

Swanwick Airspace Improvements Programme - Airspace Development 5 (SAIP AD5)

Airspace Change Decision

CAP 1820



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Chapter 1

Executive summary

Objective of the Proposal

1. Under Airspace Development 5 (AD5), part of the modular Swanwick Airspace Improvements Programme (SAIP), National Air Traffic Services (NATS) is proposing the development of the following distinct areas of London Area Centre (LAC) West Airspace:
 - a. Establish appropriate Controlled Airspace (CAS) and Air Traffic Service (ATS) routes for Birmingham Airport (EGBB) arrivals and departures via the MOSUN area.
 - b. Provision of an offload route and appropriate CAS for some traffic inbound to Heathrow.
 - c. Establish or revise a number of high-level ATS routes in the West End Sector Group.
 - d. Amend the boundary of TRA002, in conjunction with the Ministry of Defence (MoD).
2. A diagram of the existing airspace structure and traffic flow is at Appendix A and diagram of proposed traffic flow is at Appendix B.

Summary of the decision made

3. The CAA has decided to approve the proposed changes to develop distinct areas of LAC west airspace; including the establishment of CAS and ATS routes for Birmingham arrivals and departures via the MOSUN area and a tactical offload route and appropriate CAS for some traffic inbound to Heathrow. The implementation of these changes will provide a more predictable controlled environment for Birmingham traffic which routes via MOSUN. In addition, it will alleviate complexity associated with tactical stack swaps between Ockham (OCK) and Bovingdon (BNN) for Heathrow inbounds when the OCK stack is above capacity. It will also increase flight planning options and enable fuel and CO₂ savings for operators through introducing amendments to several ATS routes.

4. This proposal will introduce new Flexible Use Airspace (FUA) CAS and RNAV1 ATS Routes for EGBB arrivals and departures via the MOSUN area; where currently there does not exist a flight plannable route within CAS. The proposed changes will provide aircraft operators and ATC with more predictability for flight planning, as well as reducing the overall workload associated with flights to and from Birmingham to the south-west/ west destinations.
5. This ACP will also introduce a new unidirectional tactical offload route and CAS for Heathrow Airport (EGLL) arrivals from the Irish boundary, across Sectors 5, 23 and 35 into TC Midlands. This will allow for more pre-planned tactical offloading and rerouting of flights, which will reduce workload and complexity. The proposed route will be restricted as a tactical offload route, such that it is not used significantly more often than how frequently aircraft are currently re-routed from the OCK to BNN hold. The route will not be available when North Wales Military Training Area (NWMTA) Upper/ Lower are active. The route will not be flight plannable and will be Route Availability Document (RAD) restricted to ensure it is used appropriately.
6. By establishing 4 new ATS routes within the West End Sector Group this proposal will meet the SAIP Specific Project Requirement (SPR) to enable fuel savings for airline operators as part of NATS 10% target for Reporting Period 2 (RP2).

Next Steps

7. Implementation of the revised airspace will be notified through a single AIRAC cycle (AIRAC 12/19) and will become effective on 7 November 2019.
8. The CAA's Post Implementation Review (PIR)¹ of the changes approved by the CAA in this decision will commence at least one year after implementation of those changes. It is a condition of the CAA's approval that the sponsor provides data required by the CAA throughout the year following implementation to carry out that PIR. In due course, the sponsor will be advised of the specific data sets and analysis required, and the dates by when this information must be provided.

¹ PIR is the seventh stage of the CAA's airspace change proposal process

Chapter 2

Decision Process and Analysis

Chronology of Proposal Process

Statement of Need and Assessment Meeting

9. NATS submitted an initial Statement of Need (SoN) on 12 January 2017. An Assessment Meeting (AM) was held on 17 July 2018 at which NATS outlined the scope of the ACP which included establishing CAS and ATS routes for Birmingham arrivals and departures via MOSUN, provision of an offload route and appropriate CAS for some traffic inbound to Heathrow and amendment or implementation of high-level ATS routes in the West End sector. The sponsor provided a proposed draft timeline together with detail of completed or planned engagement activity. The CAA determined that the proposal was in scope of the ACP process. Minutes of the AM together with a copy of the slide presentation and detail of provisional scaling were published on the CAA airspace change portal.

Process followed to arrive at the proposal's design principles

(Stage 1, Step 1B)

10. The sponsor developed an appropriate set of Design Principles (DPs) through targeted engagement with representative groups of aviation industry stakeholders, including airline operators and other airspace users, neighbouring Air Navigation Service Providers (ANSPs) and the Ministry of Defence (MOD). A proposed set of DPs was circulated through established consultative forums to initiate discussion. Initial responses were analysed in August 2018 and an updated set of DPs circulated for further comment. Detail of the finalised 7 DPs was submitted to the CAA in the Step 1B Design Principles document and published on the CAA airspace change portal.

Define Gateway

11. A Define Gateway Assessment for SAIP AD5 was held on 28 September 2018. The CAA was content that the DPs had been developed through appropriate engagement with relevant stakeholders and took account of the 6 criteria laid down in CAP1616, Appendix D.

12. The following statement was uploaded to the CAA airspace change portal on 28 September 2018. 'The CAA has completed the Define Gateway Assessment for SAIP AD3 and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA approves progress to the next Step'.

Options development and appraisal (Stage 2, Step 2A and 2B)

13. The change sponsor options development was centred around the following 3 main areas of airspace development:
 - a. Establish CAS and ATS Routes for arrivals to, and departures from EGGB via the MOSUN area to enable a more predictable ATS route connection for EGGB traffic to and from the South-West.
 - b. Introduce a unidirectional tactical offload route(s) for traffic inbound to EGLL from air traffic control Sector 23/ TC SW into Sector 5/ TC MIDS, to offload traffic from the OCK (Ockham) Hold to the BNN (Bovingdon) Hold, when the OCK hold is above capacity.
 - c. Establish new ATS Routes in the NATS West End Sector Group in line with common tactical behaviour, potentially acting as a precursor to Free Route Airspace (FRA) by allowing predicted routings that FRA will enable. The intent was to provide more flight planning options for airlines and enable the reduction of fuel uplift/ burn and associated emissions.
14. Two design workshops were held with stakeholders where design concepts for the three main areas of work were illustrated and discussed. In addition, the Irish Aviation Authority (IAA) was briefed and relevant elements of the proposal presented and discussed at the North American-European (NAM/EUR) flow management taskforce, in Frankfurt on 23rd October 2018.
15. Options, including 'Do Nothing' options, were developed independently for each of the respective airspace development areas. Each option was evaluated against the DPs and assessed as either 'fit to progress' or to 'reject'. Options that were assessed as fit to progress were then developed into combined options with similarly assessed options from the other 2 areas of airspace development. The combined options were then considered against the DPs and assessed as either 'fit to progress' or 'reject'.

Develop and Assess Gateway

16. A Develop and Assess Gateway was held on 28 November 2019. The CAA was content that the proposed options had been developed through suitable engagement. However, some inconsistencies were identified in the sponsor's options evaluation process, principally in determining whether options were 'fit to progress' or 'reject'. Consequently, the sponsor did not pass the Stage 2 Gateway and was advised accordingly. Documents to support Stage 2 were resubmitted by the sponsor for consideration at a Develop and Assess Gateway Assessment on 21 December 2018. The CAA was content that earlier anomalies in the sponsor's options evaluation process had been addressed. The CAA determined that because the ACP affected airspace below 7000ft it was a Level 1 ACP. However, the sponsor provided written justification that the impact of any proposed changes was above 7000ft and, through submission of aircraft movements data, the number of GA aircraft impacted would be minimal. Consequently, the CAA accepted that the environmental impact assessment only could be scaled as for a Level 2 ACP.
17. The following statement was published on the CAA portal on 8 January 2019; 'The CAA has completed the Develop and Assess Gateway Assessment for SAIP AD5 and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA has determined that this is a Level 1 ACP and approves progress to the next step'.

Consult Gateway

18. The CAA reviewed the change sponsor consultation and engagement strategy against the criteria set out in CAP1616. The CAA determined that the strategy met the best practice consultation principles in that it was targeting the right audience, communicating in a way that met the requirements of the stakeholders and provided sufficient information to enable stakeholders to make informed judgements. Furthermore, it was acknowledged that mechanisms for stakeholder consultation feedback were appropriate.
19. The sponsor made representation to the CAA for a targeted and slightly shorter (11-week) consultation. The CAA determined that given the size and composition of the target audience an eleven-week consultation was appropriate and that stakeholders would not be disadvantaged by a shorter consultation period. The period of consultation was 31 January to 18 April 2019.

20. The following statement was published on the CAA portal on 8 January 2019; 'The CAA verifies that the consultation documents address all of the reasonable requirements of the consultees, that the strategy to communicate with them is sufficient and appropriate and that the proposed 11-week consultation period is of appropriate duration. The CAA has assessed the full options appraisal and is satisfied that it meets the requirements'.

Public consultation and consultation responses (Steps 3C and 3D)

21. Consultation related to this ACP commenced on 31 January 2019. Consultation documents were emailed to all relevant stakeholders and full details published on the change sponsor website. A link to the consultation strategy and consultation document were also made available through the CAA Airspace Change Portal. Stakeholders were sent an email informing them of the consultation and when the consultation went live. Consultation was conducted via an online portal. Responses were invited related to 21 questions.
22. During consultation it was necessary for the sponsor to upload a more accurate set of departure statistics for EGGB. This change was communicated to all stakeholders. No other additional material was requested.
23. To ensure any pending responses were not missed the sponsor sent reminder emails to stakeholders at the consultation mid-point and one week ahead of consultation end.
24. On conclusion of the consultation phase the sponsor submitted a Step 3D (Collate and Review Responses) document, which provided a full breakdown of stakeholder feedback, including a summary of stakeholder comment. Feedback was categorised by theme (the specific aspect of each element of the ACP to which it referred) and on whether it had potential to impact the proposal. Responses were further categorised across 5 levels ranging from 'strongly object' to 'strongly support'. The Step 3D was comprehensive and included supporting graphical data covering each element of the ACP together with detail of stakeholder responses. The CAA is therefore content that the categorisation was thorough, completed satisfactorily and appropriate for the level and content of responses received.

Proposal update and submission to CAA (Stage 4, Step 4A and 4B)

25. Post consultation discussions were held with the MOD and Birmingham Airport Ltd (BAL) to seek an agreed position regarding airspace hours of availability in order that

DP6 could be met. The MoD provided robust argument to support their position regarding FUA hours of operation and consensus was reached amongst the ANSPs.

26. Step 4A provided detail of design amendments resulting from stakeholder consultation. Updated final options appraisal analysis and environmental and safety assessment tables reflected the impact of these design changes.
27. Step 4B was the sponsors formal submission of the Airspace Change Proposal.
28. The sponsor submitted Step 4A (Update Design) and 4B (Airspace Change Proposal) documents on 10 June 2019. Both documents were published on the CAA airspace change portal.

Secretary of State call-in

29. The ACP was not subject to the Secretary of State call-in process.

Public Evidence Session and written statements (if applicable)

30. The CAA determined that it was not proportionate to hold a Public Evidence Session for this ACP. The following statement was uploaded to the CAA airspace change portal on 26 June 2019: 'Following review of SAIP AD5 Airspace Change Proposal final submission documentation the CAA has determined that it is not proportionate to hold a Public Evidence Session for this ACP. In reaching its decision the CAA took account of the limited level of feedback to the online consultation that formed part of Stage 3 and concluded that there is not sufficient interest to support one being held'.

CAA's assessment of the change sponsor's Final options appraisal assessment

31. Through the mechanism of developing an initial, full and final options appraisal the sponsor has demonstrated an appropriate level of engagement with a targeted but relevant body of stakeholders. Over the course of the ACP process the volume of airspace and hours of operation have been effectively assessed and revised to ensure they meet but do not exceed that required to meet the statement of need. Airspace classification was a key consideration and the final design aligns with the Design Principle to ensure maximum access to all airspace users. The final option has taken account of stakeholder responses to consultation, specifically regarding the classification and FUA hours of availability for a volume of airspace. Furthermore, the

final preferred option of the sponsor is assessed via WebTAG workbook for greenhouse gases; according to the output of WebTAG workbook, the design would yield a positive Net Present Value of £601,249 which reflects a benefit in CO2e emissions reduction.

CAA Analysis of the Material provided

32. As a record of our analysis of this material the CAA has produced the following:

20190802 – SAIP AD5 Engagement and Consultation Assessment

20190802 – SAIP AD5 Economic Assessment

20190802 – SAIP AD5 Environmental Assessment

20190802 – SAIP AD5 Operational Assessment

The CAA Assessments will be published on the CAA airspace change portal.

CAA assessment and decision in respect of Consultation

33. The CAA is satisfied that the fundamental principles of effective consultation; targeting the right audience, communicating in a way that suits them and giving them the tools to make informative, valuable contributions to the proposal's development were applied by the change sponsor before, during and after the consultation. Furthermore, the change sponsor has conducted this consultation in accordance with the requirements of CAP 1616, that they have demonstrated the Government's consultation principles and that they have taken into consideration the contents of the Secretary of State's Air Navigation Guidance.

CAA Consideration of Factors material to our decision whether to approve the change

Explanation of statutory duties

34. The CAA's statutory duties are laid down in Section 70 of the Transport Act 2000.

Conclusions in respect of safety

35. The CAA's primary duty is to maintain a high standard of safety in the provision of air traffic services and this takes priority over all other duties.²
36. In this respect, with due regard to safety in the provision of air traffic services, the CAA is satisfied that the proposal maintains a high standard of safety for the following reasons:
- a. The introduction of CAS and ATS routes to contain Birmingham arrivals and departures and the proposed offload route for Heathrow inbound will deliver a more predictable air traffic environment, reduce coordination and controller interaction and therefore reduce operational complexity in the region.
 - b. The sponsor has conducted full Safety Assurance in accordance with NATS Safety Management Manual (SMM). In addition, the sponsor completed a full safety analysis which has generated a Project Safety Assurance Report (PSAR).
 - c. There are no safety concerns associated with the implementation of or revision to high-level ATS routes.
37. However, the CAA did note the absence of connectivity between the recently introduced RWY 33 UMLUX 1M SID, which terminates on the western boundary of EGGB CTA-5 at 6,000ft amsl (the base of the CTA being at 2,500ft amsl), and the proposed ATS link route (N92) that starts laterally coincident with reporting point UMLUX heading South West. Whilst there are existing examples of similar discrepancies in UK airspace, where a disconnect exists between a conventional SID and the airway they are intended to join, the CAA considers such discrepancies as sub-optimal airspace design. The discrepancy in the AD-5 design brings with it the possible inherent risks of flight planning, FMS and radio fail issues. However, such inherent risks do not render the airspace unsafe and steps can be taken to ensure that the risks are successfully mitigated against.
38. In addition, the CAA's Instrument Flight Procedures (IFP) review did identify that where proposed holds are not aligned with the STAR track, some deviation from the nominal track is noticeable. The following recommendations are therefore included for consideration by the sponsor.

² Transport Act 2000, Section 70(1).

- a. FITZI 1B and GROVE Hold – where the hold is not aligned with the STAR tracks deviation from the nominal track is noticeable. Therefore, radar monitoring may be required as a mitigation when aircraft are required to hold at Grove.
- b. FITBO 1H and associated Holds - where the holds are not aligned with the STAR tracks the deviation from the nominal tracks is noticeable both on the entry and exit. Therefore, radar monitoring may be required as a mitigation when aircraft are required to hold at FITBO and WCO.

Conclusions in respect of securing the most efficient use of airspace

39. The CAA is required to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.
40. The CAA considers that the most efficient use of airspace is defined as ‘secures the greatest number of movements of aircraft through a specific volume of airspace over a period of time so that the best use is made of the limited resource of UK airspace’.
41. The CAA considers the expeditious flow of air traffic to involve each aircraft taking the shortest amount of time for its flight. It is concerned with individual flights.
42. In this respect the CAA is satisfied that increased systemisation will better distribute and segregate traffic and contributes to the safe and efficient operation of aircraft. The additional volumes of regulated airspace, hours of operation and airspace classification are appropriate to meet the task and are consistent with the requirements outlined in the statement of need.

Conclusions in respect of taking into account the Secretary of State’s guidance to the CAA on environmental objectives

43. In performing the statutory duties, the CAA is obliged to take account of the extant guidance provided by the Secretary of State,³ namely the 2014 Guidance to the CAA on Environmental Objectives.
44. In this respect the predominant environmental changes delivered through more direct routing and reduced fuel uplift will result in a predicted beneficial net saving in fuel burn of -1,806T in 2020, for the associated regions, rising to -2,238T for 2030⁴. As reported

³ Transport Act 2000, Section 70(2)(d)

⁴ Figures provided through the DfT transport modelling and appraisal tool - WebTAG

by the sponsor there would be a reduction of CO₂e emissions in the opening year 2020 of 4,353T and according to WebTAG output the total reduction would be 55,146T over a 60-year appraisal period.

Conclusions in respect of aircraft operators and owners

45. The CAA is required to satisfy the requirements of operators and owners of all classes of aircraft.⁵
46. In this respect, the CAA is content that the new CAS and ATS routes for Birmingham (EGBB) arrivals and departures via the MOSUN area and provision of an offload route and appropriate CAS for some traffic inbound to Heathrow (EGLL) will not negatively impact other airspace users. The classification of the airspace ensures that access to the airspace is available to GA aircraft and the hours of operation of the airspace under FUA principles are not restrictive to other airspace users.

Conclusions in respect of the interests of any other person

47. The CAA is required to take account of the interests of any person (other than an owner or operator of an aircraft) in relation to the use of any particular airspace or the use of airspace generally.
48. In this respect the CAA considers that the proposal will not negatively impact other commercial interests and will meet the requirements of other air navigation service providers. The ACP will not have a discernible impact on the general public.

Integrated operation of ATS

49. The CAA is required to facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services.⁶
50. In this respect the CAA is content that the revised structure associated with this ACP will not impact the operational requirements of the MoD and that the impact on other Air Traffic Service Providers will be positive or undiscernible.

Interests of national security

51. The CAA is required to take account of the impact any airspace change may have upon matters of national security.⁷

⁵ Transport Act 2000, Section 70(2)(b).

⁶ Transport Act 2000, Section 70(2)(e).

⁷ Transport Act 2000, Section 70(2)(f).

52. In this respect the CAA is satisfied that the proposal has no impact on national security.

International obligations

53. The CAA is required to take account of any international obligations entered into by the UK and notified by the Secretary of State.

54. In this respect the CAA is satisfied that the proposal has no impact on international obligations.

Chapter 3

CAA's Regulatory Decision

55. Noting the anticipated impacts on the material factors we are bound to take into account, we have decided to approve the development of the following distinct areas of London Area Centre (LAC) West Airspace:
- a. Establish appropriate Controlled Airspace (CAS) and Air Traffic Service (ATS) routes for Birmingham Airport (EGBB) arrivals and departures via the MOSUN area.
 - b. Provision of an offload route and appropriate CAS for some traffic inbound to Heathrow.
 - c. Establish or revise several high-level ATS routes in the West End Sector Group.
 - d. Amend the boundary of TRA002, in conjunction with the MoD.

Conditions

56. NERL to bring forward an airspace change proposal, within 18 months of the implementation of the AD-5 airspace change, to address the connectivity issue between the RWY 33 UMLUX 1M SID and ATS Link route (N92).

Period Regulatory Decision Remains Valid for Implementation

57. To accord with proposed AIRAC dates.

Implementation

58. The revised airspace will become effective on 7 November 2019. Any queries are to be directed to the [REDACTED]

Post Implementation Review

59. In accordance with the CAA standard procedures, the implications of the change will be reviewed after one full year of operation, at which point, CAA staff will engage with interested parties to obtain feedback and data to contribute to the analysis.

Civil Aviation Authority

August 2019

Appendix A

Current Airspace, Routes and Traffic Flows relevant to this proposal

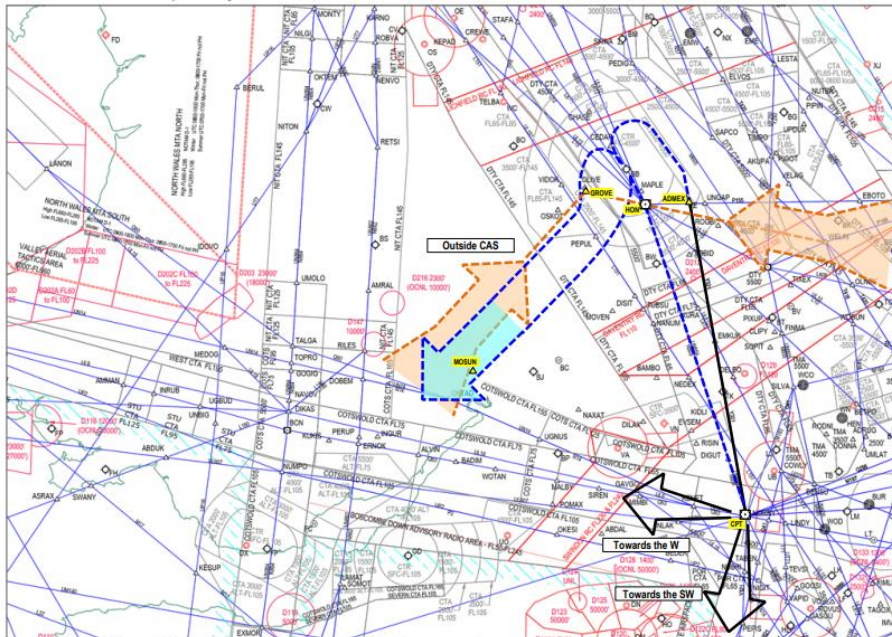


Figure 1 Current Birmingham traffic flows relevant to this proposal

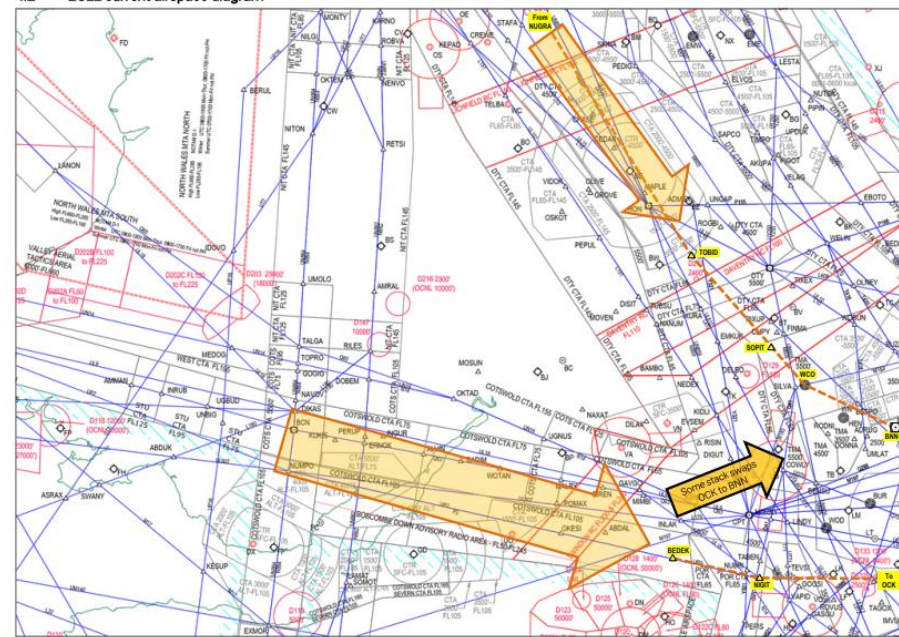


Figure 2 Current Heathrow arrival flows relevant to this proposal

Appendix B

Future Airspace, Routes and Traffic Flows relevant to this proposal

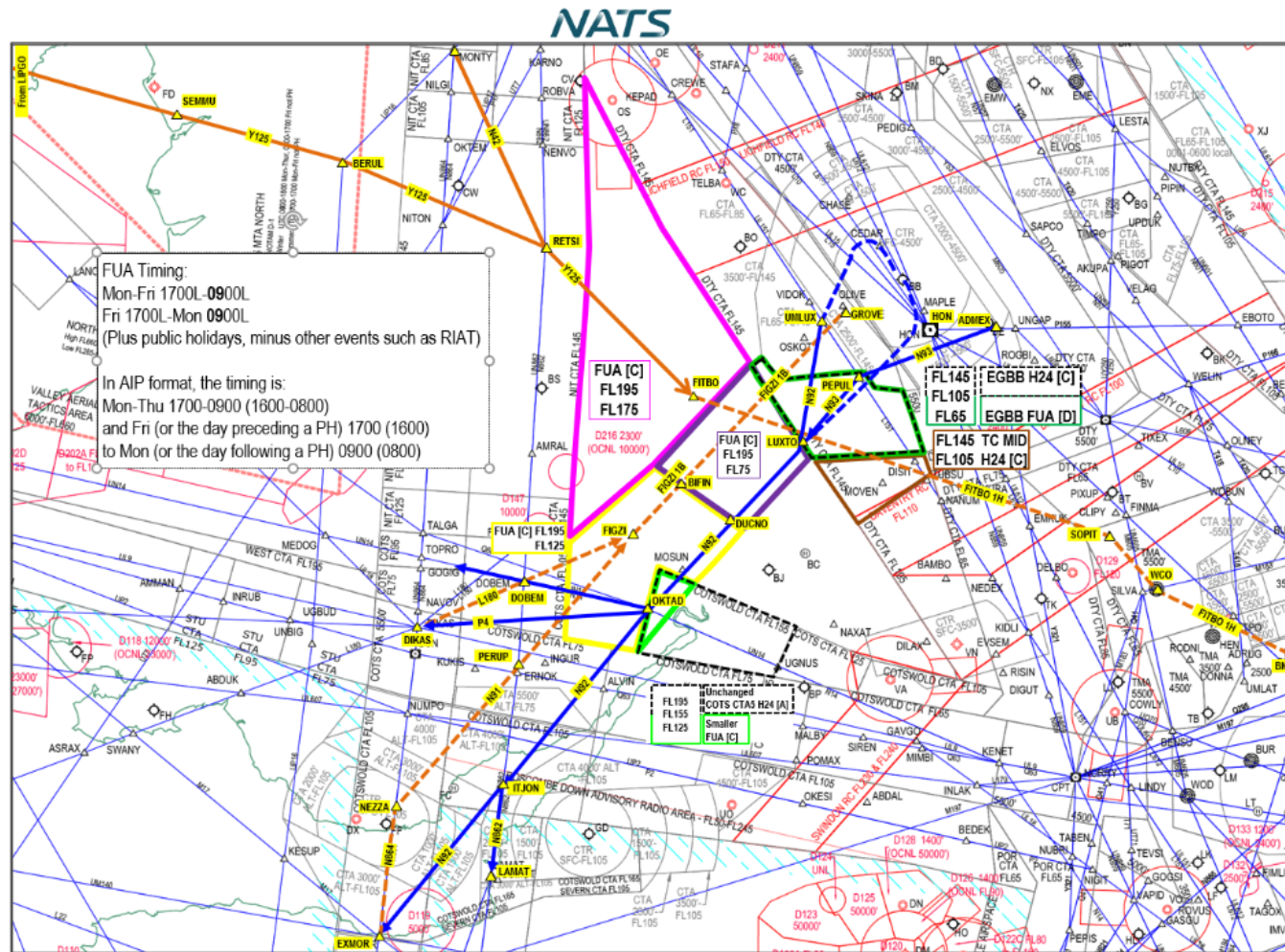


Figure 6: Final proposal - Routes and CAS associated with Birmingham and Heathrow