



Airspace Change Proposal
MTMA Airspace Modernisation

Stage 2 Formal Stakeholder Engagement



Why?

The core of our current airspace route system in the MTMA was designed many years ago.

Although the airspace has been upgraded piecemeal over the years, the design is not always efficient, it can create delay and tactical intervention is often required.

Future proofing.

Our airspace hasn't kept up with the capabilities and technologies of modern aircraft (e.g. PBN – Performance Based RNAV Navigation which is no longer dependant on ground located nav aids.)

Airspace Modernisation is now part of UK Government policy (CAA's Airspace Modernisation Strategy)

NATS



Tweak existing airspace or build a new modern design?

Modernisation of the MTMA will enable us to deliver:

- Maintaining or enhancing safety.
- Environmental benefits - enabled fuel burn/CO2.
- A reduction in complexity, RT and co-ordination.
- Greater capacity and delay reduction.
- Consistency for our customers and sector teams.
- A balanced design to consider all airspace users.

Airspace & Future Operations

Where are we in the CAP1616
process?



ACP Progress

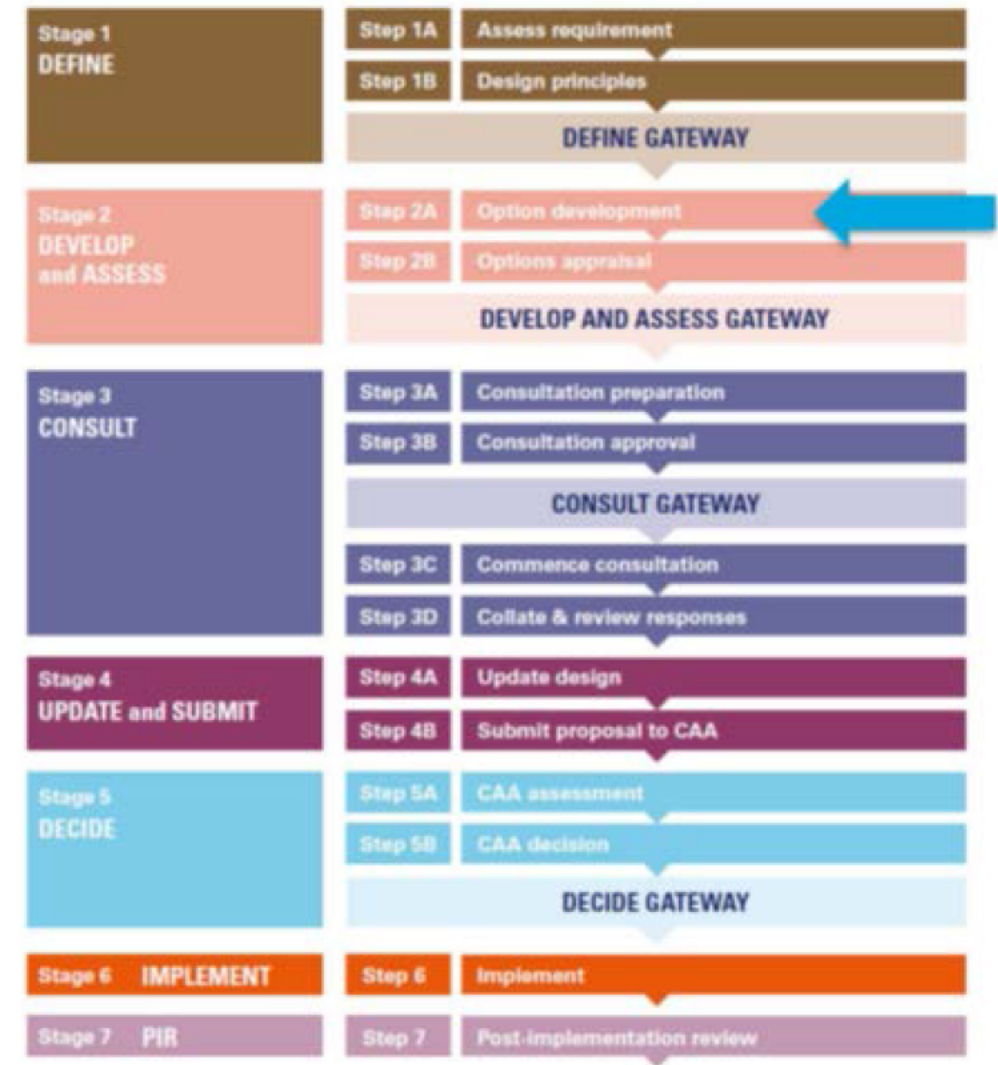


NATS currently are undertaking 2 ACPs (FASIN MTMA, Manchester and East Midlands (ACP-2019-77) and FASIN, MTMA – Liverpool (ACP-2019-76)) to update the en-route airspace alongside these changes.

NATS intends to amalgamate their submission into a single ACP, Future Airspace Strategy Implementation – MTMA. The NERL Manchester TMA ACPs are currently in Stage 2A of the CAP1616 Process – Options development. We will shortly move into Stage 2B - Options appraisal.

Options development is conducted in close cooperation with the MTMA airports – Manchester, Liverpool, East Midlands and Leeds Bradford.

Stage 2A required us to develop a comprehensive list of options (Longlist). These options expand on the Statement of Need and align with the Design Principles approved at Stage 1 (Define).



NERL MTMA Design Principles & Options Appraisal



The Design Principles describe the qualities this proposal is seeking to achieve. They have been developed through engagement with our stakeholders at Stage 1 of the CAP1616 process. The options appraisal is an assessment of the cost and benefits of the option. Feedback on how each option responds to the design principles or an assessment of the impact of each option is welcomed.

Design Principles

DP	Priority	Quick Ref	Description
1	High	Safety	The airspace will maintain or enhance current levels of safety.
2	High	Operational	The proposed airspace will maintain or enhance operational resilience of the ATC Network.
3	High	Operational	The proposed airspace design will yield the greatest capacity benefits from systemisation.
4	High	Technical	The MTMA airspace design will provide a compatible and optimised interface between the lower level terminal airspace; the upper Free Route Airspace (FRA) and ATS network.
5	Medium	Economic	The proposed MTMA airspace will facilitate optimised network economic performance.
6	Medium	Environmental	The proposed MTMA airspace will facilitate the reduction of CO2 emissions per flight.
7	Low	Environmental	Minimise environmental impacts to stakeholders on the ground (note: network changes are >7,000ft, the position of the interface with the airport's lower level routes will be determined by the airport, hence impacts below 7,000ft will be addressed in the separate airport-sponsored ACP).
8	Medium	Operational	The MTMA airspace should be compatible with the requirements of the MoD and take into consideration the requirements of the defence industry stakeholders.
9	Medium	Operational	The impacts on GA, non-commercial and other civilian airspace users due to MTMA should be minimised.
10	Medium	Technical	The classification and volume of controlled airspace required for the MTMA should be the minimum necessary to deliver an efficient airspace design, taking into account the needs of UK airspace users.
11	High	Technical	The route network linking Airport procedures with the enroute phase of flight will be spaced to yield maximum safety, capacity and efficiency benefits by using an optimal standard of PBN.
12	High	Technical	The MTMA airspace design will provide a compatible and optimised interface with London Airspace Modernisation Programme (LAMP) design.
13	High	Policy	Must accord with the CAA's published Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it.
14	Medium	Environmental	The airspace should introduce improved Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO) for all aircraft.

Options Appraisal Criteria

Group	Impact
Communities	Noise impact on health and quality of life
Communities	Air quality
Wider society	Greenhouse gas impact
Wider society	Capacity / resilience
General Aviation	Access
General Aviation / commercial airlines	Economic impact from increased effective capacity
General Aviation / commercial airlines	Fuel burn
Commercial airlines	Training costs
Commercial airlines	Other costs
Airport / Air navigation service provider	Infrastructure costs
Airport / Air navigation service provider	Operational costs
Airport / Air navigation service provider	Deployment costs

What have we done so far in CAP1616 Stage 2?



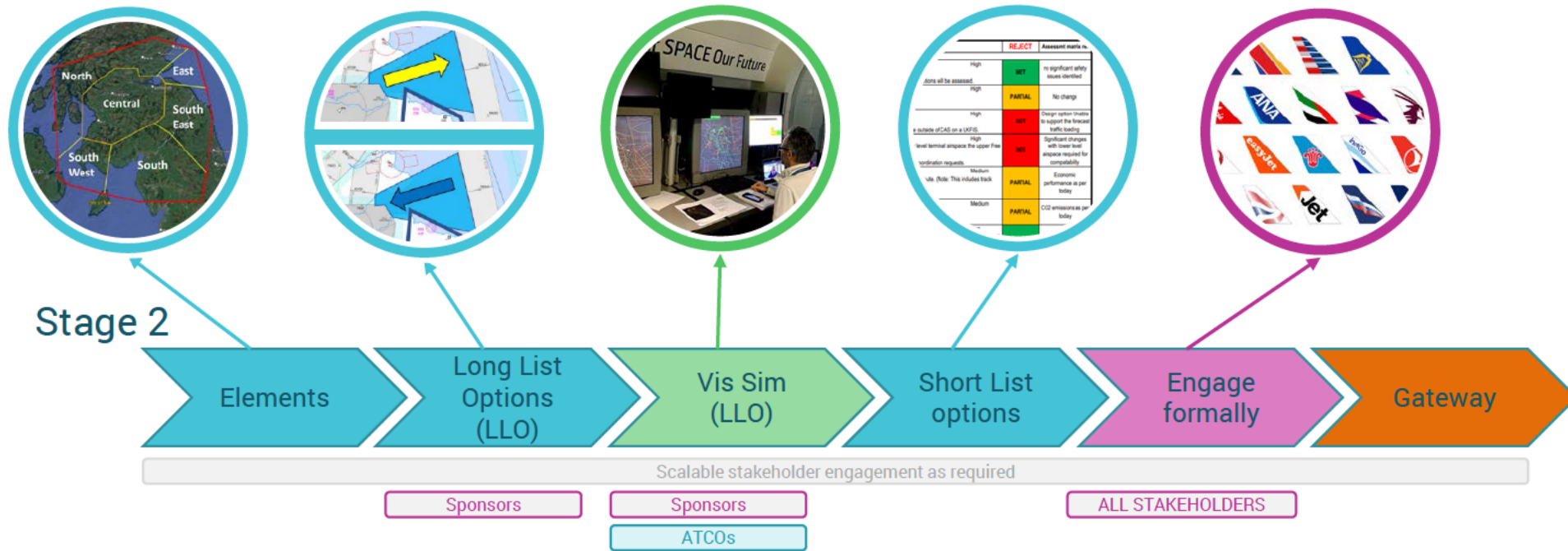
Technical collaborative engagement workshops with airports within MTMA progressing their own ACPS (Manchester, Liverpool, East Midlands & Leeds Bradford).

Defined a long list of options

Concept simulations with PC ATCO participation capturing detailed feedback - 47 Operational ATCO's appraised (3 simulated airspace concepts).

Commenced options appraisal.

Engagement with Stakeholders including Airlines & GA.



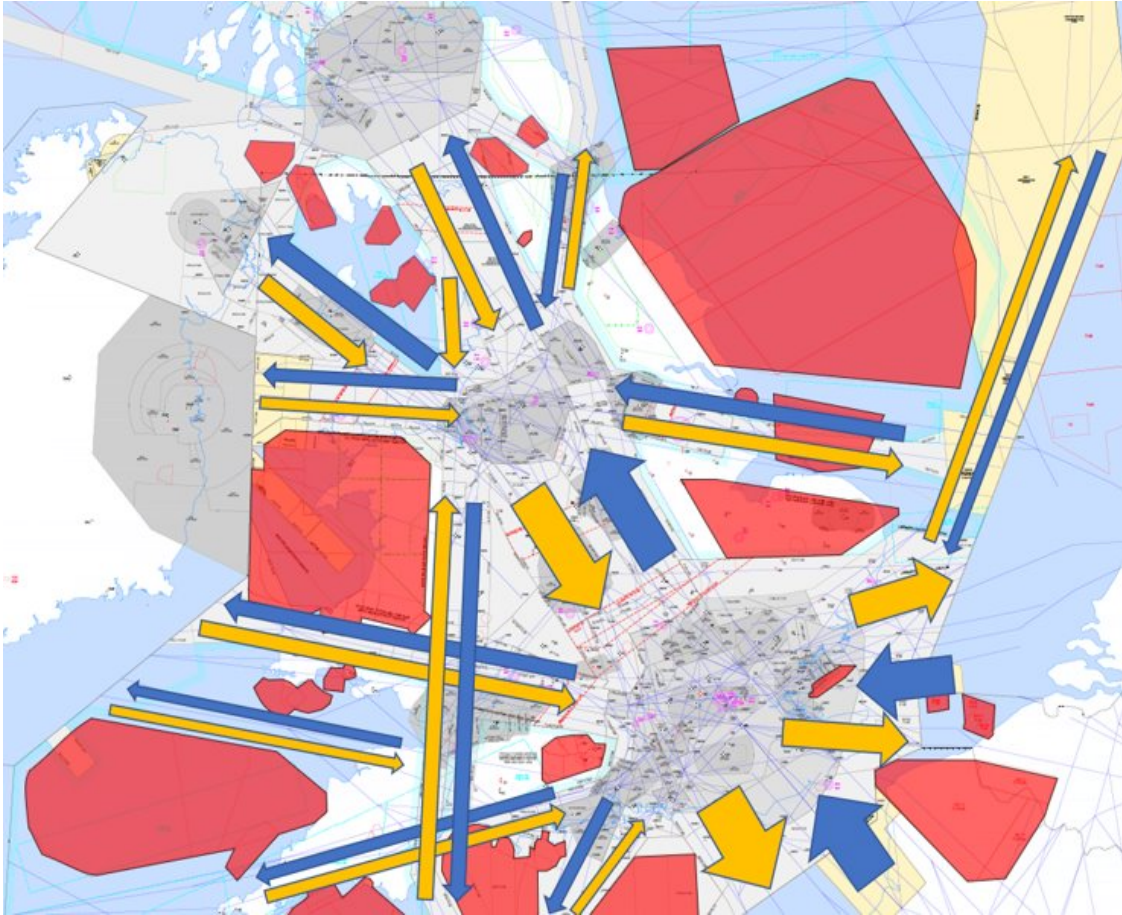
Stage 3



Key points - Options in stage 2 will be conceptual with detailed designs coming together as part of stage 3 work; Sponsors are not designing holistically with other sponsors in stage 2 and this will need to be resolved in stage 3.

Re-designing MTMA airspace – What's our starting point?

Mapping Constraints – Today's traffic flow depiction



This map demonstrates airspace Traffic flow demands and interfaces constraints now.

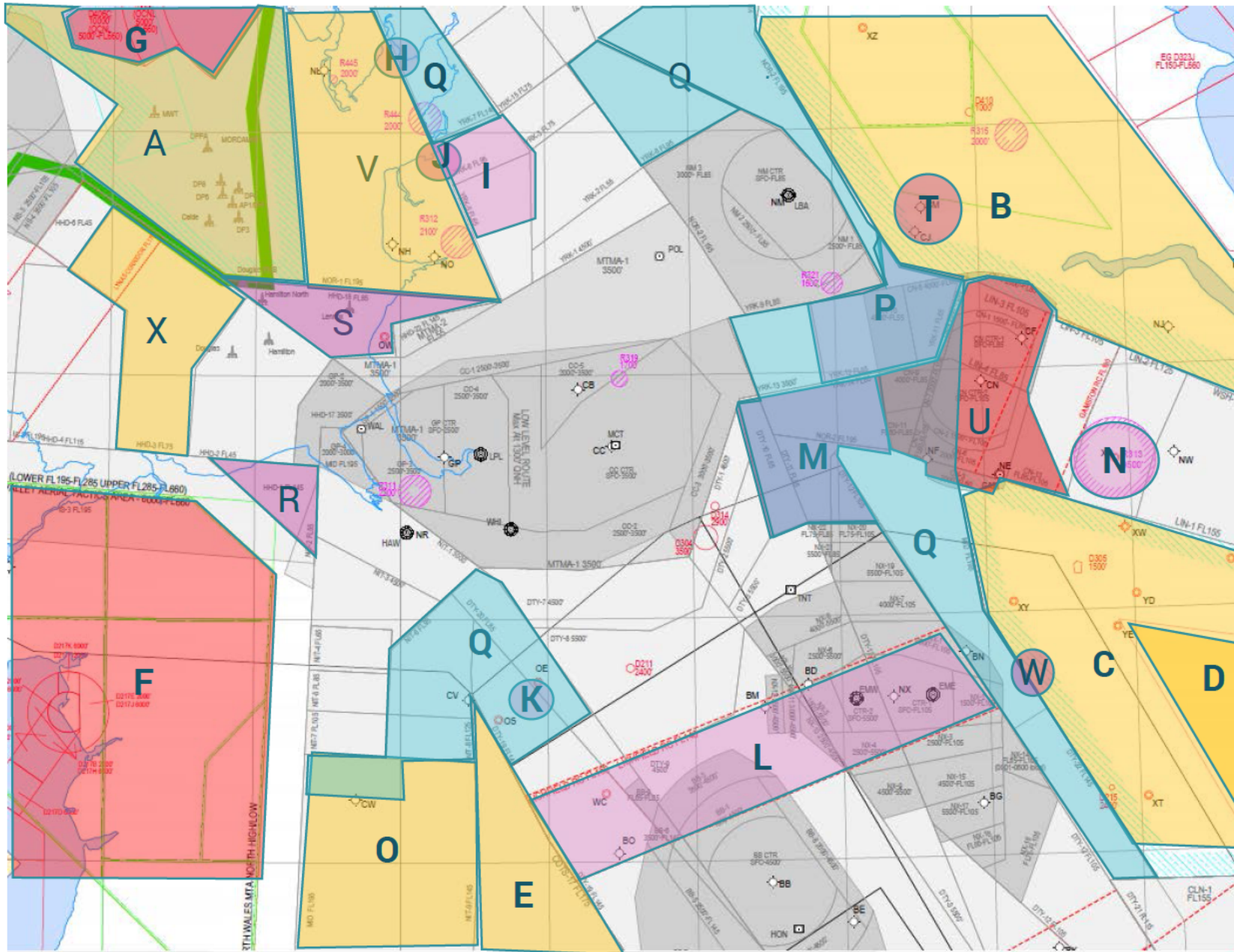
Displayed here is the current network route structure.

The **red** areas depict SUAs.

The **yellow** arrows are Eastbound routes.

The **blue** arrows are Westbound routes.

Due to the interactions with neighbouring ANSPs it is anticipated that this route orientation will not change significantly.



Constraints map

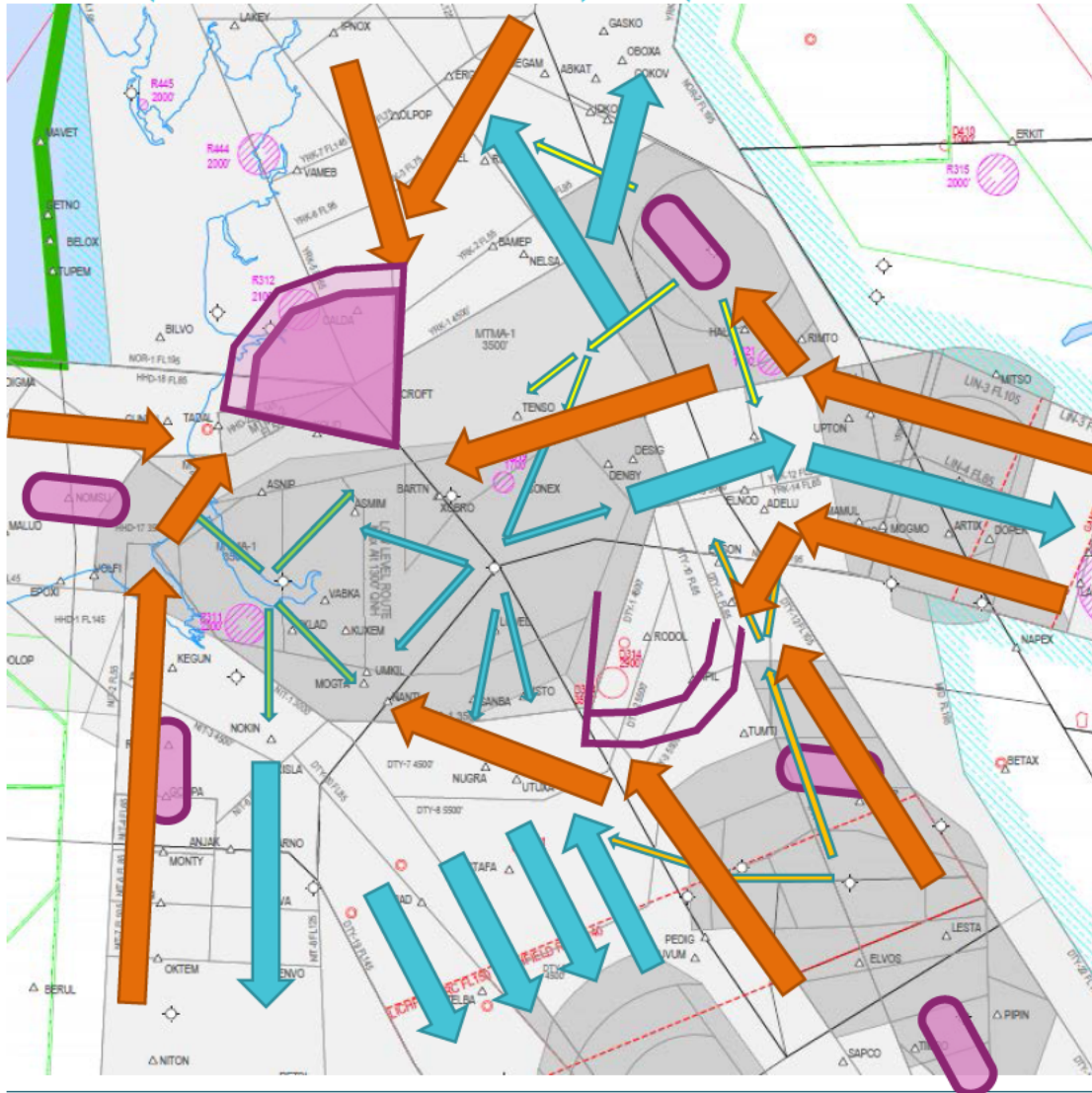
NATS

- **RED** – segments of airspace where changes may be exceptionally challenging to make.
- **ORANGE** – segments of airspace where changes may be challenging to make.
- **PURPLE** – segments of airspace that currently has unusual activity that needs to be taken into account through the design process.
- LIGHT BLUE** - Areas where CAS bases limit operations. Potential to investigate lowering bases.

- A TRA004
- B TRA006
- C TRA003
- D East Anglian MTA
- E Cotswold FUA time dependent
- F North Wales MTA
- G Eskmeals D406
- H Cark Paradrup Site – Up to FL150
- I Chipping Box – Up to FL140
- J Cockerham Paradrup Site – Up to FL150
- K Tilstock Paradrup Site Up to FL110
- L Lichfield Radar Corridor – FL140
- M Camphill Gliding FL85 to FL100 max FL190
- N R313 – Red Arrows up to 9500ft
- O N862/N864 Complex
- P L975 Glider Crossing DB to FL120 max FL190
- Q Areas where CAS bases limit operations. Potential to investigate lowering bases.
- R Armpit Triangle FL145-FL185 (as req)
- S Warton Fillet FL85-FL195 (as req)
- T Leeds East airfield
- U EGCN zone
- V N864 triangle
- W Langer Paradrup
- X Base of CAS to be reviewed, from FL75 to FL65, to facilitate CDO for EGGP/EGNR. The minimum necessary will be considered

Example of a Concept Iteration

CC N (2 arcs 2 directions) /S (2 arcs 1 direction) PM Orbital holds for NX/GP/NM



Departures

Manchester - thin blue arrows

Leeds Bradford – Thin yellow arrows

East Midlands – thin orange arrows

Liverpool– thin green arrows

Thick blue lines indicate departure connections

Thick orange lines indicate arrival routes

Purple areas are holding structures in this case orbital holds and Point Merge serving Manchester
Southerly Point merge has 2 arcs approached from the same direction

Generic Elements of MTMA Airspace Modernisation **NATS**



Due to the complexity of the airspace it was too difficult to consider the MTMA change as a single entity.

We, therefore decided to break the airspace up into the 5 elements seen on this slide.

1. Northern Spine
2. Eastern Arm
3. Southern Spine
4. Western Arm
5. Central

Assumptions



All airspace volumes are indicative.

All flight levels or altitudes referred to in this document are indicative.

All arrows are indicative of routes.

The slide pack has been tailored to your specific area. A library of the slides used to create the presentations shown to each stakeholder will be made available.

Areas Of New Controlled Airspace Under Consideration



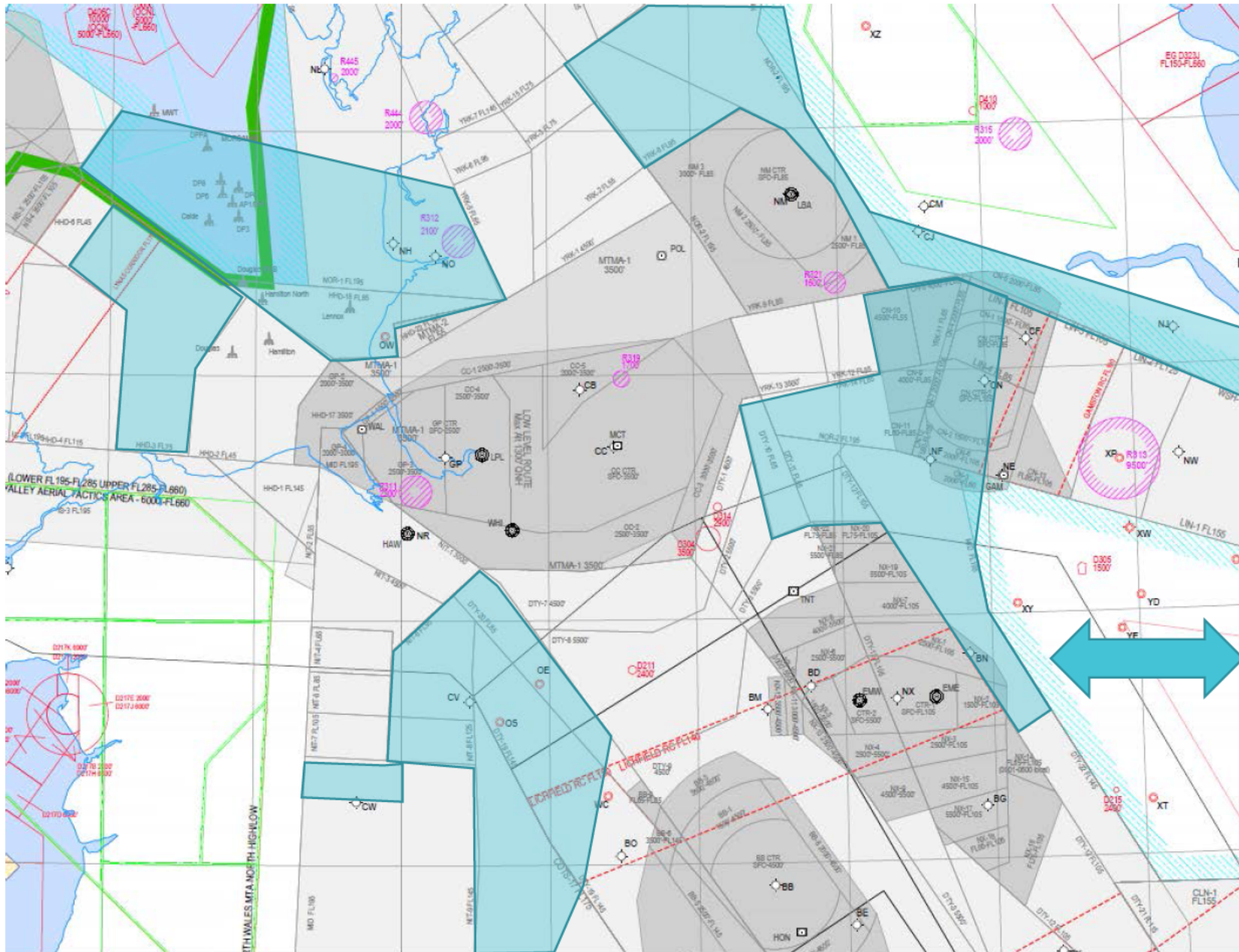
Areas for consideration.

Nothing in this slide pack is set in stone.

Every area and Flight Level mentioned is indicative, a starting point for consultation, engagement and discussion.

We have tried to set out areas that could offer the greatest benefit for safety, the environment and capacity, including but not exclusive to the blue shaded areas. NERL is giving serious consideration to giving back, accessibility and sharing.

Blue arrow indicates potential for route to/from the east for EGNX and others.



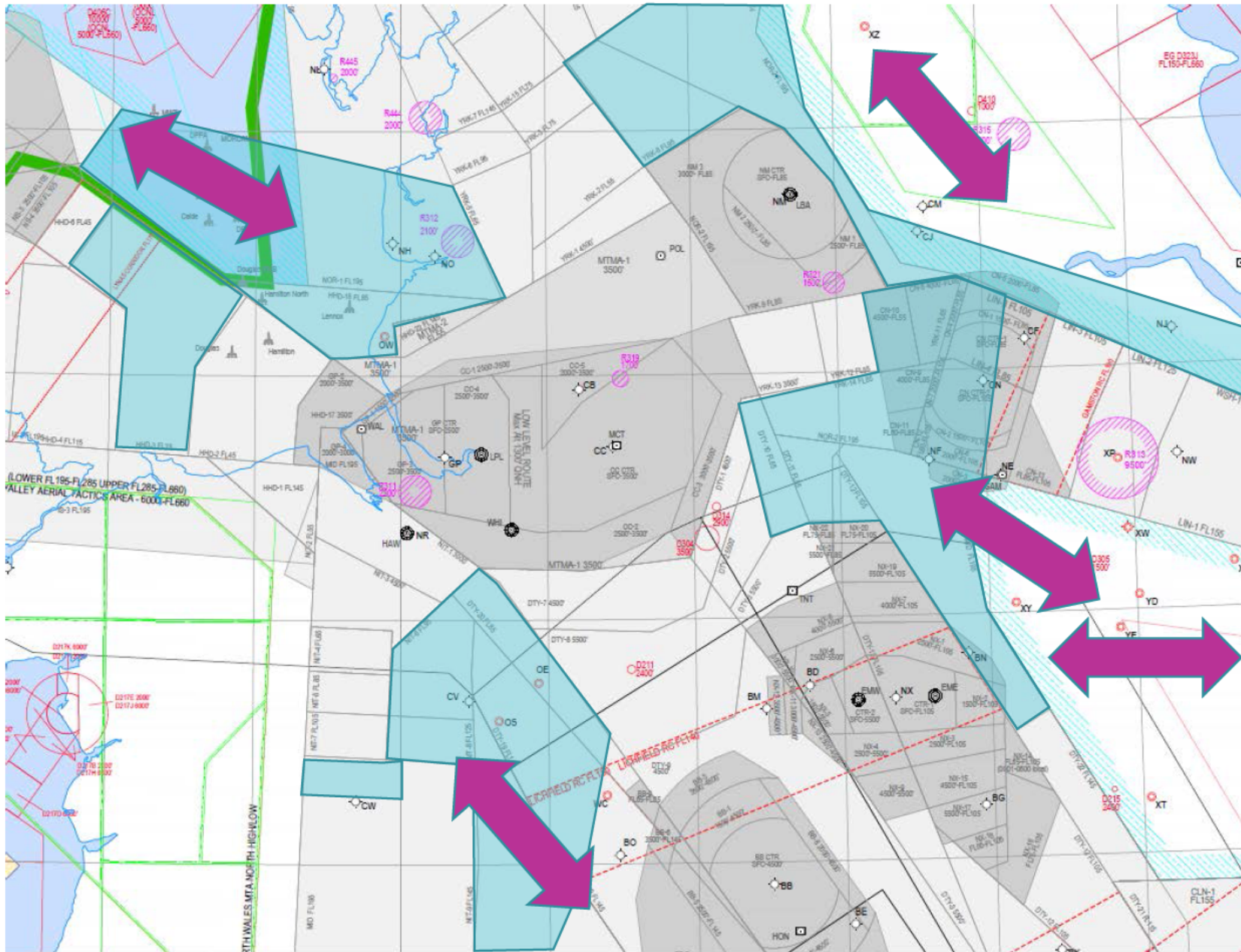
MTMA airspace sharing concept.

Nothing in this slide pack is set in stone.

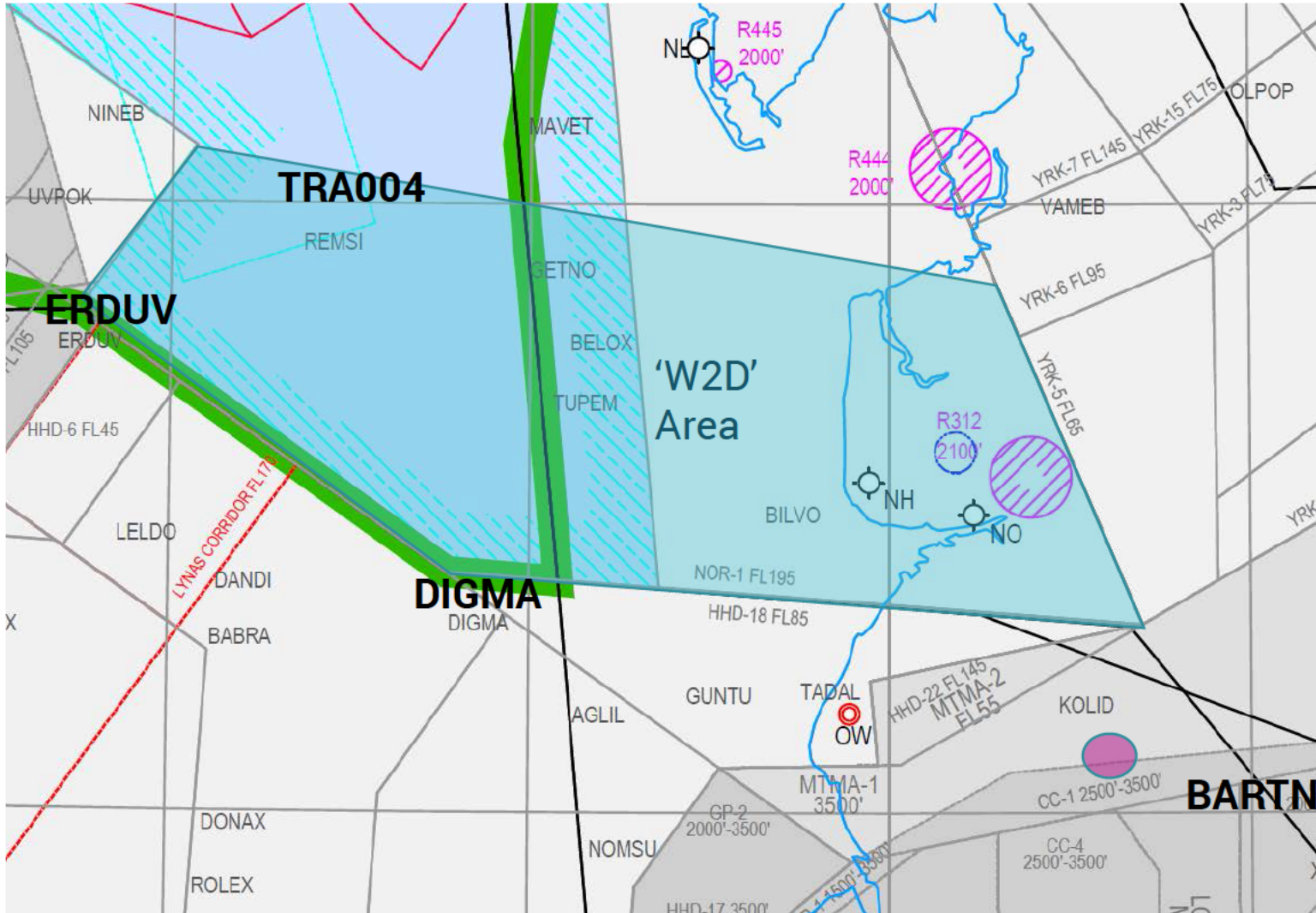
Every area and Flight Level mentioned is indicative, a starting point for consultation, engagement and discussion.

Airspace Sharing.

The purple arrows demonstrate areas NERL consider to be open for discussion around the sharing of airspace. This could be by flexible use, time limited etc.



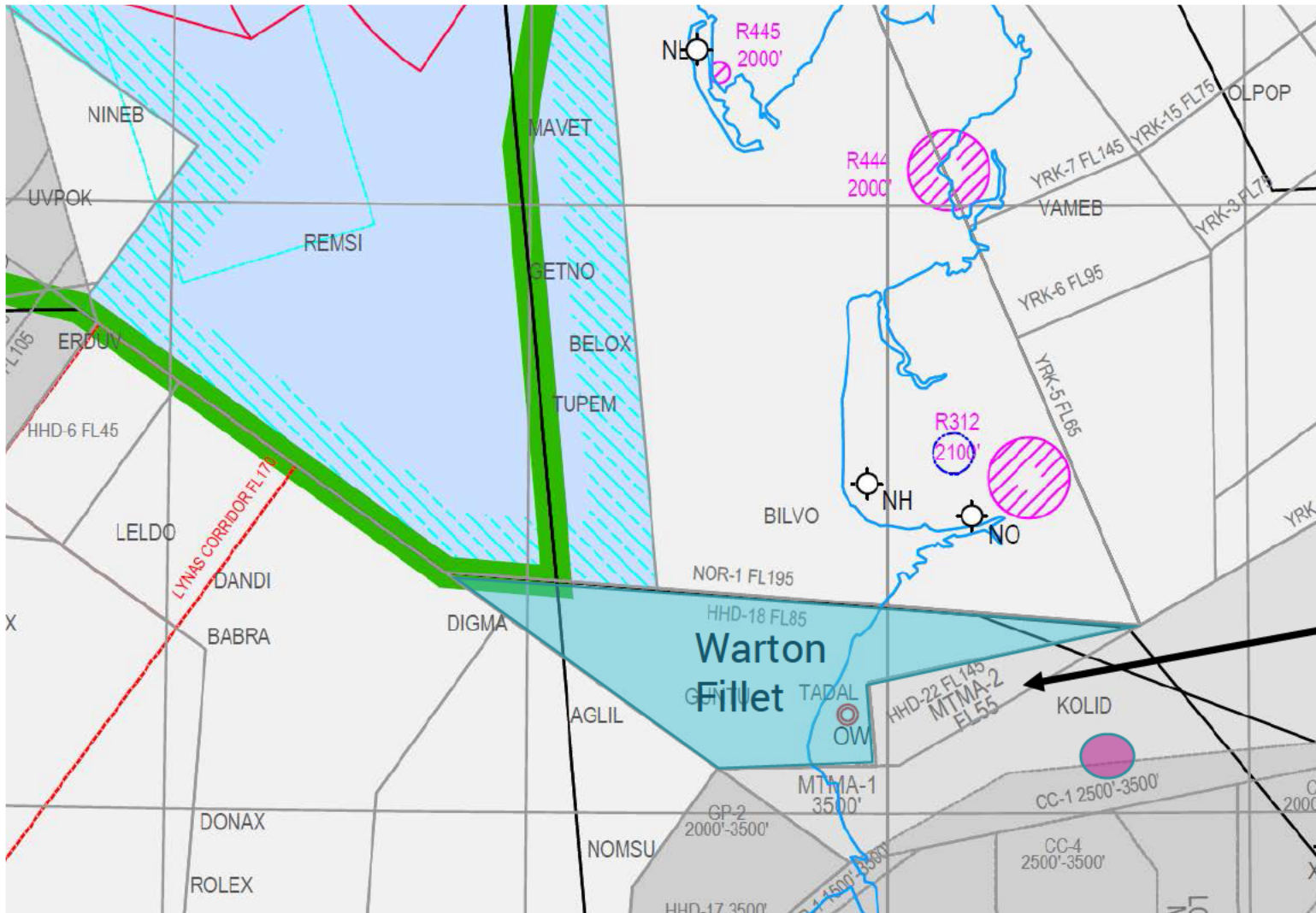
'W2D' Area



'W2D' Area. We discussed how to best utilise this airspace. Our conversation was around a base of FL135 to facilitate traffic to and from Leeds primarily towards the area between DIGMA and ERDUV, accepting that engagement with the mil was also required due to TRA 004. this would remove traffic from the area around BARTN

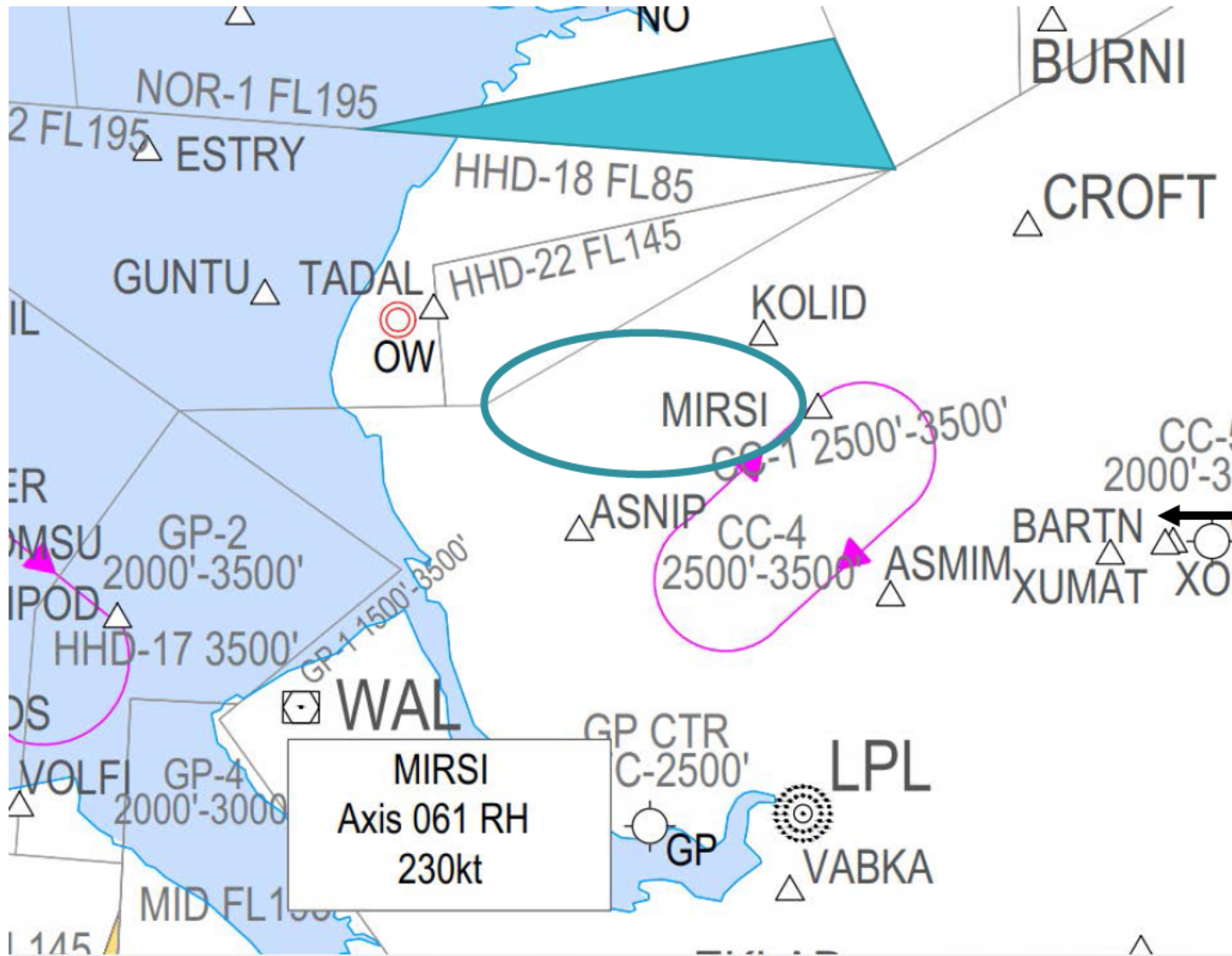
How can we best share this airspace? When Warton are closed or not using it, would an extension of existing clawback procedures offer sufficient protection for Warton?

Warton Fillet



Warton fillet. Lower Base from FL85 to FL75. Benefit to NERL – workload saving for Manchester inbounds. Currently we descend to FL90 to remain in CAS. Our procedures require Manchester (EGCC) inbounds to be at FL80 5 before MIRSI roughly where the purple circle is. We have to wait for the MTMA-2 line to descend. Having the base lowered to FL75 would allow us to descend and transfer traffic earlier to Manchester approach

MIRSI Hold



We discussed the possible reorganisation of the MIRSI Hold. Currently RH pattern 061 axis. We are considering a left hand pattern with a possible inbound axis of circa 085 degrees. This would potentially free up space around BARTN helping to deconflict Manchester and Liverpool (EGGP) traffic in that area. We are working on containment and the protected area. It may require more CAS in the area shown in BLUE but this is currently unknown.

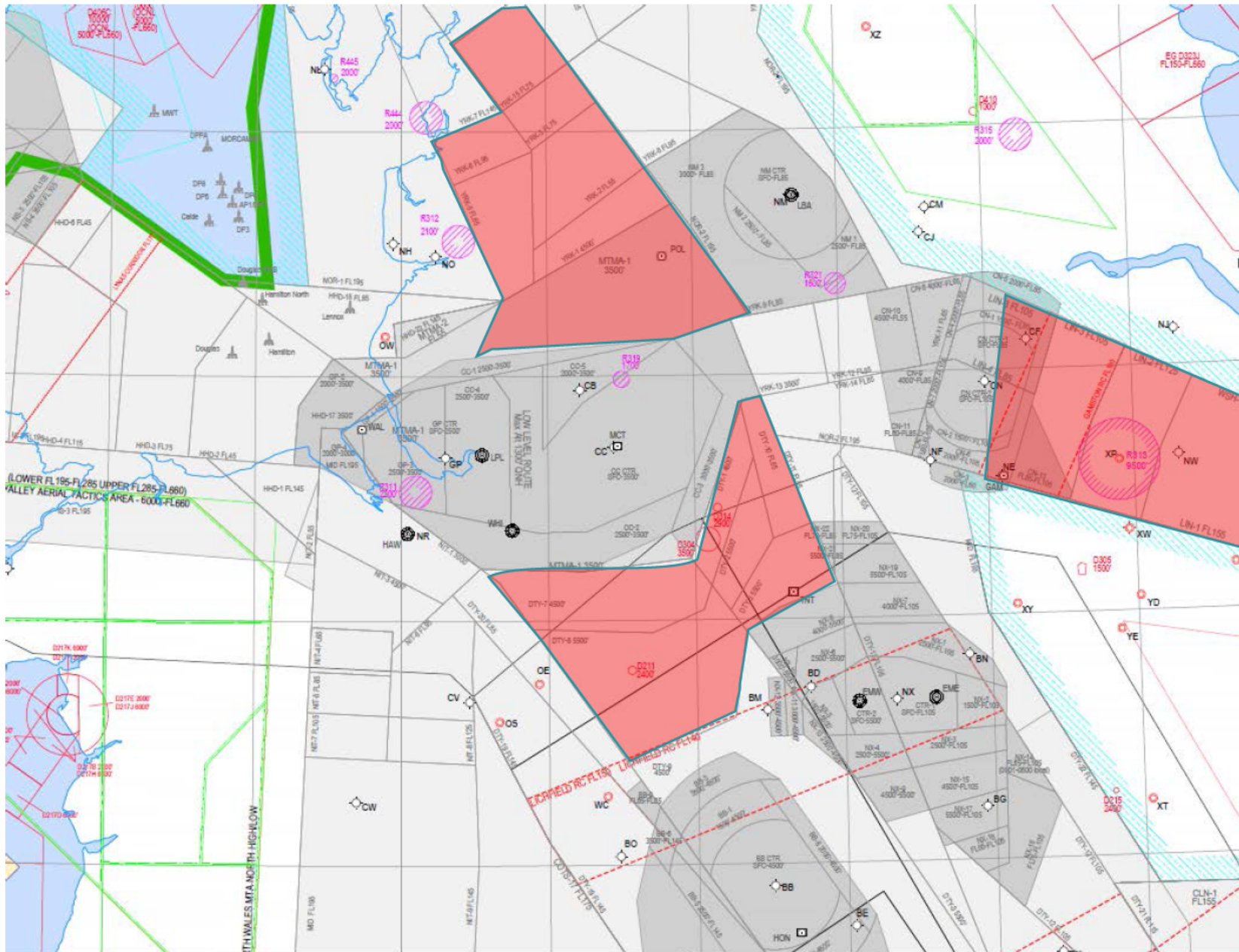
What NERL could potentially
give back



We are required to identify areas of airspace for hand-back within the CAP1616 process. MTMA are committed to suggesting airspace volumes for evaluation.

The evaluation includes a review of bases and classification of airspace in, but not exclusive to, the red shaded areas.

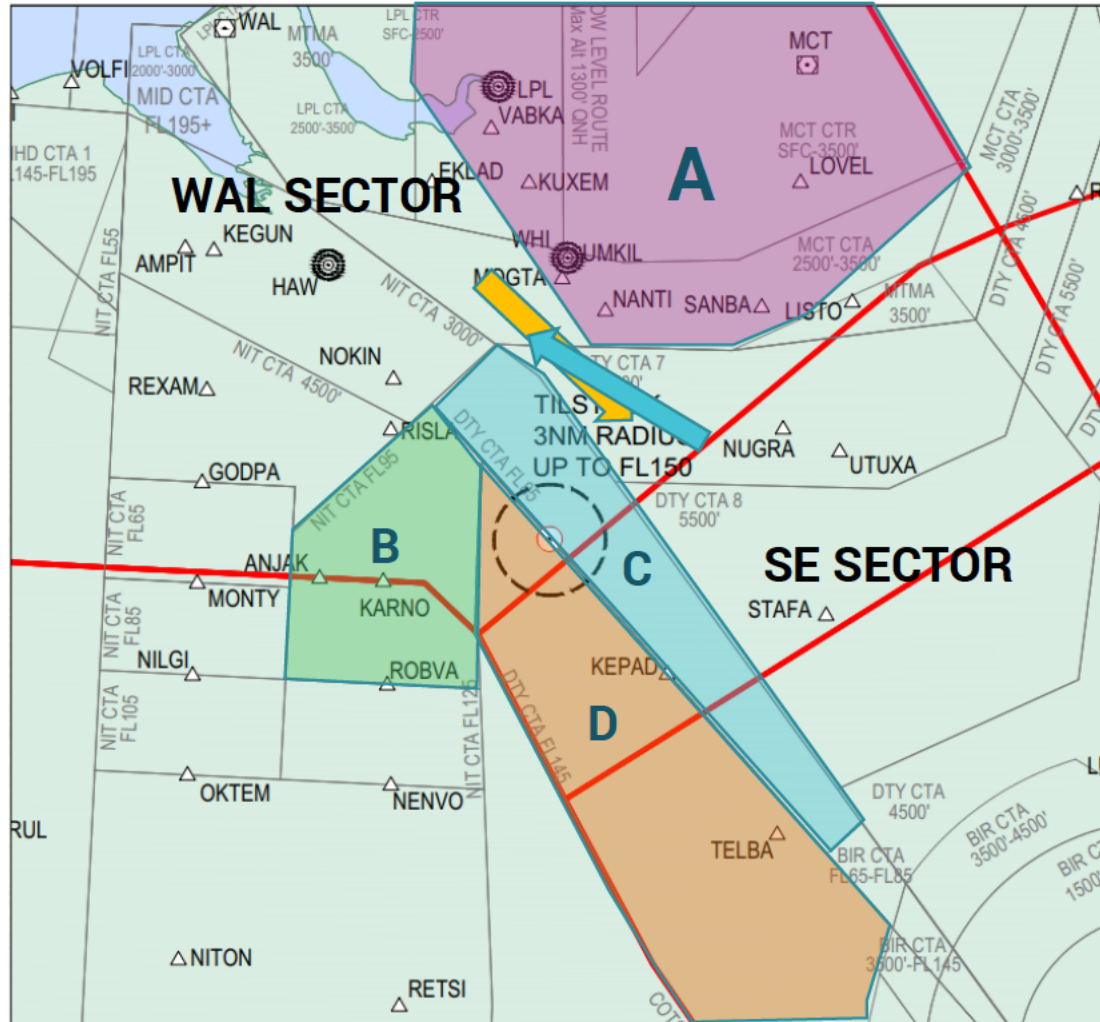
Of the red shaded areas **only** the area associated with the Doncaster CTR is currently under evaluation by the ACP process.



Liverpool and Hawarden



Figure 3.2 Tilstock Parachute Area



Area A (purple) is a representation of the Manchester (EGCC) 05 Radar Manoeuvring Area (RMA) 'owned' by Manchester APC which area controllers need to avoid.

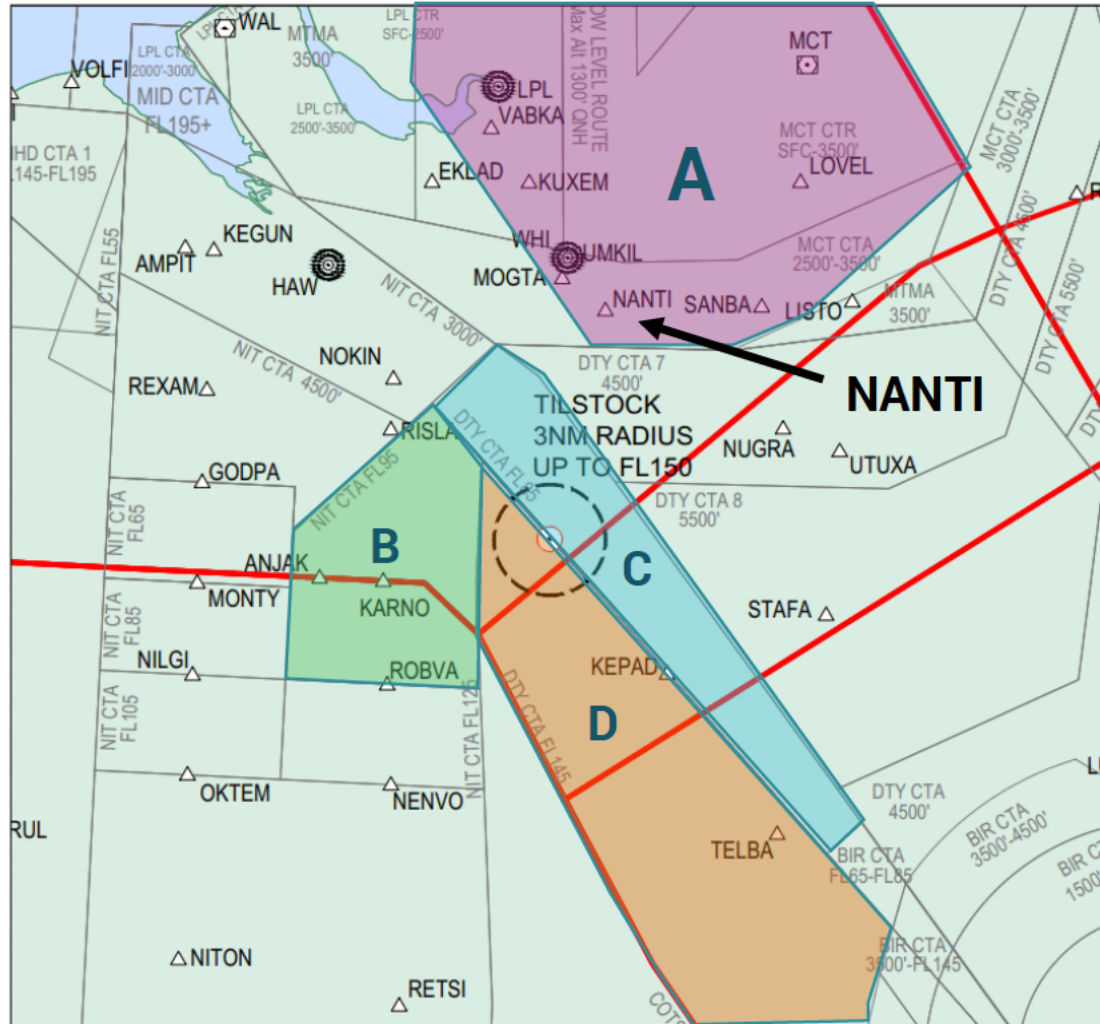
Area B (green) – Base of CAS FL95

Area C (blue) – Base of CAS FL85

Area D (orange) – Base of CAS FL145

The Problem – due to the proximity of the EGCC 05 RMA and the, relatively high bases of CAS areas B,C,D. Liverpool and Hawarden traffic, in and out between WAL and South East sectors, have to be 'funnelled' in the gap due to the levels such traffic is either at or wants to be at. When there are coincident arrivals and departures the conflict is head on and the only option for resolution is a vertical solution this requires tactical intervention.

Figure 3.2 Tilstock Parachute Area



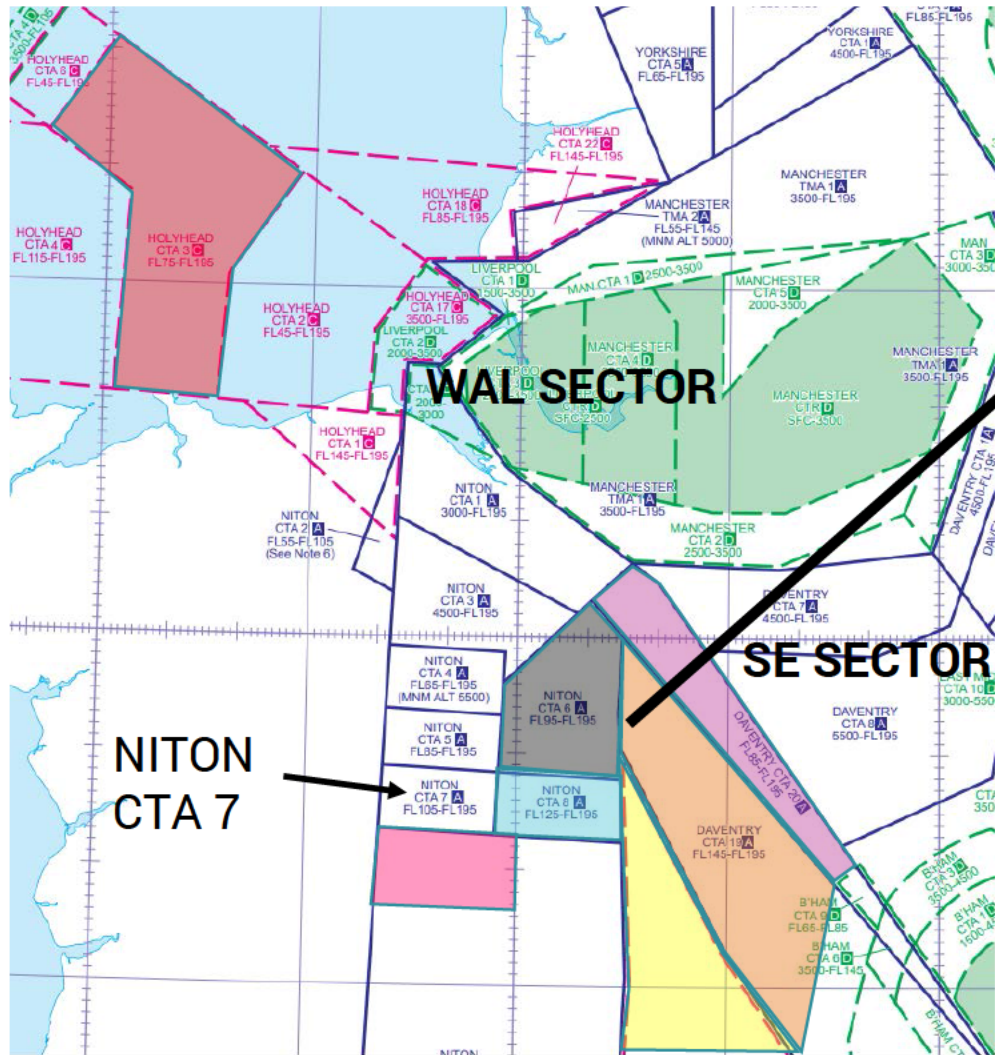
The proposal – lower the bases of, or part of areas B, C and D. The levels would depend on the chosen solution. For example, one solution may require the northern most part of area C, 2-3nm, be reduced from FL85 to FL65.

The reason for this is to enable us to ‘design out’ the head-on conflict and give greater flexibility to the controllers for dealing with traffic in this area. This may allow a systemised solution which would further reduce controller intervention, which may also facilitate continuous climb/descents operations delivering improved environmental performance. Safety and environment are 2 of the design principles we have to design to.

With lowered bases there is a potential for routes to be designed to go north or south of the drop zone removing the conflict issues in the area around NANTI limiting the impact on Tilstock operations.

The exact location of the solution within the design envelopes (B,C,D) is unknown at this time.

Review of CAS



Purple area – base FL85 – lowering the Base to circa FL65 could give benefits to EGGP and Hawarden (EGNR) traffic between WAL and SE sectors (approximate boundary demonstrated by the bold black line). Could reduce complexity and remove a head-on conflict.

Orange area – depending on the solution could give benefits to EGGP/EGNR traffic between WAL and SE sectors (approximate boundary demonstrated by the bold black line). Could reduce complexity and remove a head-on conflict.

Yellow area – underused airspace part of Cotswold CTA. Lowered base could offer flexibility of options for dealing with EGGP/EGNR traffic between WAL and SE sectors. Could reduce complexity and remove a head-on conflict.

Blue area - Lowered base could offer flexibility of options for dealing with EGGP/EGNR traffic between WAL and SE sectors. Could reduce complexity and remove a head-on conflict.

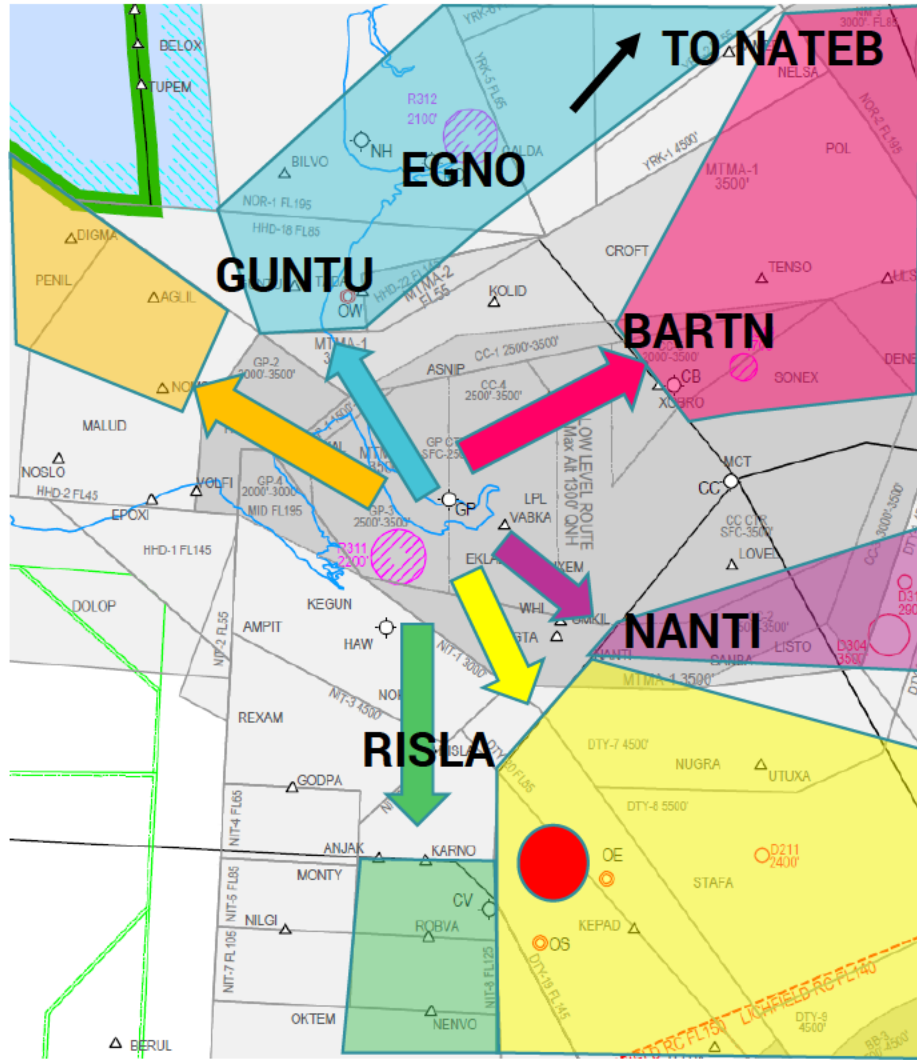
Dark grey area - Lowered base could offer flexibility of options for dealing with EGGP/EGNR traffic between WAL and SE sectors. Could reduce complexity and remove a head-on conflict.

Pink area – Lowered base could facilitate improved CDO for EGGP and EGNR arrivals from the south/south west. Currently the base of CAS is FL145 prior to the NITON CTA 7. Inbound traffic will regularly request continuous descent outside CAS and a deconfliction service.

Red area – Lowered base could facilitate improved CDO for EGGP and EGNR arrivals from the north west and west.

In all cases the minimum volume required will be considered.

EGGP/EGNR departure Options



Problem – Complex Interactions at BARTN.

Proposals

Blue arrow to blue swathe – EGGP/EGNR departures to ScTMA and NATEB route towards GUNTU and overhead EGNO.

Purple arrow to purple swathe – EGGP/EGNR departures to the east. NANTI-MAMUL

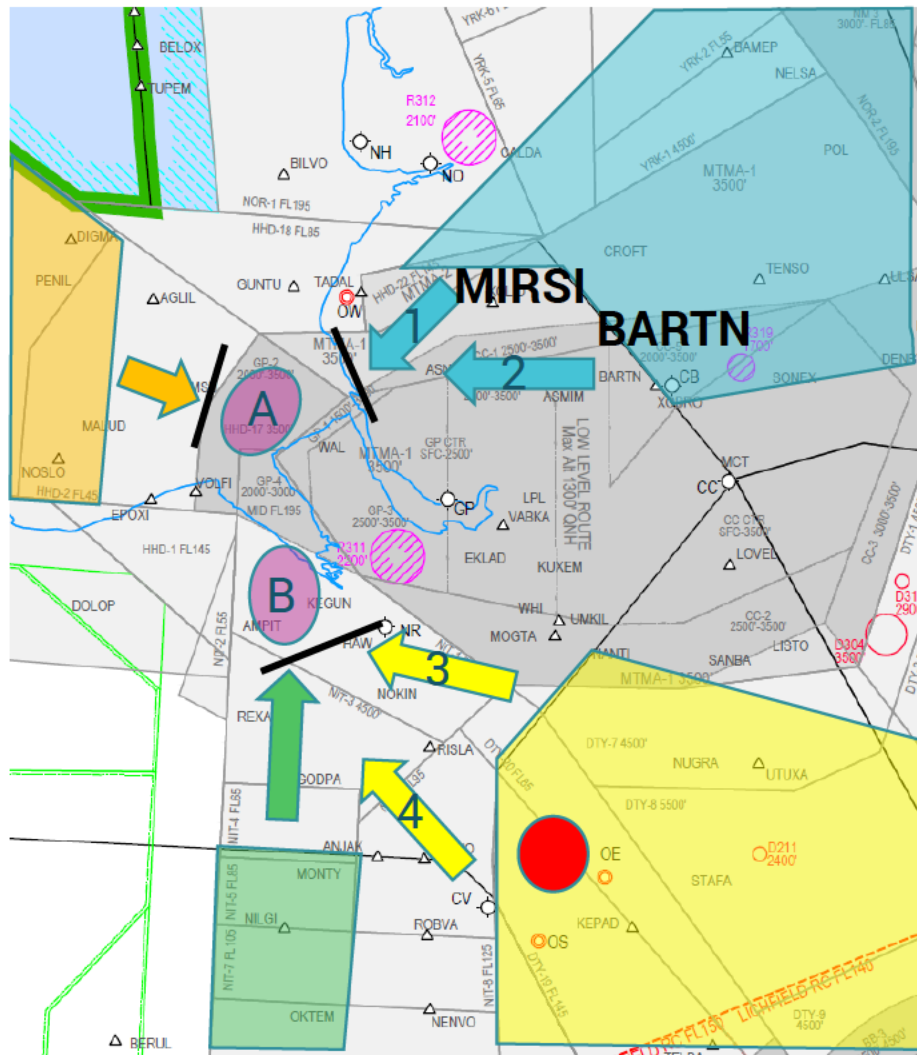
Yellow arrow to yellow swathe – EGGP/EGNR departures to the south/south east. The solution could be for traffic to route to the north or to the south of the red dot (Tilstock paradropping site). This would depend on a number of factors primarily more CAS by lowering the bases in that area.

Green arrow to green swathe – EGGP/EGNR departures to the south/south west. More direct towards RISLA.

Orange arrow to orange swathe – EGGP/EGNR departures to the west/north west.

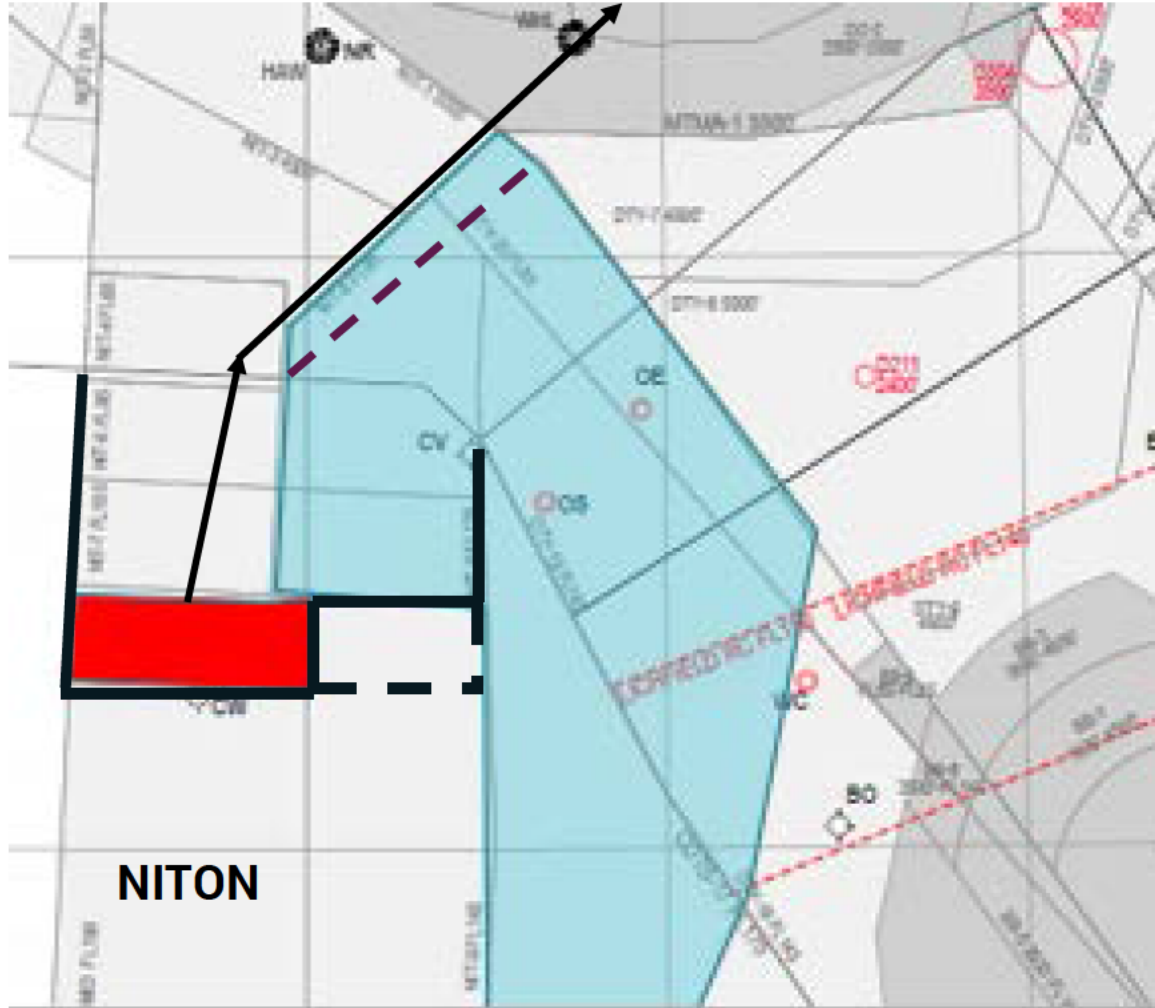
Pink arrow to pink swathe – EGGP/EGNR departures to the north and east via BARTN. Alternative solution to traffic routing NANTI – MAMUL.

EGGP/EGNR arrival Options



- 1 or 2 Holds. A would be the approximate location for the single hold solution. The single hold solution will require some investigation regarding how traffic from multiple directions can safely be released into one holding facility. A gate solution, indicated by the black lines, similar to that used by Leeds could be used. Either the STAR or vectoring would take traffic through the gates at or descending to an agreed level and transferred to the approach unit.
- Blue swathe to blue arrow – Inbound traffic from the ScTMA and the Papas route to the north of MIRSI avoiding BARTN. Inbound traffic from the east route via BARTN. The solution maybe that traffic from the north enters the hold via arrow 1 and traffic from the east enters the hold via arrow 2. OR **all** traffic enters the hold via arrow 2.
- Yellow swathe to yellow arrows – The solution could be for traffic to route to the north or to the south of the red dot (Tilstock paradropping site). This would depend on a number of factors primarily more CAS by lowering the bases in that area.
- Green swathe to green arrow – Inbound traffic from Sector 5. Traffic from yellow arrow 4 may be integrated more easily into this flow.
- Orange swathe to orange arrow – Inbound traffic from the west and north west with the gate shown for a single hold solution.

How this Airspace could be used?



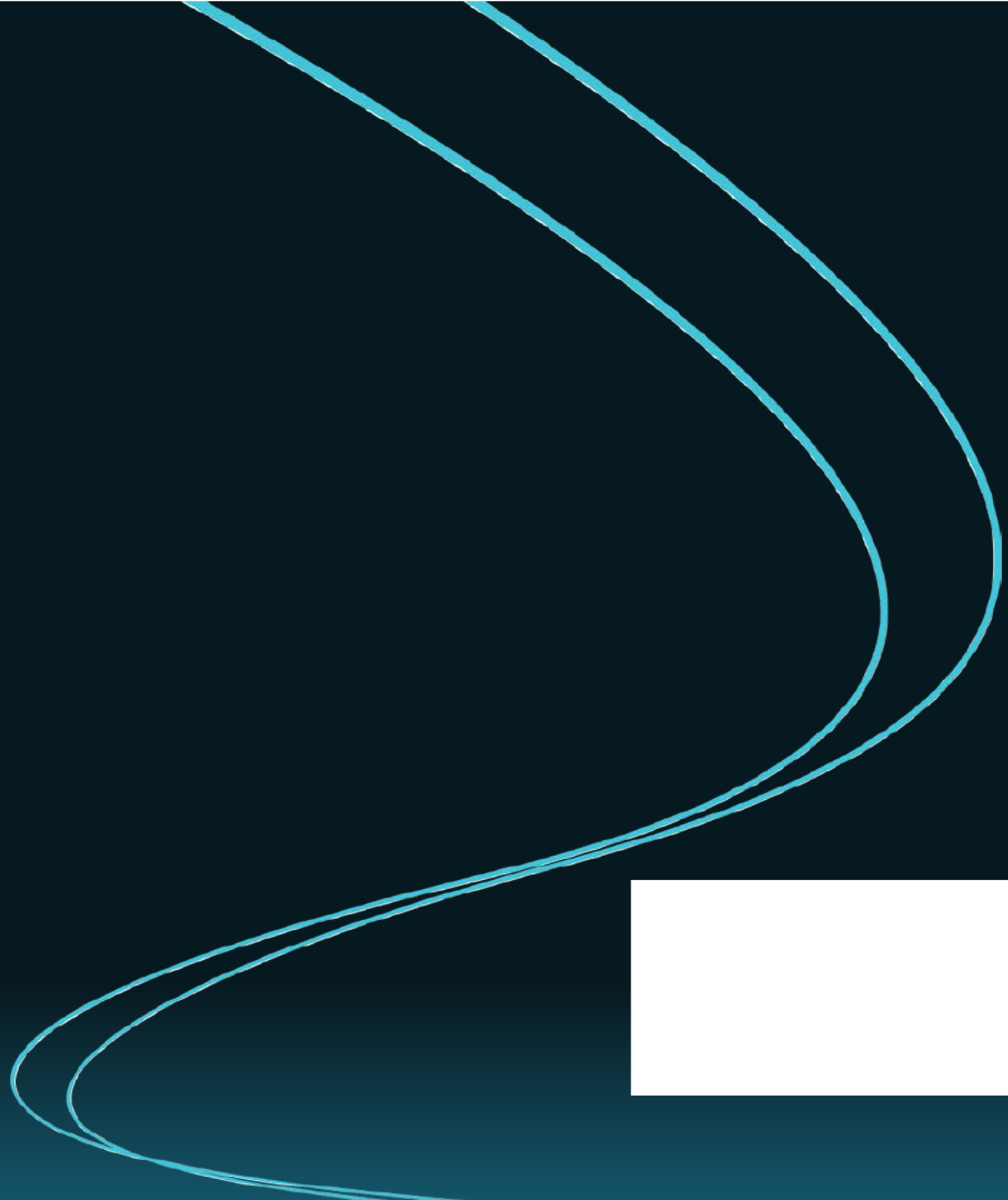
Black line represents a straight in approach option for EGCC on 05 requiring minimal CAS with 3 nm containment south of black line

Blue area – appropriate bases would be considered depending on the traffic flow

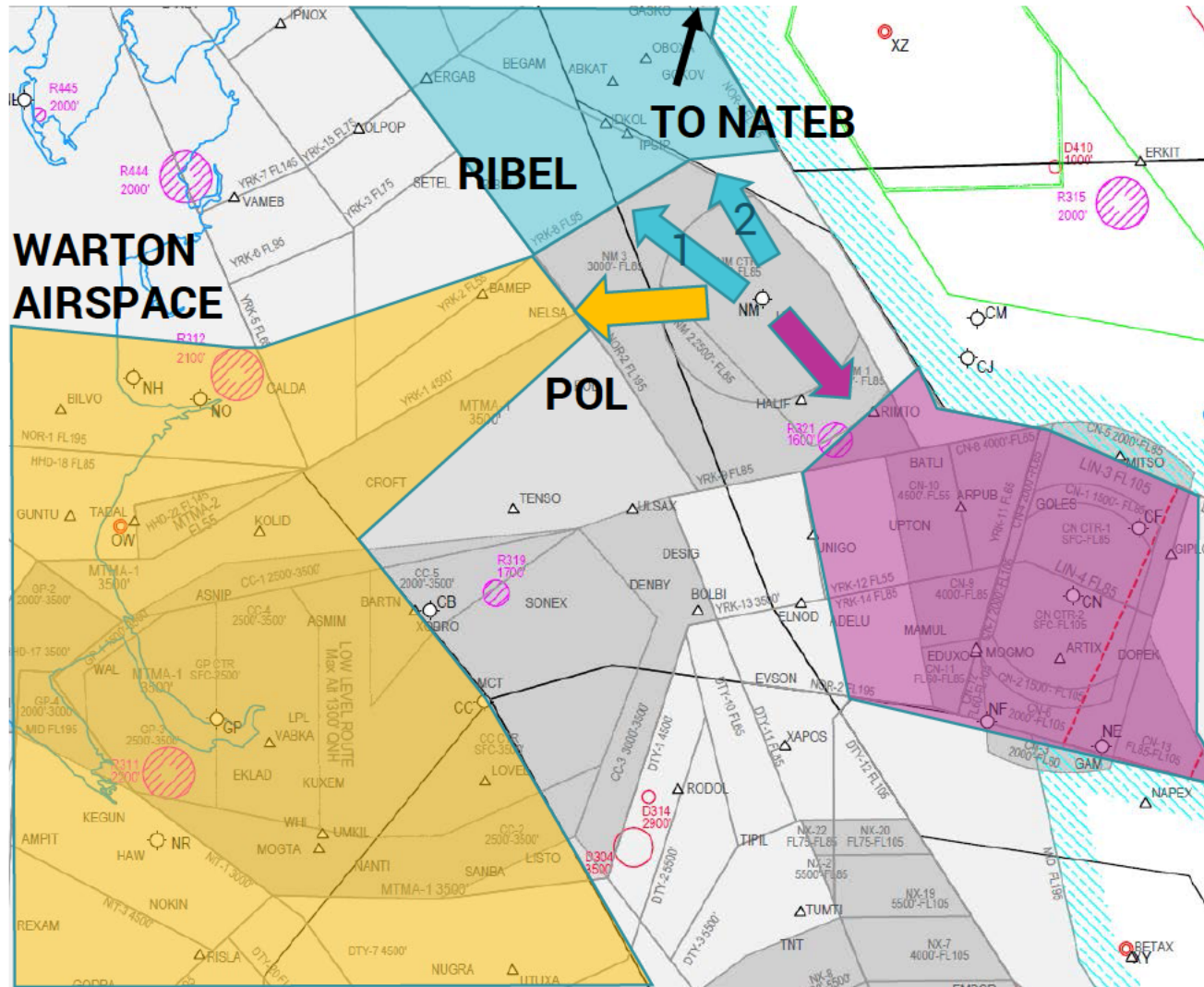
Red area (7nm N NITON) – lower base to FL125 to assist continuous descent operations (CDO) for EGGP/Hawarden (EGNR). 50 nm to run EGGP 09. specifically chosen dimensions to minimise impact on Military traffic to/from Lichfield radar corridor (LIC RC) and the North Wales Military Training Area (NWMTA).

Consider extending WAL sector to the bold line – currently delegated from S5.
Could be extended, dotted line, for simplification

Leeds



EGNM Departure options



Problem – complex interactions at POL.

Blue arrow to blue swathe – Single SID option routed towards RIBEL, arrow 1, for traffic to ScTMA and NATEB. Currently such traffic files via POL and is tactically turned by the North controller. More CAS maybe required to facilitate this option.

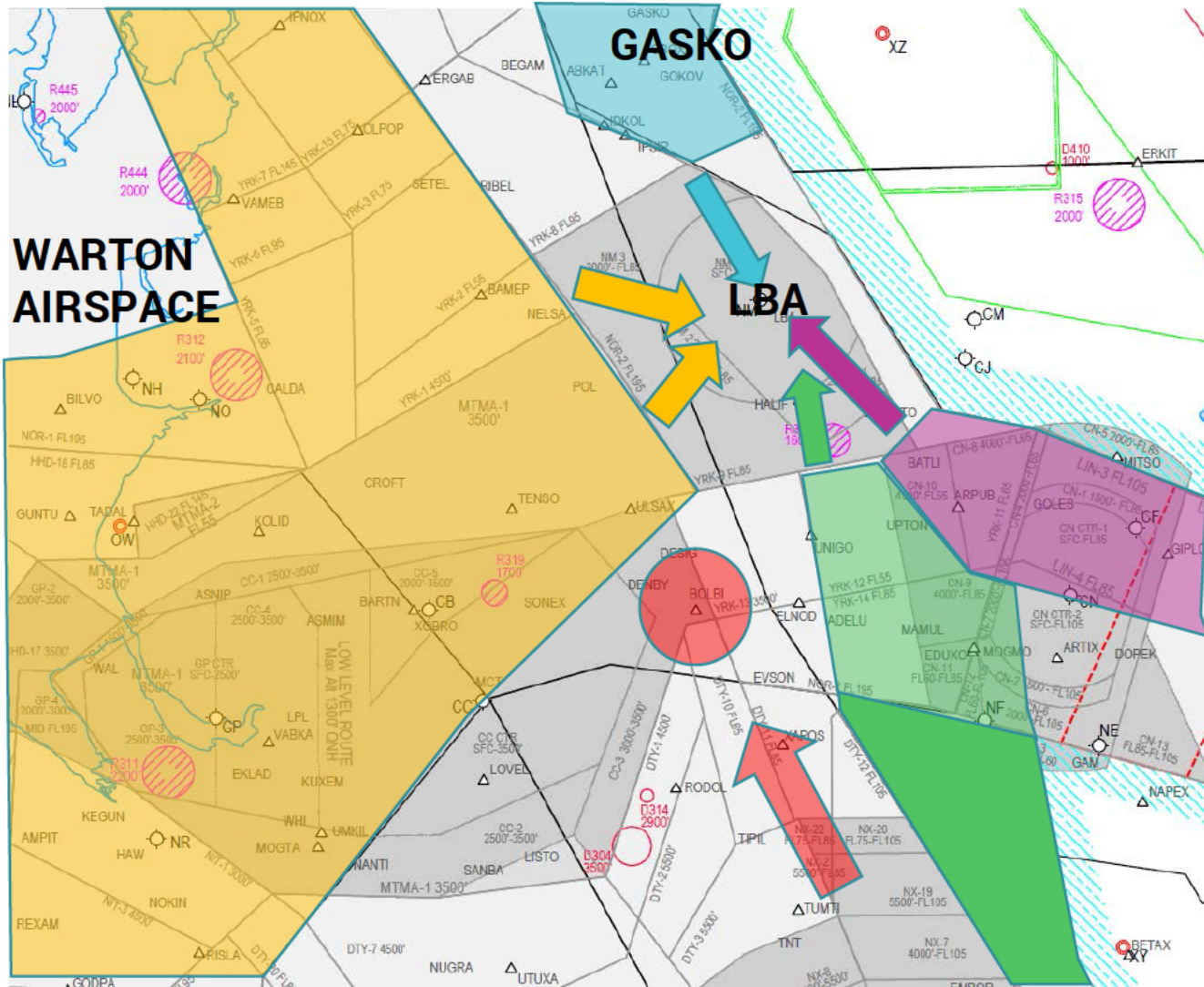
2 SID option – Arrow 1 for ScTMA traffic and arrow 2 for traffic via NATEB. More CAS maybe required to facilitate this option.

In both cases a left turn out option off runway 14 has been considered.

Orange arrow to orange swathe – All departures to the north west, west, south west and south. Currently handled using a single SID but this option routes traffic away from POL and includes the option for a more direct route through Warton Radar's airspace and TRA004 for traffic to the west and northwest.

Purple arrow to purple swathe – All departures to the east. Truncated SIDs considered for better fuel planning and right turn out options considered for runway 32 operations. More CAS maybe required to facilitate the right turn outs.

EGNM Arrival options



Blue swathe to blue arrow – Inbound traffic from NATEB direction. GASKO – hold as per today. Downwind leg to the east of Leeds for runway 32 considered. More CAS maybe required to ensure traffic remains in CAS. Currently the base in the blue swathe is FL125.

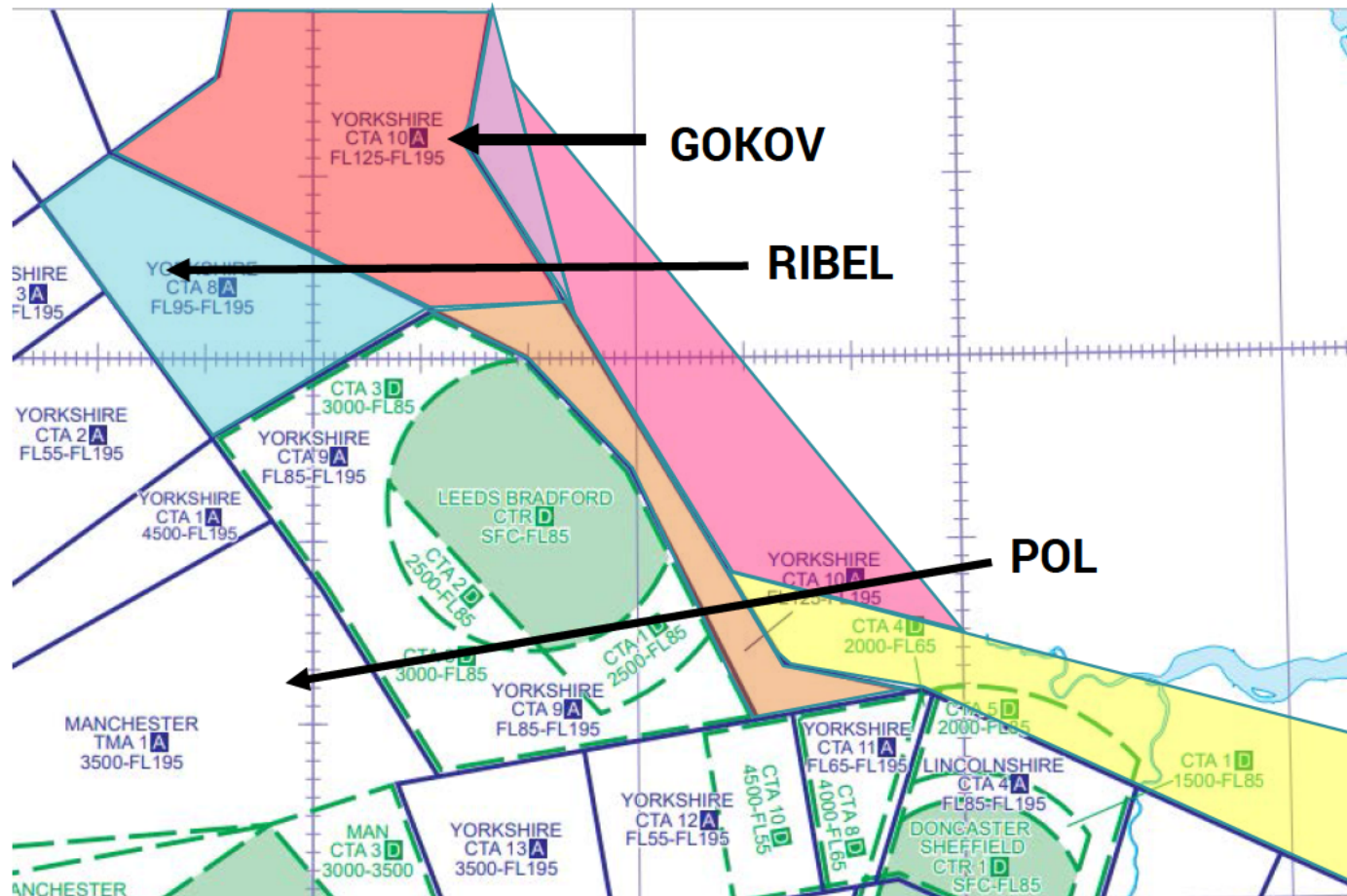
Orange swathe to orange arrows – Inbound traffic from the north, north west, west and south west largely handled as per current procedures and includes the option for a more direct route through Warton Radar's airspace and TRA004 for traffic to the west and northwest.

Purple swathe to purple arrow – Inbound traffic from the east. Left hand downwind options are being considered. More CAS maybe required to facilitate this.

The red arrow indicates current routing for traffic from the south. The red circle indicates the conflict point between EGCC departures and EGNM inbounds.

Green swathe to green arrow – Proposed solution to avoid the red circle. Traffic could use the existing gates or be integrated into the traffic flow from the east. Left hand downwind options are being considered. More CAS maybe required to facilitate this option. The base in the solid green area is FL195.

Leeds Area Proposal



Purple shaded area – facilitate more direct routings for Newcastle (EGNT) inbound from the east and south. Reduces the head-on turn at GOKOV. Base circa FL155 – EGNT inbound agreed level is currently FL160.

Orange area – facilitate Leeds (EGNM) operations to the east of Leeds reducing complexity in the area to the west of Leeds whilst potentially offering environmental benefits, fuel and (continuous descent operations) CDO etc. Base to be confirmed but potentially quite low to allow for CDO.

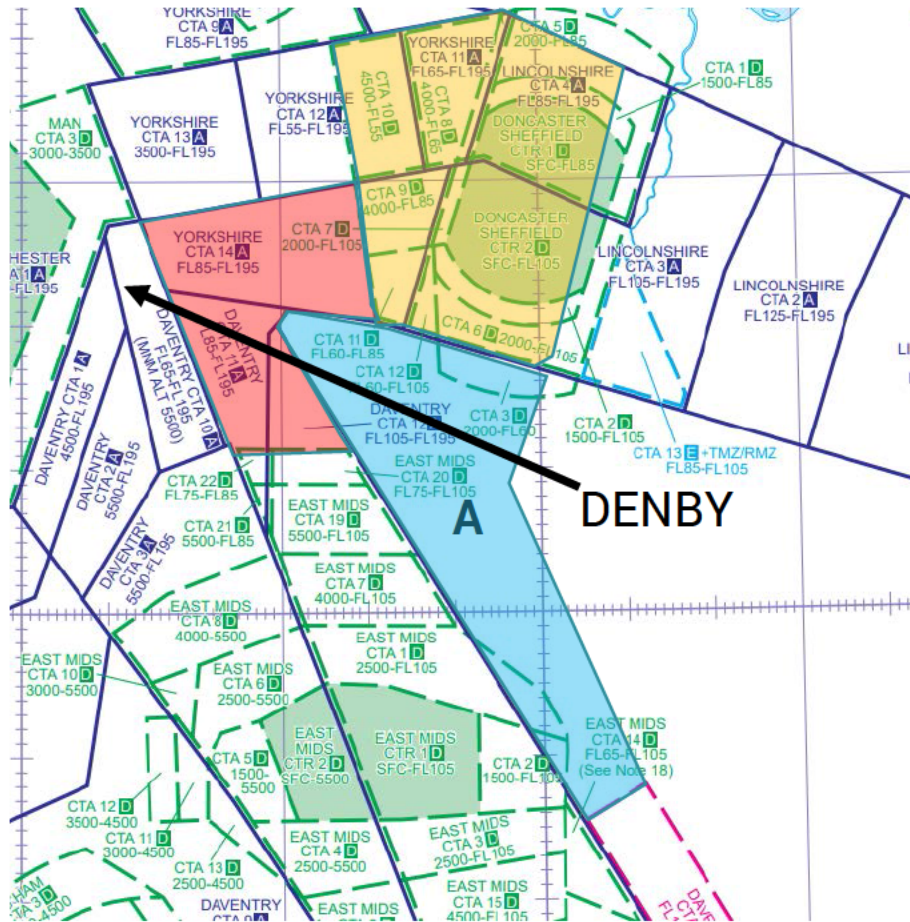
Yellow area – facilitate an a forth systemised route in the east sector most likely for EGNT, Teeside (EGNV) and Liverpool (EGGP) inbound. Base circa FL175.

Blue area – facilitate a standard instrument departure (SID) off Leeds runway 32 towards RIBEL for traffic to Scottish terminal manoeuvring area (ScTMA) and the airway complex including P16/17/18 commonly referred to as 'the Papas'. Removes conflicts and complexity at POL.

Red area – lowered base here would allow Leeds traffic from the north a better descent profile when using runway 14 from the north. Would also allow NV departures to join CAS earlier and may allow better descent profiles for inbound as they would be in CAS for longer.

Pink area - could be used to join the purple and yellow areas. This could benefit traffic arriving to and departing from EGNT/EGNV.

BETAX Proposal



Red area – lowered base circa FL65– better descent profiles for EGNM and Manchester (EGCC) traffic. Could it be a quiet hours solution that the base lowers?

Blue area - This could be used by traffic inbound to; EGMN offering CDO and remove conflicts at DENBY, roughly western edge of YRK CTA 14

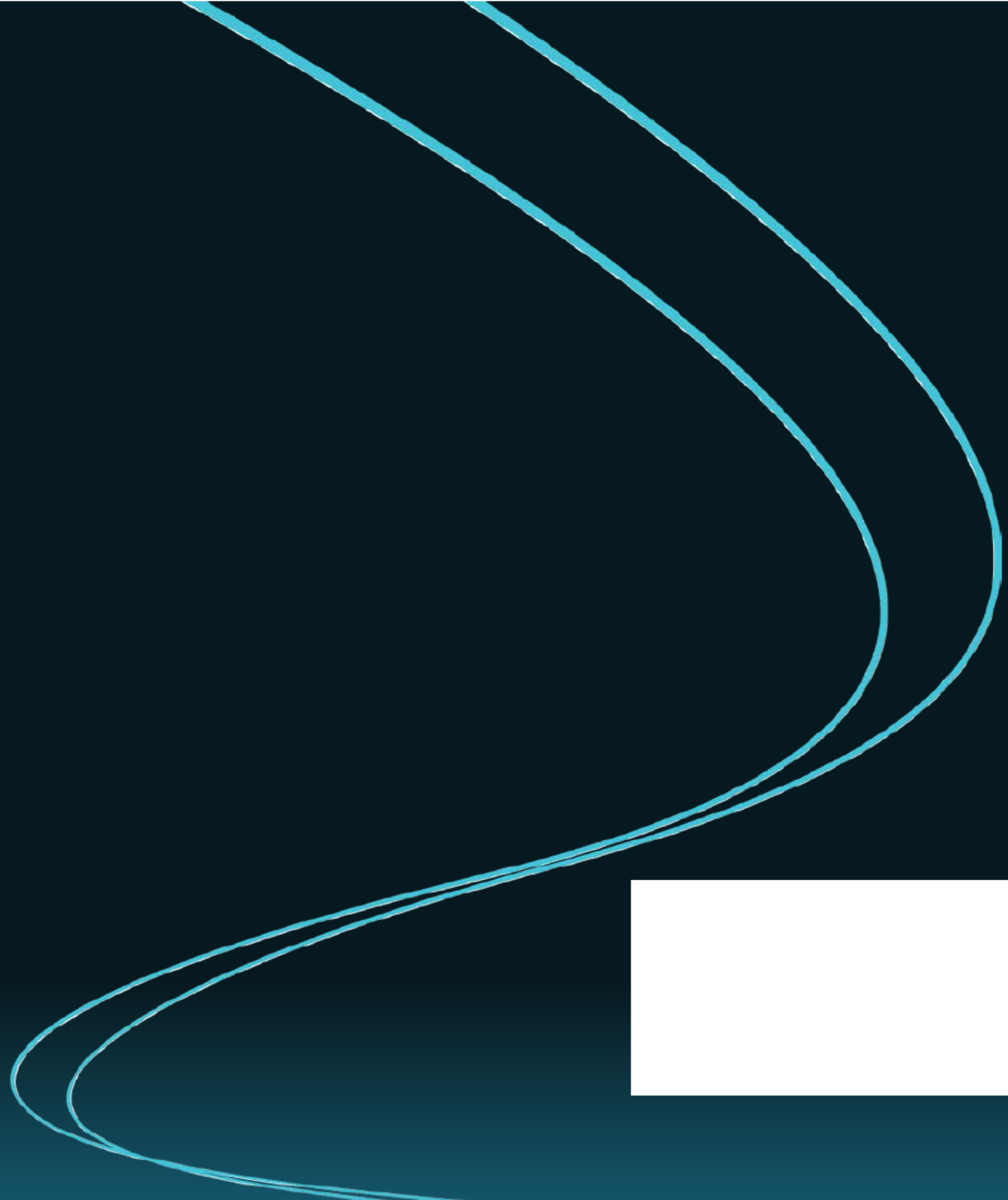
Traffic inbound to Humberside (EGNJ) for the reasons above.

Traffic inbound to and outbound from the Midlands group (Birmingham (EGBB), East Midlands (EGNX), Coventry (EGBE)). Offering environmental benefits by potentially reducing flight plannable track miles and potentially offering better descent profiles.

The base of area A would be lowered to FL95 (**indicative as a starting point for discussion**).

Yellow area – airspace under review due to the anticipated closure of Doncaster (EGCN), important that NERL and Leeds can still use this airspace for their inbound traffic.

Manchester



'Turn and Burn' procedure

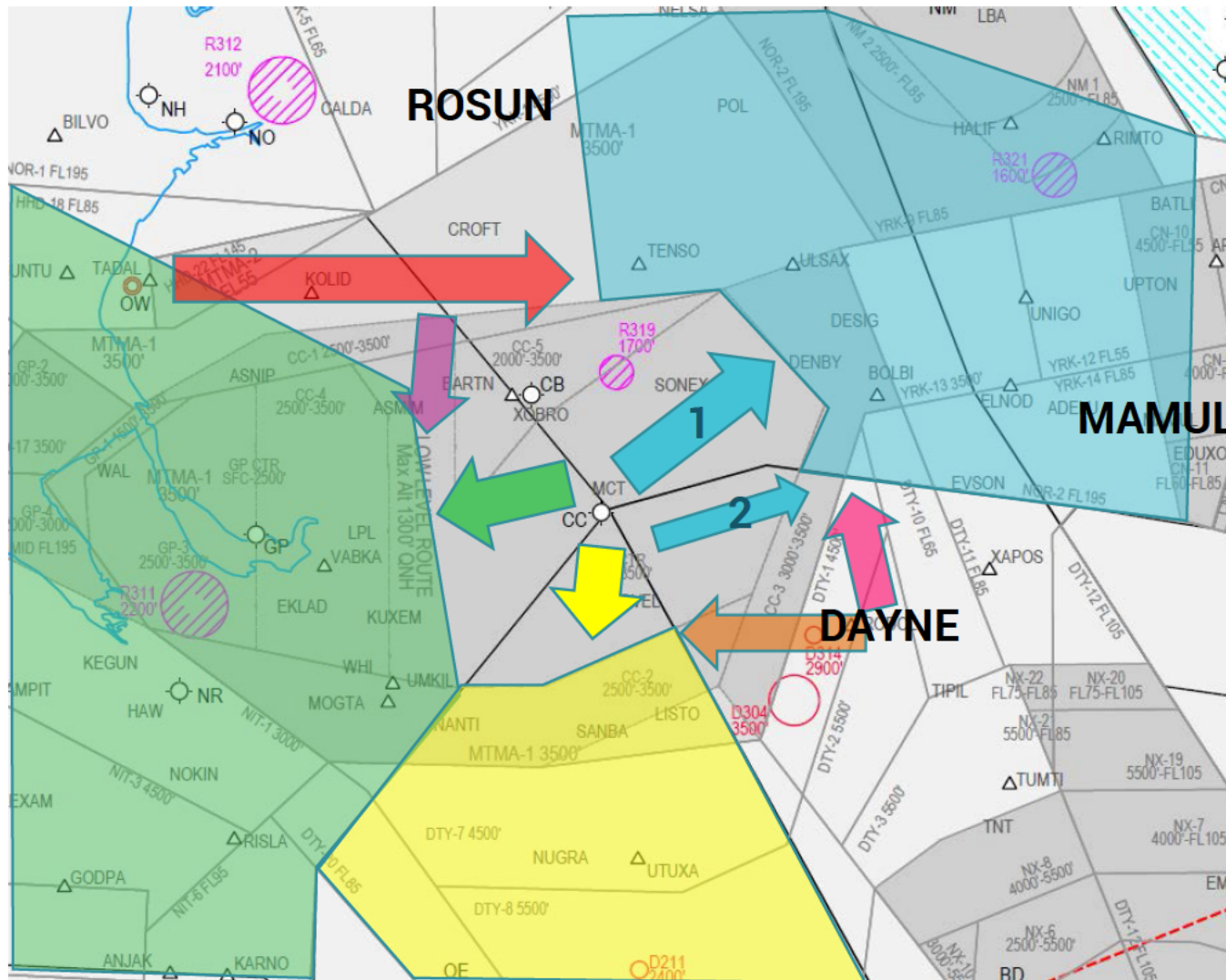
The early turn procedures are often referred to as 'turn and burn'. Area controllers have to wait for aircraft to reach a specified altitude, in line with noise abatement procedures, and give a turn and climb instruction to a departing aircraft to avoid the inbound track under the control of the approach unit.

We are trying to design out these procedures as it adds significant flight deck workload at a critical and busy stage of the flight, namely as the pilots are trying to 'clean up' the aircraft after departure.

The decision to turn and climb is made if there is an inbound in conflict and if the controllers expects there is time for the turn to achieve separation against the inbound aircraft. Or to turn aircraft to where they want to go and is therefore unpredictable.

It would be desirable for the SID procedure itself to be designed to remove the tactical element of the turn. The result would be predictability for both the pilots and the approach controllers. It could also reduce workload at a critical stage of flight The area controllers would only have to choose the appropriate flight level to climb to.

EGCC Departure Options



Blue arrow to blue swathe – EGCC departures to the north and east. SIDs connect to systemised route structure where possible.

Various options considered including runway 23 left turn out towards MAMUL such traffic would turn inside the traffic off DAYNE (pink arrow) for runway 23. (turn & burn)
Departures off runway 23 right turn out. Options include aircraft turning tighter to avoid the inbound aircraft from the west (red arrow). (turn & burn)

Yellow arrow to yellow swathe – EGCC departures to the south. SIDs will connect to a systemised route structure where possible.

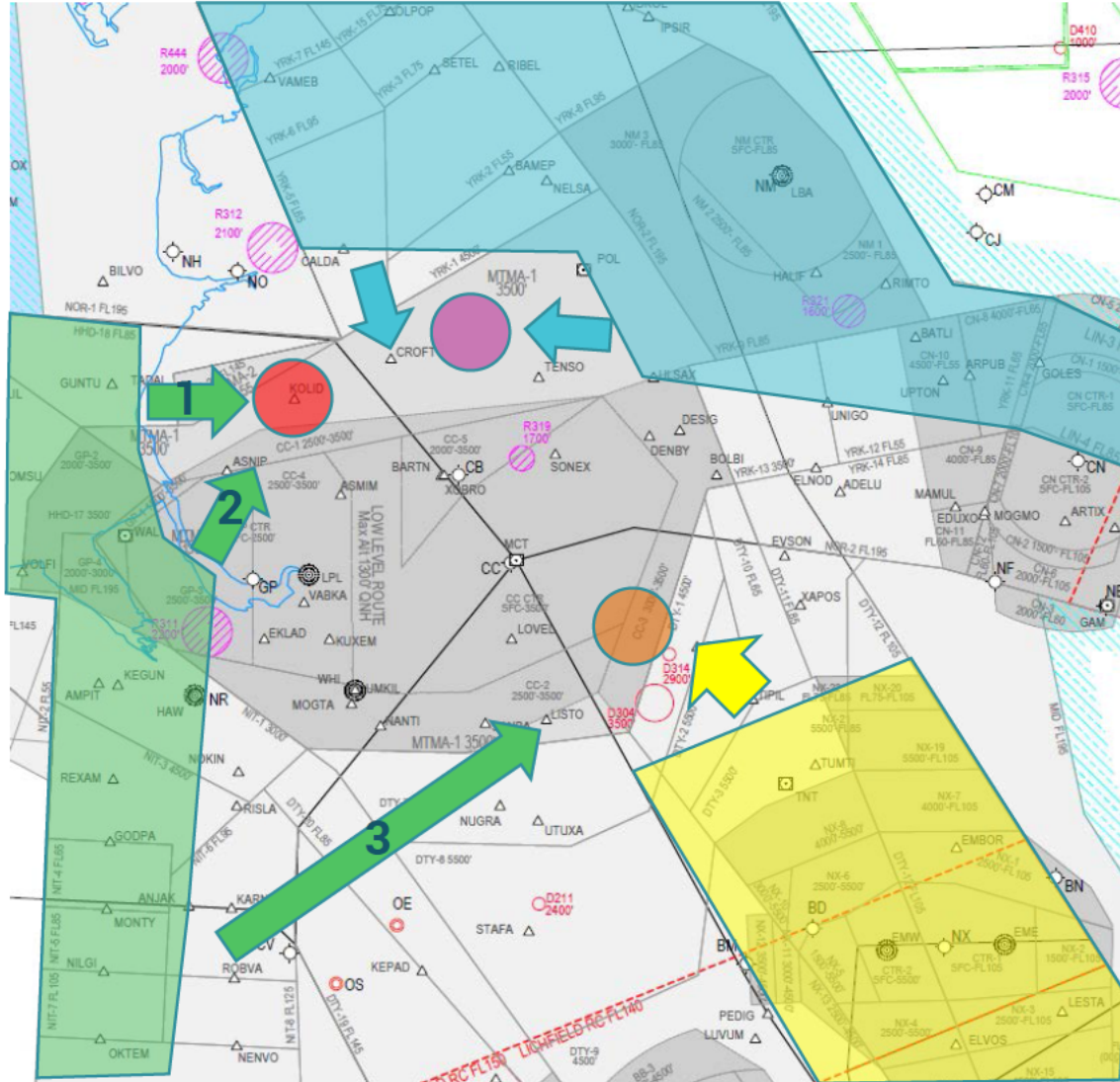
Runway 05 options – tight right turn to turn inside the inbound flow from DAYNE (orange arrow) (turn & burn)
and left turn out 'wrap around' SID to go south and gain height to avoid inbounds from DAYNE.

Green arrow to green swathe – EGCC departures to the west and south west. SIDs will connect to systemised route structure where possible.

Runway 05 options included departures turning on to a south westerly heading early to separate from inbound traffic from ROSUN (purple arrow). (turn & burn)

Discussions around how many SIDs would be required were had in collaborative workshops with MAG.

EGCC Arrival Options – Radial holds



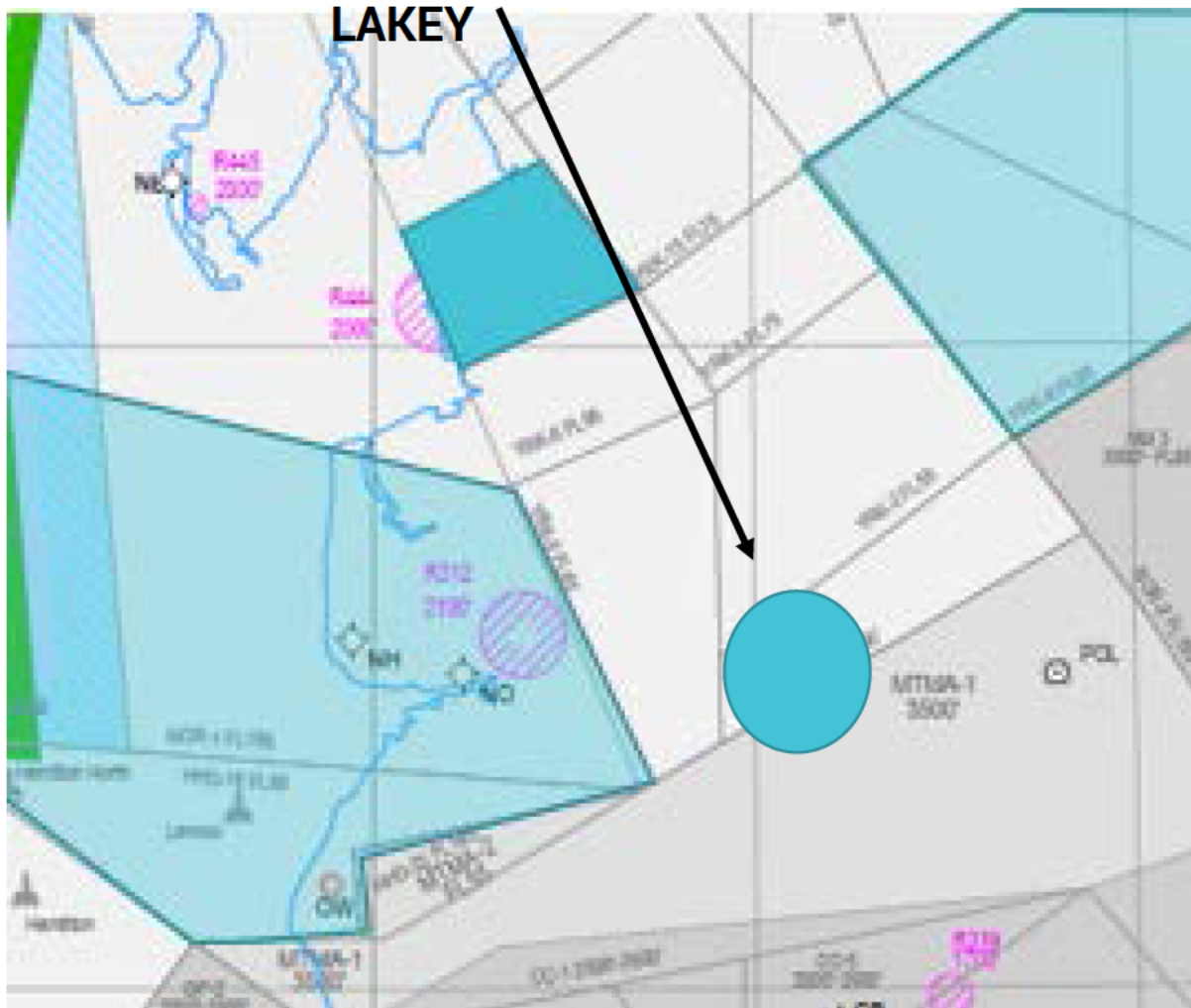
Green swathes to green arrows 1 & 2 – EGCC arrivals from the west and south west towards an optimised radial hold solution in the MIRSI area (red circle)

Green arrow 3 – traffic from the south west turn early towards the DAYNE area (orange circle). This route has the potential of offering track mile saving for such traffic when runway 23 is in use **BUT** it would also create significant conflict against the south bound flow of traffic from EGCC and EGGP, for example. It may also have a disbenefit when runway 05 is being used. This would also 'force' traffic into a sector that is already very busy with EGCC inbound traffic from the south. A radial hold may not be able to cope with the increased traffic demand on it.

Blue swathe to blue arrows – EGCC arrivals from the north and east feed an optimised radial hold solution in the ROSUN area (purple circle).

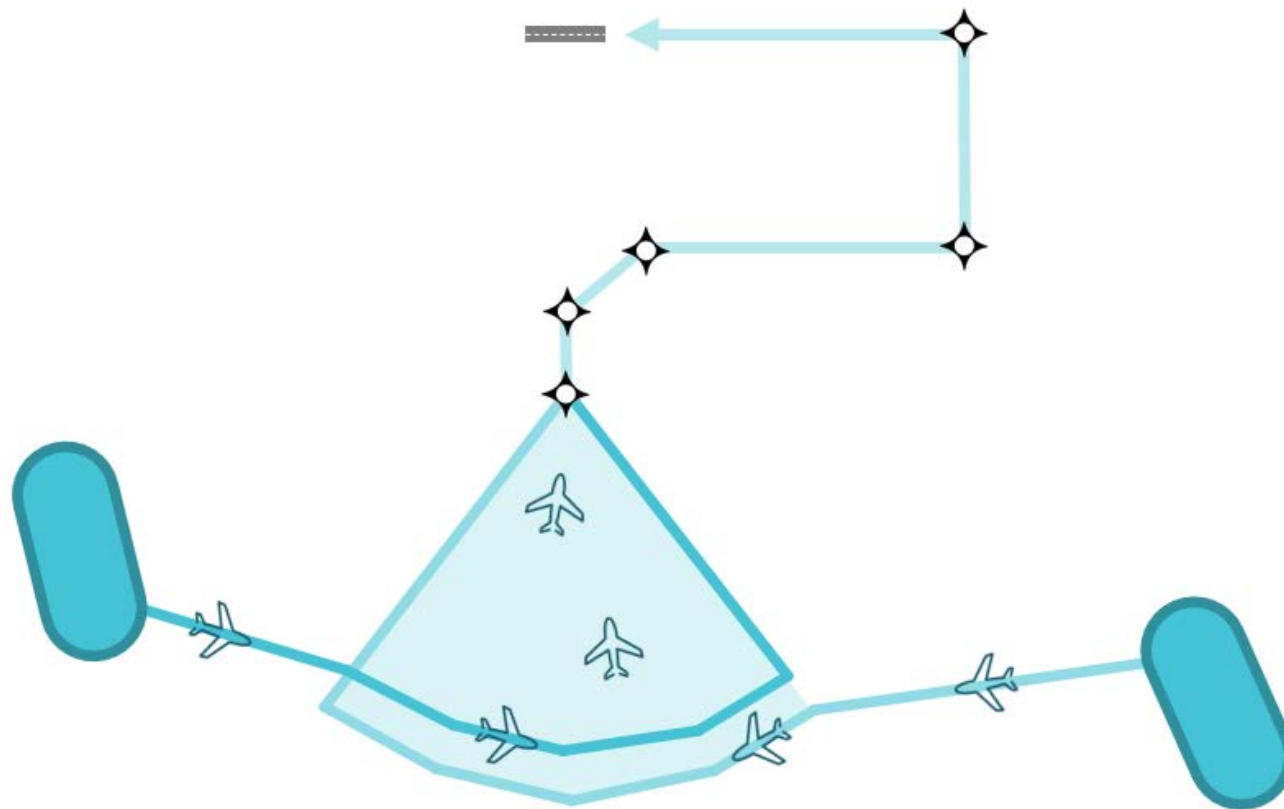
Yellow swathe to yellow arrow - EGCC arrivals from the south feed an optimised radial hold solution in the DAYNE area (orange circle).

How The Airspace Might Look



Black arrow from a point east of LAKEY allows 3 degree descent profile for CC arrivals

Point Merge

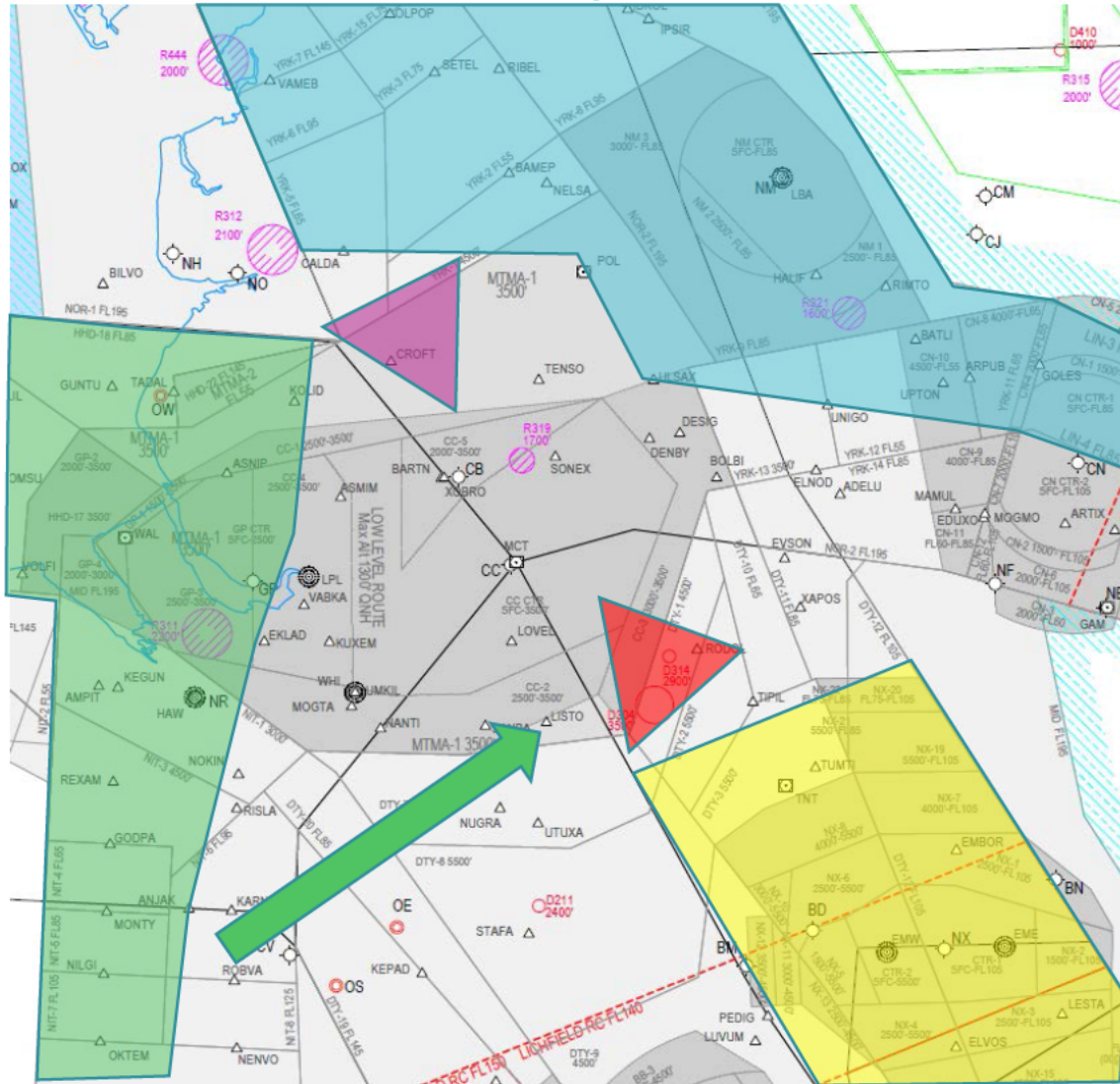


Allows traffic to be taken from different directions and be streamed into a single transition for final approach and landing.

Outer contingency holds are required as shown.

<https://www.eurocontrol.int/publication/point-merge-implementation>

EGCC Arrival Options – Lateral holding solution



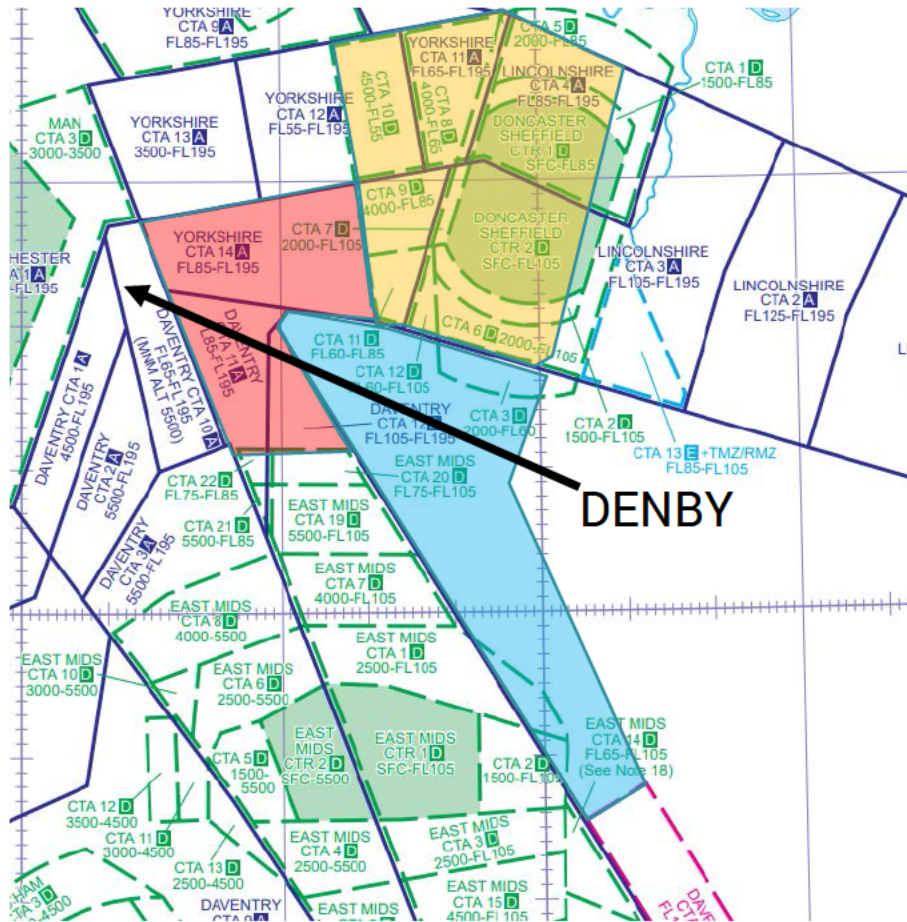
Green swathe to purple triangle – EGCC arrivals from the west and south west towards an optimised lateral hold solution in the CROFT area (purple triangle). This holding structure could also be fed by traffic from the north and east. Outer contingency holds are still required.

Yellow swathe to red triangle – EGCC arrivals from the south feed an optimised lateral hold solution in the DAYNE area (red triangle). Outer contingency holds are still required.

This may also be fed by traffic from the south east via the green arrow.

This route has the potential of offering track mile saving for such traffic when runway 23 is in use **BUT** it would also create significant conflict against the south bound flow of traffic from EGCC and EGGP, for example. It may also have a disbenefit when runway 05 is being used.

BETAX Proposal



Red area – lowered base circa FL65– better descent profiles for EGNM and Manchester (EGCC) traffic. Could it be a quiet hours solution that the base lowers?

Blue area - This could be used by traffic inbound to; EGMN offering CDO and remove conflicts at DENBY, roughly western edge of YRK CTA 14

Traffic inbound to Humberside (EGNJ) for the reasons above.

Traffic inbound to and outbound from the Midlands group (Birmingham (EGBB), East Midlands (EGNX), Coventry (EGBE)). Offering environmental benefits by potentially reducing flight plannable track miles and potentially offering better descent profiles.

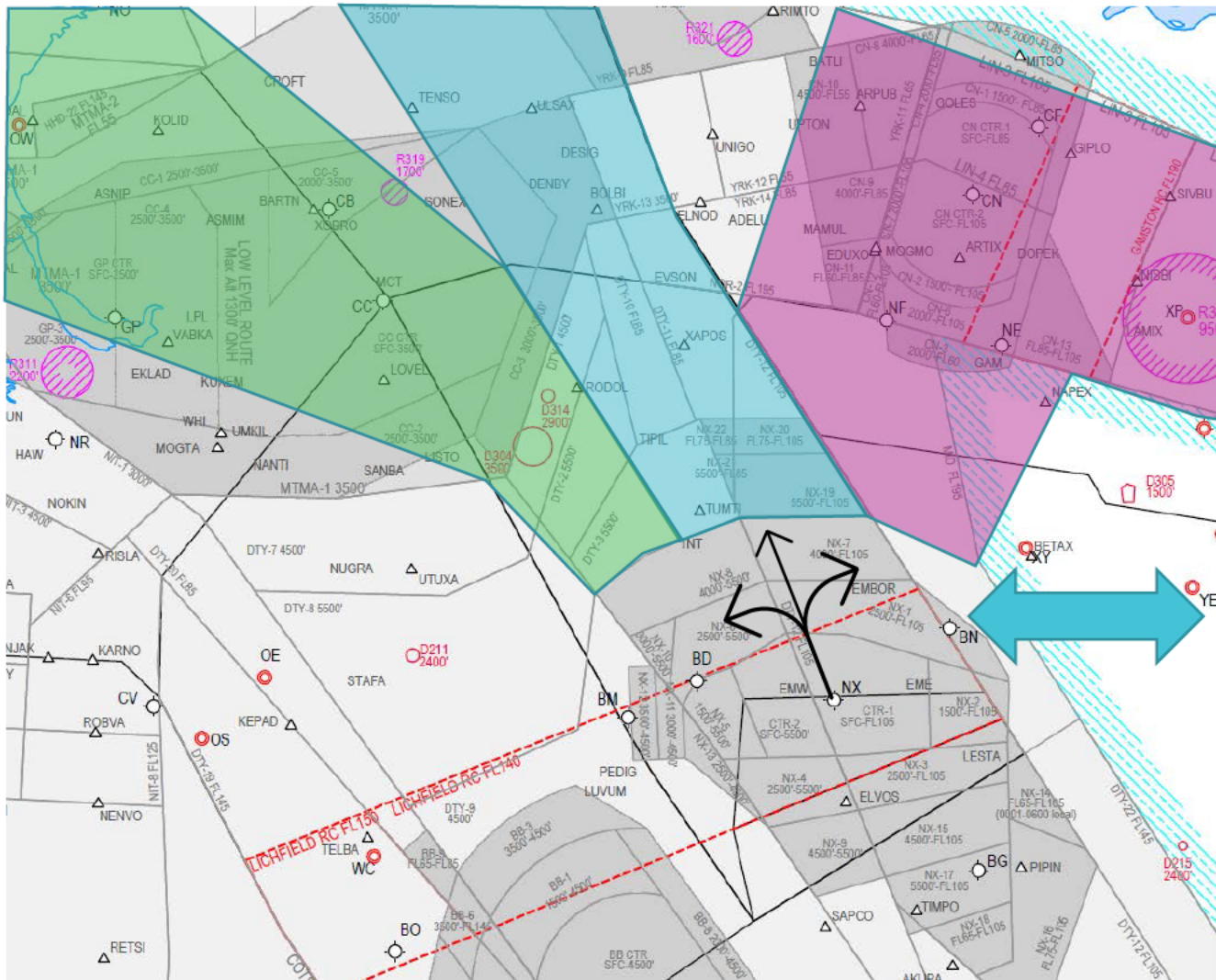
The base of area A would be lowered to FL95 (**indicative as a starting point for discussion**).

Yellow area – airspace under review due to the anticipated closure of Doncaster (EGCN), important that NERL and Leeds can still use this airspace for their inbound traffic.

East Midlands



EGNX Departure Options

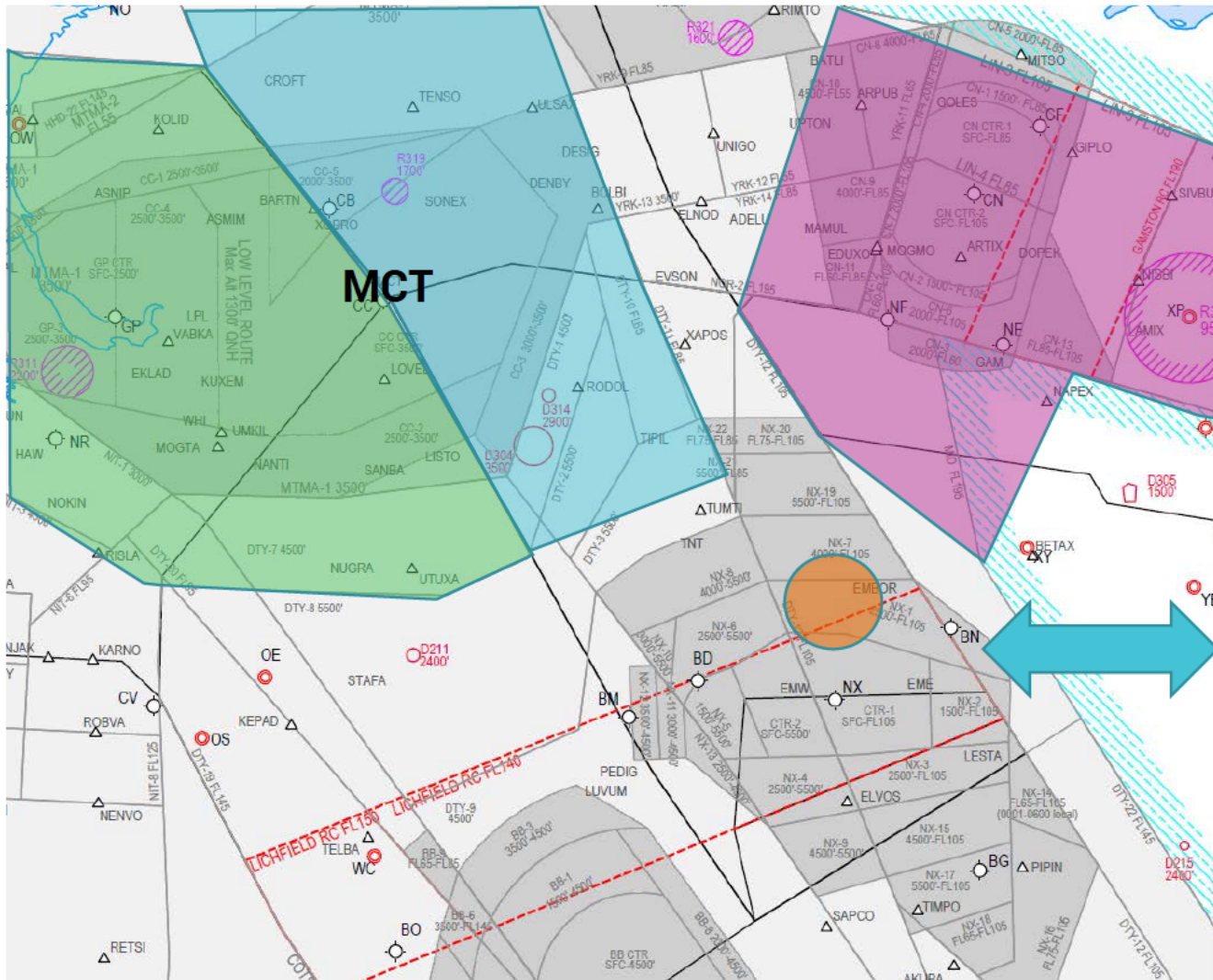


Single or multiple SID options to deliver traffic to;

- The purple swathe for traffic to the east.
- The blue swathe for traffic to the north.
- The green swathe for traffic to the north west and west.

Blue arrow indicates potential for route to/from the east for EGNX and others.

EGNX Arrival Options – Radial holds

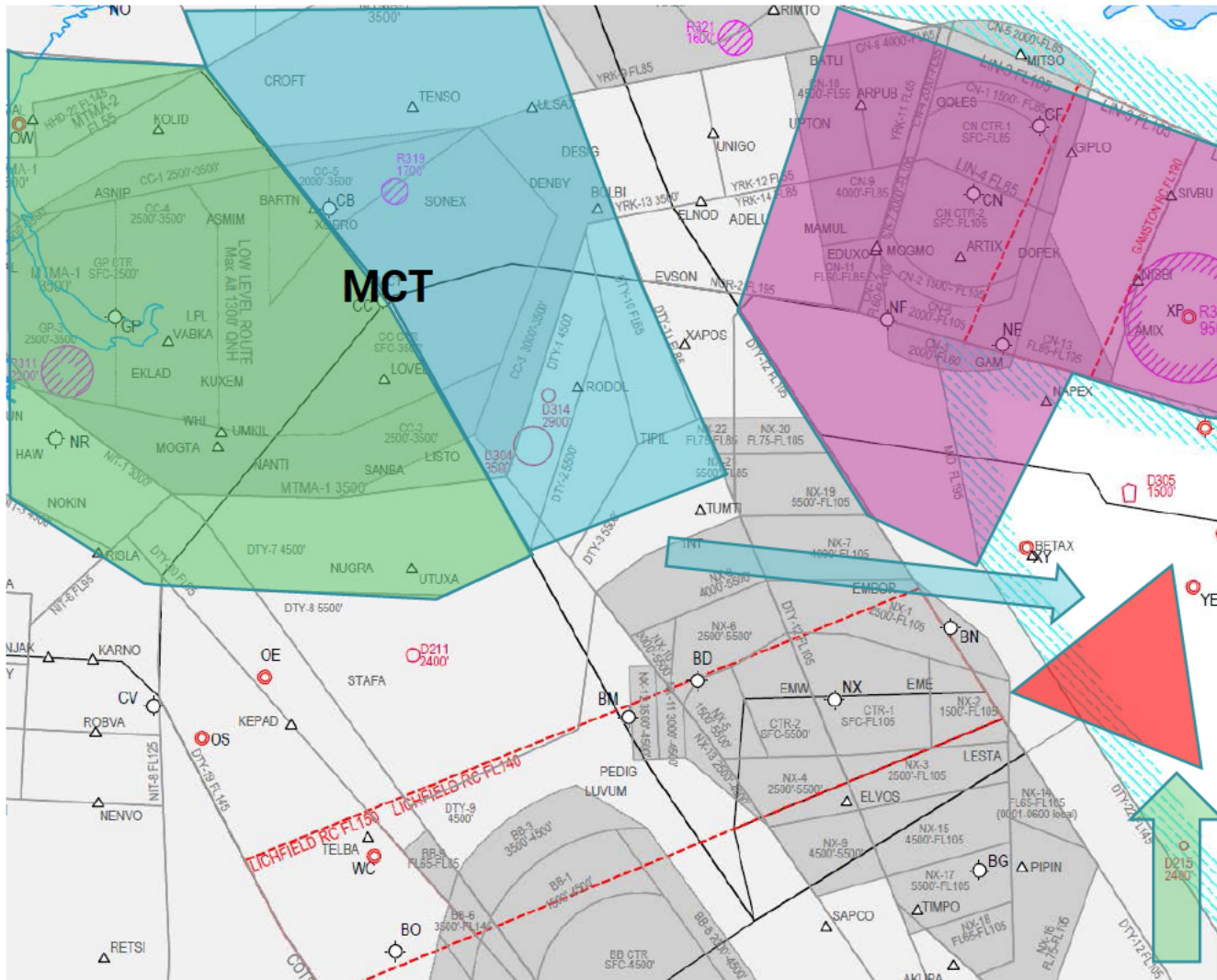


Traffic from the green, blue and purple swaths deliver traffic to an optimised radial holding structure. The location of which is indicated by the orange circle.

Currently traffic from the east has to flight plan via the MCT. With additional CAS in the purple swathe demonstrable environmental benefits could be gained for traffic inbound from the east.

Blue arrow indicates potential for route to/from the east for EGNX and others.

EGNX Arrival Options – Lateral holds

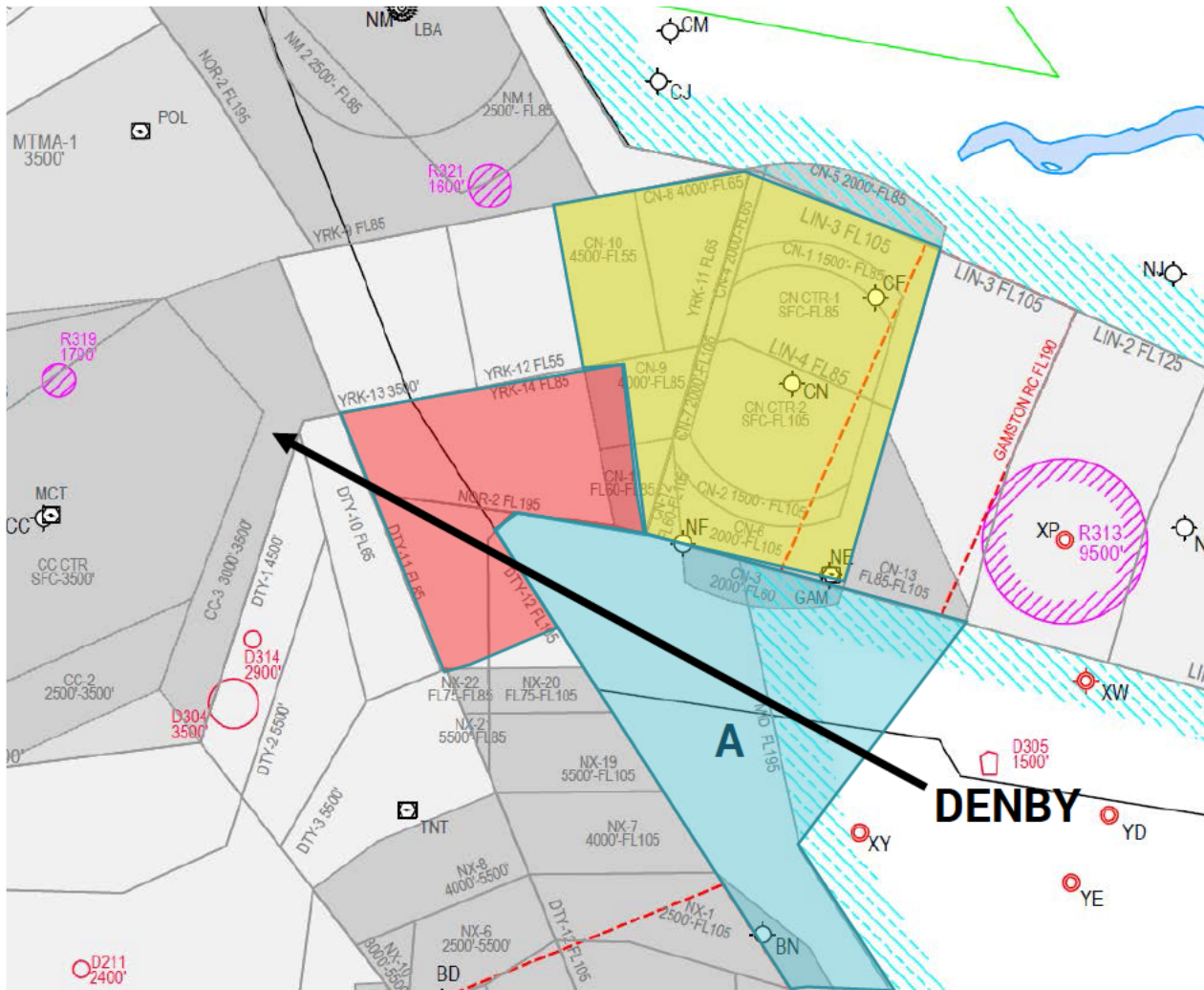


Traffic from the green, blue and purple swathes deliver traffic to an optimised lateral holding structure. The location of which is indicated by the red triangle. Due to the proximity of other airfields, namely EGCC and EGBB it was considered that the location of the holding structure could only be in the area shown.

This location may result in the holding facility only being available during quiet hours, essentially at night, due to the amount of CAS required and the impact on the military and GA. There may be a disbenefit for all traffic especially from the west when runway 09 is in use.

Currently traffic from the east has to flight plan via the MCT. With additional CAS in the purple swathe demonstrable environmental benefits could be gained for traffic inbound from the east when runway 27 is in use. Traffic from the south, green arrow, could also potentially use a single lateral holding structure, e.g. a point merge.

Camphill Gliding



Red area – lowered base circa FL65– better descent profiles for EGNM and Manchester (EGCC) traffic. Could it be a quiet hours solution that the base lowers?

Blue area - This would be used by traffic inbound to EGNM offering CDO and remove conflicts at DENBY. Traffic inbound to Humberside (EGNJ) for the reasons above.

Traffic inbound to and outbound from the Midlands group (group (Birmingham (EGBB), East Midlands (EGNX), Coventry (EGBE)). Offering environmental benefits by potentially reducing flight plannable track miles and potentially offering better descent profiles. The base of area A would be lowered to FL95 (**indicative as a starting point for discussion**).

Yellow area – airspace under review due to the anticipated closure of Doncaster (EGCN), important that NERL and Leeds can still use this airspace for their inbound traffic.

Holistic representation of one set of problems.



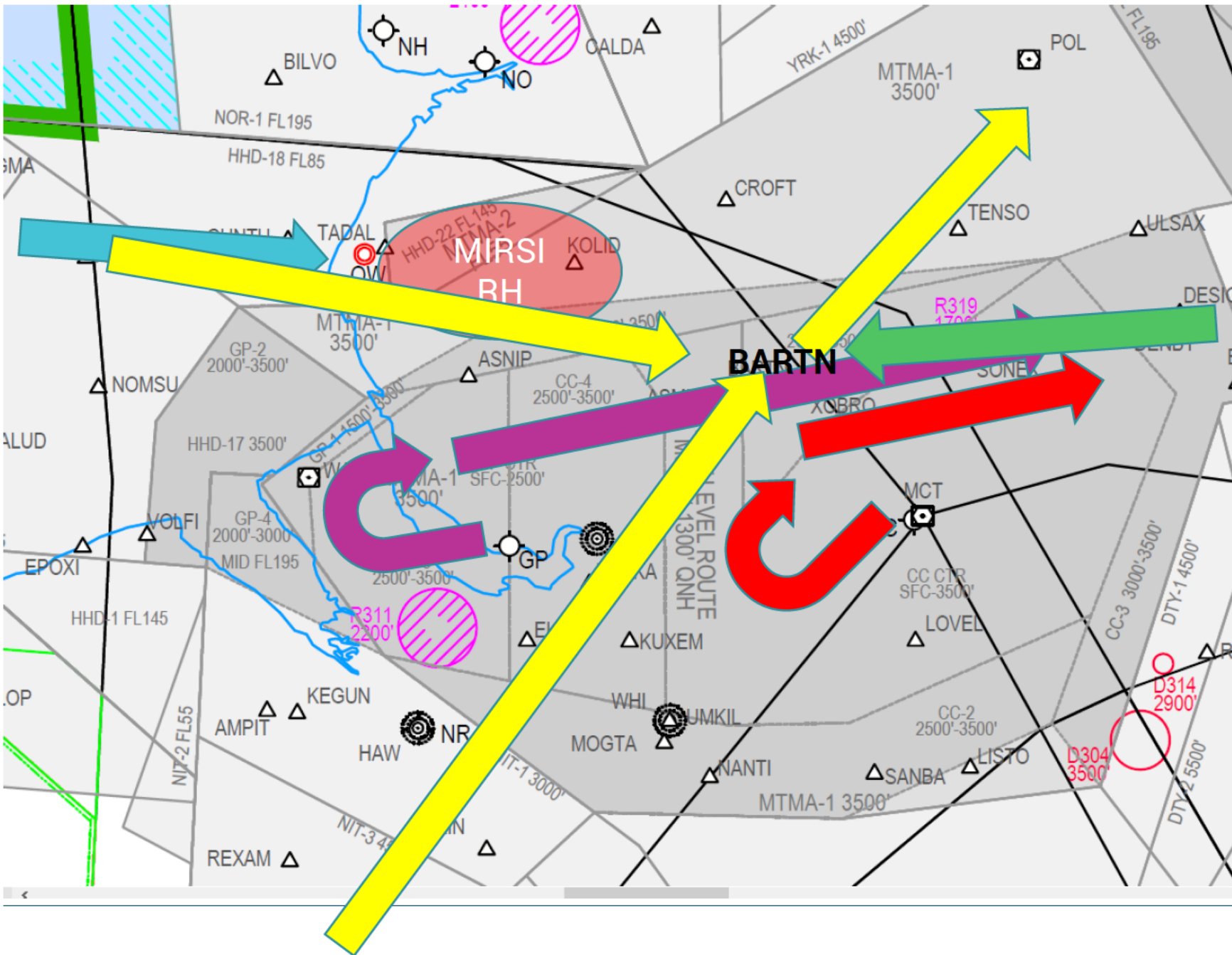
Current situation.

Yellow – EGNM inbounds route via BARTN.

Green – EGGP inbounds from the east route via BARTN.

Purple – EGGP departures to the east route via BARTN.

Red – EGCC departures to north and east initially route towards BARTN.

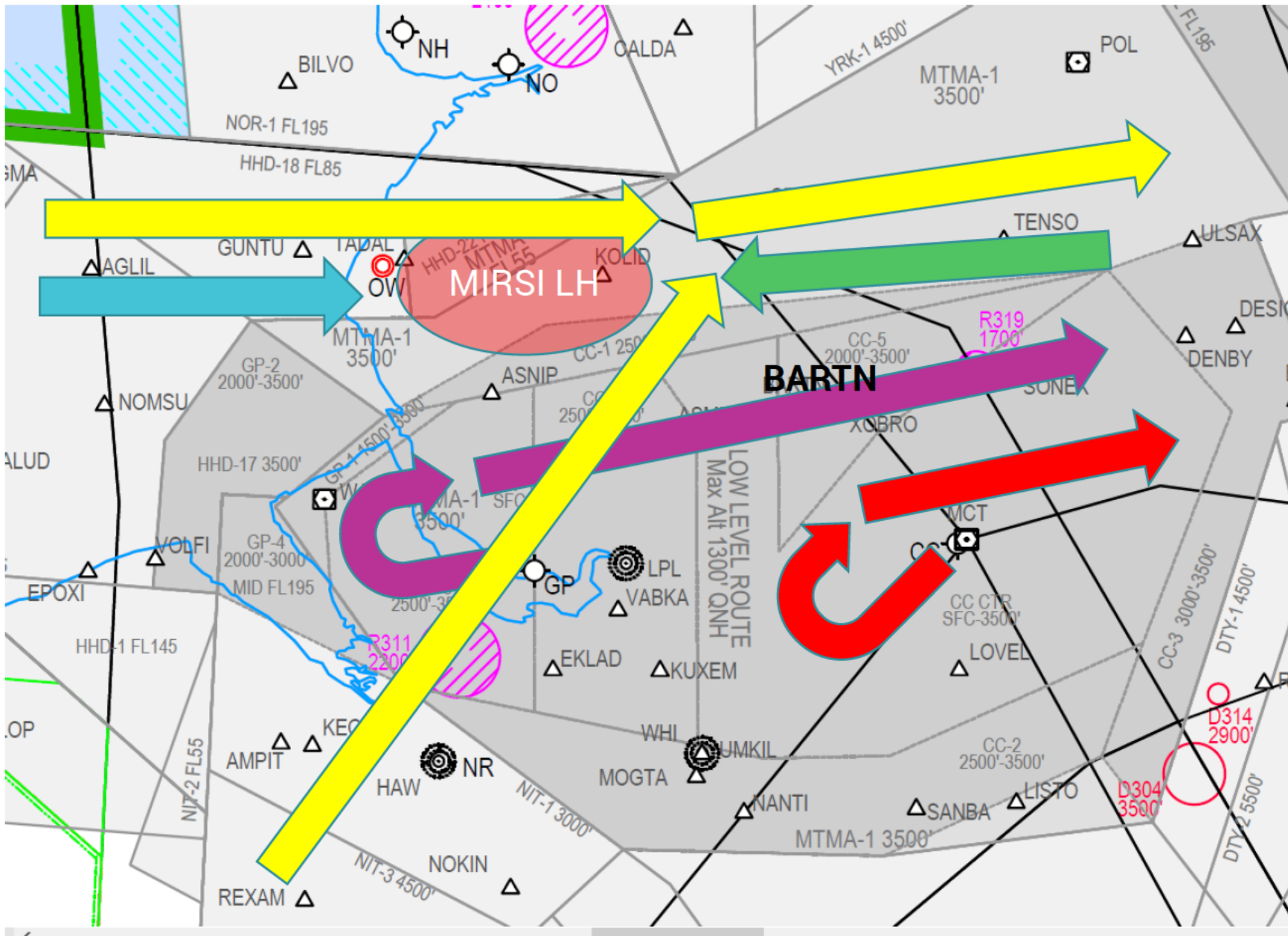


How might it work together?

A systemised solution through BARTN.

Red arrows – EGCC departures earlier and tighter after departure. Track separated from the EGGP departure through BARTN – purple arrows which are track separated from the EGGP inbounds from the east, Green arrow, and the EGCC inbound traffic from the west, blue arrow. If MIRSI is Left Hand holding traffic would turn away from the EGGP departures to the east. Whilst the EGCC and EGGP inbounds are head on this is an existing problem today with known and well practiced solutions.

The yellow lines indicate Leeds inbounds through BARTN and would be above the EGGP and EGCC traffic until east of BARTN where they would be on a route separated from the EGGP departures.



Next steps

Stage 2 submission in Q1 2023

Stakeholder feedback collated, assessed and used to shape options.

Run a 2nd program of visualisation simulations Feb 2023 at Prestwick Centre

Continued engagement with Sponsor Airports, other ANSPs, GA, Military, Airlines and all other stakeholders.

Stage 3 & co-ordinated consultation Q3 2024

Planned O date 2027

Thank you

We welcome your feedback on the concepts presented in today's engagement and slide packs that will be sent to you.

Please submit your feedback using the MS Form

Section 1 asks for your feedback on our concepts that could link the 4 ACP sponsoring airports to the en-route ATC Network.

In Section 2 of the form you will find text windows for your organisation feedback on our wider MTMA Network concepts.

