

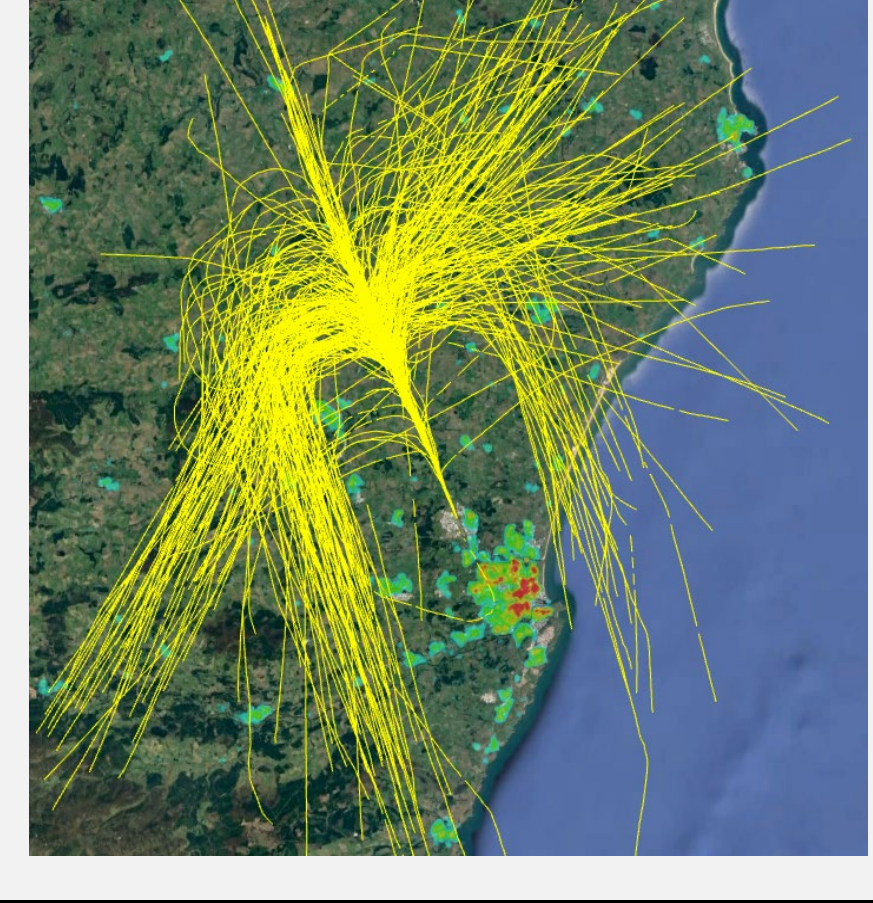
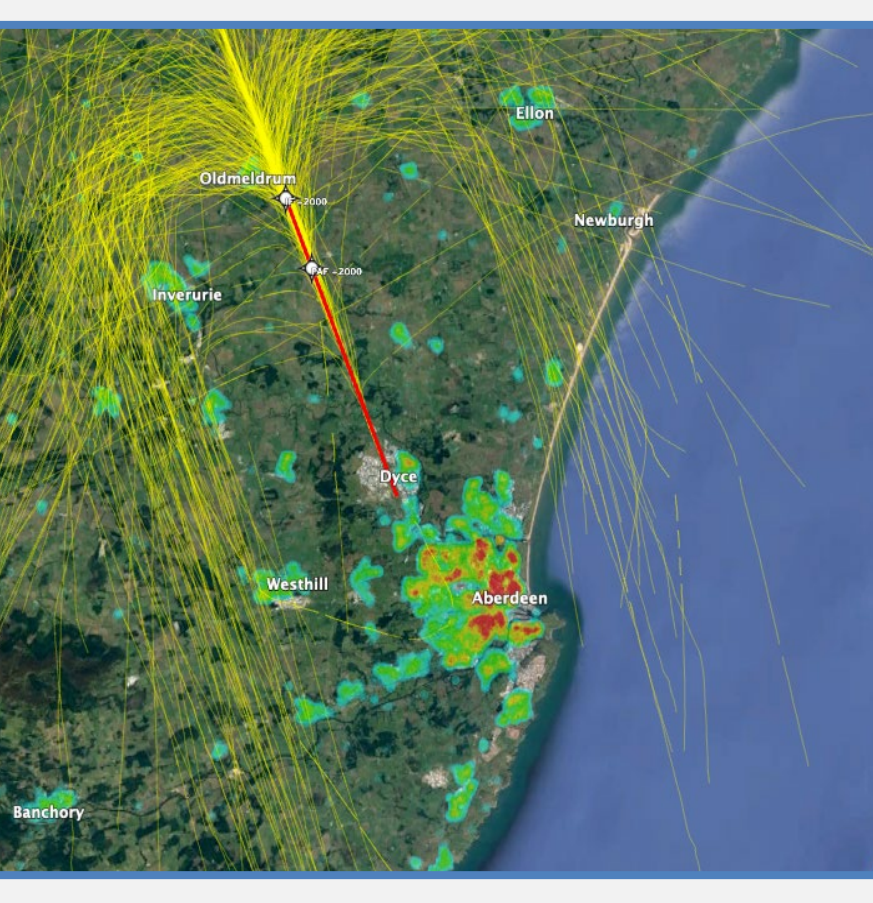
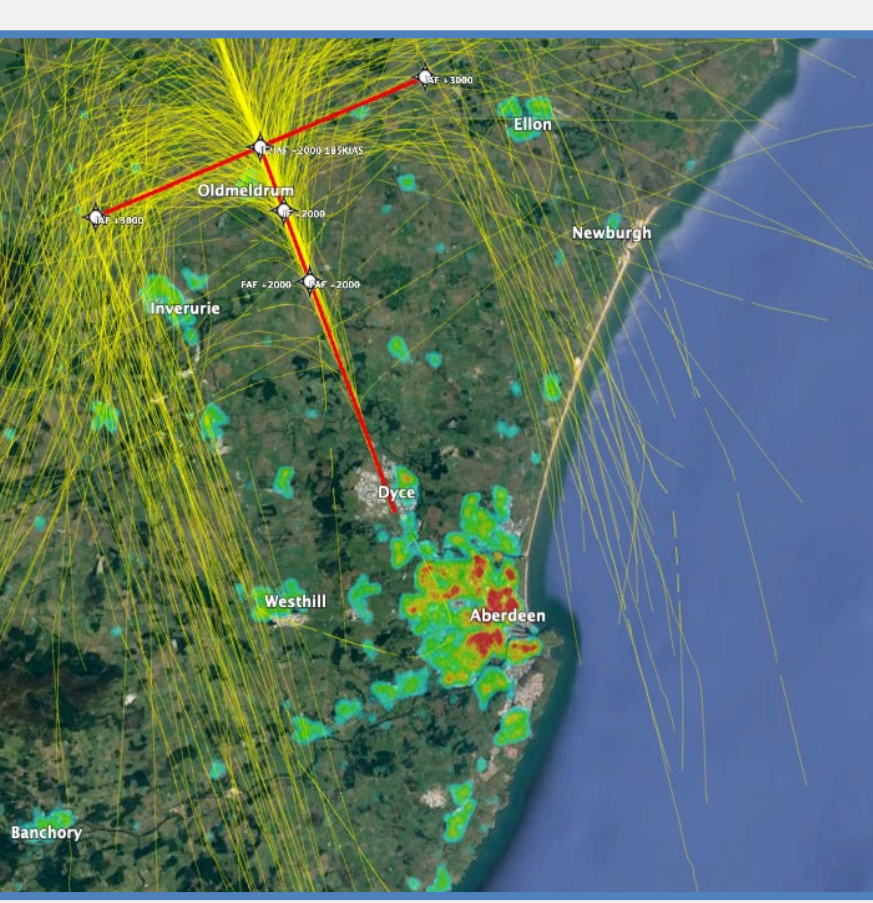
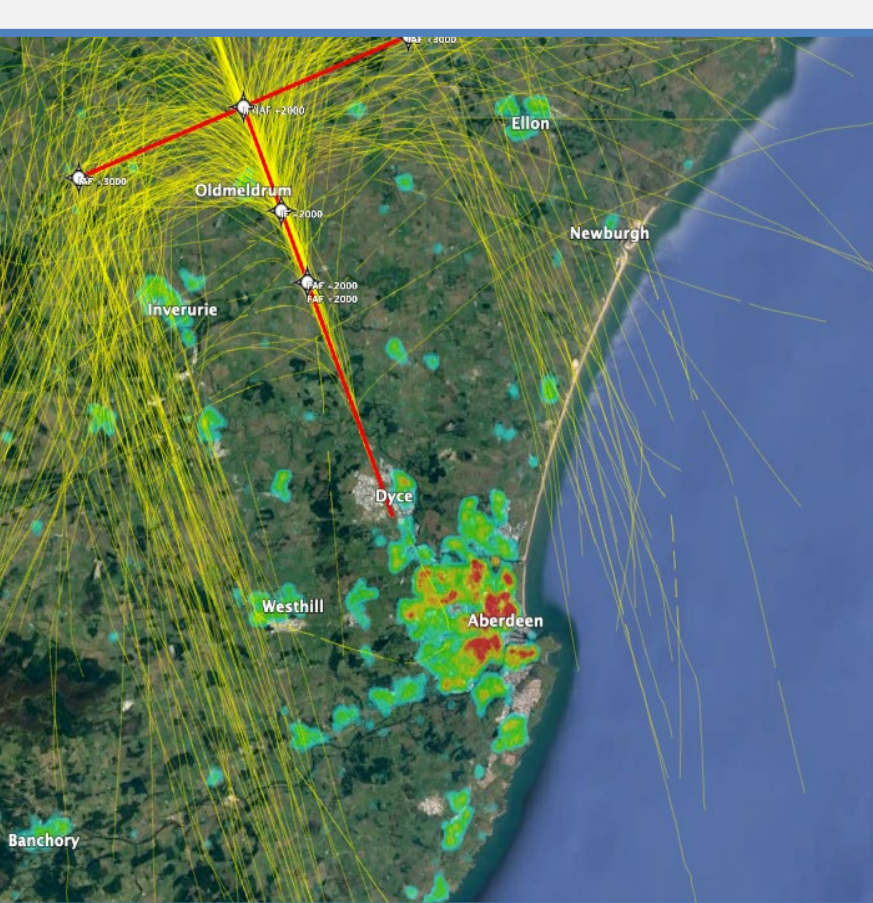
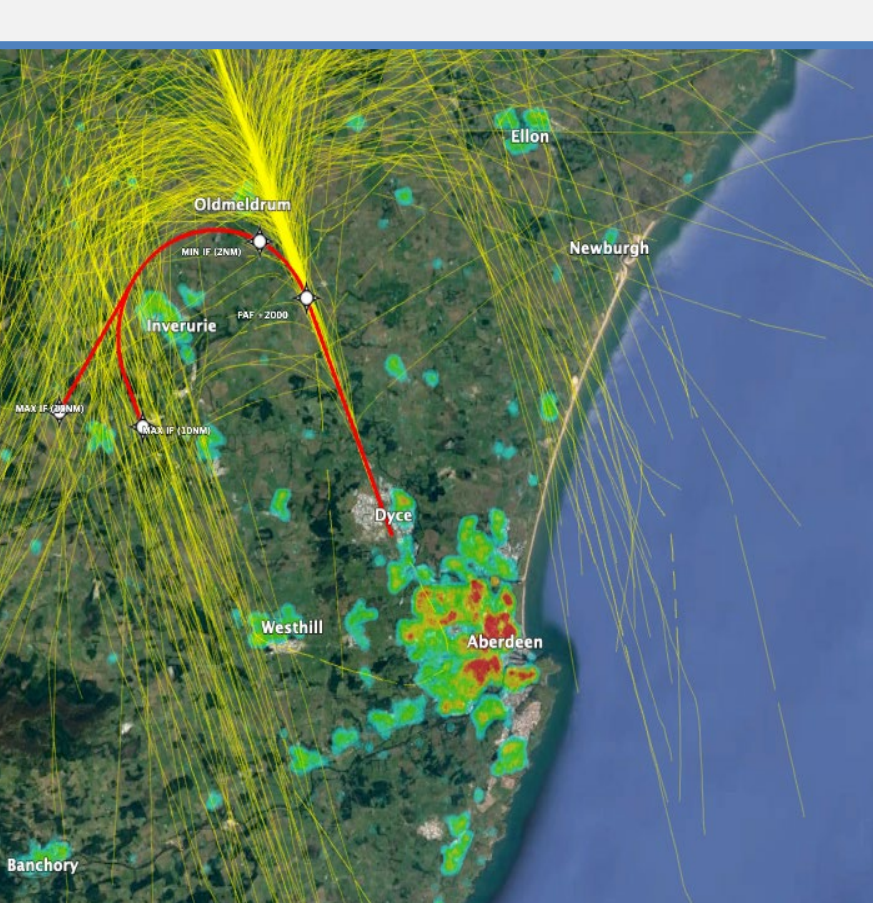
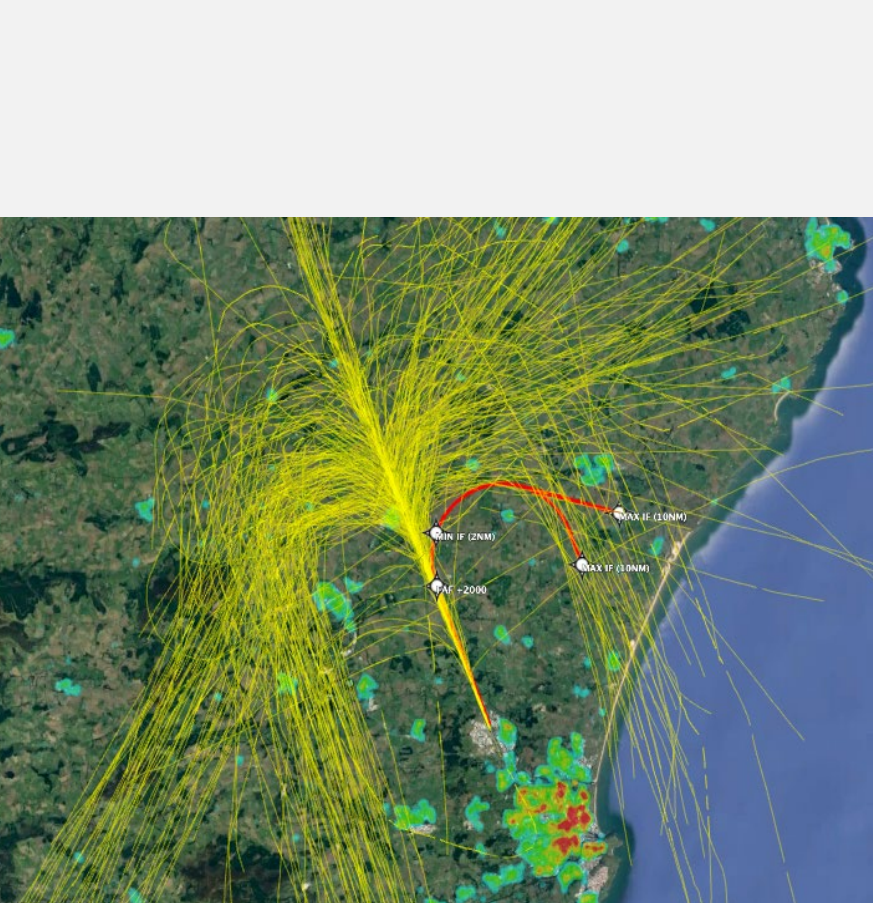
Aberdeen International Airport (AIAL)


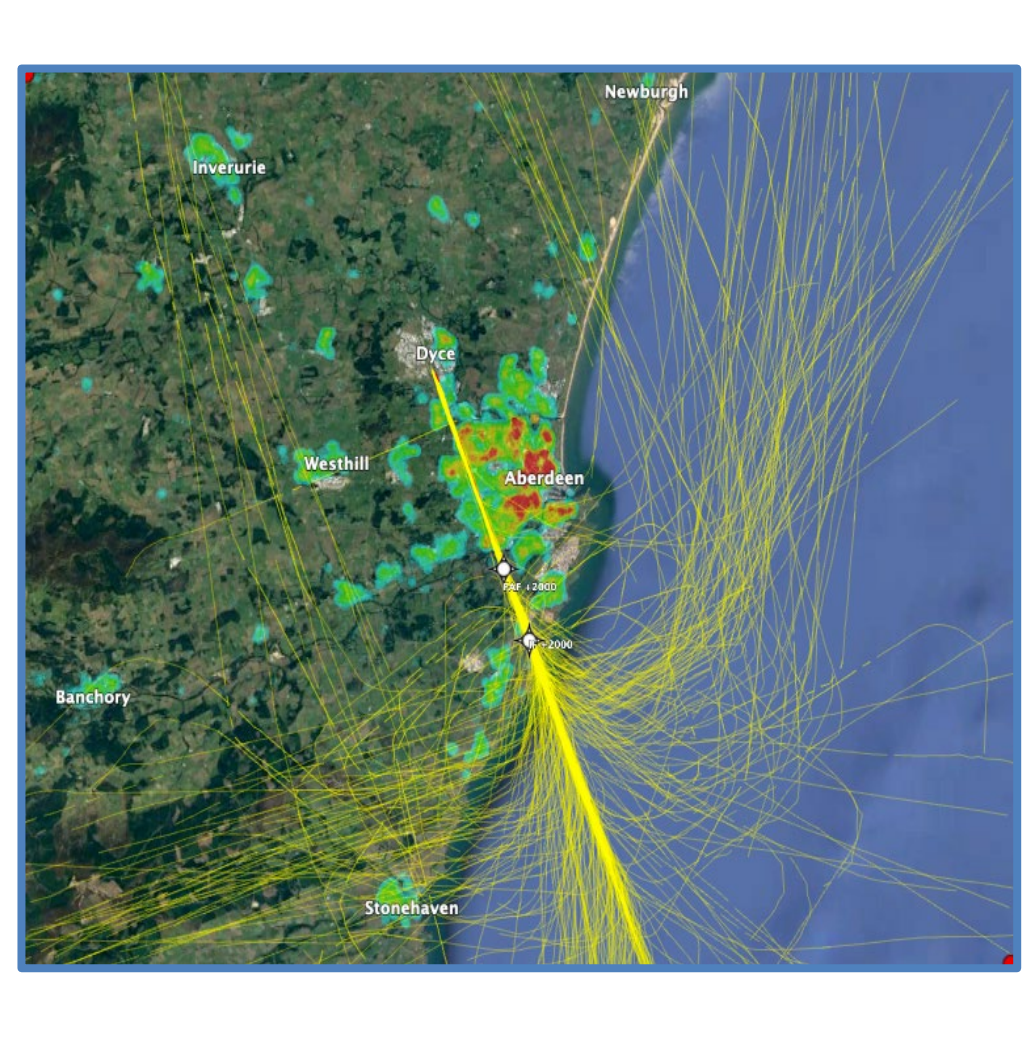
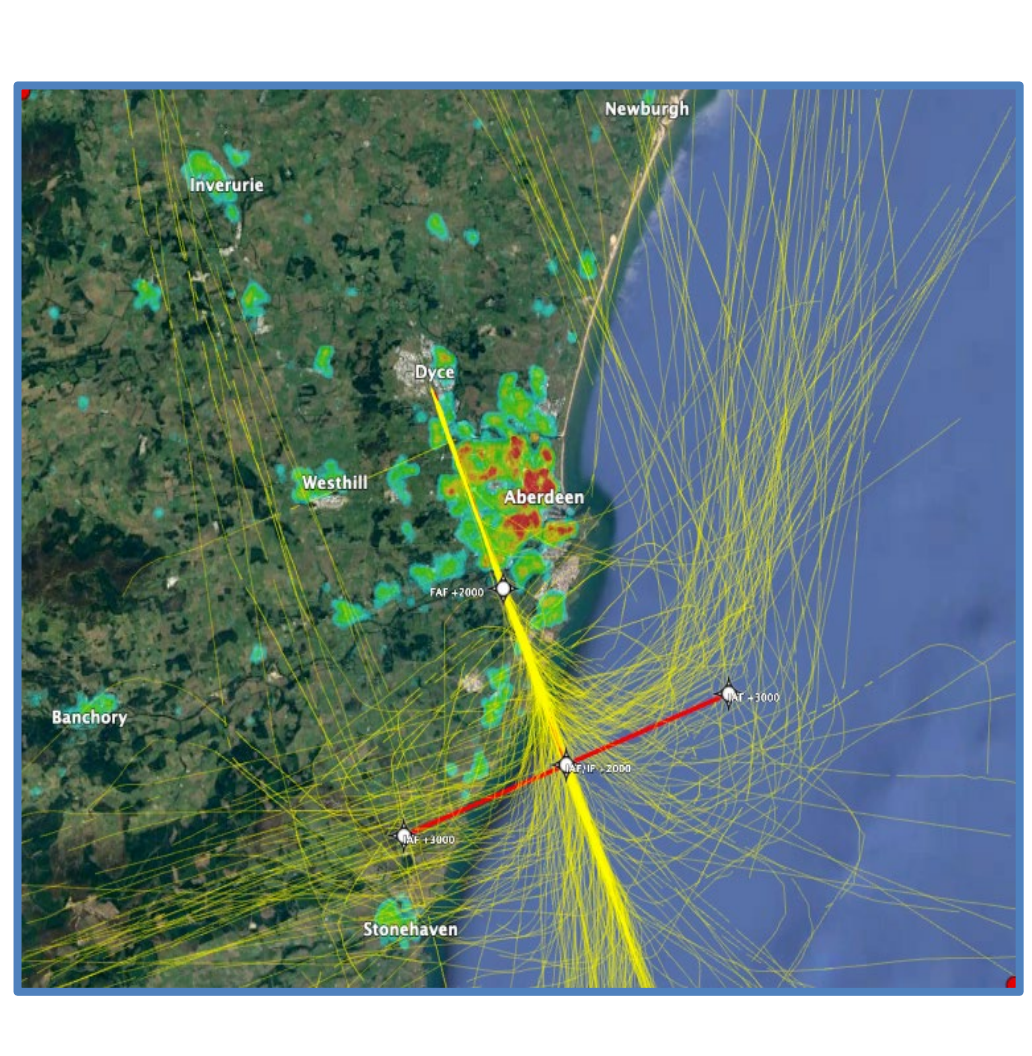
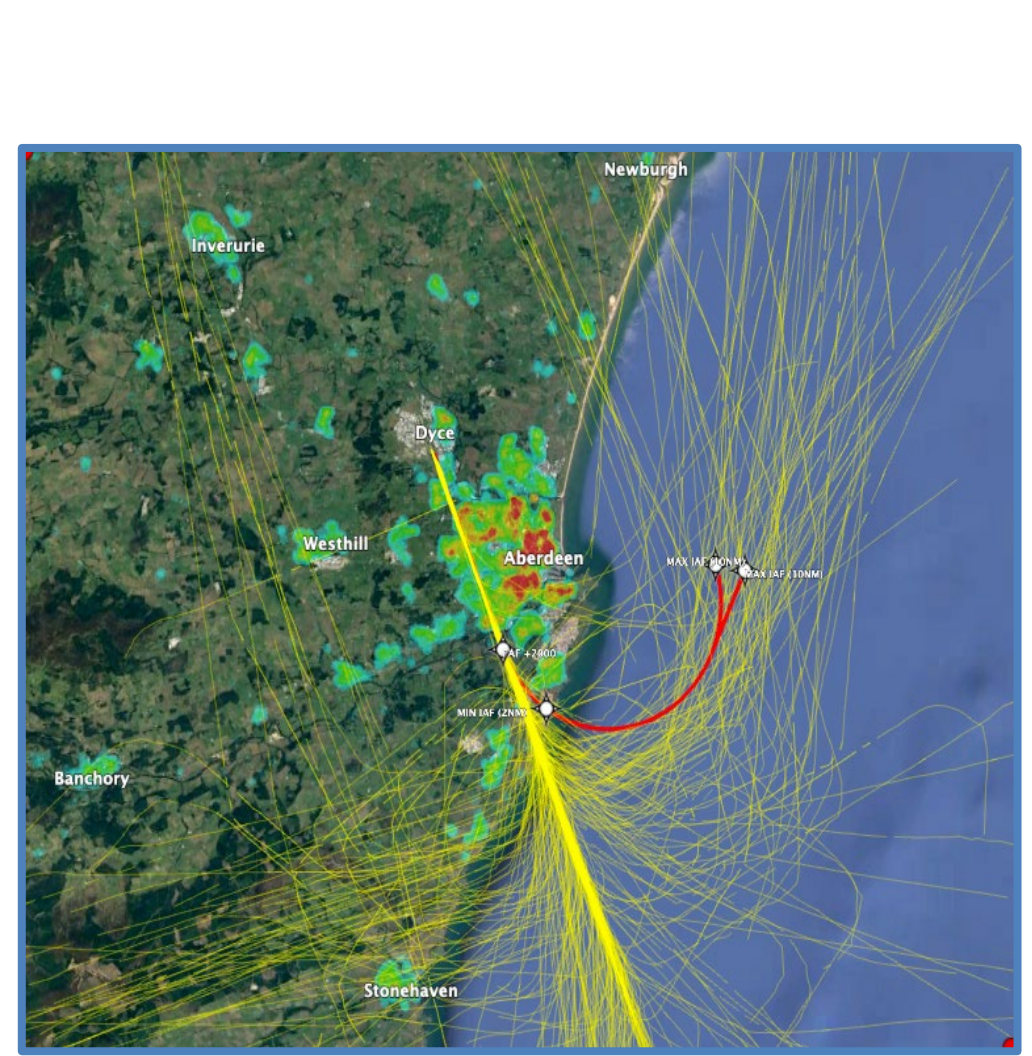
FASI-N Airspace Change Proposal



Annex A Design Principle Evaluation

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Option Name	The airspace design and its operation must be as safe or safer than today for all airspace users that are affected by the airspace change	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it accords with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.	Design options should minimise the change to tracks over the ground of aircraft arriving and departing from Aberdeen.	Design options should investigate the feasibility of steeper approaches for PBN arrivals to reduce the noise footprint of Aberdeen Airport's operation.	Arrival route options should enable aircraft to descend continuously and should not inhibit departures from climbing continuously. If both cannot be achieved, there should be preference to the most environmentally beneficial option.	Options should not increase and should aim to reduce the emissions footprint of aircraft operating at Aberdeen by reviewing existing controlled airspace boundaries and usage of flight paths in the NERL network.	Design the appropriate volume of controlled airspace (CAS) to safely support commercial air transport and release controlled airspace which is not required	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate, to improve access and decrease airspace segregation.	Options shall not reduce and where possible enhance the air traffic movement capacity of Aberdeen Airport.	Ensure the Aberdeen operation is resilient to the withdrawal or failure of navigation aids and systems.	Result
RWY 16 Do Nothing											Option Discontinued
RWY 16 Option 1 Vectors to final approach											Option carried forward to IOA
RWY 16 Option 2 Inner T Bar											Option carried forward to IOA
RWY 16 Option 3 Outer T Bar											Option carried forward to IOA
RWY 16 Option 4 Curved Approach from West											Option carried forward to IOA
RWY 16 Option 5 Curved Approach from East											Option carried forward to IOA
RWY 34 Do Nothing											Option Discontinued
RWY 34 Option 1 Vectors to final approach											Option carried forward to IOA
RWY 34 Option 2 T Bar											Option carried forward to IOA
RWY 34 Curved Approach from East											Option carried forward to IOA
Existing CAS Do Nothing											Option carried forward to IOA
CAS Option 1 Raise portion of CTA 3 to 4500ft											Option carried forward to IOA

Option Image	Option Name	Option Description	DPS					Design options should minimise the change to tracks over the ground of aircraft arriving and departing from Aberdeen.	Design options should investigate the feasibility of steeper approaches for PAN arrivals to reduce the noise footprint of Aberdeen Airport's operation.	Arrival route options should enable aircraft to descend continuously and should not inhibit departures from climbing continuously, if both cannot be achieved, there should be preference for the most environmentally beneficial option.	Options should not increase and should aim to reduce the emissions footprint of aircraft operating at Aberdeen by reviewing existing controlled airspace boundaries and usage of flight paths in the NERL network.	Design the appropriate volume of controlled airspace (CA) to safely support commercial air transport and release controlled airspace which is not required.	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate, to improve access and decrease airspace segregation.	Options shall not reduce and where possible enhance the air traffic movement capacity of Aberdeen Airport.	Ensure the Aberdeen operation is resilient to the withdrawal of navigation aids and systems.
			DP1	DP2	DP3	DP4	DP5								
	RWY 16 Do Nothing	The weather (optimal) are a result of arrivals to RWY 16. There are no published arrival times, either from on final approach. All arrivals are subject to ATIS and holding, leading to establish on the taxiway. Typical arrival are joining final approach between 10-15min from touchdown.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option is not expected to result in any changes to tracks over the ground compared to today.	Doing nothing means RWY 16 approach and departures are currently the most environmentally beneficial option.	Doing nothing will not change track into for Aberdeen traffic compared to today.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option does not provide additional resilience.	
	RWY 16 Option 1 Vectors to final approach	This option would continue to see those arrivals wishing to fly an RNP APCH vectored to final approach as they are today. The only difference would be where with the ATIS, the arrivals have flexibility in where they join final approach from down and beyond. The RNP APCH arrivals would be vectored to join final approach from the same location as the initial fix (D). The fix has been positioned to those arrivals would join final approach as representatively them, keeping the external arrival headings consistent with the baseline.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option is expected to result in very minimal changes to tracks over the ground compared to the baseline as CRUTAs would be vectored to final approach as today. While they will be vectored towards the final approach (D) rather than back to where they were today, the number of arrivals expected to use the RNP APCH is not expected to result in a concentration of tracks. The fix is located where the majority of arrivals currently join the fix.	This option would be able to accommodate a 3.2° VAs. However please see the Stage 2a submission document for notes on benefits of a deeper VAs versus safety assurance and other feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an LS, DME or VOR outage.	
	RWY 16 Option 2 Inner T Bar	Arrivals wishing to fly an RNP APCH vectored towards an initial approach fix (IAF) positioned on base leg from either side of final approach. The IAFs have been positioned to minimise track mile flow but still allow to be within the existing arrival swathe, consistent with an ILS final. As a result, the tracks between the IAF and final approach (D) have been moved to the communities of Oldmeldrum and Taveris.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option could result in some concentration of tracks but over areas currently relatively over flown by Aberdeen traffic on landing.	This option would be able to accommodate a 3.2° VAs. However please see the Stage 2a submission document for notes on benefits of a deeper VAs versus safety assurance and other feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an LS, DME or VOR outage.	
	RWY 16 Option 3 Outer T Bar	Arrivals wishing to fly an RNP APCH vectored towards an initial approach fix (IAF) positioned on base leg from either side of final approach. The IAFs have been positioned to minimise track mile flow but still allow to be within the existing arrival swathe, consistent with an ILS final. As a result, the tracks between the IAF and final approach (D) have been moved to the communities of Oldmeldrum and Taveris.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option could result in some concentration of tracks but over areas currently relatively over flown by Aberdeen traffic on landing.	This option would be able to accommodate a 3.2° VAs. However please see the Stage 2a submission document for notes on benefits of a deeper VAs versus safety assurance and other feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an LS, DME or VOR outage.	
	RWY 16 Option 4 Curved Approach from West	Arrivals wishing to fly an RNP APCH that were also equipped with Radius to Fix (RF) functionality vectored towards an initial approach fix (IAF) positioned downwind to the west of final approach. The RF allows arrivals to fly an arc of fixed radius around a point, direct to the final approach (D), enabling shorter track miles and CO2 reduction. The tracks in the image have been positioned to try and route between Oldmeldrum, Aberdeen, Taveris and Oldmeldrum. Note however that these communities could still be overflown according to the CAA definition of overflight, as the concentration enabled by RF would require aircraft would accurately fly around the arc into final approach. These communities are currently overflown by arrivals, but the curved path is within the main arrival swathe on base leg and therefore communities could be expected to experience a change in frequency overflight.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option is expected to result in overflight of areas currently overflown by Aberdeen traffic, as the curved approach would be positioned to the west of the existing landing swathe in order to avoid separation concerns and provide track mile reduction.	This option would be able to accommodate a 3.2° VAs. However please see the Stage 2a submission document for notes on benefits of a deeper VAs versus safety assurance and other feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an LS, DME or VOR outage.	
	RWY 16 Option 5 Curved Approach from East	Arrivals wishing to fly an RNP APCH that were also equipped with Radius to Fix (RF) functionality vectored towards an initial approach fix (IAF) positioned downwind to the east of final approach. The RF allows arrivals to fly an arc of fixed radius around a point, direct to the final approach (D), enabling shorter track miles and CO2 reduction. The tracks in the image have been positioned to try and route between Oldmeldrum, Aberdeen, Taveris and Oldmeldrum. Note however that these communities could still be overflown according to the CAA definition of overflight, as the concentration enabled by RF would require aircraft would accurately fly around the arc into final approach. These communities are currently overflown by arrivals, but the curved path is within the main arrival swathe on base leg and therefore communities could be expected to experience a change in frequency overflight.	See methodology - doing nothing would not meet any of the AMC.	See DP1	See DP2 and DP3	See DP4 and DP5	See DP1, DP2, DP3, DP4, DP5 and DP6	Option is expected to result in overflight of areas currently overflown by Aberdeen traffic, as the curved approach would be positioned to the east of the existing landing swathe in order to avoid separation concerns and provide track mile reduction.	This option would be able to accommodate a 3.2° VAs. However please see the Stage 2a submission document for notes on benefits of a deeper VAs versus safety assurance and other feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Option is expected to be contained within existing CA but does not enable a reduction in CA.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. Plans that require a total of 150 CRUTAs are always welcome to contact AED ATC and request a clearance to enter CA.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that back of envelope evidence provided by the approach could track in delay and departures however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an LS, DME or VOR outage.	

Option Image	Option Name	Option Description	Design Principle Evaluation						Design options should minimise the change to tracks over the ground of aircraft arriving and departing from Aberdeen.	Design options should investigate the feasibility of steeper approaches for PBN arrivals to reduce the noise footprint of Aberdeen Airport's operation.	Arrival route options should enable aircraft to descend continuously and should not inhibit departures from climbing continuously, if both cannot be achieved, there should be preference to the most environmentally beneficial option.	Options should not increase and emissions footprint of aircraft operating at Aberdeen by reviewing existing controlled airspace boundaries and usage of flight paths in the NEBL network.	Design the appropriate volume of controlled airspace (CAS) to safely support commercial air transport and release controlled airspace which is not required.	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate to improve access and decrease airspace segregation.	Options shall not reduce and where possible enhance the air traffic movement capacity of Aberdeen Airport.	Ensure the Aberdeen operation is resilient to the withdrawal of failure of navigation aids and systems.
			DPI	DPI2	DPI3	DPI4	DPI5	DPI6								
	RWY 34 Do Nothing	The image shows the weather (yellow) of a series of arrivals to Aberdeen's Wulfric runway (RWY 34). There are no published arrivals from either side on final approach and therefore all arrivals are vectored by ATIS. There is a closing to landing to establish on the localiser. Typical track mile flow from final approach between 8 and 12nm from touchdown although there are variances to this.	See methodology - doing nothing would not meet any of the DPs	Maintain and enhance high aviation safety standards	Secure the efficient use of airspace and enable integration	Avoid flight delays by better managing the airspace network	Improve environmental performance by reducing emissions and by better managing noise	Facilitate defence and security objectives	Option not expected to result in any changes to tracks over the ground compared to today	Doing nothing would not meet any of the DPs	There would be no change to the profile of inbound arrival as a result of this option.	Doing nothing will not change track miles for Aberdeen traffic compared to today.	Option is expected to be contained within existing CAS but does not enable a reduction in CAS.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. PBNs that require a request of the CTR/CTA are always welcome to contact ABE/ATC and request a clearance to enter CAS.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that loss of resilience enabled by PBN approaches could result in delays and diversions however this is not necessarily a capacity measure.	Option does not provide additional resilience
	RWY 34 Option 1 Vectors to final approach	Arrivals wishing to fly an RNP APCH vectored to final approach as they are today. The only difference would be whereas with the US, the arrivals have flexibility in where they fly final approach from 8nm and beyond, RNP APCH arrivals would be vectored to join final approach in the same location, at the initial fix (IF). The IF in this case has been positioned so those arrivals would join final approach at approximately 8nm, keeping the vectored arrival weather consistent with the baseline.	See methodology - doing nothing would not meet any of the DPs	See DPI	See DPI and DPI2	See DPI and DPI2	See DPI, DPI3, DPI4, DPI5, DPI6, DPI7 and DPI8	Option not expected to affect defence and security objectives	Option is expected to result in very minimal changes to tracks over the ground compared to the baseline as aircraft would be vectored to final approach as they are today. Whilst they will be vectored towards a fixed frequency (IF) rather than a location which is more flexible, the low number of arrivals expected to use the RNP APCH is not expected to result in any concentration of tracks. The IF would be located where the majority of US arrivals currently join the localiser.	This option would be able to accommodate a 3.2° VPA, however please see the Stage 2A submission document for notes on benefits of a steeper VPA versus safety assurances and airline feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	This option is not expected to change track mileage compared to the baseline.	Option is expected to be contained within existing CAS but does not enable a reduction in CAS.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. PBNs that require a request of the CTR/CTA are always welcome to contact ABE/ATC and request a clearance to enter CAS.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that increased resilience enabled by PBN approaches helps to reduce delays and diversions however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an ILS, DME, NDB or VOR outage.
	RWY 34 Option 2 T Bar	Arrivals wishing to fly an RNP APCH vectored towards an Initial Approach Fix (IAF) positioned on bearing from either side of final approach. The IAF in this image has been positioned to minimise track mile flow but still within the existing arrival weather, consistent with the 8nm flow. The T-Bar is predominantly over water, but Muckalee and Headland would be expected to be overflown to a similar extent as in the baseline.	See methodology - doing nothing would not meet any of the DPs	See DPI	See DPI and DPI2	See DPI and DPI2	See DPI, DPI3, DPI4, DPI5, DPI6, DPI7 and DPI8	Option not expected to affect defence and security objectives	Option could result in some concentration of tracks but over areas currently overflown by Aberdeen traffic on bearing	This option would be able to accommodate a 3.2° VPA, however please see the Stage 2A submission document for notes on benefits of a steeper VPA versus safety assurances and airline feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Taking the typical track mile flow from each of the arrival points there would be a cumulative track mile reduction of 1.2nm compared to an arrival from each direction being vectored to an ILS approach in the baseline.	Option is expected to be contained within existing CAS but does not enable a reduction in CAS.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. PBNs that require a request of the CTR/CTA are always welcome to contact ABE/ATC and request a clearance to enter CAS.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that increased resilience enabled by PBN approaches helps to reduce delays and diversions however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an ILS, DME, NDB or VOR outage.
	RWY 34 Option 3 Curved Approach from East	Arrivals wishing to fly an RNP APCH that were also vectored with 'Narrow' or 'DP' functionality vectored towards an Initial Approach Fix (IAF) positioned downward to the East of final approach. The IAF allows arrivals to fly an arc of fixed radius around a point, direct to the final approach fix (FAF), enabling shorter track miles and CO2 reduction. The track in the image has been positioned to be largely over water and then around Cove Bay. Note however that Cove Bay could still be overflown according to the CAS definition of overflight, but the concentration of arrivals is not necessarily overflown by arrivals, but the curved path is not within the main arrival weather on bearing and therefore communities could be expected to experience a change in frequency overflight.	See methodology - doing nothing would not meet any of the DPs	See DPI	See DPI and DPI2	See DPI and DPI2	See DPI, DPI3, DPI4, DPI5, DPI6, DPI7 and DPI8	Option not expected to affect defence and security objectives	Option is expected to result in overflight of areas not currently overflown by Aberdeen traffic. The majority of the curved approach is over water and therefore has no impact on those areas however the track and the IAF in this image are not aligned with the current ILS approach and therefore communities could be expected to experience a change in frequency overflight.	This option would be able to accommodate a 3.2° VPA, however please see the Stage 2A submission document for notes on benefits of a steeper VPA versus safety assurances and airline feedback.	This option should enable aircraft to descend continuously and should not inhibit departures from climbing continuously.	Taking the typical track mile flow from each of the arrival points that would service this option there would be a cumulative track mile reduction of 1.8nm compared to an arrival from the same direction when being vectored to an ILS approach in the baseline. Note however this option would be used by a relatively small number of helicopter arrivals with very low fixed-wing arrivals.	Option is expected to be contained within existing CAS but does not enable a reduction in CAS.	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. PBNs that require a request of the CTR/CTA are always welcome to contact ABE/ATC and request a clearance to enter CAS.	Option is not expected to affect the ATM capacity of Aberdeen Airport. We note that increased resilience enabled by PBN approaches helps to reduce delays and diversions however this is not necessarily a capacity measure.	Option provides additional resilience in the event of an ILS, DME, NDB or VOR outage.

		Design Principle Evaluation														
Option Image	Option Name	Option Description	DP1	DP2				DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10	
		The airspace design and its operation must be as safe or safer than today for all airspace users that are affected by the airspace change		Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it accords with the CA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.				Design options should minimise the change to tracks over the ground of aircraft arriving and departing from Aberdeen.	Design options should investigate the feasibility of steeper approaches for PBN arrivals to reduce the noise footprint of Aberdeen Airport's operation.	Arrival route options should enable aircraft to descend continuously and should not inhibit departures from climbing continuously. If both cannot be achieved, there should be preference to the most environmentally beneficial option.	Options should not increase the emissions footprint of aircraft operating at Aberdeen by reviewing existing controlled airspace boundaries and usage of flight paths in the NERL network.	Design the appropriate volume of controlled airspace (CAS) to safely support commercial air transport and release controlled airspace which is not required	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate, to improve access and decrease airspace segregation.	Options shall not reduce and where possible enhance the air traffic movement capacity of Aberdeen Airport.	Ensure the Aberdeen operation is resilient to the withdrawal or failure of navigation aids and systems.	
				Maintain and enhance high aviation safety standards	Secure the efficient use of airspace and enable integration	Avoid flight delays by better managing the airspace network	Improve environment performance by reducing emissions and by better managing	Facilitate defence and security objectives								
	Existing CAS Do Nothing		The airspace design is expected to be as safe or safer than today with no safety concerns at this time.	See DP1	See DP7 and DP8	See DP9 and DP10	See DP3, DP4, DP5, DP9 and DP10	Option not expected to affect defence and security objectives	Option is not expected to result in any changes to tracks over the ground compared to today.	N/A	Option is not expected to change COO or CDD performance compared to today	Option is not expected to change track miles for Aberdeen traffic compared to today	Option is expected to be contained within existing CAS but does not enable a reduction in CAS	Option is not expected to lead to a change in airspace classification or enable flexible use of airspace. However, it may require a transfer of the CTR/CTA area where necessary to contact A&C ATC and request a clearance to enter CAS.	Option is not expected to affect the ATM capacity of Aberdeen Airport	N/A
	CAS Option 1 Raise portion of CTA 3 4500ft	Analysis of surveillance data followed by conversations with Aberdeen ATC identified a section of CTA 3 which was underutilised. It is initially considered that the base of a 500 portion of CTA 3 could be raised to 4,500ft without any negative impact on the operation. The image illustrates the section of CTA 3 that will be considered for a declassification from Class D to Class G.	Although the airspace design is expected to be as safe or safer than today with no safety concerns at this time, further investigation is required to ensure that the direct arrival from Runway 09/21, ELVING RAMP 04, LPT/DMR RAMP 04 and VOL/DME RAMP 04 procedures can be contained within the higher base of CAS	See DP1	See DP7 and DP8	See DP9 and DP10	See DP3, DP4, DP5, DP9 and DP10	Option not expected to affect defence and security objectives	Option is not expected to result in any changes to tracks over the ground compared to today as analysis of radar data suggests the profiles of aircraft arriving and departing Aberdeen are currently above this volume.	N/A	Option is not expected to change COO or CDD performance compared to today	Option is not expected to change track miles for Aberdeen traffic compared to today	Option is expected to enable a reduction in CAS compared to today	Option could enable a change in classification of airspace to a lower classification	Option is not expected to affect the ATM capacity of Aberdeen Airport	N/A