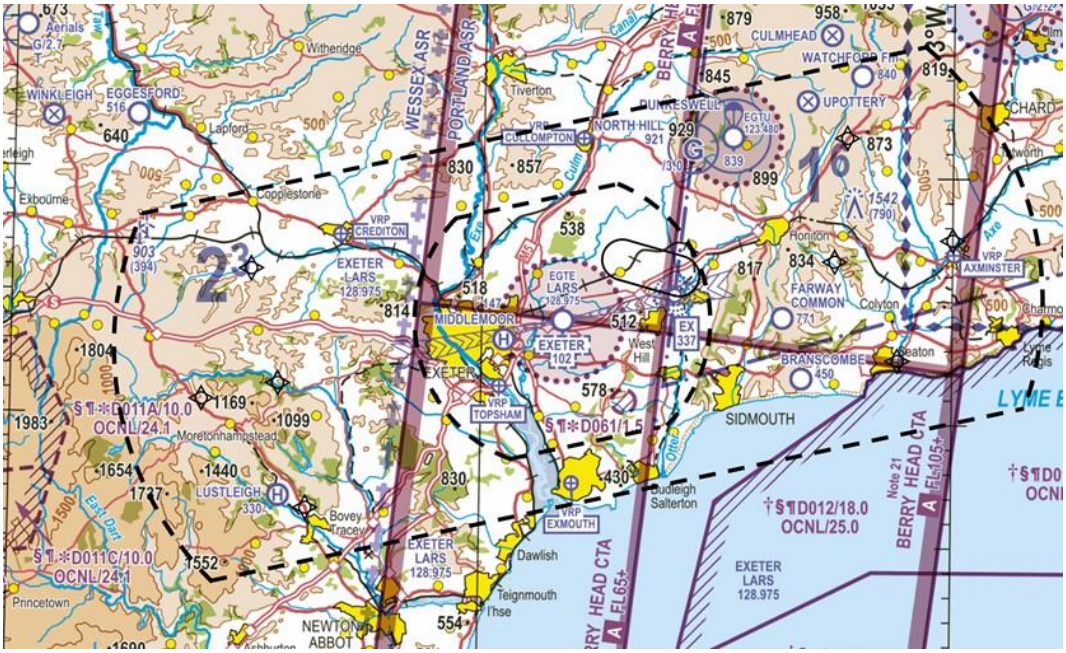


A4.6 Option 6

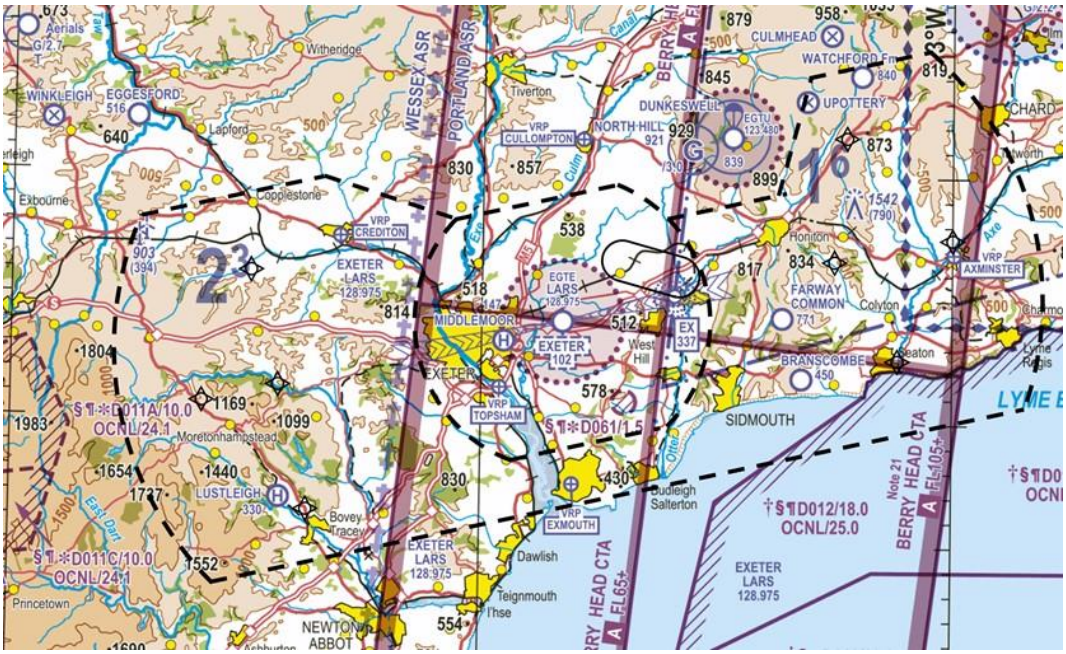
A4.7 Option 7



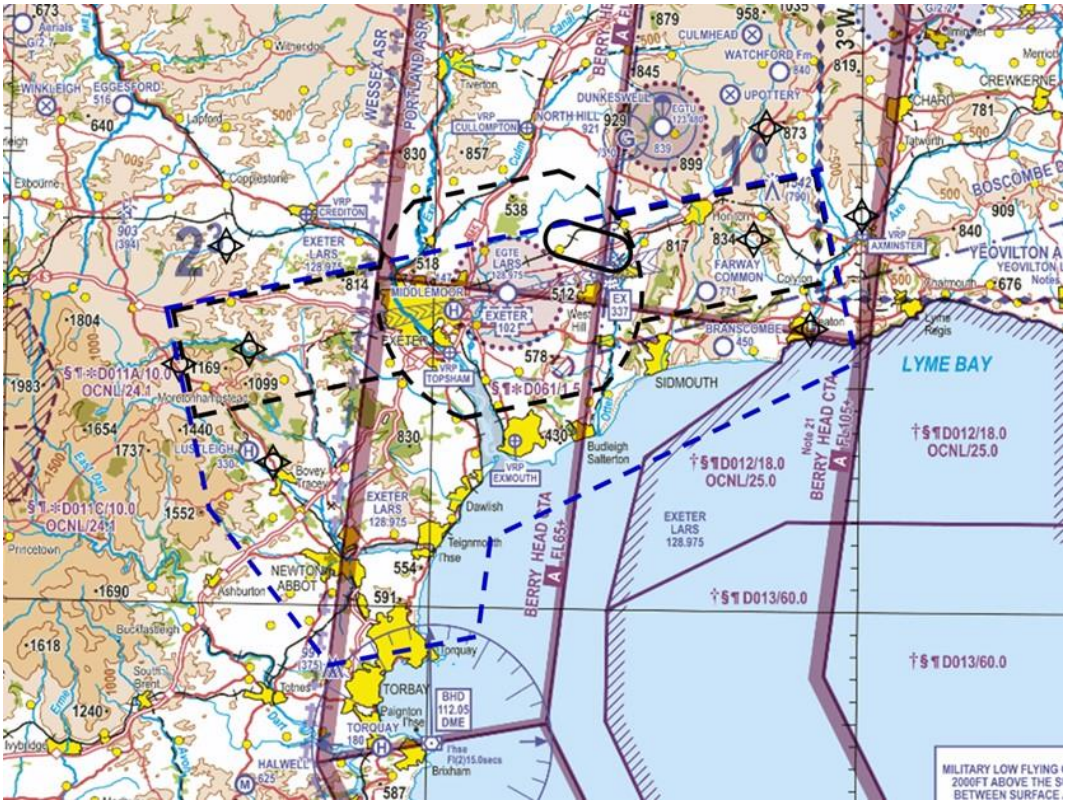
A4.8 Option 8



A4.9 Option 9

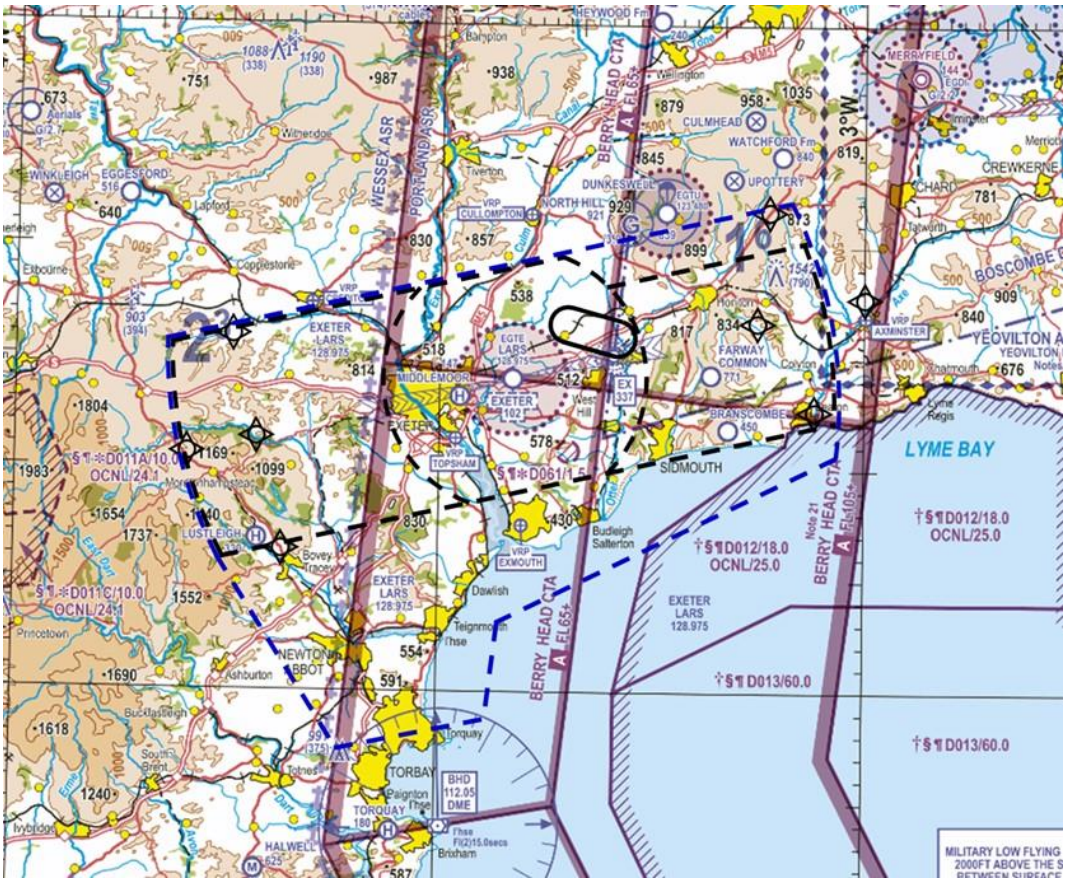


A4.10 Option 10

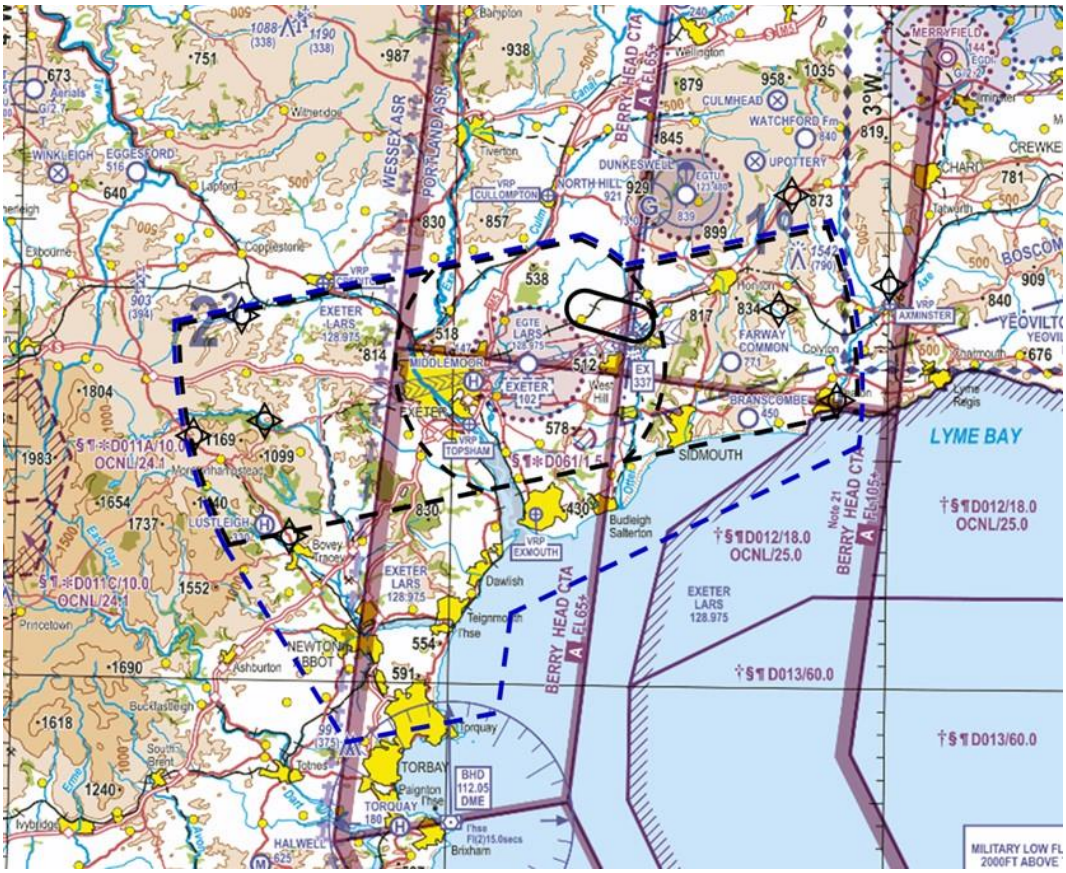


A4.11 Option 11

A4.12 Option 12

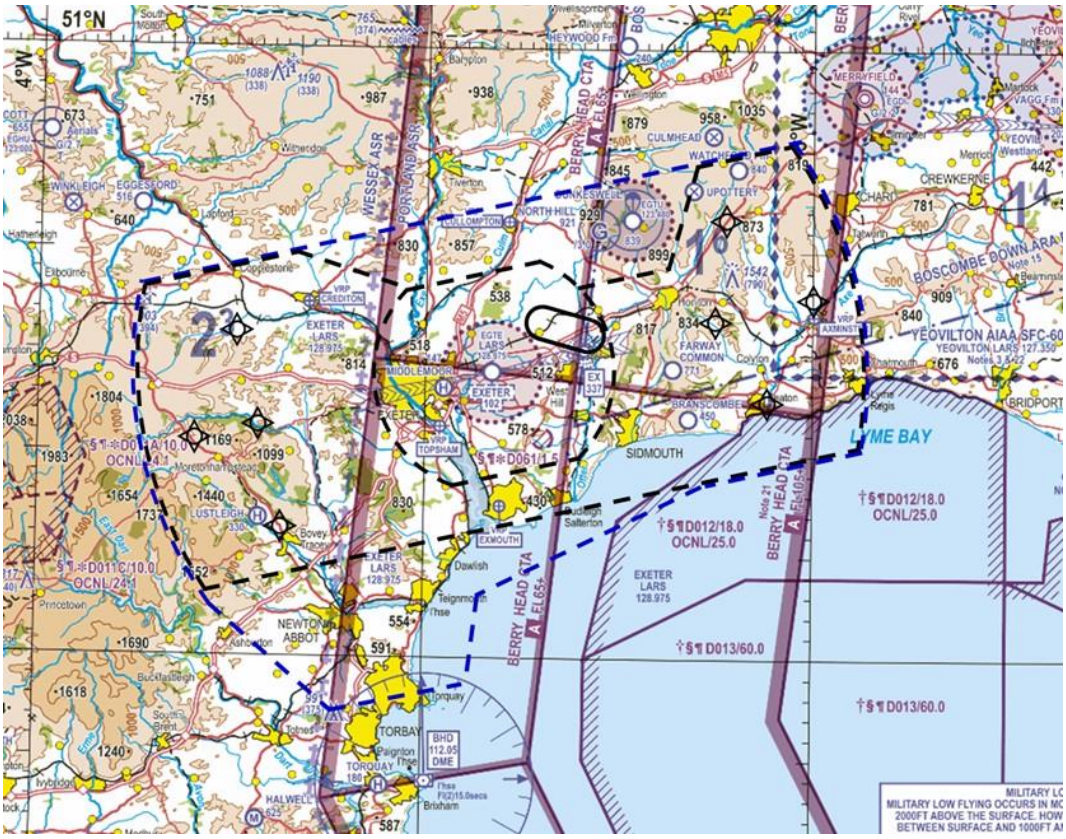


A4.13 Option 13



A4.14 Option 14

A4.15 Option 15



A4.16 Option 16

A4.17 Option 17

A4.18 Option 18

A4.19 Option 19