Inverness Airport – ACP Addendum June 2024

Addendum to ACP Submission

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Executive Summary

Inverness Airport supports a vital and effective national and international flight network to both the local community and wider Highlands area. Highlands and Islands Airports Limited (HIAL), owner and operator of Inverness Airport, has identified the need for changes to the current arrangements and procedures in the immediate airspace surrounding Inverness Airport. These changes are driven by advances in Air Traffic Management (ATM), airliner navigation and routing procedures plus General Aviation (GA) navigation. The purpose of the changes being proposed is to ensure that environmental and economic benefits are achieved through efficient use of surrounding airspace and procedures, protecting critical stages of flight following departure and before arrival for Instrument Flight Rules (IFR) commercial air transport flights and arrival for Visual Flight Rules (VFR) flights.

Since 2013, HIAL has proposed to introduce a system of aRea NAVigation (RNAV) Standard Instrument Departures (SIDs) and RNAV1 Transitions to the destination Initial Approach Fix (IAF). These new routes will take advantage of improved navigational capability which will allow enhanced systemisation and enable more efficient use of the airspace. The efficient use of airspace will also enable the environmental impact of aircraft to be lowered by enhancing the predictability and certainty of routings and reducing the average CO_2 emissions per flight.

The original ACP submission was submitted to the CAA in 2017 in accordance with the Civil Air Publication (CAP) 725[1]. Since then, CAP1616[2] has been issued and the CAA previously agreed that this ACP could continue to be conducted under the CAP 725 process. Delays in the progression of this ACP have been caused primarily by the effects of COVID-19. The purpose of this document is to provide an update to the CAA and stakeholders to the original ACP submission and to articulate any changes that have occurred and provide more up-to-date data since that document was submitted.

It is important to note that the dimensions of the Class D and Class E+ Transponder Mandatory Zone (TMZ) **have not changed** since the ACP submission was made. There have been some slight amendments to the IFP designs for one Standard Instrument Departure (SID) and three Transitions to ensure compliance with the latest CAA regulatory policy and ensure that HIAL can maintain an acceptable level of air safety. In addition, these changes have looked at enhancing the environmental benefits by ensuring Continuous Climb Departure (CCD) and Continuous Descent Approach (CDA) can be safely facilitated, as well as slight tweaks to routings to avoid built-up areas wherever possible.

[1] CAA Guidance on the Application of the Airspace Change Process
[2] The Process for Changing the Notified Airspace Design

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1 Glossary

Table of abbreviations and acronyms

Acronym	Meaning
ACP	Airspace Change Proposal
amsl	Above mean sea level
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAS	Controlled Airspace
CAT	Commercial Air Traffic
CCD	Continuous Climb Departure
CDA	Continuous Descent Approach
CTA	Control Area (Class D UK Airspace)
CTR	Control Zone
ERCD	Environmental Research and Consultancy Department
FIS	Flight Information Service
FPL	Flight Plan
ft	Feet
GA	General Aviation
GAT	General Air Traffic
HazID	Hazard Identification
HIAL	Highlands and Islands Airports Ltd
IAIP	Integrated Aeronautical Information Package
IAP	Instrument Approach Procedure

Acronym	Meaning
IFP	Instrument Flight Procedure
IFR	Instrument Flight Rules
LoA	Letter of Agreement
MoD	Ministry of Defence
NATS	The National Air Traffic Service Provider
NM	Nautical Miles
PBN	Performance Based Navigation
RAF	Royal Air Force
RNAV	Area Navigation
RNP	Required Navigation Performance
Rwy	Runway
SARG	CAA Safety and Airspace Regulation Group
SID	Standard Instrument Departure
SSR	Secondary Surveillance Radar
TMZ	Transponder (SSR) Mandatory Zone
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VRP	Visual Reference Point

Table 1 - Glossary

2 Introduction

2.1 Overview

HIAL identified some time ago the need for changes to the current arrangements and procedures in the immediate airspace surrounding the Airport. Inverness Air Traffic Control (ATC) currently operates in a Class G airspace environment where frequent radio communication intervention is required to enable Instrument Flight Rules (IFR) traffic, predominantly commercial airliners, to arrive and depart the Airport. The purpose and intent of the Airspace Change Proposal that was submitted in 2017 was to ensure future efficient use of surrounding airspace and that current effectiveness is preserved for all aircraft. This purpose and intent remain today.

HIAL seeks to upgrade arrival and departure routes to take advantage of the improved navigational capabilities of RNAV1 and improve the efficiency and capacity of the airspace around Inverness Airport by utilising CAS. The changes will:

- Minimise the impact to people on the ground and minimise the number of people impacted by aircraft noise from overflights below 4,000ft.
- Make improvements to departure routes utilising RNAV1 capabilities.
- Make efficiency improvements to the arrival routes based on RNAV1 arrival transitions.
- Position IFR passenger-carrying airliners more accurately allowing arrival and departure routes to be flown more precisely (hence impacting fewer people).

HIAL aims to continue to meet these requirements, maximising benefits to Inverness, The Highlands and Scotland whilst minimising any negative impacts. HIAL is seeking to minimise the population impacted under the routes by rationalising the current 'vectored' or 'procedural' approach and departures made in the existing Class G airspace environment. CAS and improved track-keeping mean that there will be less dispersal of aircraft on either side of route nominal centrelines over sparsely populated areas. This would mean a reduction in the overall area regularly overflown (but a corresponding increase in the concentration of over-flights in some areas, predominantly close to the Airport and its extended runway centrelines).

Updating the airspace design allows HIAL to improve efficiency, and better match it to the improved performance capabilities of more modern aircraft. The net effect of these proposals would be to enhance the overall efficiency of airspace management for Inverness Airport and to achieve connectivity to the wider air route network.

The introduction of RNAV1 SIDs and arrival transitions at Inverness Airport would also improve systemisation and upgrade the navigation capability per the CAA Future Airspace Strategy (FAS) recommendations and Airspace Modernisation Strategy (AMS).

2.2 Background

The background relating to the Inverness Airspace Change Proposal can be found in the Airspace Change Proposal document dated 9 Nov 17. The purpose of this ACP Addendum is to supplement the original ACP submission and highlight any changes

made to that document caused by changes to policy and to enhance safety. It is also intended to provide the CAA and stakeholders with updated details relating to the proposed Airspace Change including route designs, aircraft movements, recent engagement, an update of the safety case and address any potential environmental issues.

3 CAS Design and routes

3.1 Overview

The proposed design of the CAS structure has **not changed** since the November 2017 ACP submission and remains a mix of Class D-controlled airspace and Class E+ as previously consulted upon.

Since the ACP submission was made, the airspace around RAF Kinloss has been disestablished and the aircraft types operating at RAF Lossiemouth have changed. HIAL and Inverness ATC have a good day-to-day working relationship with RAF Lossiemouth and a Letter of Agreement is currently in force for daily operations. Engagement with RAF Lossiemouth has also taken place to ensure that a LOA can be implemented in time for when the proposed airspace is activated. This draft LOA has received the 'buy-in' from the Officer Commanding Operation Support Wing and the SATCO and will be completed and signed off before the proposed implementation in March 2025. The design of the CAS is shown in Figure 1 below.

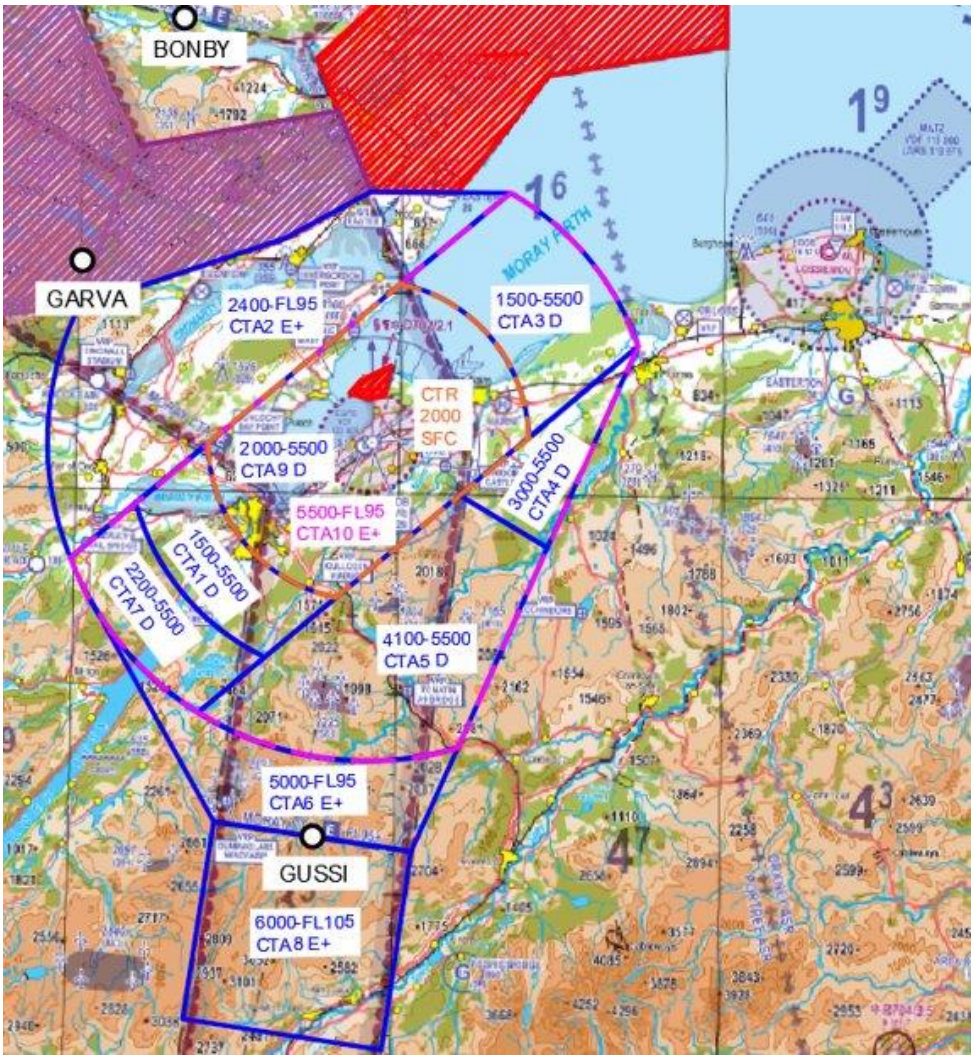

Figure 1 - Proposed Inverness Airport Class D (Ceiling 5,500ft) and E+TMZ CTAs

3.2 CAA Policy for the Design of Controlled Airspace Structures

The CAA SARG Policy for the Design of Controlled Airspace Structures has been revised since the original ACP submission was made in November 2017. To ensure compliance with the latest CAA policy dated October 2023, HIAL elected to have a full review of the designs of the SIDs and Transitions to ensure that the policy requirements were met, and the designs remained safely contained within controlled airspace. The review of the proposed procedures was conducted by an IFP designer and to ensure that the designs complied with the requirements of the Policy, minor amendments were made to one SID and 3 Transitions to ensure that safety requirements and the results of a comprehensive safety assurance review associated with containment, could be met.

For completeness, all designs for the SIDs and Transitions are shown in paras 3.3 and 3.4 below and the proposed amendments caused by the revision of policy are currently under review by the CAA IFP regulator.

3.3 Standard Instrument Departures (SIDs)

The revised containment policy has not resulted in any change to the track over the ground for the proposed Standard Instrument Departures from Inverness. During the review, some amendments were made to the climb gradients of some of the departures to ensure that the routes can be flown safely and to enable built in separation for the purposes of deconfliction against inbound traffic on route to the points of GUSSI, BONBY and GARVA.

During a further review of the BONBY SID from Runway 05, and after engagement with Loganair, it was agreed to extend the departure upwind slightly over water in the climb. The purpose of the amendment was to ensure that the aircraft could safely attain FL100 and remain inside controlled airspace without a load penalty.

The SID route designs that have been submitted to the CAA for IFP review are as follows:

SID BONBY Runway 05

After further engagement with Loganair, it was agreed to extend the original planned departure (in Blue) upwind slightly over water in the climb (in Yellow) to FL100. The purpose of the amendment was to ensure that the aircraft could safely attain FL100 and remain inside controlled airspace without a load penalty for the operator.

Figure 2 - Proposed Inverness SID BONBY Runway 05

SID GARVA Runway 05

No change to track over the ground.

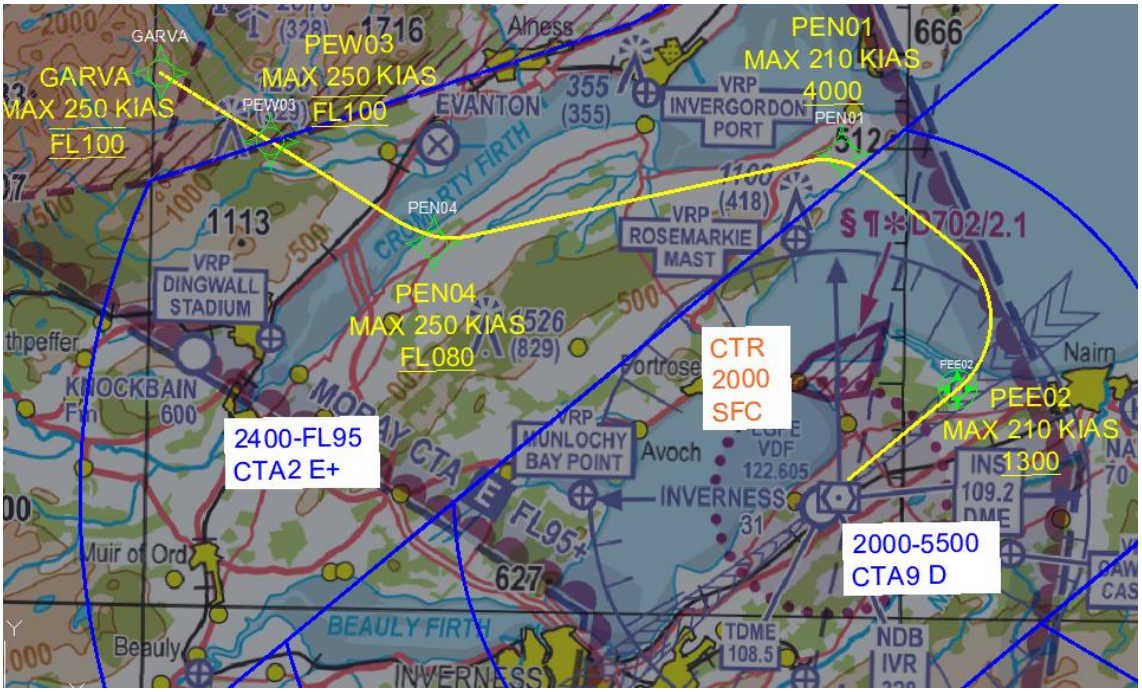

Figure 3 - Proposed Inverness SID GARVA Runway 05

SID GUSSI Runway 05

No change to track over the ground.

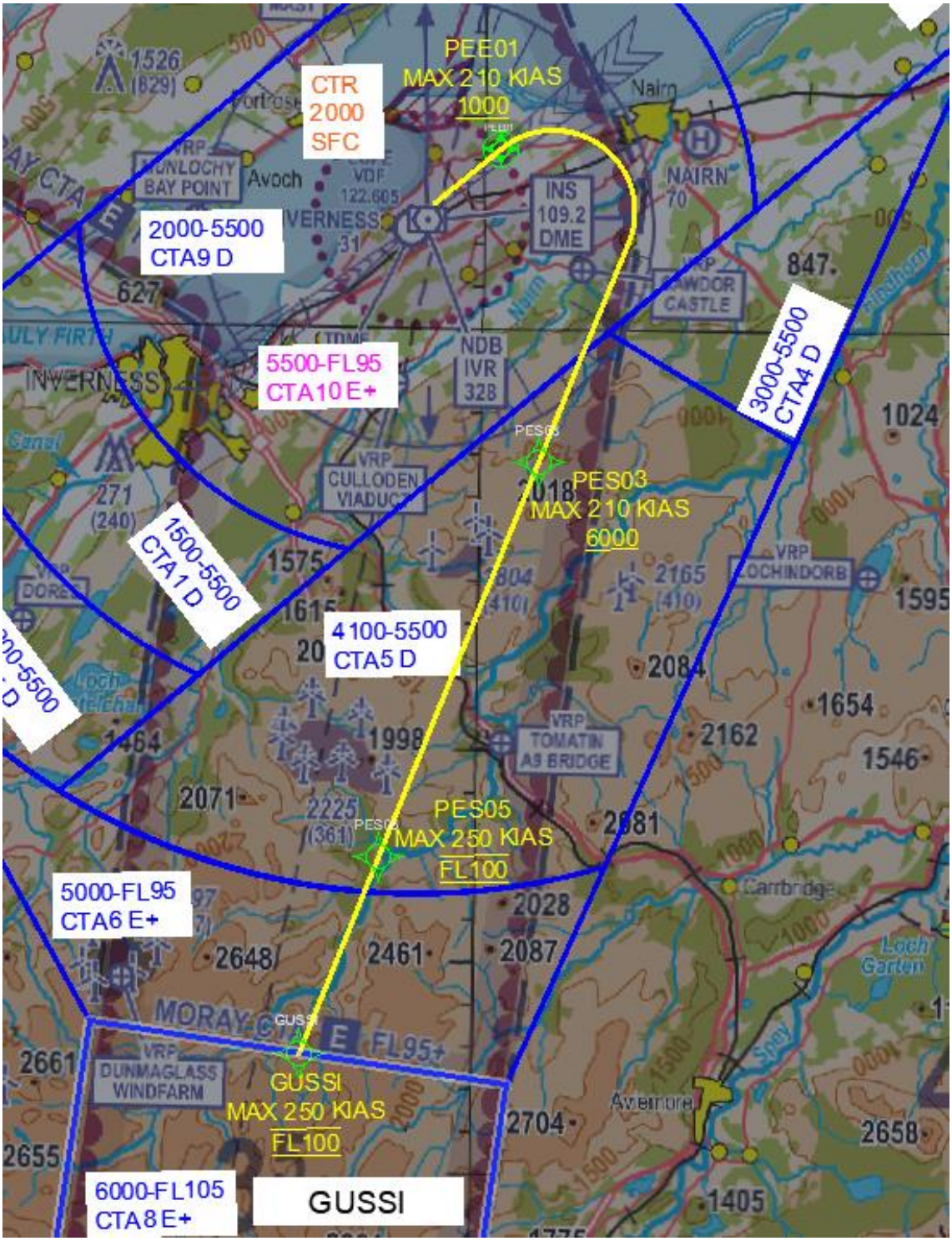

Figure 4 - Proposed Inverness SID GUSSI Runway 05

SID BONBY Runway 23

No change to track over the ground.

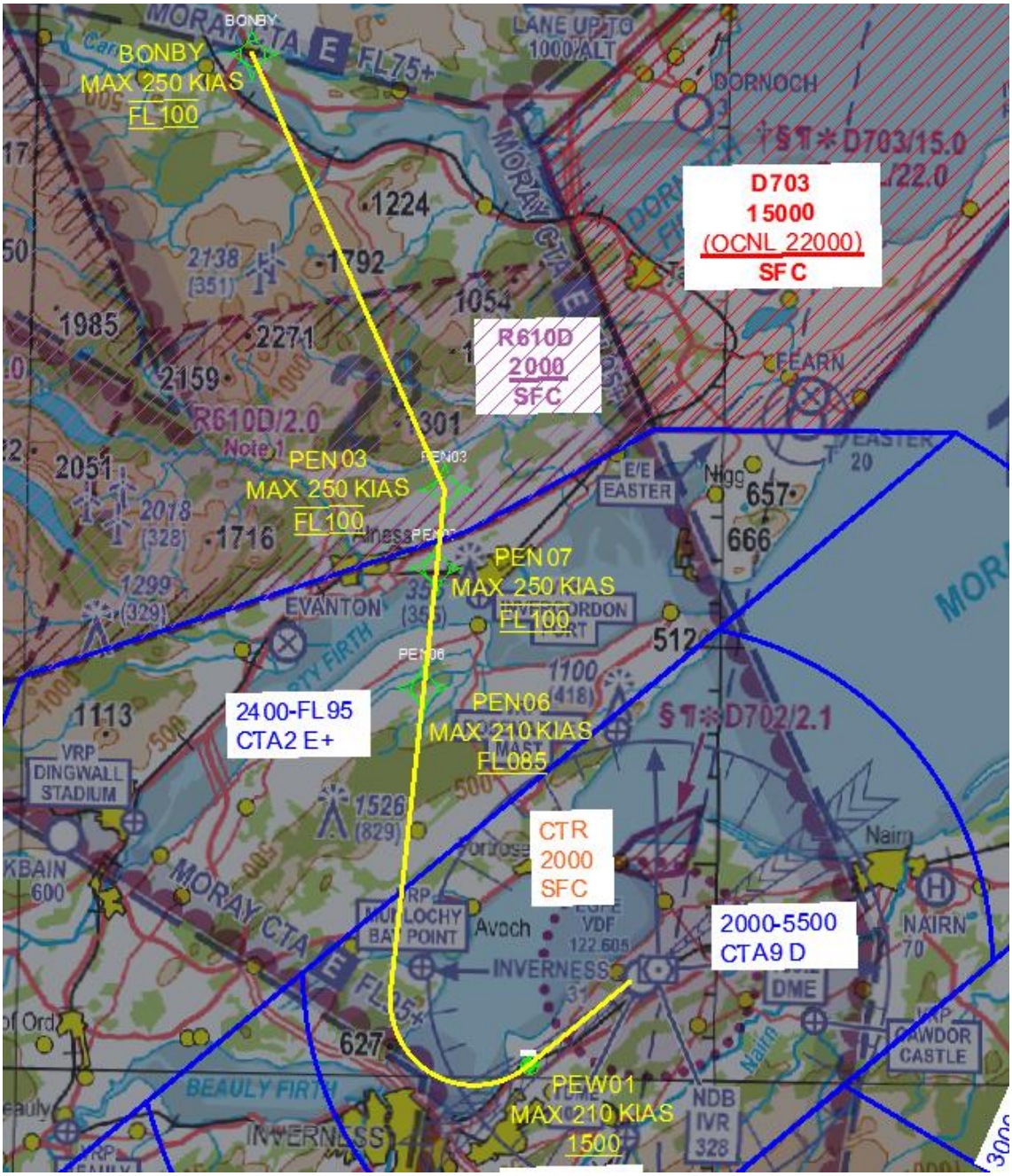

Figure 5 - Proposed Inverness SID BONBY Runway 23

SID GARVA Runway 23

No change to track over the ground.

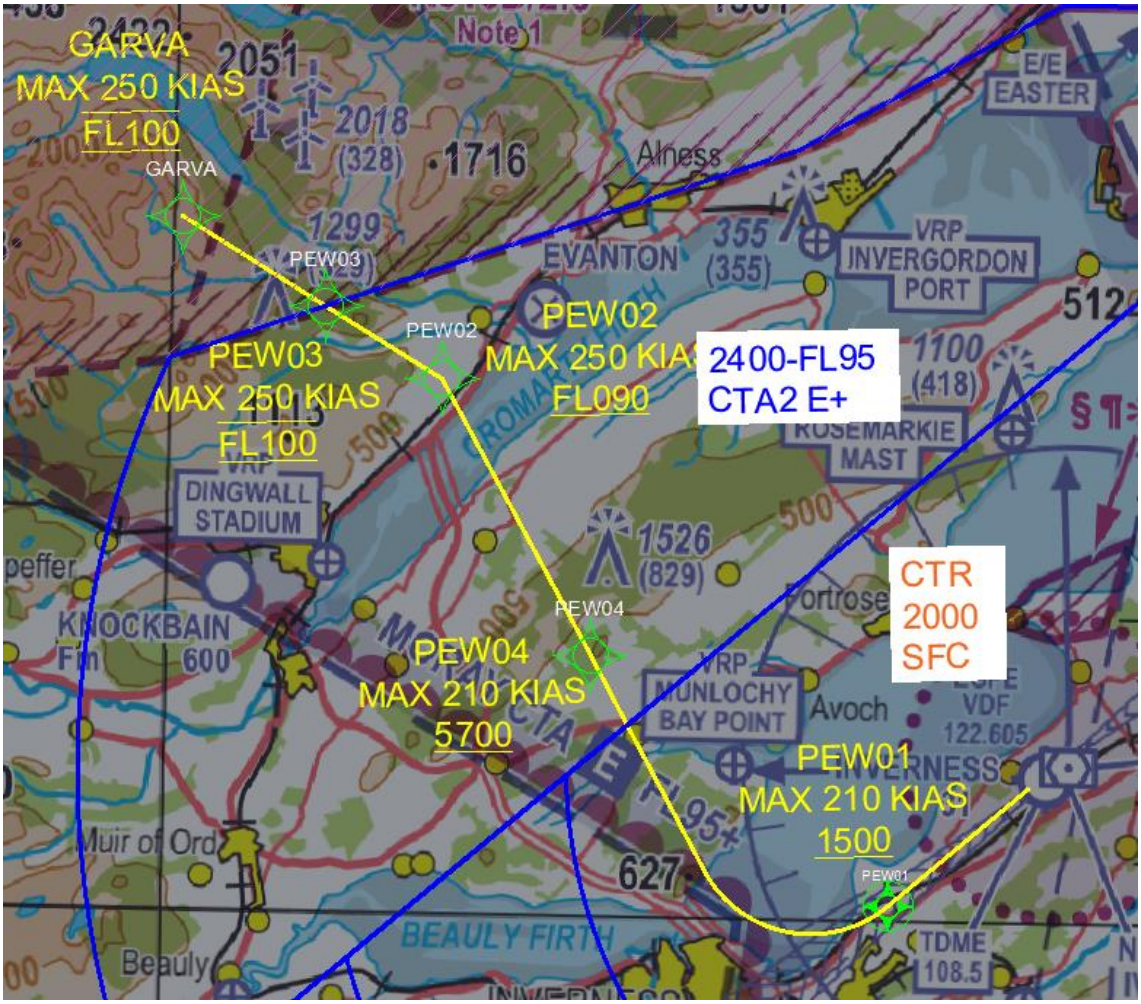

Figure 6 - Proposed Inverness SID GARVA Runway 23

SID GUSSI Runway 23

No change to track over the ground.

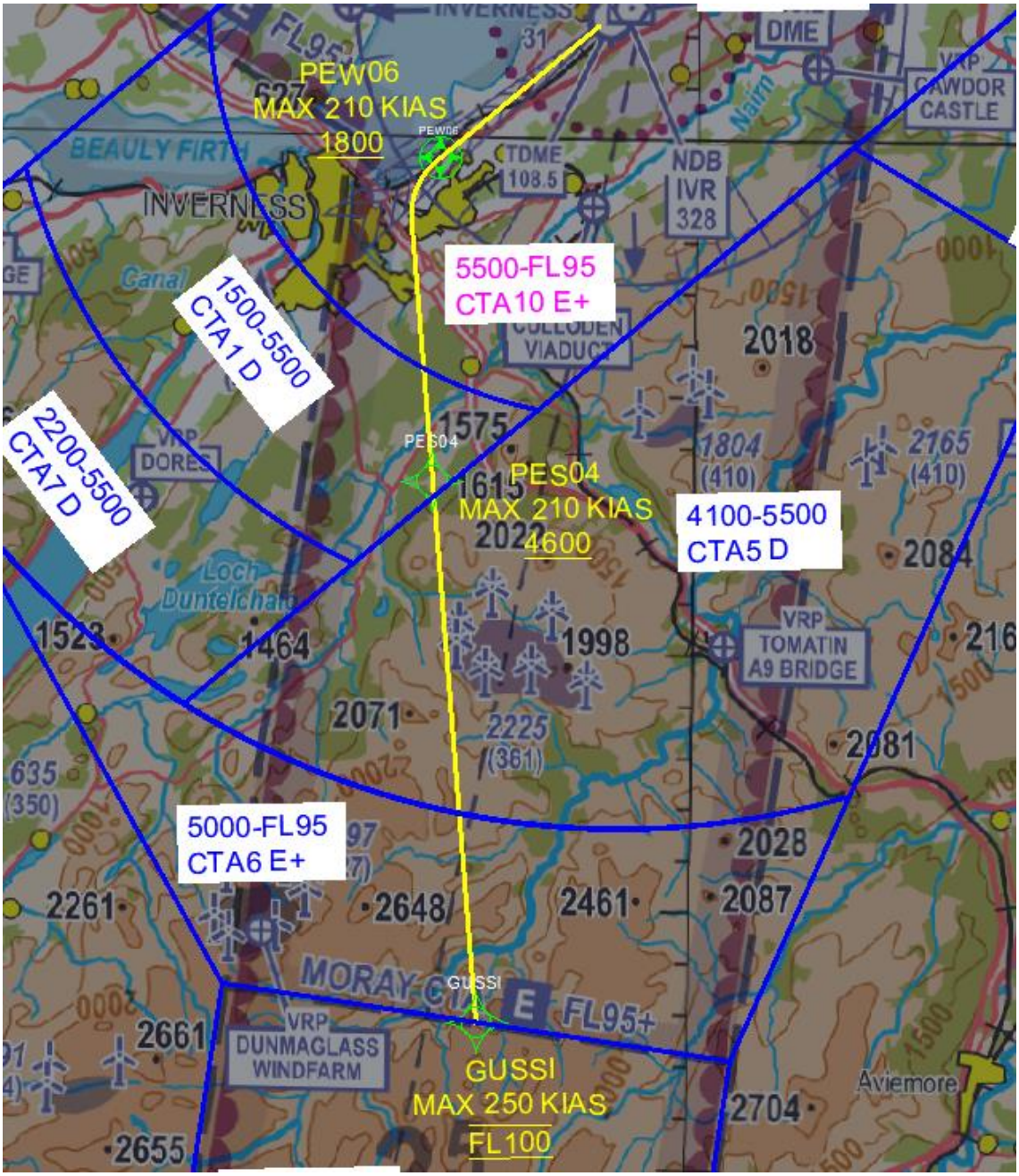

Figure 7 - Proposed Inverness SID GUSSI Runway 23

All the designs of the SIDs and Transitions are currently undergoing review by the CAA IFP regulator along with a flight validation plan. Once they have been reviewed by the regulator, the routes will be coded and then flown in both an ATR 72 and A320 simulator to ensure that they are safe and flyable in line with CAA regulatory practice.

3.4 Transitions

The revised CAA policy for the Design of controlled Airspace Structures and a HIAL safety review, has resulted in slight track amendments to 3 of the planned transitions into Inverness. Amendments have been made to the following transitions:

GARVA Runway 23 Transition

GARVA Runway 05 Transition

BONBY Runway 23 Transition

The track amendments have been highlighted in the route descriptions which can be seen below in Figures 9, 11 and 12. It should be noted that the track amendments occur in the 7,000ft to 4,000ft altitude band to ensure that the safety margins required within the CAA containment policy can be achieved and the risks identified in the HIAL safety review are mitigated. The amended tracks also ensure minimal environmental impact concerning noise. The IFP design team have also been able to re-route traffic over non-built-up areas to minimise noise impact and enable a CDA to occur.

The Transition route designs that have been submitted to the CAA for IFP review are as follows:

BONBY Runway 05 Transition

No change to track over the ground- vertical profile amendment.

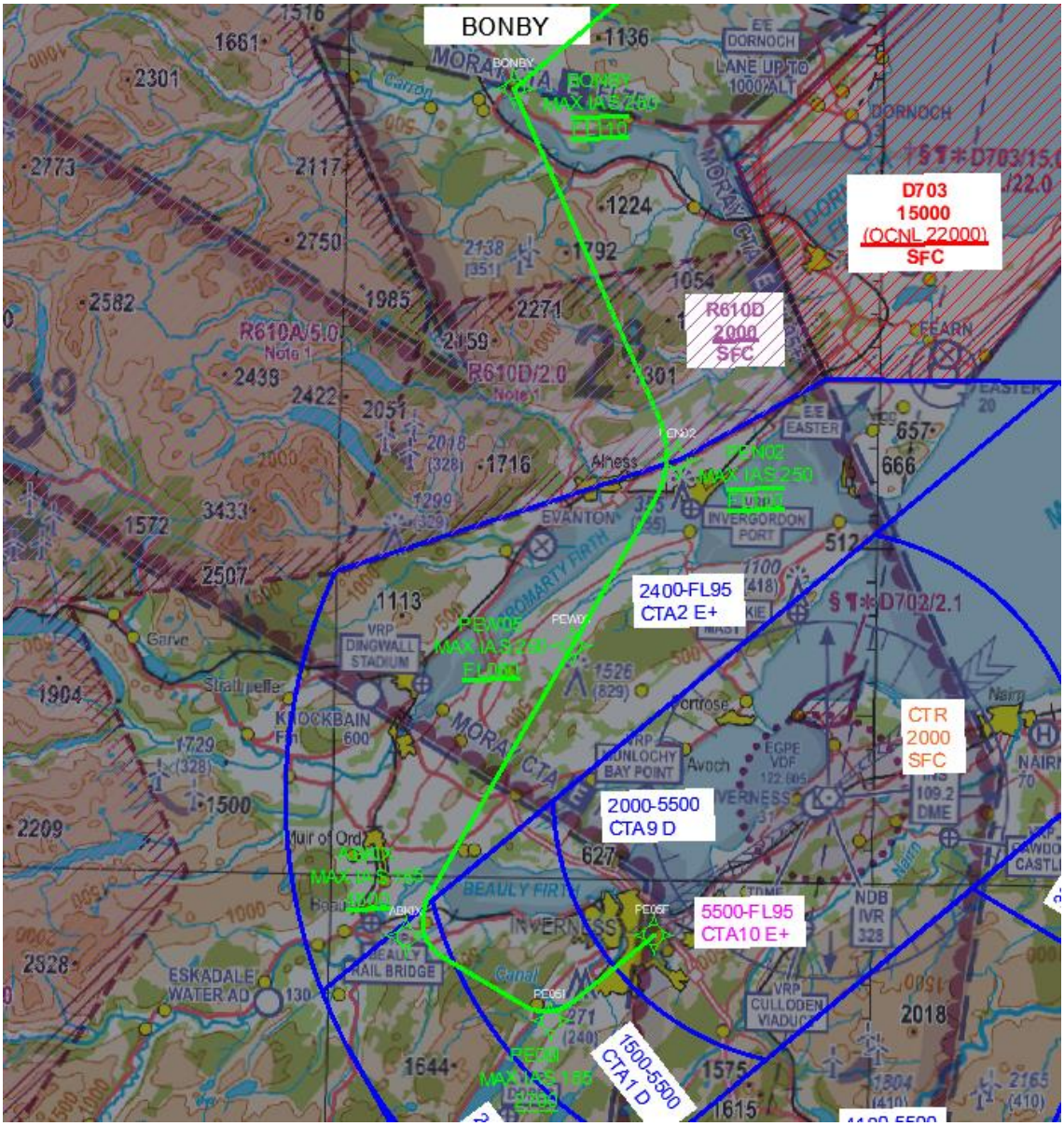

Figure 8 - Proposed Inverness Transition BONBY Runway 05

GARVA Runway 05 Transition

The original GARVA Runway 05 transition is in Magenta. To ensure that the CDA can be attained, and the track can be safely contained, there is a slight track amendment to route further to the west as shown in Green that ensures that a CDA can be flown. The transition also routes more to the west and avoids the built-up areas of Dingwall, Mayburgh, Conon Bridge and Muir of Ord. The amendment to this route occurs above 4,600ft AMSL.

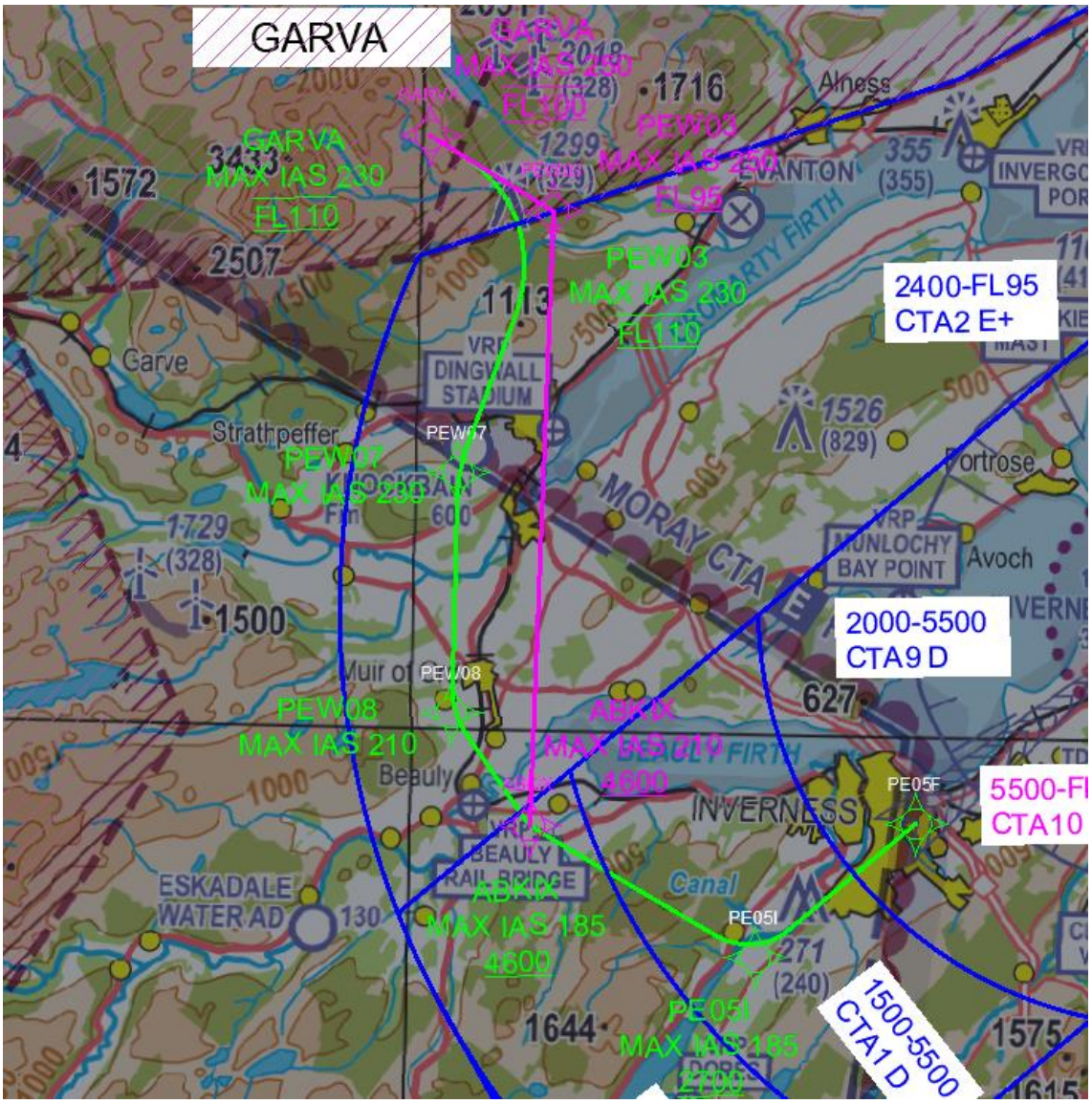

Figure 9 - Proposed Inverness Transition GARVA Runway 05

GUSSI Runway 05 Transition

No change to track over the ground.

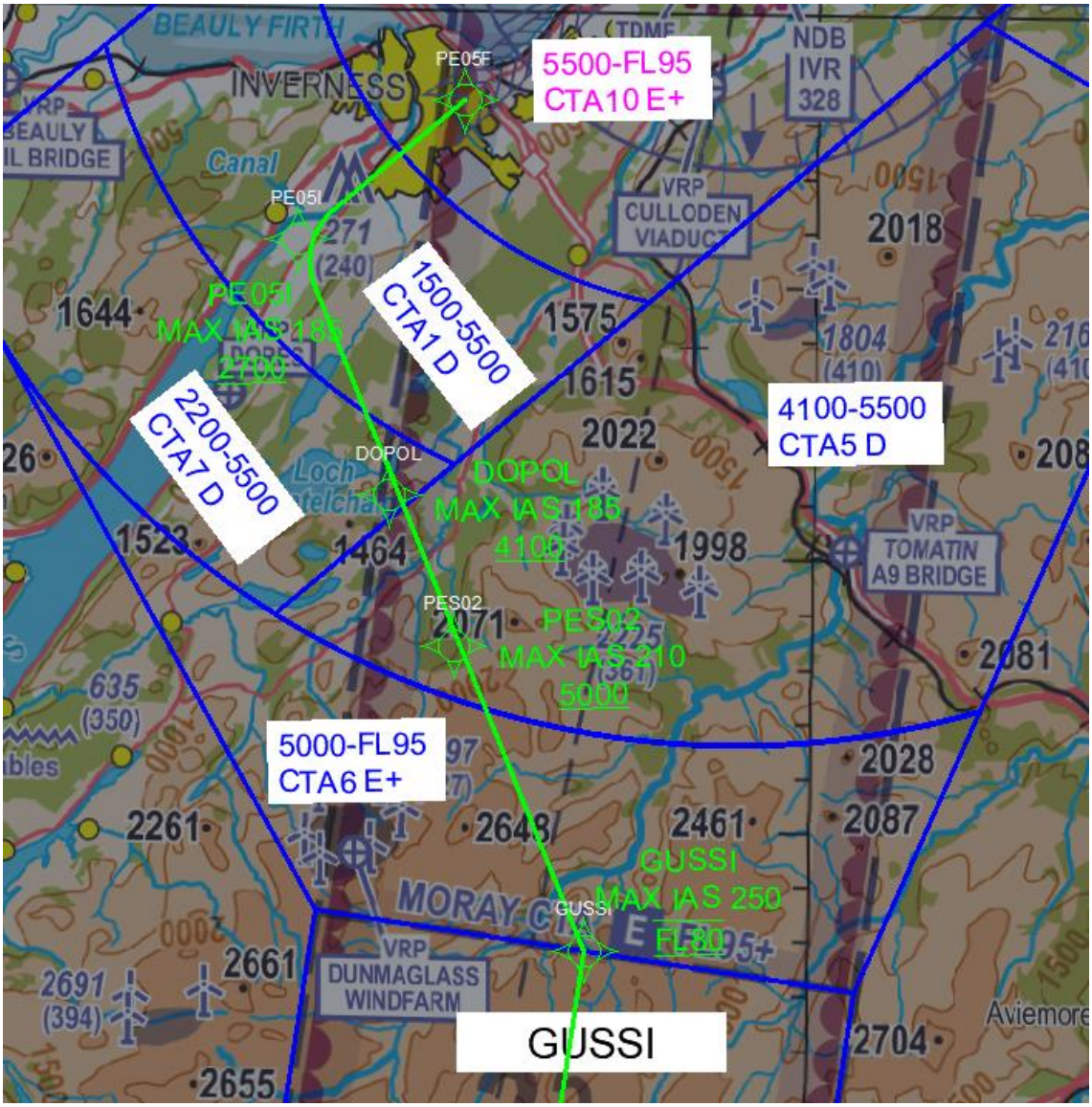

Figure 10 - Proposed Inverness Transition GUSSI Runway 05

BONBY Runway 23 Transition

The original BONBY Transition can be seen in Magenta. The amended BONBY Runway 23 transition (in Green) now commences descent at PEN 02. Due to the re-design and safety requirements of HIAL safety analysis to ensure that all Inverness inbound and outbound traffic remain safely within the confines of CAS, the inbound track has required an amendment to the proposed track ensure that there is enough track distance to maintain a CDA. This has resulted in an amendment to the track over the ground in the altitude band of FL100 to 3,300ft AMSL. The portion of the new track over the ground between 7000 and 3300ft has been designed to route over sparsely populated areas or water.

Figure 11 - Proposed Inverness Transition BONBY Runway 23

GARVA Runway 23 Transition

Due to the CAA Policy for the Design of Controlled Airspace structures and as a result of HIAL safety analysis, the inbound track has required an amendment to ensure that the track remains 2nms clear of the edge of the CAS limits.

The original track is in Magenta and the amended track is in Green. As can be seen the deviation to the track has been placed over water as much as possible and the changes take effect primarily above 4,000ft AMSL. Built-up areas have also been avoided where possible to ensure that the route can be safely contained.

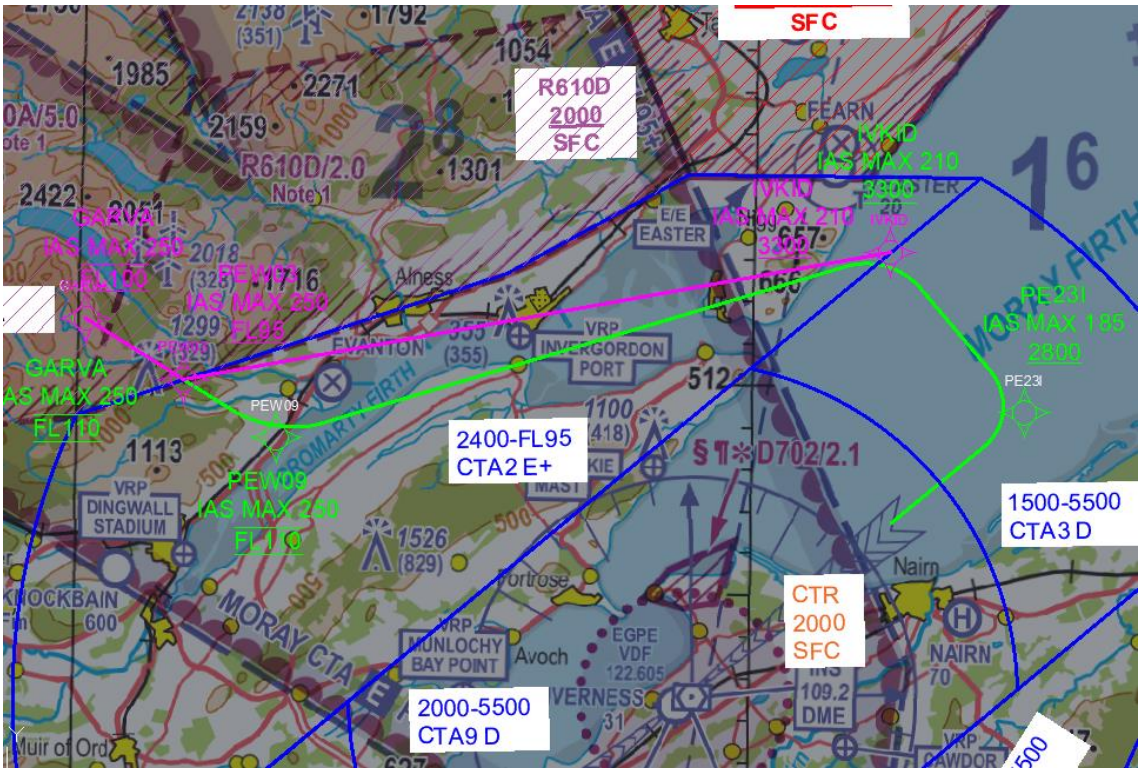

Figure 12 - Proposed Inverness Transition GARVA Runway 23

GUSSI Runway 23 Transition

No change to track over the ground.

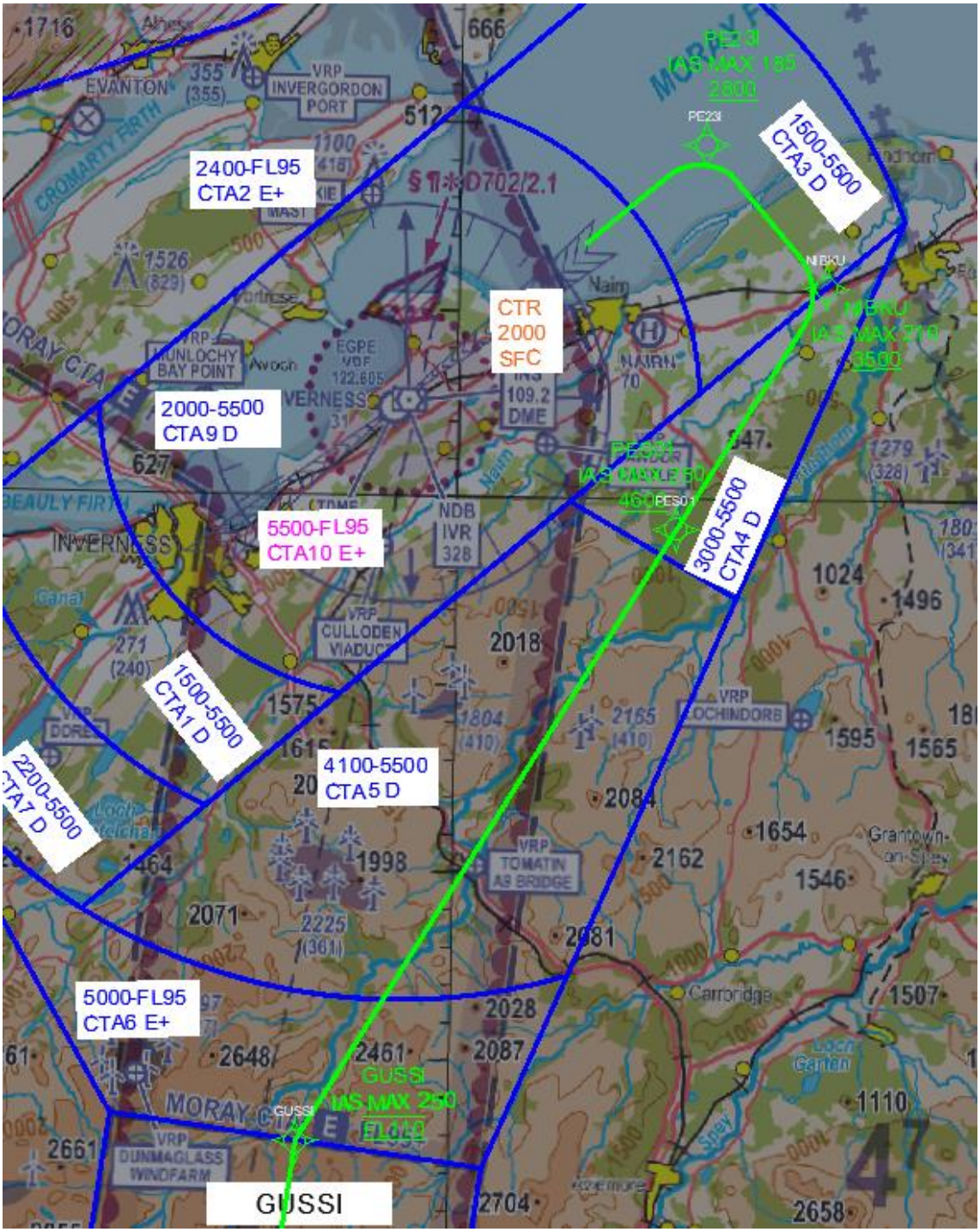

Figure 13 - Proposed Inverness Transition GUSSI Runway 23

4 Environmental Considerations

4.1 Environmental Considerations

4.1.1 Noise and Population Impacted

The proposed SIDs and Transitions are flown over sparsely populated areas of The Highlands and mimic as far as possible the current 'vectored' routes. It is anticipated that reduced ATC intervention will reduce the unpredictable scatter of current air traffic noise (in Class G airspace). Even with any significant growth in traffic forecast, the number of people within the Leq 51dBA contour for the proposed airspace would be almost the same as today. The new routes have been designed, where possible (runway centrelines excepted) to avoid population centres as previously mentioned in the ERCD Report that was submitted with the 2017 ACP submission.

There have been no significant changes to the air transport fleet mix at Inverness Airport that was used during the original modelling by ERCD. The SF340 has now been withdrawn from service by Loganair and has been replaced by both the ATR 42 and ATR 72. The E170, and A319 are still used and the E190 and A320 aircraft are being strategically integrated into airline operations. An examination of noise certification data by ERCD indicates that the Loganair SF340 and ATR-72 aircraft are broadly similar in terms of noise. Noise measurement data from another UK airport provided by ERCD also indicates that the A319 and A320 aircraft are reasonably similar in terms of noise.

For current operations at night, the SF340 aircraft has been replaced by an ATR-72. As stated above, the SF340 and ATR-72 share broadly similar noise characteristics, the ATR-72 being slightly noisier than the SF340 on arrival, but quieter on departure.

Since the original 2017 ACP submission, there has also recently been a change to operations at night and with effect from 1 April 2025, there will be no planned airfield movements during the period (2300-0615). During this period the airfield will be closed, and the proposed controlled airspace will be de-activated.

4.1.2 Traffic Concentration

When following RNAV1 routes, aircraft follow the routes more consistently than when using conventional radio navigation aids. This is due to the improved track-keeping ability of RNAV1. Improved track-keeping means there will be less dispersal of aircraft either side of the route nominal centrelines. This will result in a reduction in the overall area regularly overflown (reduced ATC intervention would reduce the unpredictable scatter). Where possible, the new routes have been designed to over-fly the lowest number of people possible, remaining clear of built-up areas per DfT guidelines.

4.1.3 Biodiversity

It is considered unlikely that this airspace change will have a direct impact on animals, livestock and biodiversity.

4.1.4 Local Air Quality

There is no change to flight profiles below 1,000ft as the aircraft will be in the final stages of flight or in the immediate climb out.

4.1.5 CO_2 Emissions and Fuel Burn

CO_2 emissions and fuel burn were previously analysed in the ACP submission ERCD Report (Enclosures 5B-D) of the 2017 ACP submission. The analysis forecasts that the proposed changes would result in a small reduction in fuel burn and CO_2 emissions.

As previously mentioned, the BONBY Runway 05 SID has been extended slightly upwind to remain contained within CAS without a load penalty to the operator and maintain a CCD whilst ensuring that the procedure is safely contained within CAS.

CCDs and CDAs have been built into all procedures below FL100 aimed at reducing emissions and fuel burn. On aggregate, a reduction in the average fuel burn & CO_2 emissions per flight is forecast as the routes will be confined within controlled airspace and crews will be operating in a known traffic environment. This will result in more predictability of flight and a significant reduction in re-routes and extended track miles that crews currently incur whilst operating under a Deconfliction service under UK FIS.

4.1.6 Tranquillity and Visual Intrusion

Tranquillity and visual intrusion are required to be considered where proposals change the flight paths of aircraft above a National Park or Area of Outstanding Natural Beauty. The design of the routes proposed herein do not impact any National Parks or AONBs.

5 Aircraft Movements and Forecast

5.1 Aircraft Movements

Since the original ACP submission in 2017, the effects of COVID-19 have impacted aviation and the recovery at Inverness has not been as anticipated. The total yearly terminal passenger numbers, aircraft movements and Commercial Air Transport movements handled can be seen below in Table 2.

Year	Terminal Passengers	Total Aircraft Movements	Commercial Air Transport Movements Handled
2017	874000	31002	16338
2018	893000	29690	15877
2019	938000	31338	16065
2020	240000	19610	7216
2021	357000	25267	9350
2022	700000	23820	11650
2023	801000	23842	12361

Table 2 – Inverness actual (2017-2023) Passenger numbers, Aircraft Movements and CAT Movements handled.

5.2 Five Year Forecast

For the next 5 years, HIAL anticipates a 3% year-on-year growth in passenger numbers and commercial air transport moves. This is based upon Inverness being judged by airlines to be a safer environment to operate from due to it being located within the confines of controlled airspace.

Year	Terminal Passengers	Total Aircraft Movements	Commercial Air Transport Movements Handled
2024	*825000*	*24557*	*12731*
2025	*850000*	*25300*	*13113*
2026	*875000*	*26050*	*13507*
2027	*901500*	*27000*	*13912*
2028	*928500*	*28000*	*14329*

Table 3 – Inverness forecast (2024-2028) Passenger numbers, Aircraft Movements and CAT Movements handled.

6 Safety Summary

6.1 Background

The proposed introduction of Controlled Airspace (CAS) at Inverness Airport seeks to enhance safety in the vicinity of the Airport by implementing a known air traffic environment using Class D and Class E+ CAS. New Instrument Flight Procedures (IFP) have been designed that will be wholly contained by the implementation of the proposed CAS.

As with the current CAP1616 where the full Safety Case would be submitted at Stage 4, CAP 725 requires the Safety Case to be submitted at Stage 5. Both processes require a robust Safety Management (SM) process to be an integral part of any proposed airspace change. Moreover, the CAA Safety and Airspace Regulation Group (SARG) requires assurance that the changes introduced by the Airspace Change will result in safe air operations at all stages of the project lifecycle.

The form of this assurance is an operationally focused Safety Case Report (SCR), that is structured in four parts as required by the HIAL Safety Management System (SMS), the detail of which is held by HIAL.

Since the original ACP submission, a full review of the Safety Case has been conducted during 2024 and a Safety Summary has been produced. The purpose of the Safety Summary is to present the key elements of the ACP Safety Assurance that support the overarching Safety Claim regarding the Inverness Airspace Change Proposal and the detail can be seen below.

6.2 Safety Argument

The overarching Safety Claim (Claim 0) is that the proposed Inverness CAS and IFPs will be acceptably safe when introduced into operational use and throughout their in-service usage.

In order to demonstrate Claim 0 is valid, it is necessary to support it with three subsidiary claims, namely:

- Claim 1: The provision of an ATS at Inverness Airport, using the extant airspace and IFPs is acceptably safe.
- Claim 2: The provision of an ATS at Inverness Airport, using the revised airspace will be acceptably safe.
- Claim 3: The use and implementation of the new IFPs will be acceptably safe.

Satisfaction of the Safety Argument is presented in the table below.

Claim	Satisfied?
Claim 1: The provision of an ATS at Inverness Airport, using the extant airspace and IFPs is acceptably safe.	Yes, current Inverness Airport Certificate issued by CAA. Safety related procedures are set out in the MATS Part 2 and the HIAL SMS.

Claim	Satisfied?
Claim 2: The provision of an ATS at Inverness Airport, using the revised airspace will be acceptably safe.	See sub claims below
Claim 2.1: The design of the new airspace is deemed acceptably safe and agreed by the CAA, in accordance with CAP 725[3].	Yes, evidence presented in Part 2 & 3 SCR (see Para 6.4of this Safety Summary)
Claim 2.2: All hazards pertaining to the introduction of the new airspace have been identified and understood, including those associated with other airspace users, adjacent airports, and aviation organisations.	Yes, evidence presented in: Part 1 SCR (Para 6.3of this Safety Summary) Part 2 & 3 SCR (Para 6.4of this Safety Summary)
Claim 2.3: The Programme for transitioning the new airspace into operational use is planned and acceptably safe.	Yes, evidence presented in the Part 2 & 3 SCR (see Para 6.4of this Safety Summary)
Claim 2.4: The use of the new airspace will remain acceptably safe during its operational life.	Yes, evidence presented in the Part 4 SCR (see Para 6.5of this Safety Summary)
Claim 3: The use of the new IFP will be acceptably safe.	See Sub Claims below
Claim 3.1: The submitted designs for the new IFPs are deemed acceptably safe and agreed by the CAA.	Yes, evidence presented in Part 2 & 3 SCR (see Para 6.4of this Safety Summary)
Claim 3.2: All hazards pertaining to the introduction of the new IFP have been identified and understood, including those involving other airspace users, adjacent airports, and aviation organisations.	Yes, evidence presented in: Part 1 SCR (Para 6.3of this Safety Summary) Part 2 & 3 SCR (Para 6.4of this Safety Summary)
Claim 3.3: The Programme for transitioning the new IFP into operational use is planned and acceptably safe.	Yes, evidence presented in the Part 2 & 3 SCR (see Para 6.4of this Safety Summary)
Claim 3.4: The use of the new airspace will remain acceptably safe during use.	Yes, evidence presented in the Part 4 SCR (see Para 6.5of this Safety Summary)

[3] This will be confirmed by the CAA during the Stage 5 Decision process as per CAP725.

6.3 Safety Requirements

6.3.1 Hazard Identification

A Hazard Identification (HazID) Meeting was first held in April 2013 (HazID-1) to identify functional hazards concerned with the proposed introduction of Class D CAS and new IFPs at Inverness Airport.

A review of the HazID was held in November 2014 (HazID-2). This HazID review ensured that the HazID results reflected the latest design of the proposed CAS (including the addition of Class E+ airspace).

A further Hazard Review meeting was held in October 2023 (HazID-3) to ensure that the original HazID results remained valid for the implementation of the proposed CAS at Inverness Airport, given changes to the Inverness Airport operating environment since HazID-1 and HazID-2.

The aims of the HazID activities were as follows:

- To identify the functional hazards associated with the proposed Class D and Class E+ CAS and IFPs at Inverness Airport.
- To investigate the causes of the identified hazards.
- To identify potential consequences (incidents/accidents) which may arise from the identified hazards.
- To investigate potential mitigations/controls to prevent the identified hazards occurring or limit the consequences.

The HazID activity employed a structured, systematic, 'brainstorm' and drew upon the knowledge and experience of the team of subject matter experts.

The HazID activities were centred on the logical representation of the system/operation, and considered scenarios, to which "what-if" guidewords were applied, to identify the hazards and outline their causes and mitigation.

The results of the HazID activity have been subject to development and refinement to determine a list of Hazards applicable to the proposed introduction of Class D and Class E+ CAS and new IFPs at Inverness Airport.

The consolidated list of functional hazards is presented in the table below.

Hazard No.	Hazard Description
HAZ01	Erroneous Voice Comms (IFP)
HAZ02	Loss of Nav data (IFP)
HAZ03	• Erroneous Nav data (IFP)
HAZ04	Loss of Voice Comms (CAS)
HAZ05	Erroneous Voice Comms (CAS)
HAZ06	Loss of Nav data (CAS)
HAZ07	Erroneous Nav data (CAS)

Hazard No.	Hazard Description
HAZ08	• *Not Used*
HAZ09	Loss of ground Comms to RAF Lossiemouth
HAZ10A	Unauthorised entry to CAS by known aircraft
HAZ10B	Unauthorised entry to CAS by unknown aircraft
HAZ11	Loss/Corruption of single Secondary Surveillance Radar (SSR) plot
HAZ12	Loss/Corruption of all SSR data
HAZ13	Total loss of Surveillance
HAZ14	Surveillance coverage shortfall in performance
HAZ15	IFPs not contained by CAS

6.3.2 Safety Objective & Safety Requirement Derivation

Since it is not practical to derive numerical Safety Objectives for the design of the proposed CAS and IFPs, Safety Objectives have been derived for the infrastructure that supports the proposed CAS and IFPs: Voice Communications, Navigational Aids and Surveillance. Further, a set of Safety Requirements has been derived by identifying mitigations that manage the risks presented by the hazards.

Where appropriate, the available mitigations to the hazards have been modelled using Event Trees. Each branch of the event tree resulting in a safety significant consequence was assigned a severity in accordance with the HIAL SMS Severity Classification Scheme. The maximum acceptable probability of the hazard occurring was then calculated (***Safety Objective***), taking account of the available mitigation while constraining the resultant level of risk to an acceptable level, in accordance with the HIAL SMS.

Any mitigation proposed to manage the risks presented by the hazards were identified as ***Safety Requirements*** and linked to the Hazard.

Full details are presented in the Part 1 SCR held by HIAL.

6.4 Compliance with Safety Requirements

The Part 2 & 3 SCRs held by HIAL presents the evidence to support the claims that:

- The provision of an ATS at Inverness Airport, using the revised airspace will be acceptably safe.
- The use of the new IFP will be acceptably safe.

Compliance is demonstrated with the derived Safety Objectives that limit the level of risk associated with the hazards to an acceptable level (in accordance with the HIAL SMS).

Additionally, compliance is shown to all derived Safety Requirements that limit the likelihood or severity of the identified hazard risks to an acceptable level (in accordance with the HIAL SMS).

Some Safety Requirements are currently shown to be 'Conditionally Compliant' since the evidence of compliance is not available at the time of publication of the SCR. However, for these requirements a plan exists for this evidence to be generated when implementing the Inverness CAS and/or IFPs.

6.5 Safety of Transition into Service

An initial Risk Assessment of the transition arrangements for the implementation of CAS and the associated procedures took place in August 2017. An ACP Transition into Service Hazard Review Meeting was held in January 2024 that resulted in changes to the original Risk Assessment.

The Part 2 & 3 SCR demonstrates that the process of introducing the Inverness CAS and IFPs into service has been assessed and is considered to be safe.

Some transitional Safety Requirements are currently shown to be 'Conditionally Compliant' since the evidence of compliance is not available at the time of publication of the SCR. However, for these requirements a plan exists for this evidence to be generated when implementing the Inverness CAS and/or IFPs.

6.6 Safety of ACP Through life

The Part 4 SCR held by HIAL provides assurance evidence that the Operation and Support of the proposed CAS and IFPs will allow for continued satisfaction of the Safety Argument and Safety Objectives and Requirements set out in the Part 1 SCR.

The Part 4 SCR details the following:

- Operational Interfaces
- Availability of GNSS (to support continued use of the proposed IFPs)
- IFP Safety Performance Monitoring (including reviews and safeguarding of IFPs)
- Airspace Safety Performance Monitoring
- Organisation and Safety Management
    - Change Control
    - Changes to the ATC surveillance display
    - Document Control
    - Training and Competence
    - Roles and Responsibility
- Limitations and Shortcomings

6.7 Conclusion

The suite of SCRs support the claim that the implementation of the proposed CAS and IFPs at Inverness Airport is acceptably safe when introduced into service and will continue to be so.

7 Engagement Update

7.1 Background

Engagement with all stakeholders (both aviation and non-aviation) to ensure that they are kept informed of the progression of the ACP has continued since operations re-commenced post-COVID-19.

Updates regarding the ACP have been briefed at the quarterly Inverness Airport Consultative Committee by members of the airport management team. The Inverness SATCO and staff have attended the Regional Airspace Users Working Group (RAUWG) held by RAF Lossiemouth. Information and updates regarding the ACP have also been published on the HIAL Inverness website. Email communications have also been sent out by Inverness Airport to stakeholders where appropriate.

More recently, work has also taken place to agree Letters of Agreement with Stakeholders to ensure that the ACP can be implemented safely. Key engagement opportunities are highlighted below.

7.2 RAF Lossiemouth

The Inverness Senior Air Traffic Control Officer recently provided an ACP update brief at the RAUWG that was hosted by RAF Lossiemouth and held over MS Teams on 31st January 2024. No concerns or feedback was received at this meeting.

The ACP Project team has been engaged with the SATCO and ATC personnel and along with SATCO Inverness have met twice with RAF Lossiemouth Officer Commanding Operations Support Wing. Procedures have been discussed relating to a draft LOA which is now mature, and discussions will continue to ensure safe and workable procedures are implemented to enable airspace access in line with the FUA concept.

7.3 Swanwick (Mil) 78 Sqn

The Project team met with the RAF Lossiemouth engagement lead and Swanwick(Mil) representatives in late April 24 to discuss future operational requirements and any potential LoAs that may be required prior to implementation. Further engagement will continue throughout the summer before the proposed implementation.

7.4 DAATM

The Project Team met with representatives from DAATM and RAF Lossiemouth to discuss the ACP in early May 24. DAATM have agreed to support RAF Lossiemouth in finalising the LoA and providing further support to Lossiemouth as required.

7.5 Tain Air Weapons Range

The Project Team has recently re-engaged with the Tain Air Weapons Range (AWR) regarding the ACP. As was highlighted by the Range Controller, the operation at Tain

should not be affected by this ACP and communication and co-ordination methodologies that are currently practised by both Tain AWR and Inverness will ensure the safe conduct of flight.

7.6 Fort George

SATCO and his staff are in regular communication with the Range Controller at Fort George. It is not envisaged that this ACP will have any detrimental effect on the current operation at Fort George.

7.7 Highlands Hang-Gliding and Para-Gliding Club (HHGPGC)

The Project Team has been engaged with the Highlands Hang Gliding and Paragliding Club regarding their current operations at Alturlie Point. Although flying operations have taken place for many years, there was no formal Letter of Agreement in place. A draft LoA is now undergoing final review by the Chair of the HHGPGC for current operations and it is envisaged that the document will be signed off in early July. It is understood that the LoA will require slight amendment should the ACP be approved.

7.8 Cairngorm Gliding Club (CGC)

The Project team has been engaged with the CGC and an LOA with Cairngorm Gliding Club has been agreed in draft. This LOA will be formalised when the result of the CAA Decision is announced.

7.9 Stakeholder engagement

HIAL has continued to provide updates to its stakeholders via engagement meetings, through email and on the HIAL Inverness website. The last communication that was distributed to all HIAL Inverness stakeholders was sent on 10th March 2024 and a copy can also be found on the CAA ACP portal. A further update is due to be circulated at the end of June 2024.

8 Training of Inverness ATC Personnel

8.1 Training Plan

The training of the controlling cadre at Inverness is planned to commence in November 2024 and will be conducted by a third-party provider subject to a positive decision. The ATS Inspector for Inverness has been briefed by the SATCO and the Project Team about the training plan and exercises and shall be further consulted as the plan develops further.

It is anticipated that all members of the controlling staff and assistants will have undergone the appropriate simulator and classroom training exercises before implementation of the Airspace Change. This will ensure that a seamless transition for safe operations within controlled airspace can take place in March 2025.

9 UK AIP Amendments

9.1 AIS Submission

The Project Team and Inverness ATC are aware that changes will be required to be made to the UK AIP before implementation. Should this ACP be approved, it is intended to submit all changes to UK AIS by no later than Thursday 7th November 2024.

The proposed AIRAC and date of implementation of this Airspace Change will be AIRAC 03/25 which is scheduled for 20th March 2025.