



Feedback Report

for the

Consultation on revised ATS route structure over the Irish Sea

(Isle of Man and Antrim Sectors of NATS'
Prestwick Centre)

Issue 1

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Prepared by NATS Airspace Change Assurance

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1 Introduction

From 4th July 2016 to 30th August 2016 (a period of 8 weeks) NATS consulted on proposed changes to the ATS route structure over the Irish Sea.

We proposed to introduce a system of RNAV1 routes, for flights in the Isle of Man (IoM) and Antrim sectors of NATS' Prestwick Area Control Centre (PC).

The consultation document is available at www.nats.aero/environment/consultations

For ease of reference the charts used for consultation are shown overleaf in Figure 1.

This document summarises the feedback we received during the consultation, and how it has changed the proposed design from that shown in Figure 1.

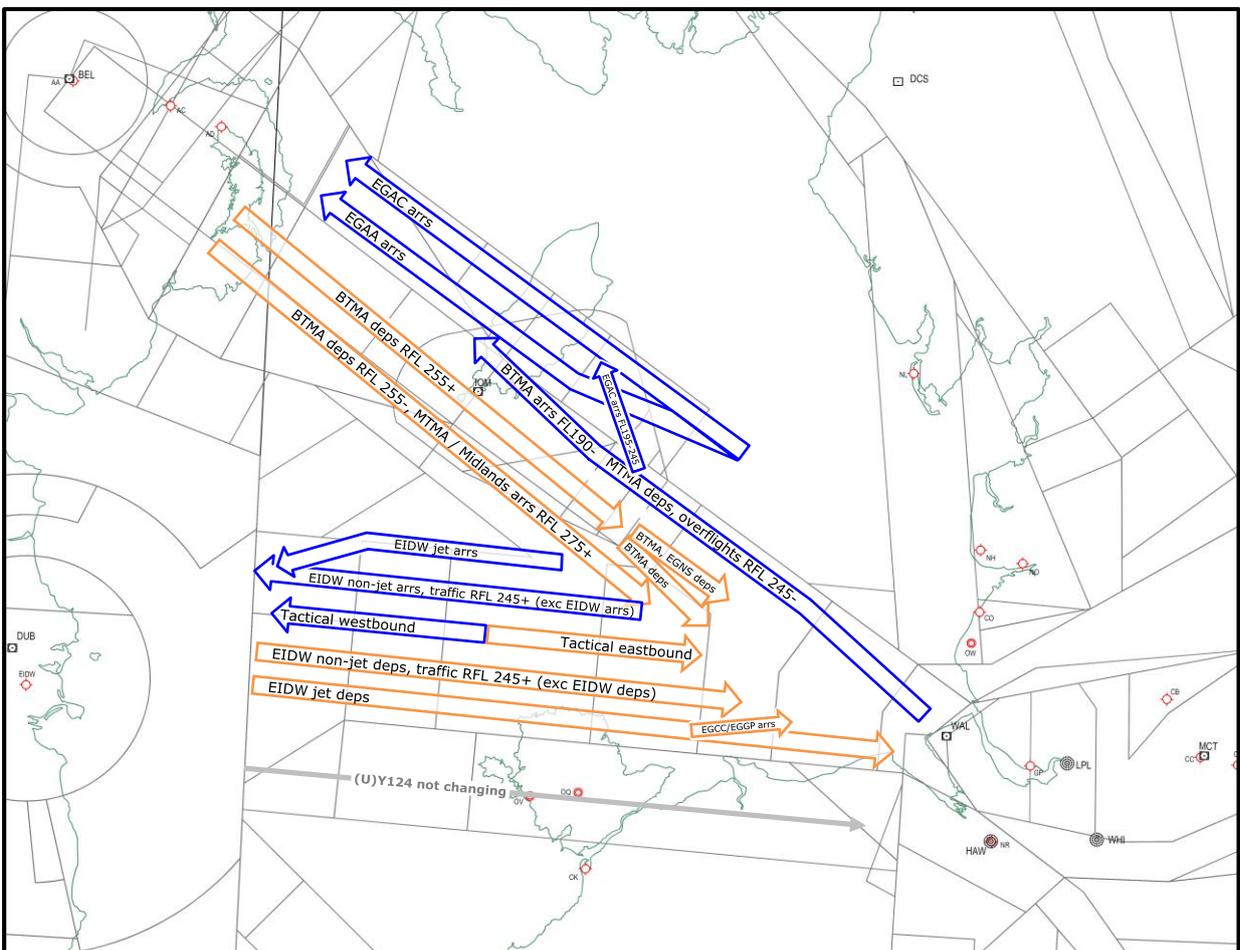
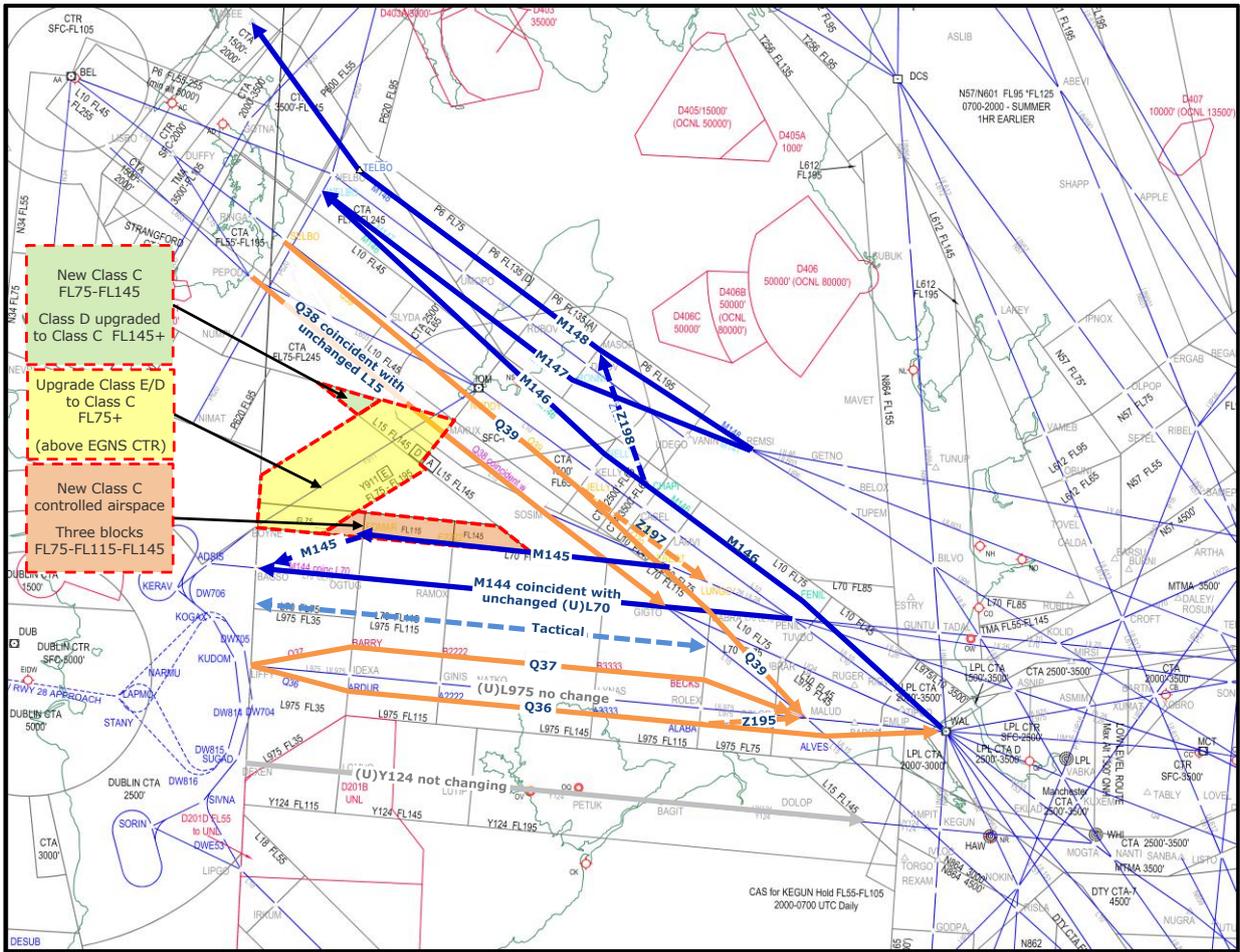


Figure 1 Consultation - Proposed RNAV1 routes, Controlled Airspace, Route Schematic

These two charts are copied from the consultation document.

2 Stakeholder Engagement

2.1 Pre-engagement

NATS identified the Ministry of Defence, BAE Systems Warton, the Irish Aviation Authority (IAA), the Isle of Man CAA, airports and airlines as major stakeholders in this proposal.

See the consultation document, paragraphs 6.7 and 6.8.

2.2 Launch

NATS formally notified this consultation to the pre-engaged stakeholders, to members of NATMAC and to its airline customers via email.

For the full list of stakeholders, see the consultation document, Appendix A.

2.3 Engagement during the consultation period

We quickly received two responses regarding the airspace classification of airway Y911. In order to more fully describe this potential option, we added a new map and some text into the consultation document and sent it out to all stakeholders as Issue 1.1.

We also communicated with the Isle of Man CAA regarding their separate proposal to raise the upper level of their CTR and CTAs.

Some Dublin-based operators were engaged during and after consultation regarding route usage and predicted fuel use. Their points are discussed later in this document.

3 Summary of feedback

3.1 Stakeholders

There were two main groups of stakeholders engaged for this consultation: members of the National Air Traffic Management Advisory Committee (NATMAC), and the airlines who use the airspace (via the NATS Customer Affairs Team).

We also consulted with the Irish Aviation Authority (IAA), the Isle of Man CAA, the UK MoD (DAATM) and BAe Systems (Warton). The full list of stakeholders is given in Appendix A of the consultation document.

Due to the altitude of the flights affected by the proposed change and the fact that the proposed changes occur over the sea, no stakeholders with an environmental interest were engaged.

The consultation was open for all to comment and was not limited to specific stakeholders. One individual responded describing themselves as a private VFR GA pilot.

3.2 Number of responses to the proposal

There were **25** responses to the proposal. They were divided into three categories:

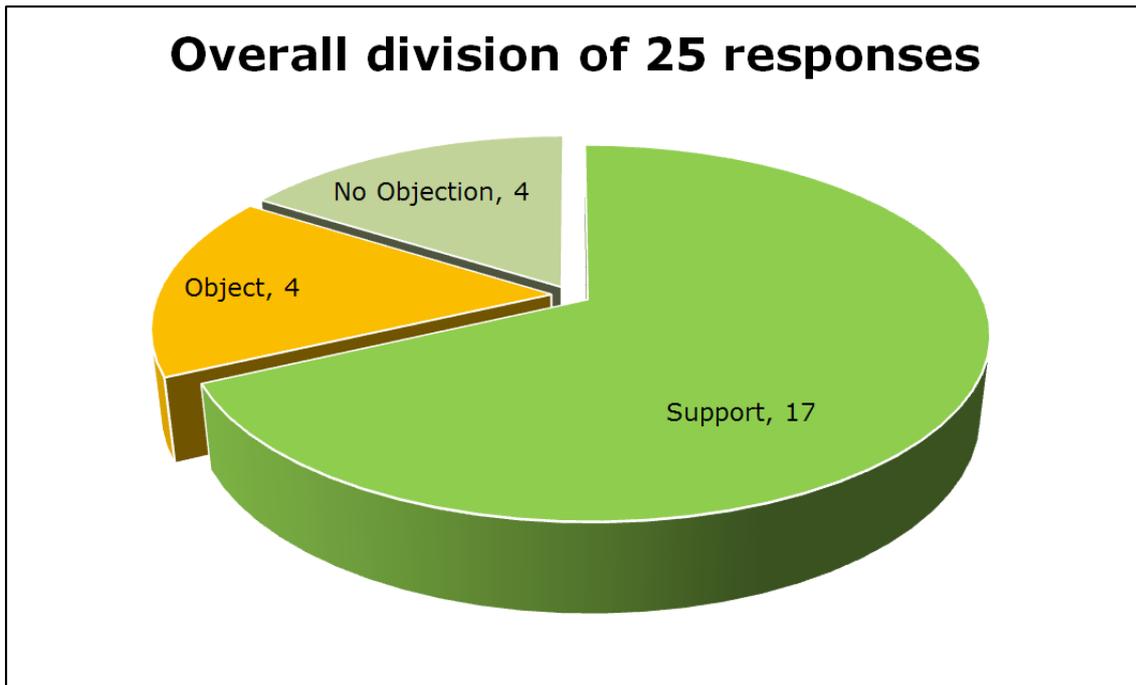


Figure 2 Responses

3.3 Response themes

The responses were analysed for common themes. Seven theme categories emerged, including one category capturing points that were out of scope of the consultation.

Some responses contained comments fitting more than one theme category, for example a single response might say both 'this change would improve my operation' and 'it would simplify airspace arrangements in the region'.

In total, **33** points were raised:

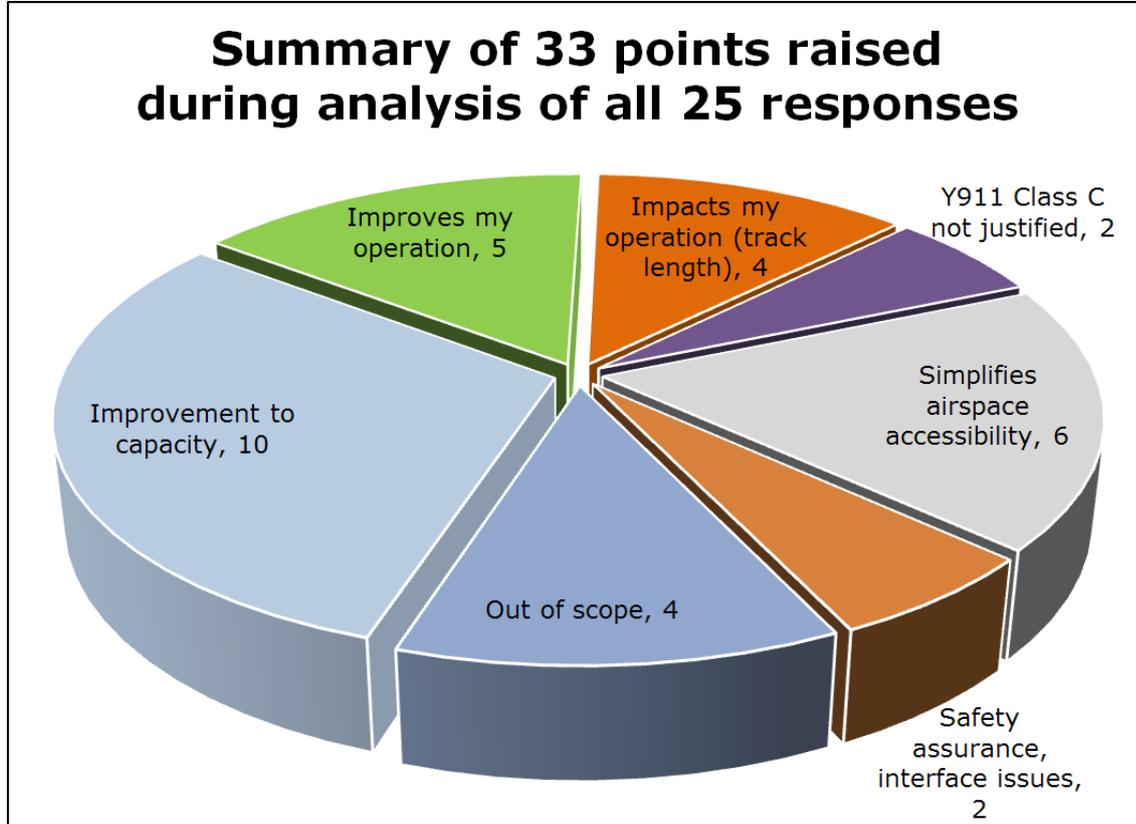


Figure 3 Summary of response analysis

4 Consideration of impacts raised

4.1 Impacts on Dublin-based operators – Delays, Fuel Burn, Cost Benefit

Some airlines fed back concerns that the proposed airspace arrangement would cause increased costs to their operation.

We engaged with these airlines and supplied additional information (copied below), which explains the forecast delay costs if we did nothing, compared with the delay costs and fuel-burn differences of implementing this proposal.

Year	Do Nothing		Implement IOM/Antrim		Net Delay Benefit if changes implemented		Increased Fuel Burn	Cost of extra fuel	Overall benefit
	IOM Delays (mins)	IOM Delay (£)	Delay (mins)	Delay (£)	Delay (mins saved)	Delay cost avoided (£)	Per year (tonnes)	Per year (£)	Per year (£)
2018	7,081	290,288	0	0	7,081	290,288	503	193,518	96,770
2019	16,820	747,680	0	0	16,820	747,680	515	198,202	549,478
2020	26,295	1,299,329	0	0	26,295	1,299,329	527	202,886	1,096,443
2021	38,434	1,998,707	0	0	38,434	1,998,707	539	207,570	1,791,137
2022	73,851	3,850,620	5,256	193,708	68,595	3,656,912	551	212,254	3,444,658
2023	116,277	6,164,980	7,450	309,067	108,827	5,855,913	563	216,938	5,638,975
2024	206,055	11,278,762	13,626	589,642	192,429	10,689,120	576	221,622	10,467,498
2025	331,441	18,876,896	23,478	1,103,607	307,963	17,773,289	588	226,307	17,546,983
Total	816,254	44,507,263	49,810	2,196,152	766,444	42,311,239	4,852	1,679,299	40,631,940

Table 1 Delays due to Airspace Regulation vs Fuel Burn, cost benefit data

Table 1 above quantifies the ATC delays due to airspace regulations only; it does not include the cost of delays due to Short-Term Air Traffic Flow Capacity Management Measures (known as 'STAM').

The relationship between airspace capacity and the application of STAM at one or more airports is subject to far more modelling assumptions than the application of Airspace Regulations, which has a more direct relationship with the capacity of blocks of airspace. Therefore, forecast delays due to future levels of STAM are less reliable than the forecast impact due to future levels of Airspace Regulation. However, analysis indicates that the increases in STAM with the 'Do Nothing' option will grow at a rate proportional to increased traffic demand, comparable with the Airspace Regulation increase indicated in Table 1.

Given that STAM measures are already applied due to capacity limitations in the IoM sector it is reasonable to predict that the level of STAM impact will be of a similar order of magnitude as that due to Airspace Regulation.

As a result of the airlines' constructive feedback relating to the initial small increase in fuel burn for some Dublin arrivals, the design team made changes to the final design specifically to reduce some of these impacts.

Continued engagement with these stakeholders resulted in their further understanding of the longer-term benefits of systemisation, and why it was not practical to implement their suggestion to switch two of the route flows. However because there would be no immediate benefit for these stakeholders due to this specific proposal, they wish their response to be categorised as an objection. We continue to work with these stakeholders regarding other elements of the UK's wider airspace change programme.

For a full chart of the final proposed design please see Figure 5 on page 13.

4.2 RNAV considerations

Some stakeholders considered that, where there was a choice of RNAV5 routes and RNAV1 routes, there may be occasions where the RNAV5 route is theoretically slightly more cost efficient even though the operator has RNAV1-capable aircraft. The consultation material stated that the RNAV5 routes would be RAD restricted so they would only be available at lower FLs within the PC IOM sector. This is intended to encourage the desired systemisation and discourage inappropriate use. One stakeholder had concerns regarding charting and FMS databases.

An Aeronautical Information Circular (AIC) will be published by the UK CAA on the subject of RNAV5 vs RNAV1 routes and is due for publication before the implementation of this proposal. Draft text for this AIC is available in the Appendix at Section 8.

Some stakeholders supported the proposal but also requested additional items such as the introduction of RNP1 RF legs on SIDs. Those additional items are outside the scope of this consultation.

4.3 Interfaces between adjacent non-NATS ATC units

The IAA initially stated that some of their Dublin-based customers had raised concerns regarding additional costs this proposal might have on their operation (see paragraph 4.1 above), and that there could be issues caused by changing the presentation of westbound traffic. Following engagement with the IAA we have mitigated their concerns regarding presentation of traffic. As discussed in paragraph 4.1 we acknowledge the comments of the IAA's customers.

BAE Systems Warton reiterated that they must continue to operate in a similar way to today, i.e. with cleared flight paths, crossing coordination, and on the supersonic routes as per their testing parameters.

The Isle of Man CAA has consulted on a separate airspace change proposal to raise the ceiling of Ronaldsway Airport's CTR/CTAs. NATS is a major stakeholder for this change, and if the EGNS CTA/CTR is raised to FL105 then the overlying NATS-controlled CTAs and ATS route arrangements must be considered. This requirement would be progressed by Isle of Man Ronaldsway Airport as part of their ACP, in close collaboration with NATS Prestwick. Our proposed airspace map (Figure 7 on page 15) does not specifically illustrate Ronaldsway's proposed changes, but we believe this to be the simplest way forward.

Draft interface agreements with the IAA, BAE Systems Warton and Ronaldsway Airport (via the Isle Of Man CAA) are being worked up and, subject to CAA approval of the ACP, will be signed & in place before implementation.

4.4 Safety and Training

One stakeholder questioned the use of 5.5nm route separation for the transfer from a 3nm separation to a 5nm separation environment, and stated a preference for 6nm due to potential wind differentials. They also questioned the accuracy of RNAV1 equipped aircraft maintaining 5nm separation in a 5nm environment.

The changes proposed are contingent upon the radar environment being upgraded to a 3nm separation environment. Also the body of research data used to develop the safe permissible route spacings, as recommended in CAP1385, contained a broad representative mix of wind conditions.

There was a typo on page 15 Table 1 of the consultation document potentially confusing the route spacing definition – Q36-Q37 was stated as 5.0nm and M144-M145 as 5.5nm. These were transposed. Paragraph 5.3 of the consultation document contained the correct text stating that Q36-Q37 would be 5.5nm and M144-M145 as 5.0nm.

Appropriate safety plans will be submitted to the CAA as part of the formal airspace change proposal documentation. The CAA would not approve a proposal which reduces aviation safety.

Appropriate training plans will be in place and all ATC staff will be trained prior to implementation, presuming approval.

4.5 General airspace classification, CTA arrangements, VFR chart simplification, GA impacts

CAS associated with ATS routes is generally defined by route width definitions in the UK AIP ENR3.1 and ENR3.2. The CAA is driving for compliance with ICAO AIP requirements – the current UK AIP is yet to fully comply. CAA AIC Yellow Y068/2016 refers.

NATS supports the CAA's introduction of CTAs that match the current volumes of CAS presently defined as airway widths, or as complex 'Route Remarks' airspace volumes. This CTA introduction will, in time, reduce the dependencies between CAS and routes, with the aim of simplifying the AIP significantly and ensuring data accuracy.

As described in the consultation document, we are proposing to introduce matching CTAs to assist the CAA in this region. We consulted on changing the classification of Class A volumes to Class C. There were no objections to this element of the proposal.

Reclassification of the airspace to Class C will improve accessibility by allowing for VFR flight. We will also add waypoints in suitable locations as part of this proposal, such as new route intersections.

The consultation was open to suggestions regarding the current classification of Y911 (Class E with Transponder Mandatory Zone, or TMZ). Early in the consultation we received comments that Class C might be appropriate for that airspace volume. We subsequently published a modified document showing an additional chart of how Y911 might look like, as Class C, and asked stakeholders for their opinion on the matter.

The airlines who use Y911 supported reclassifying it to Class C. However, this airspace is included in the CAA's post implementation review of the Class F ADR change. The CAA have stated that the classification be reviewed during this process. Therefore we have withdrawn the proposed change of Y911 to Class C as part of this ACP.

There are expected to be no negative GA impacts due to this proposal. One GA VFR stakeholder organisation requested a general update on how continuing airspace developments in the region may interact with their interests. We plan to provide a briefing to FASVIG¹ before the next airspace development reaches the consultation stage.

In the vicinity of southern Strangford CTA1, western L15 and Y911 there is a complex of Classes A, D, E and TMZ from FL75-FL195. We intend to simplify this area, please see paragraph 5.2 in the next section. Also see paragraph 4.3 above, regarding Isle of Man Ronaldsway Airport's proposed airspace change.

¹ Future Airspace Strategy VFR Implementation Group, a sub-organisation of FAS dedicated to VFR operations in future airspace

5 The final proposal

5.1 Route and waypoint arrangements

We received feedback concerning some proposed track lengths. We addressed that feedback by adding or extending ATS link routes and by amending some of the details of the route network to minimise track distances, increase route interconnections whilst retaining the desired systemisation.

Compared to the consultation document, the same general arrangement of routes is being progressed, however the feedback received means we are increasing the number of network connections (waypoints) and extending some routes further into the MTMA. Where appropriate the AIP definition of some current ATS routes will be moved from ENR3.1 (Lower ATS Routes) and ENR3.2 (Upper ATS Routes), to ENR3.3 (RNAV routes).

In the vicinity of Belfast Aldergrove and Belfast City Airports there would be technical changes to flightplan connectivity but no material change to interface arrangements and no changes to tracks over the ground below 7,000ft.

The current RNAV5 route structure can be compared with the proposed RNAV1/RNAV5 route design – see Figure 4 and Figure 5 on pages 12 and 13 respectively.

The route usage schematic is unchanged from the lower part of Figure 1 on page 4.

5.2 CAS/CTA arrangements

In the consultation document we proposed changing Class A volumes of CAS within the PC IOM sector to Class C. We are progressing this in general for the region (see para 4.5).

We also intend to reduce airspace complexity in the region by changing two small portions of existing Class D to Class C and one small portion from Class D to Class E TMZ (see Figure 7 on page 15). These changes would all be from FL75 and above, and would involve a change to Strangford CTA1's southern boundary.

We believe that the aviation impacts of this would be small. VFR flights could continue to access Class C areas with the same clearance they would get in Class D, or without any clearance at all if entering Class E provided they observe the TMZ. Y911's Class E TMZ would be retained beneath the proposed larger Class C volume, and would be more easily identifiable on VFR charts. We believe the VFR chart simplification in this area is sufficient justification to change these three small volumes, when compared with today and the original consultation material. Chart simplification means the likelihood of accidental infringement would be lower, increasing overall safety in the region.

In the consultation document we proposed to introduce a set of Class D CTAs matching existing airspace dimensions northwest of IOM, towards BEL. This is still planned in the longer term, but has been deferred. Until then, CAS volumes northwest of IOM remain defined by ATS route widths and existing CTAs.

There would be no impact on the application of Scottish Direct Route Airspace (DRA).

5.3 STAR connectivity and associated ATS route changes

Appendix B of the consultation document illustrated how STARs into Manchester and Liverpool Airports would be truncated under this proposal. These will be progressed.

As previously discussed, some routes and network links will be updated following feedback received. The consulted-upon truncations will be suitably modified to ensure appropriate connectivity is retained. The arrival route options available under this proposal mean that several other STAR charts will also be amended, some in an editorial manner.

Existing STARs into London City, Luton, Stansted and Southend will be amended at high levels without changing flight-paths at low altitudes. In order to facilitate this connectivity we propose to modify ATS route Q4 by adding a slight kink via waypoint LISTO. This kink would add less than 70 metres to flightplan track lengths for arrivals at these three airports and would benefit the wider network overall.

See Figure 5 on page 13 for the proposed ATS route network. See Figures 8 to 12, from page 16 on, for proposed STAR changes.

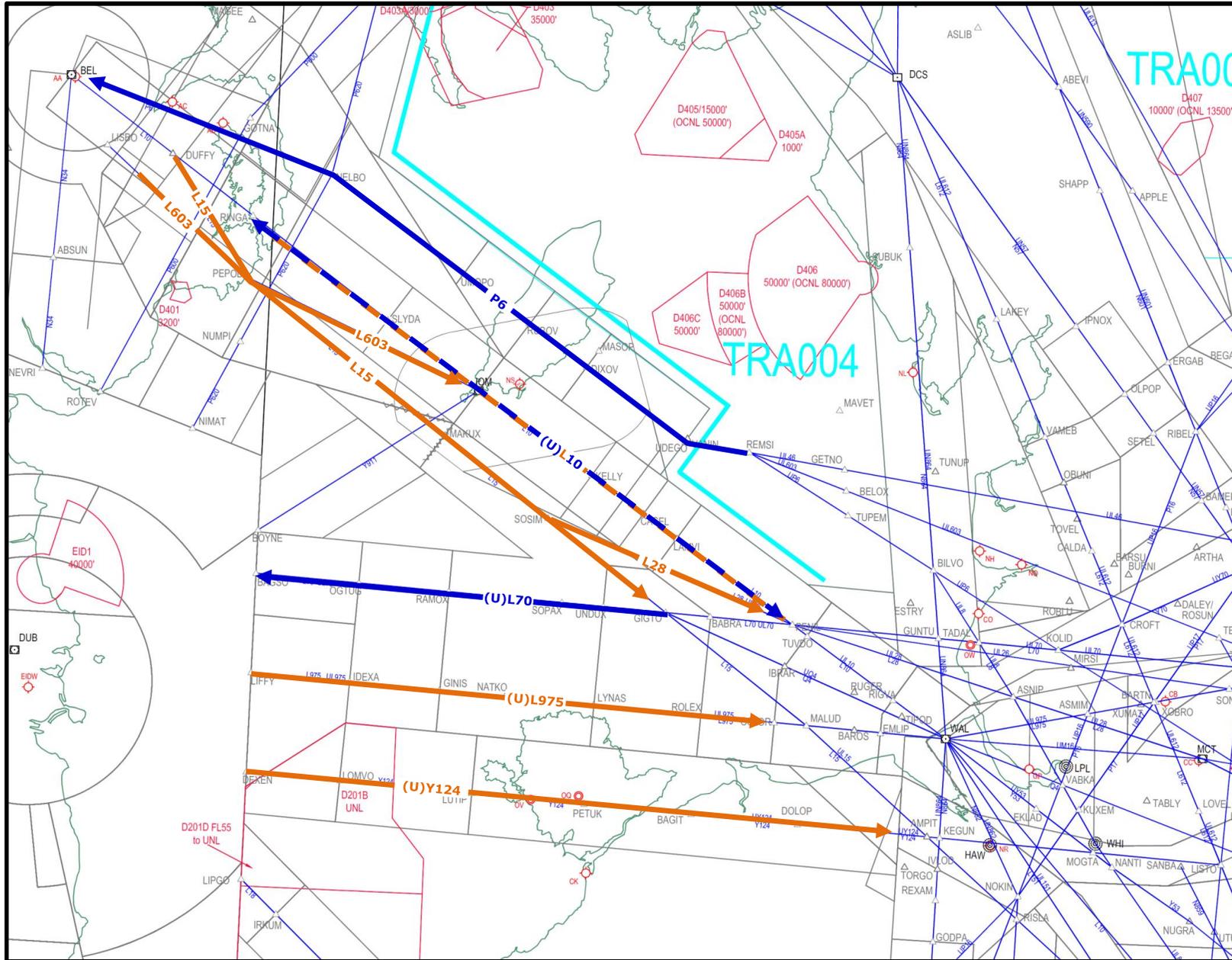


Figure 4 Current route structure (tactical vectoring not shown)

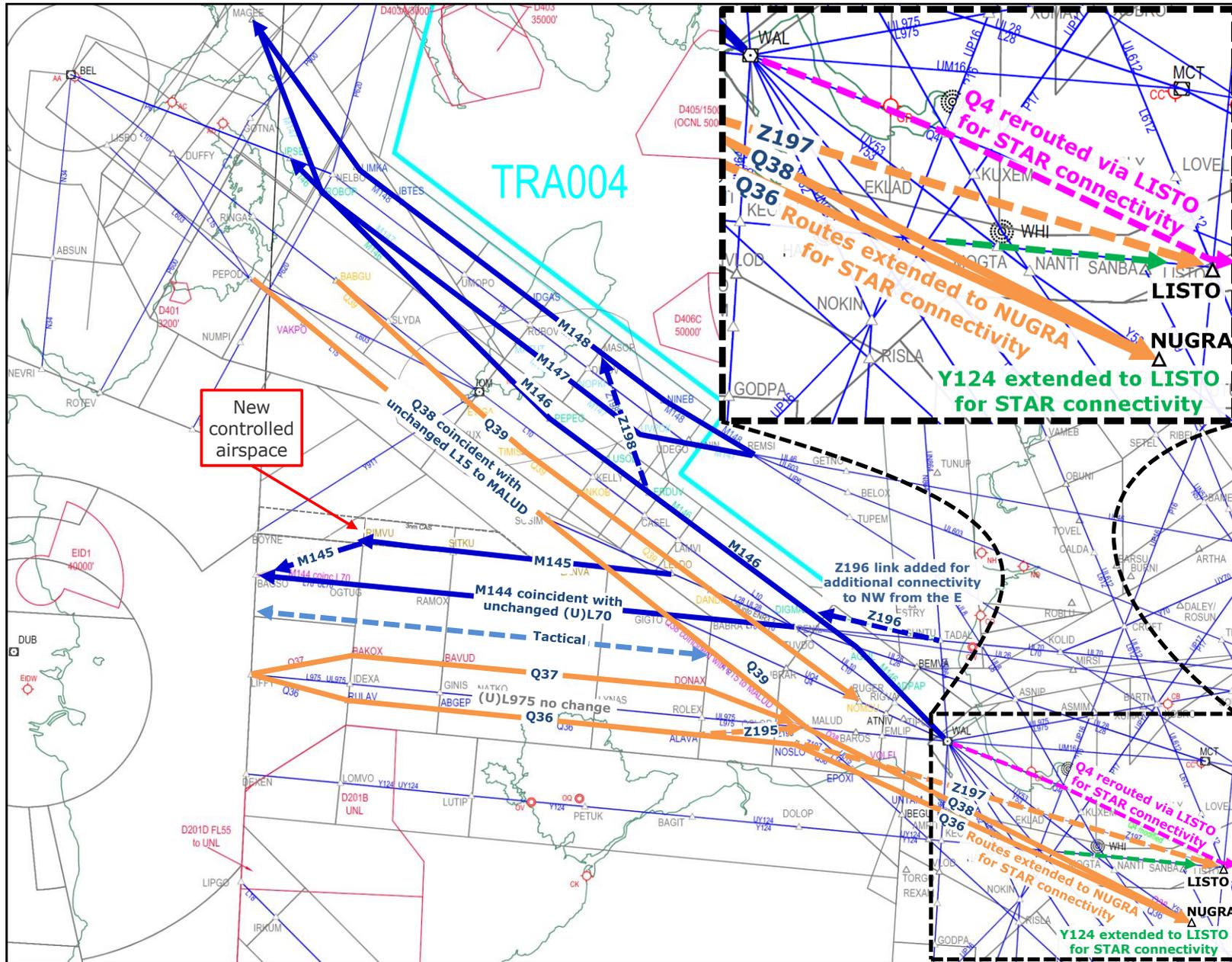


Figure 5 Proposed route structure post-consultation (note that new waypoint names are draft)

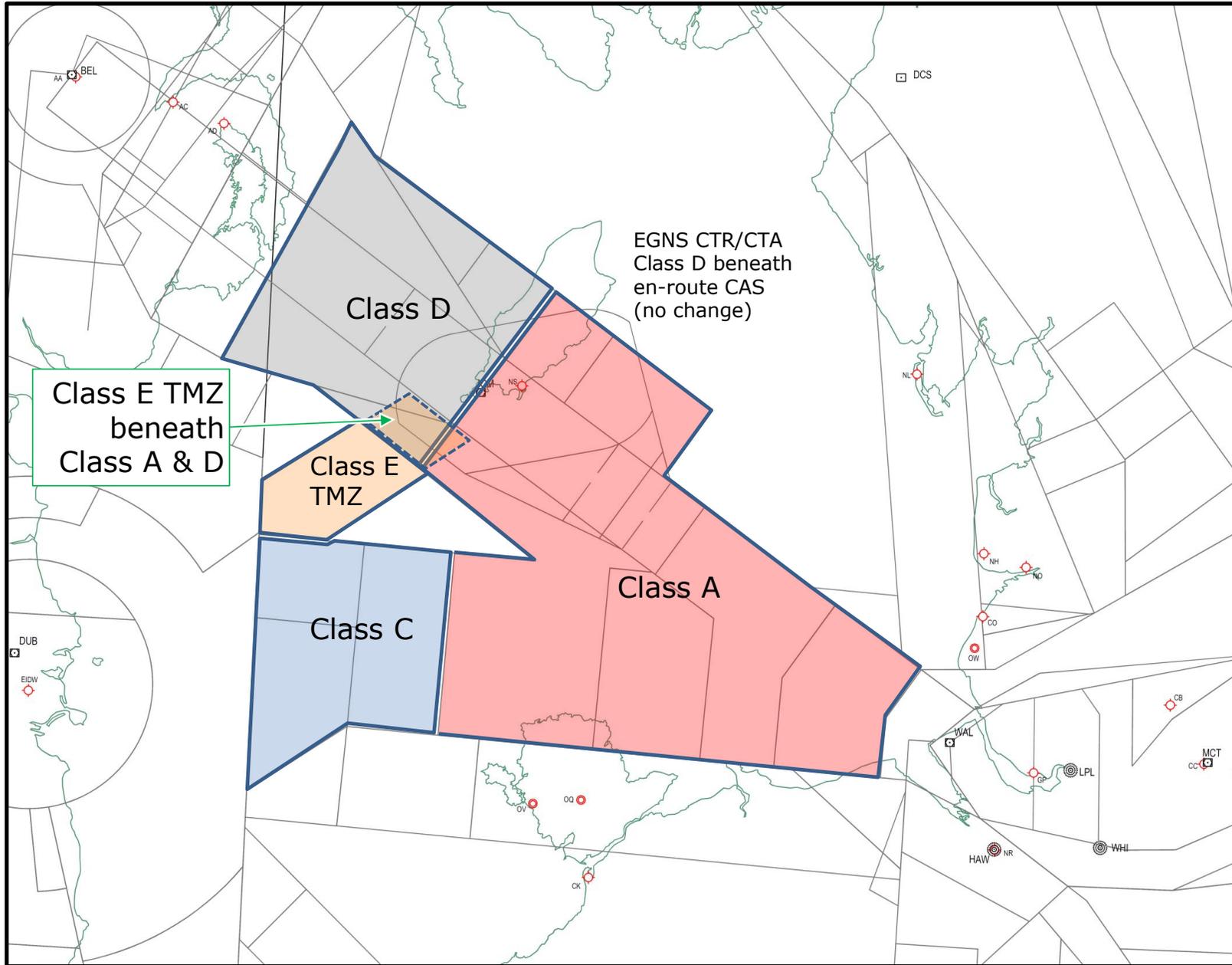


Figure 6 Current airspace arrangements up to FL195

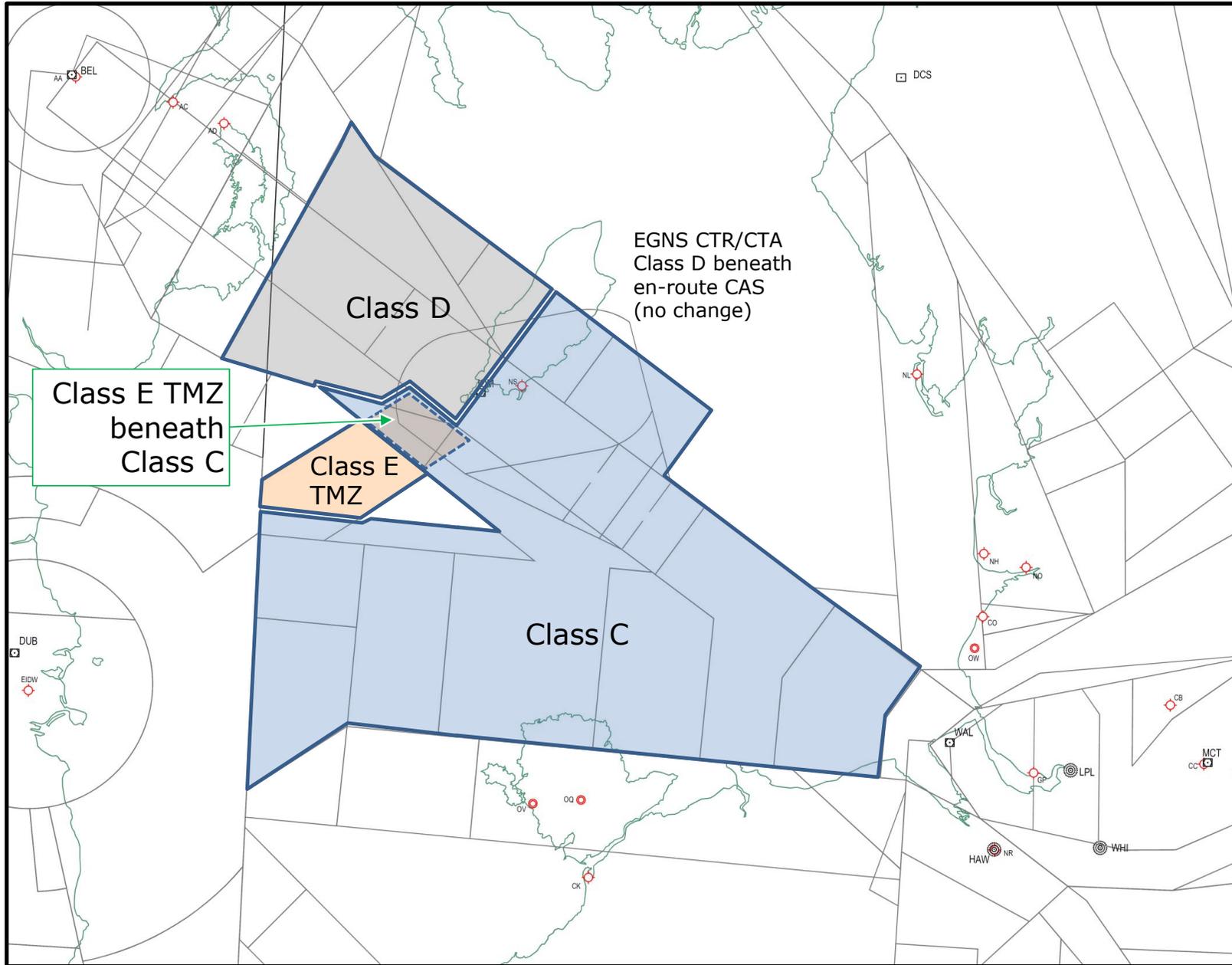


Figure 7 Proposed airspace arrangements up to FL195

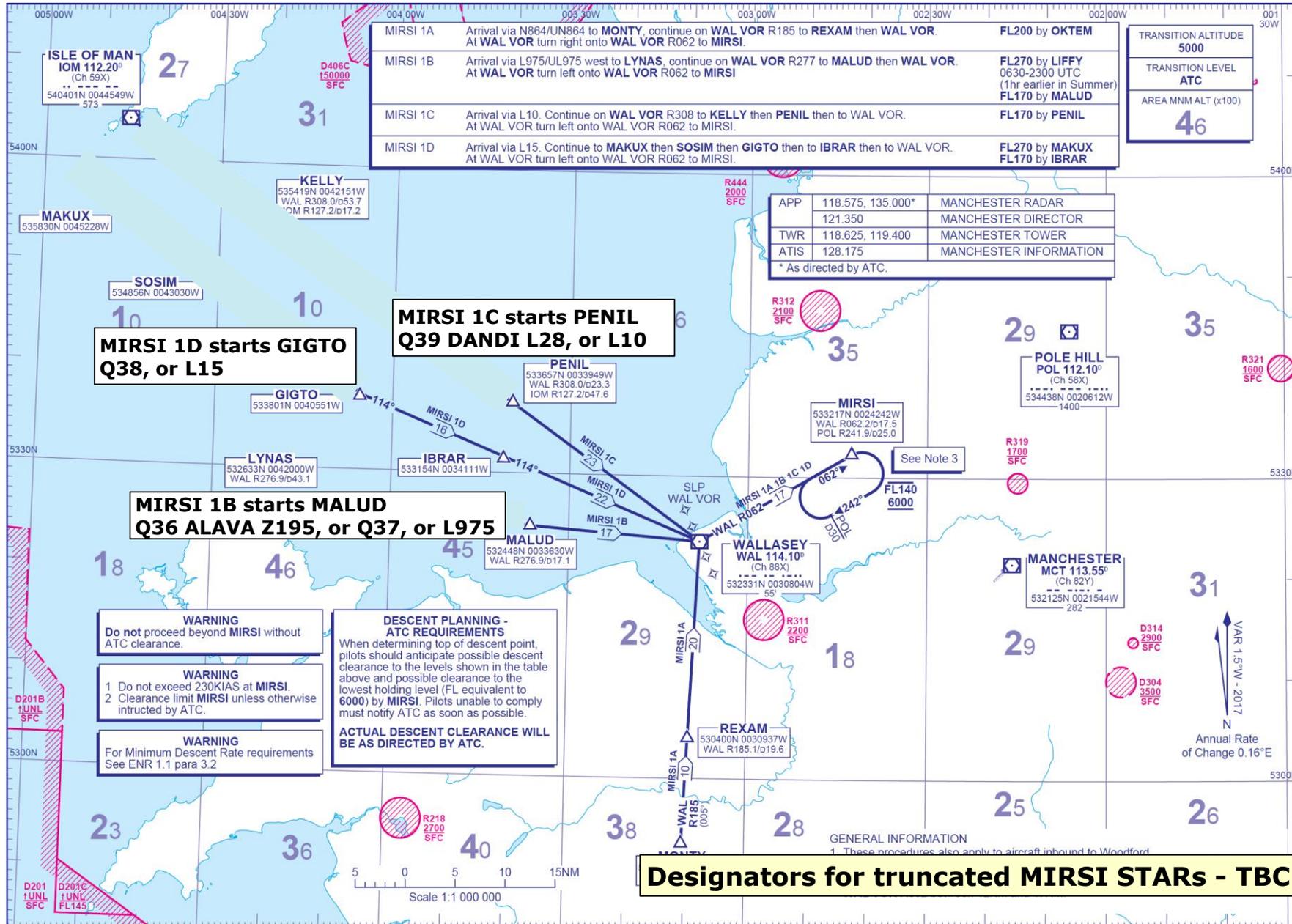


Figure 8 Manchester STAR revisions

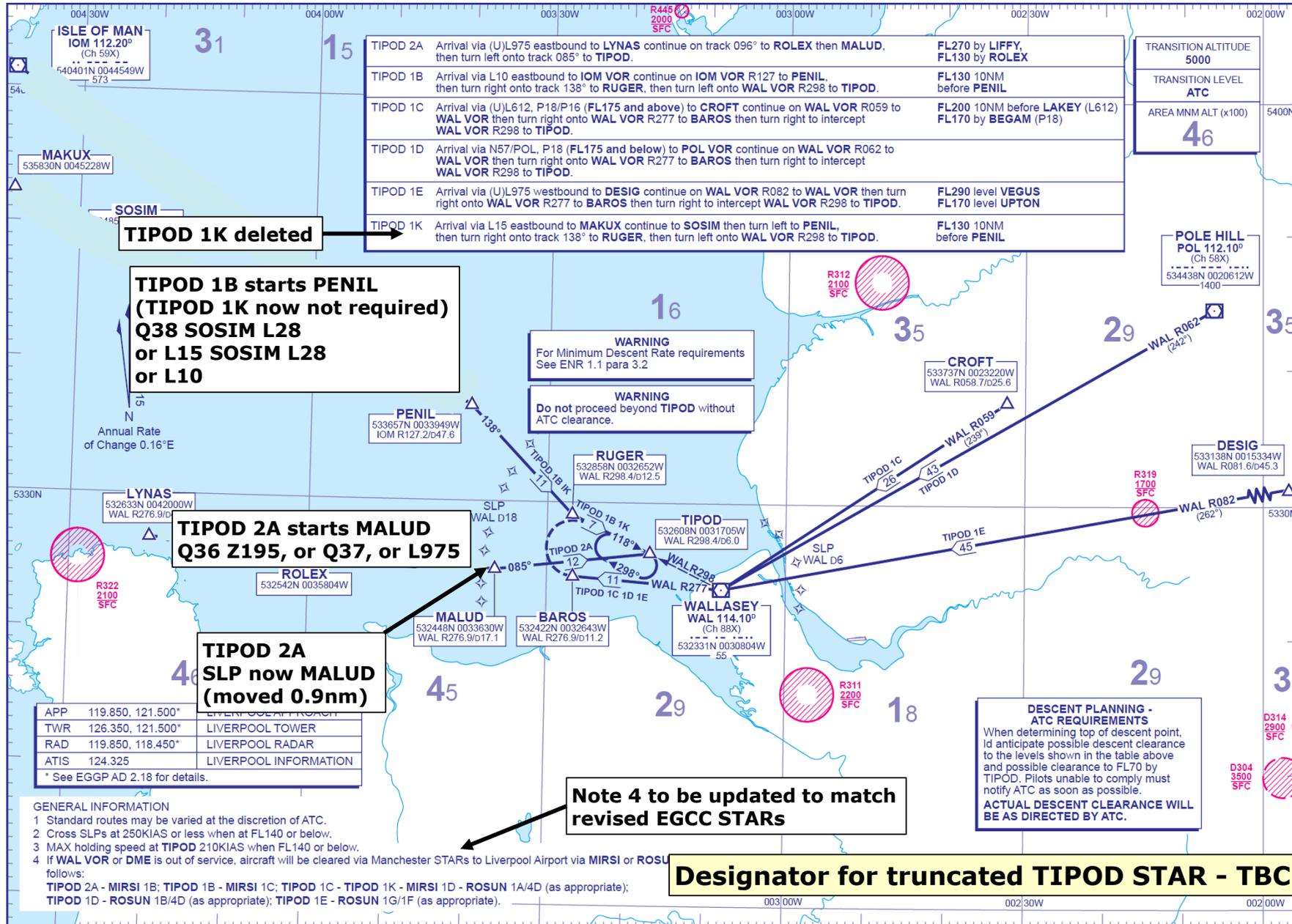


Figure 9 Liverpool STAR revisions

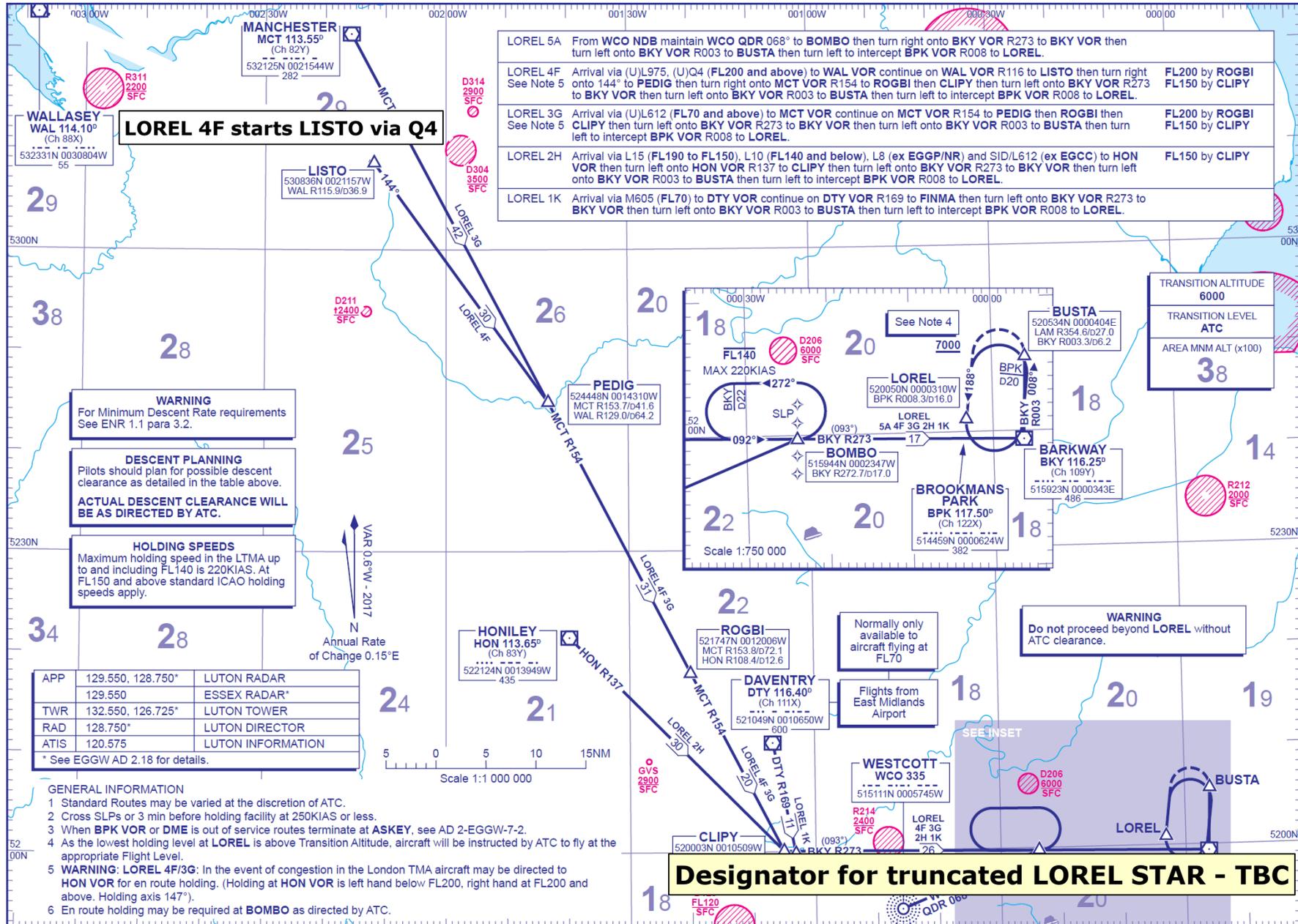


Figure 10 Stansted and Luton STAR revision (ASKEY equivalents required, not shown)

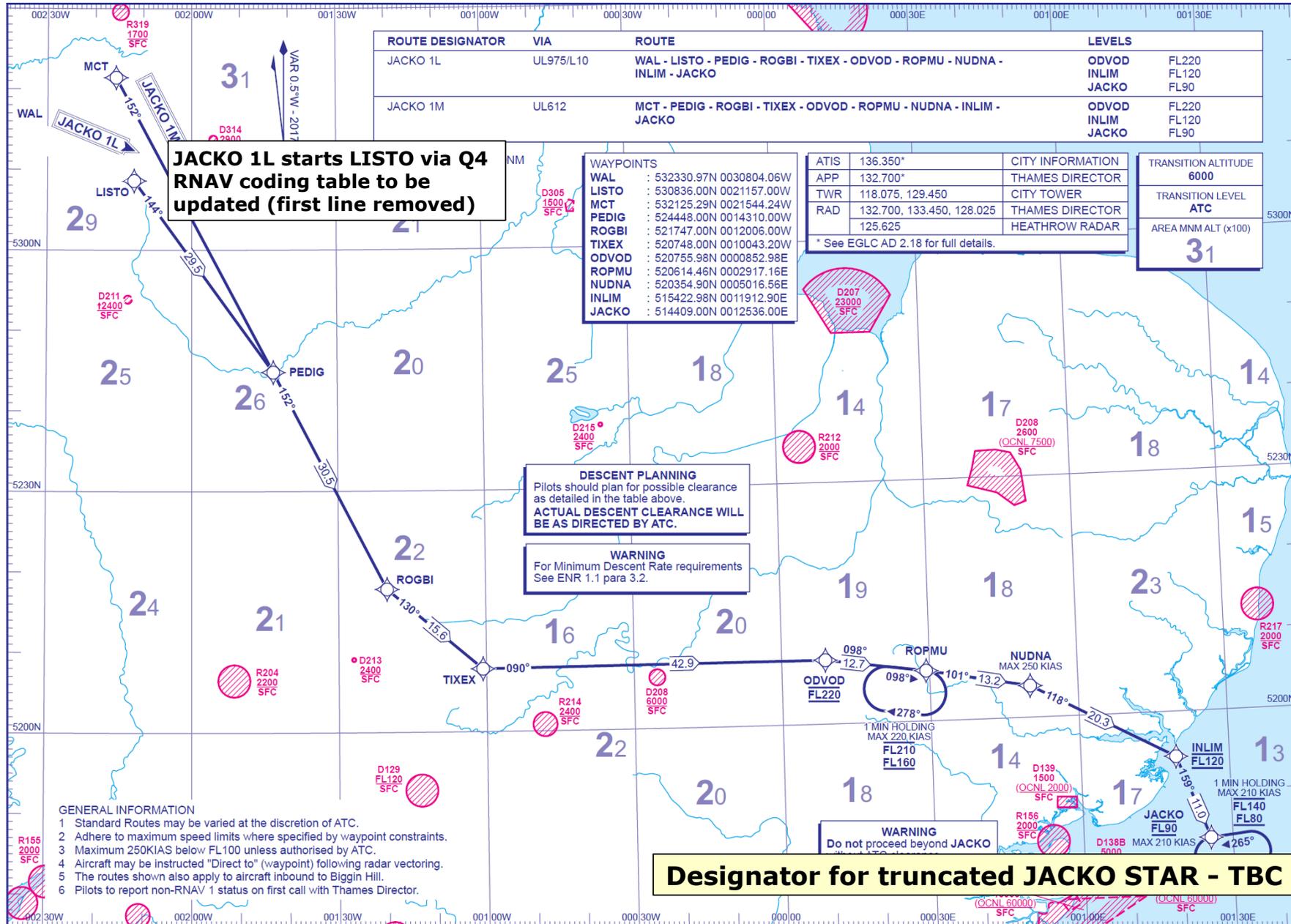


Figure 11 London City STAR revision

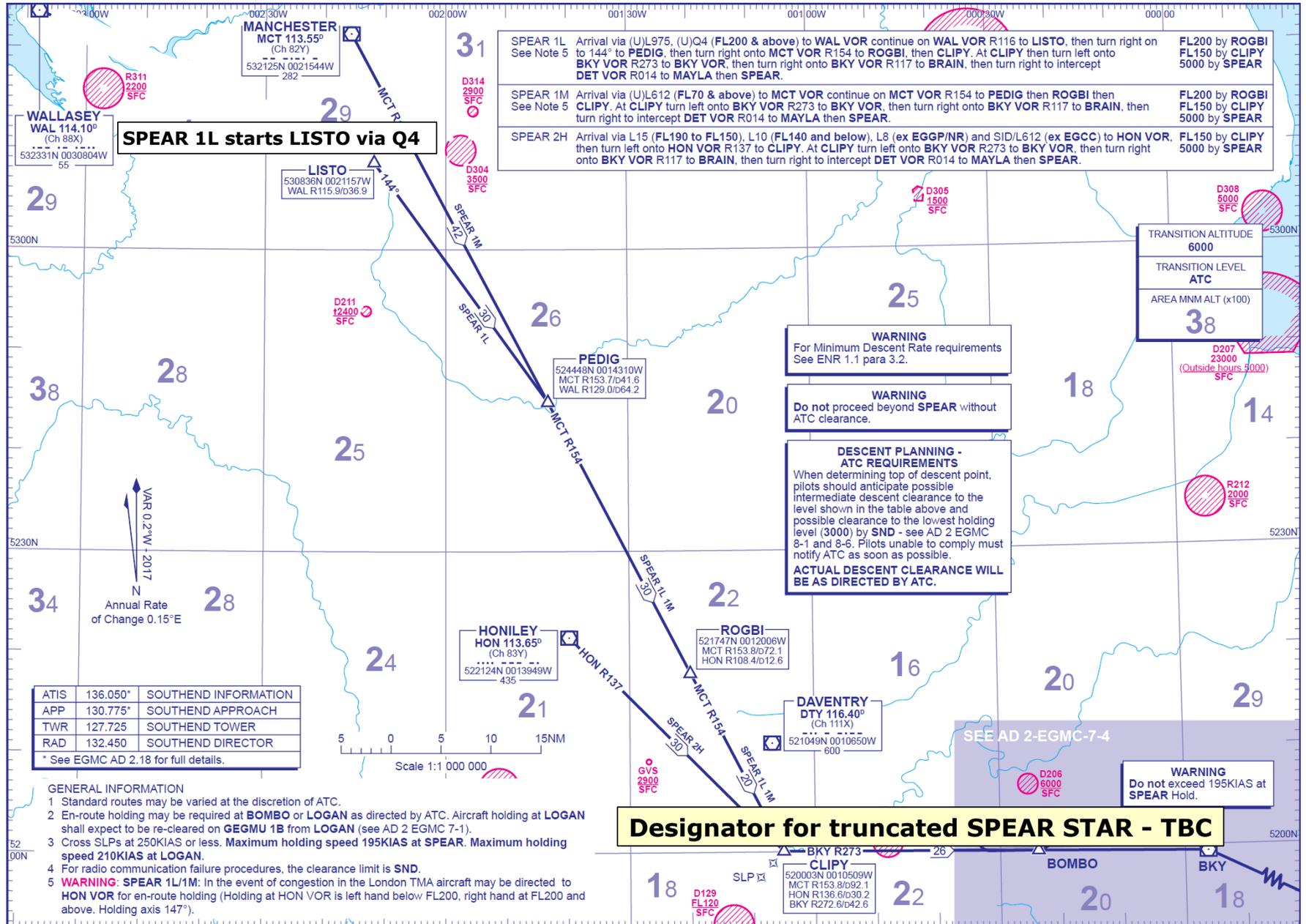


Figure 12 Southend STAR revision

6 What happens next

We will submit an Airspace Change Proposal to the CAA, as outlined in Section 5 above.

We expect this to happen Q1 2017.

The CAA will then study the proposal to decide if it has merit, and will publish a decision on its website.

If the CAA approves this proposal, implementation would not occur before November 2017.

7 Compliance with the airspace change process

If you have questions or comments regarding the conduct of the consultation and/or airspace change process (also known as CAP725), please contact the CAA:

Airspace Business Coordinator
Re: PLAS IOM Proposal
Safety and Airspace Regulation Group
CAA House
45-59 Kingsway
London
WC2B 5TE

Email: airspace.policy@caa.co.uk

8 Appendix: Airspace Performance Requirements

8.1 Flight Planning RNAV1 & RNAV5 Routes - AIC – Draft text

The text below is draft and is due for publication before this proposal is implemented, presuming regulatory approval.

1. The Air Navigation Order (ANO) 2016 Articles 84 and 85 (formerly Articles 124 and 125), apply wherever a level of PBN capability is prescribed for an ATS route or procedure or airspace. Notification of the navigation specification required for each route is made through the appropriate charting and/or AIP table entry.

2. Aircraft operators shall only file a route plan in accordance with the declared operational capability of the aircraft in their flight plan.

3. NATS' proposed airspace change over the Irish Sea (target O-date 9-Nov-2017) will introduce a number of new RNAV 1 routes designed to take advantage of the improved navigational capability provided by RNAV 1.

4. In accordance with the ANO these routes will not be available to aircraft that are not RNAV 1 capable. Alternative RNAV 5 routes will be provided for such aircraft, however in order to ensure safe separation of all aircraft the RNAV 5 routes will be restricted in altitude. This is in accordance with the principle of "best-equipped, best-served".

5. Operators shall ensure that their flight plans only use routes which are commensurate with the navigational capabilities of the aircraft. If this feature is not currently available with their flight planning tool, all flight plans must be checked manually prior to submission to ensure aircraft are not routed illegally.

6. The EUROCONTROL Integrated Initial Flight Plan Processing System (IFPS) is not currently capable of differentiating between differing levels of RNAV requirement for en-route airways. Hence flight plans which route aircraft onto airways for which they are not appropriately equipped may be accepted by IFPS despite this being invalid. However the mismatch will be identified by ATC cross checks and the flight will be subject to tactical intervention such as re-routes and level caps. This may create additional workload for pilots and ATC alike and could result in delays to the flight.

End of report