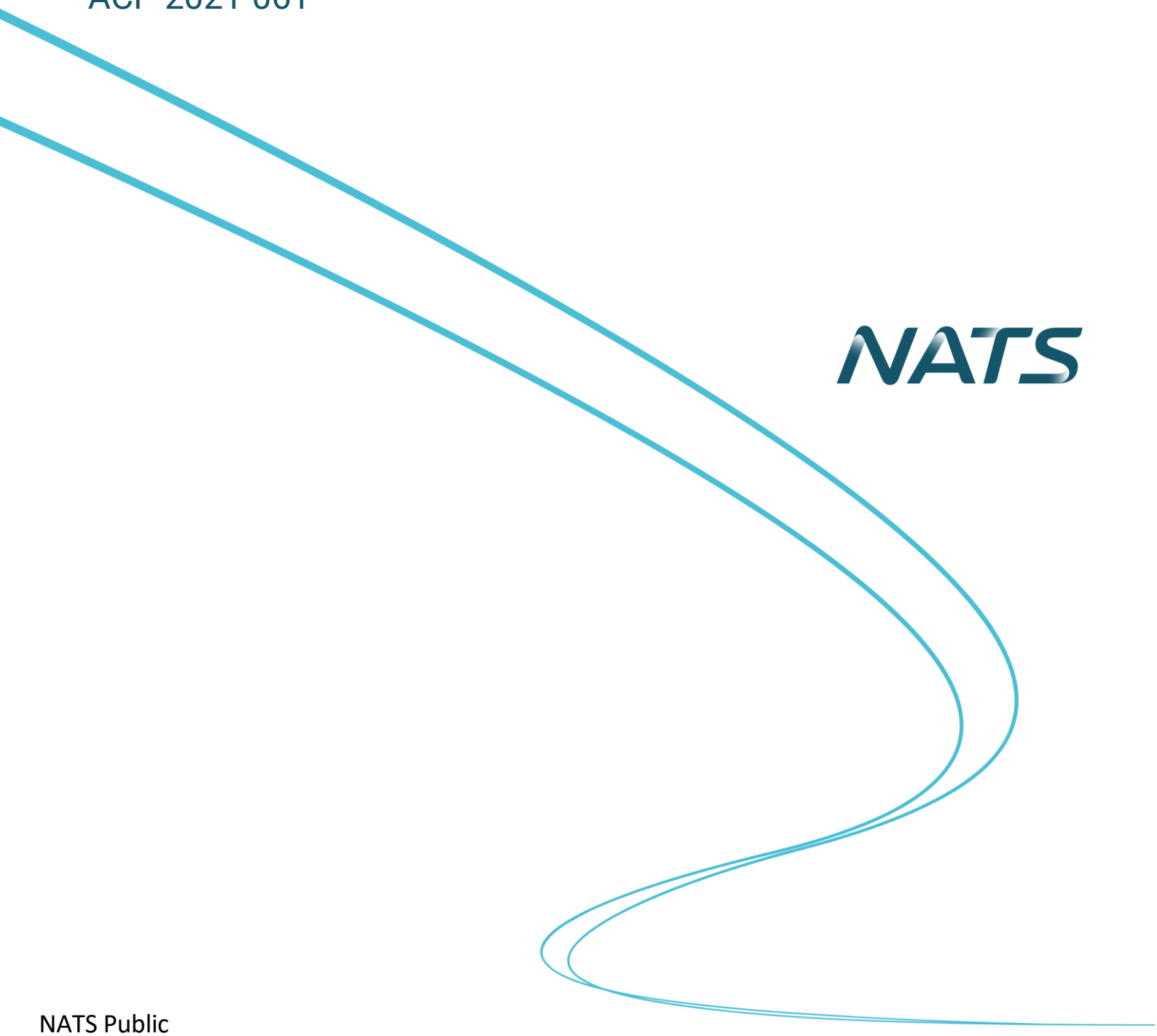
OSEP 11 CLN ACP

Gateway Documentation:
Stage 4 Update and Submit
Airspace Change Proposal
ACP-2021-061



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Change History

Issue	Month Year	Change in this issue
Issue 1	August 2024	First issue
Issue 1.1	October 2024	Clarification added on status of stakeholders (page 19-22) and engagement activity undertaken

Roles

Action	Role	Date
Produced	Airspace Change Specialist Airspace & Future Operations	August 2024
Reviewed Approved	Airspace Implementation Manager Airspace & Future Operations	August 2024
Reviewed Approved	Airspace Concepts Manager Airspace & Future Operations	August 2024

Referenced Documents

Ref Number	Name and Link	
1.	Airspace Modernisation Strategy (AMS)	Link
2.	Policy for the Establishment and Operation of Special Use Airspace (SARG Policy 133)	Link
3.	CAA STAR Truncation Policy (SARG Policy 113)	Link
4.	ICAO International Standards and Recommended Practices: Annex 11 Appendix 3	Link
5.	CAP760 Guidance on the Conduct of Hazard Identification, Risk Assessment and the Production of Safety Cases	Link

1. Introduction

1.1. Background

1.1.1. This document forms part of the document set required in accordance with the requirements of the UK Civil Aviation Authority (CAA) CAP1616 Airspace Change Process.

1.1.2. This Airspace Change Proposal (ACP) has been assessed by the CAA as a Level 3 change. This document aims to provide adequate evidence to satisfy Stage 4, Airspace Change Proposal CAP1616h[1].

1.1.3. The change sponsor for this change is NATS En Route Limited (NERL).

1.1.4. This ACP is being progressed under the NATS Operational Service Enhancement Project (OSEP), implementing a series of small-scale changes across NERL airspace in accordance with the Airspace Modernisation Strategy (AMS) (Ref 1).

1.2. Drivers for Change

1.2.1. There are 2 key drivers for the changes within the proposal:

1) **Realignment of East Anglia Military Training Area (EAMTA):** As part of a separate airspace change[2] NERL and the MoD implemented a realignment of the EAMTA area. This realignment was implemented in February 2024 through a Letter of Agreement amendment, and it facilitates more efficient ATS routings in this region. This ACP seeks to make this permanent in the UK AIP, which enables fuel and CO_2 efficiencies through the proposed route revisions.

2) **Airline feedback**: KLM airline requested NERL and LVNL review the current routing westbound from Amsterdam, which could enable flight plannable fuel and CO_2 savings.

1.3. Statement of Need

1.3.1. The Statement of Need (DAP1916) submitted in August 2021 states:

NATS Operational Service Enhancement Project (OSEP) will deliver small scale changes across NERL airspace between now and 2027. The changes will deliver benefits through enabled fuel/CO_2 savings, reduced routing inefficiency, safety improvement and alleviating capacity hotspots.

Cause
There are inbuilt inefficiencies within the UK ATS route network. One such inefficiency is caused through inefficient ATS routes or connectivity between ATS routes and neighbouring FIRs.

Current Situation
Aircraft currently flight plan in accordance with published constraints. As a result of inefficiencies and poor connectivity between some ATS routes within the UK network and FIR boundaries, aircraft are burning more fuel and emitting more CO_2 than necessary.

Issues to be addressed
This ACP seeks to improve connectivity between the UK ATS route network and adjacent FIR boundaries by introducing new and/or amended ATS routes, waypoints and/or COPs. This will enhance connectivity whilst improving fuel efficiency and reducing greenhouse gas emissions. This ACP will also seek to reduce pilot/controller workload where practicable by improving flight plan predictability.

[1] This project commenced in October 2023 under CAP1616 ed 4. The Stage and Level requirements for all ACPs were revised with CAP1616 ed 5, published in January 2025. Edition 5 introduced Level 3, with a guidance document CAP1616h, which has been adhered to for this ACP since January 2024.
[2] NERL OSEP8 project

1.4. Aims of the Proposal

1.4.1. This change forms part of the plan for delivery of the AMS.

1.4.2. This airspace change proposal seeks to improve the connectivity of the ATS route network and airspace structures between the London and Amsterdam Upper Information Region (UIR)/Flight Information Regions (FIR), in the area shown (**Error! Reference source not found.**

1.4.3. These changes will deliver against one or more of the following areas, which all align with the Airspace Modernisation Strategy:

- reduce CO_2 emissions
- reduce ATC complexity
- optimise the airspace using FUA principles
- enable fuel savings to customers
- facilitate more efficient flight planning
- provide operationally efficient airspace volumes for military airspace users

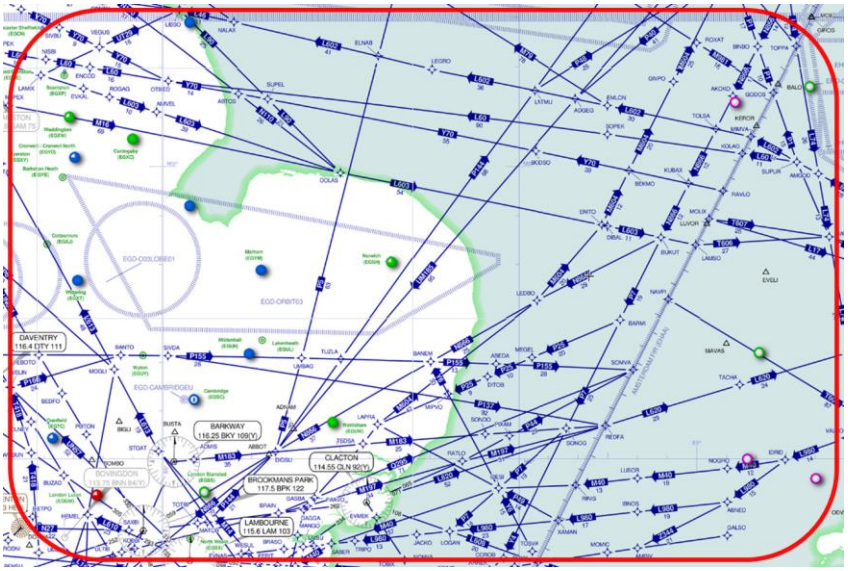


Figure 1 Area of Scope for Change Proposal

1.5. Assumptions and Constraints

1.5.1. This change is limited to routes above FL175.

1.6. Summary of Proposed Changes

1.6.1. There are 2 components to this ACP, within this geographical area. Each component has its own traffic flow and is described below:

1) Optimise East Anglia Military Training Area and optimise adjacent route structures (M604/N866)

2) Optimise westbound route structure at KOLAG (EHAM departures)

1.6.2. A third component was developed, which was the extension of ATS route P25 from BARMI to NAVPI, providing an alternative route for EGGW/EGSS inbounds to reduce complexity at RINIS. This was originally driven by feedback from MUAC. However, during engagement for this ACP, it has proven too difficult to align implementation dates. In the interests of progressing the remaining components to realise the potential benefits soonest, this aspect is not being progressed currently.Timeline for implementation

1.6.3. This ACP will be implemented in March 2025 (AIRAC 25/03).

1.6.4. This ACP needs to be co-ordinated with changes by LVNL and MUAC. Due to operational constraints, the only change window available to all parties is March 2025.

2. Stage 1: Design Principles

2.1. Alignment with CAP1616 Edition 5: Mandatory DPs

2.1.1. At the end of Stage 1, we published the Design Principles for this change which had been developed with our stakeholders in line with CAP1616 edition 4.

2.1.2. Under the revised CAP1616, published in January 2024, this is now categorised as a Level 3 ACP, and this ACP is progressing under CAP1616 edition 5.

2.1.3. CAP1616 edition 5 states sponsors must use Mandatory Design Principles (MDP), must consider Discretionary Design Principles (DDP), and must consider developing Bespoke Design Principles (BDP).

2.1.4. On advice from the CAA, we have reviewed and mapped our original design principles against these new requirements. Table 1 shows how they align with the new prescribed DPs listed in CAP1616 Ed5.

2.1.5. We align with the 3 mandatory DPs (Safety, Policy, Environment); and 4 discretionary DPs. 5 DPs have been categorised as bespoke. The priority grading previously assigned is no longer relevant due to this new categorisation.

2.1.6. The CAA have stated that for this ACP, we are only required to evaluate design options against the mandatory DPs, as would be the case if the ACP had started under Ed5 of CAP1616.

Table 1 Alignment of Design Principles from Stage 1 with CAP1616 Edition 5

CAP1616 Ed.5 Design Principle	Stage 1 Mapped Design Principle (Priority)
MDP Safety The airspace change proposal must maintain a high standard of safety and should seek to enhance current levels of safety	**Safety (A)** Maintain or enhance current levels of safety.
MDP Policy The airspace change proposal should not be inconsistent with relevant legislation, the CAA's airspace modernisation strategy or Secretary of State and CAA's policy and guidance.	**Policy (AMS) (A)** Must accord with the CAA's published Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it.
MDP Environment The airspace change proposal should deliver the Government's key environmental objectives with respect to air navigation as set out in the Government's Air Navigation Guidance 2017.	**Environmental (CO_2 emissions) (B)** The proposed route amendments will facilitate the reduction of CO_2 emissions per flight.
DDP Operational (Resilience) The airspace change proposal should maintain or enhance operational resilience of the air traffic service system.	**Operational (Resilience) (B)** The proposed airspace design will maintain or enhance operational resilience of the ATC network.
DDP Technical (MoD requirements) The airspace change proposal should be compatible with the requirements of the Ministry of Defence.	**Technical (MoD requirements) (B)** The proposed airspace amendments will maintain or enhance MoD operational needs, commensurate with FUA principles.

CAP1616 Ed.5 Design Principle	Stage 1 Mapped Design Principle (Priority)
DDP Technical (Other aviation stakeholders) The airspace change proposal should consider the impacts on air navigation service providers and other aviation stakeholders such as nearby airport operators.	**Operational (MUAC connectivity) (B)** The proposed amendments to the route network will provide a compatibility with and the possibility to enhance the interface with Maastricht Upper Area Centre (MUAC).
DDP Technical (Controlled airspace) The volume and classification of controlled airspace required for the provision of air traffic control services to IFR flights should be the minimum necessary to deliver an efficient airspace design, taking into account the needs of other airspace users.	**Technical (Minimise CAS) (C)** The proposed changes will be contained within the extant airspace i.e. above FL195 (no additional airspace required).
Bespoke DP	**Technical (Modernisation) (B)** The proposed airspace design will provide a basis for future Free Route Airspace deployments within the London UIR
Bespoke DP	**Operational (Workload) (B)** The proposed changes will facilitate the reduction of ATC workload.
Bespoke DP	**Operational (Complexity) (B)** The proposed changes will reduce network complexity.
Bespoke DP	**Economic (Fuel) (B)** The proposed route amendments will enable reduced fuel burn per flight.
Bespoke DP	**Operational (Training) (C)** The design minimises operational impact to airspace users.

3. Current Airspace and Operations

3.1. Overview of Current Airspace

3.1.1. Figure 2 shows the current day affected airspace structures and routes, described in further detail below. Relevant routes/structures are highlighted.

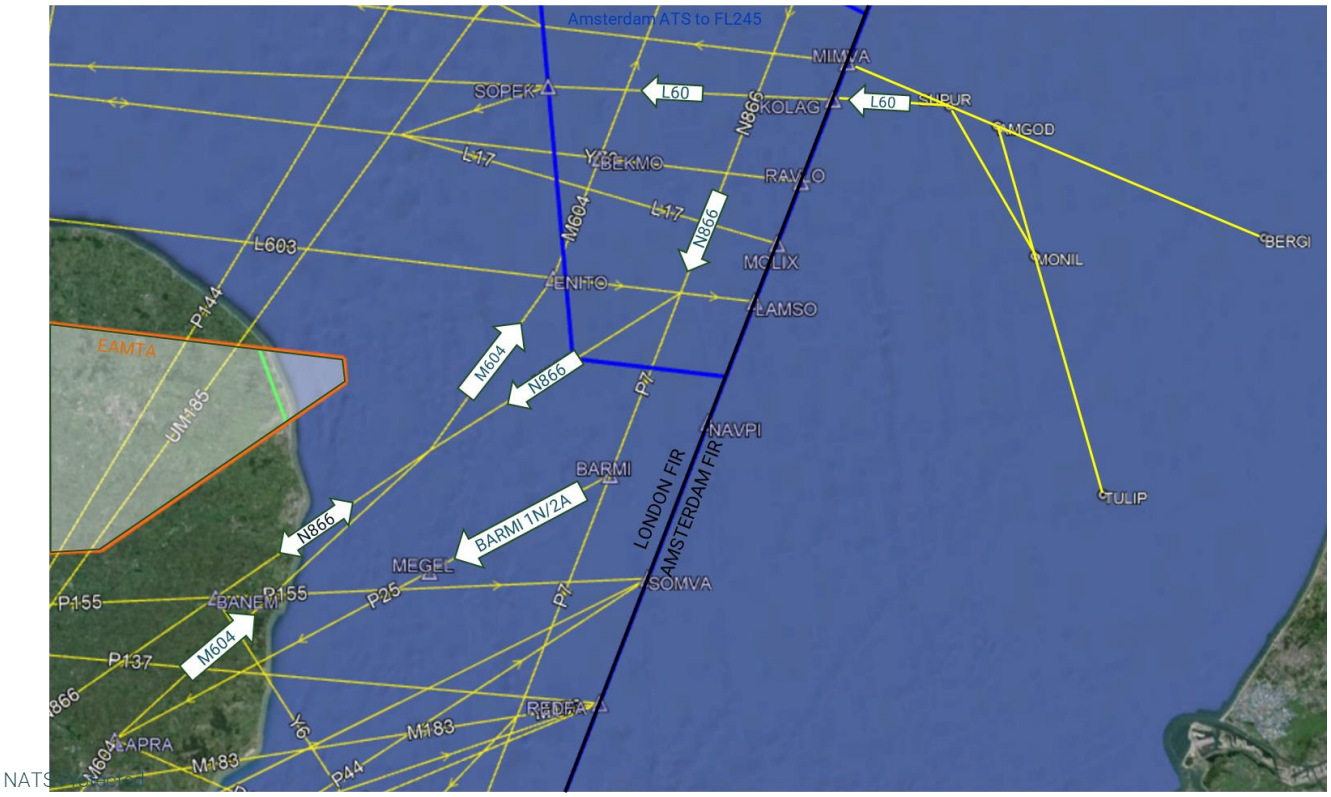


Figure 2 Current Airspace and Structures

3.1.2. All traffic data presented within this document is based on January – December 2023 full year traffic sample, using flight plan data.

3.1.3. Current day traffic diagrams all use November 2023 actual flight data. This was prior to the LOA amendment in February. This reflects the AIP and the driver for change.

3.2. Provision of Air Traffic Services

3.2.1. Within the UK, NERL provide the ATC service up to the London FIR boundary.

3.2.2. 78 Squadron provide ATS for military traffic within East Anglia Military Training Area and generally within this airspace volume.

3.2.3. The provision of ATC services is delegated to LVNL, the Dutch ANSP, within the area shown in blue in Figure 2, for FL175-FL245.

3.2.4. East of the FIR boundary, airspace below FL245 is controlled by LVNL.

3.2.5. East of the FIR boundary, above FL245, air traffic service is provided by Maastricht Upper Area Control Centre (MUAC).

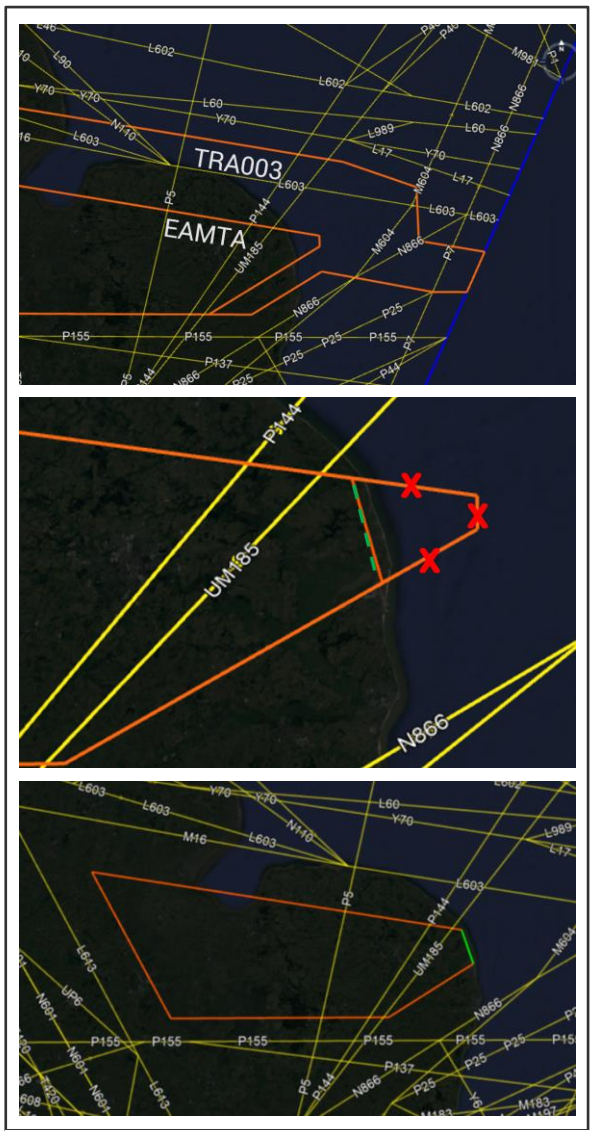
3.3. East Anglia Military Training Area (EAMTA)

3.3.1. EAMTA can be activated H24 from FL245 - FL660 and is activated by NOTAM[3].

3.3.2. The EAMTA sits above TRA003. TRA003 is active Mon-Fri 08:30-17:00 FL195-FL245.

3.3.3. Under Flexible Use of Airspace (FUA) principles, when EAMTA is not being utilised by the military this airspace can be available for civil use. The routes whgich traverse north-south are all conditional routes (CDR) H24. (For further details, see the UK AIP ENR 5.2).

3.3.4. A Letter of Agreement (LoA) has been agreed with the MoD and active since February 2024 which realigns the boundaries of the EAMTA as shown below.



East Anglia MTA as per current AIP

Revision made to East Anglia MTA as per LoA with MoD

Revised EAMTA as per LoA from February 2024

Figure 3 Revision to EAMTA – February 2024

[3] Notice to Airmen - a notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard; the timely knowledge of which is essential to personnel concerned with flight operations. It will cover notifications of temporary information (usually of less than 90 days duration), or permanent information not yet included in the AIP.

3.4. Northbound Traffic via M604 / N866

3.4.1. Currently, traffic heading north, typically for Scandinavia /Baltic states, routes via M604. The routing tracks around the extant EAMTA, separated by approximately 10NM.

3.4.2. Routes M604 & N866 converge at LEDBO to join M604 towards BEKMO.

3.4.3. M604 via LAPRA is generally used by LTMA outbounds (approximately 9,000 flights per annum). N866 via BANEM is generally used by overflight traffic (approximately 1,500 flights per annum).

3.4.4. Figure 4 shows the current northbound routes and the current traffic flows.

3.4.5. Traffic frequently utilises a tactical shortcut which bypasses LEDBO, when the MTA is not active, as shown in Figure 4.

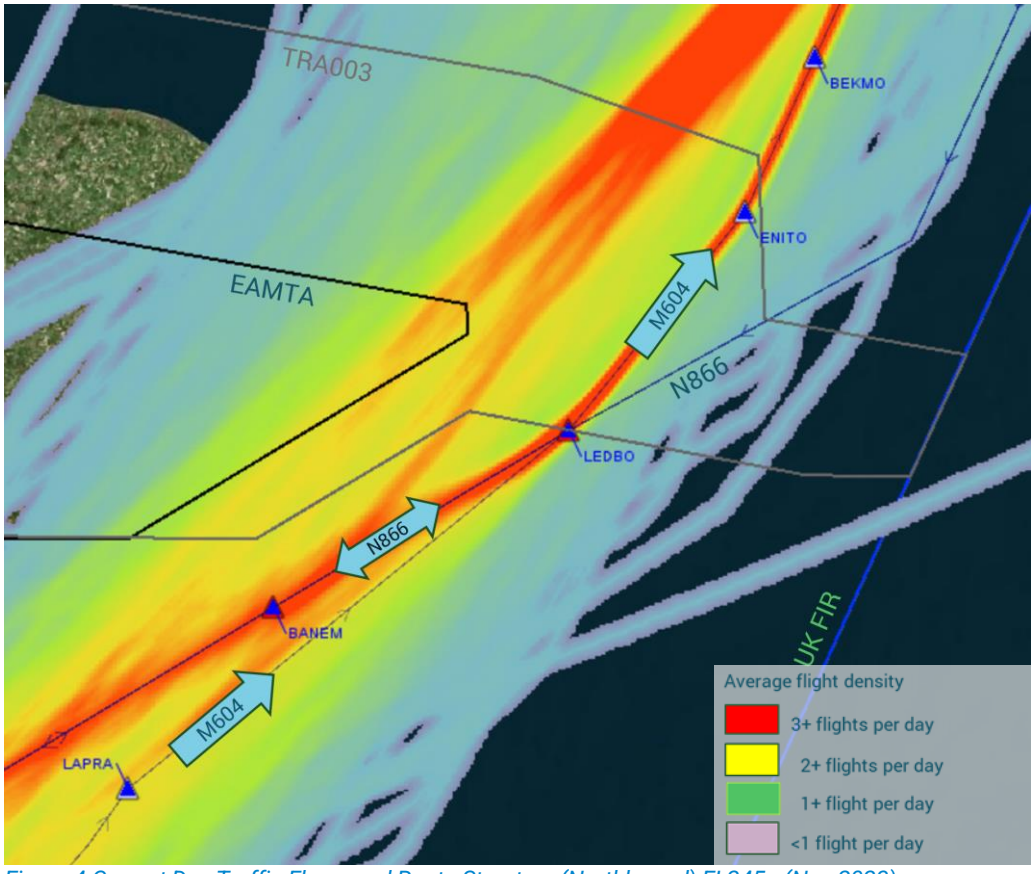


Figure 4 Current Day Traffic Flows and Route Structure (Northbound) FL245+ (Nov 2023)

3.4.6. LEDBO is on the boundary of TRA003 and is a 'level by' FL245 waypoint for when TRA003 below is active.

3.4.7. Typically, traffic is above FL200 at BANEM with most traffic at FL350 or higher.

3.4.8. The base of both ATS routes for the relevant sections through LEDBO is FL245 with TRA003 below.

3.4.9. The section of N866 BANEM-LEDBO is currently bi-directional. Beyond LEDBO, N866 is southbound only.

3.5. Southbound Traffic via N866

3.5.1. N866 southbound runs parallel to the eastern edge of the London FIR. Typically, arrivals from Scandinavia / the Baltic states utilise this route.

3.5.2. Southbound traffic on N866 connects with P7 at BUKUT. Traffic heading west turns right and stays on N866.

3.5.3. LTMA inbound traffic routes BUKUT-P7-BARMI, connecting to BARMI STARs.

3.5.4. BARMI waypoint has a FL260 'Level At' restriction due to sectorisation and TRA003 below.

3.5.5. London Stansted Airport (EGSS) and London Luton Airport (EGGW) BARMI STARs track route P25 towards WIQID.

3.5.6. Around 4,000 EGSS flights and 600 EGGW flights per annum utilise this route[4].

3.5.7. Figure 5 shows the current routes and traffic flows for EGSS/EGGW inbounds via BARMI.

3.5.8. Traffic frequently utilises a tactical shortcut which bypasses BARMI and converges with the STAR at MEGEL, shown in Figure 5.

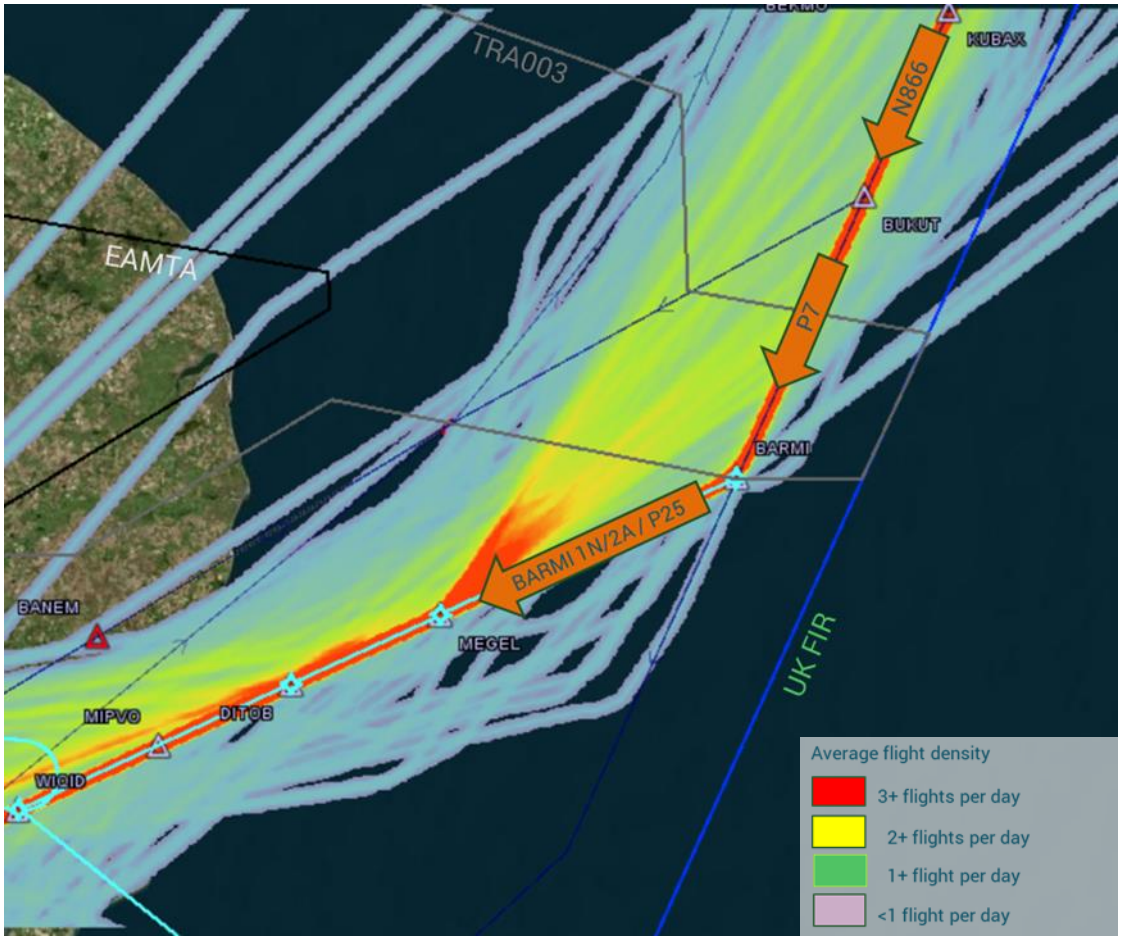


Figure 5 Current Day Traffic Flows and Route Structure EGGW / EGSS Arrivals via BARMI STARs (Nov 2023)

[4] All traffic data is based on Jan – Dec full year 2023 traffic sample, using flight plan data. Current day traffic diagrams all use November 2023 actual data.

3.6. Westbound Traffic Via KOLAG

3.6.1. Currently, westbound departures from Amsterdam (EHAM) cross into the London FIR at KOLAG via L60.

3.6.2. EHAM departures account for 95% of traffic on this route, other traffic is primarily German / Polish departures to UK/Irish airfields, cruising below FL245.

3.6.3. Figure 6 shows the current route structure and current traffic flows. It shows that regular tactical shortcuts are provided by ATC direct to SOPEK.

3.6.4. KLM airline have requested that NERL/LVNL seek to optimise this airspace to better align with the tactical routings given, to enable flight efficiencies for track mileage, fuel and CO_2.

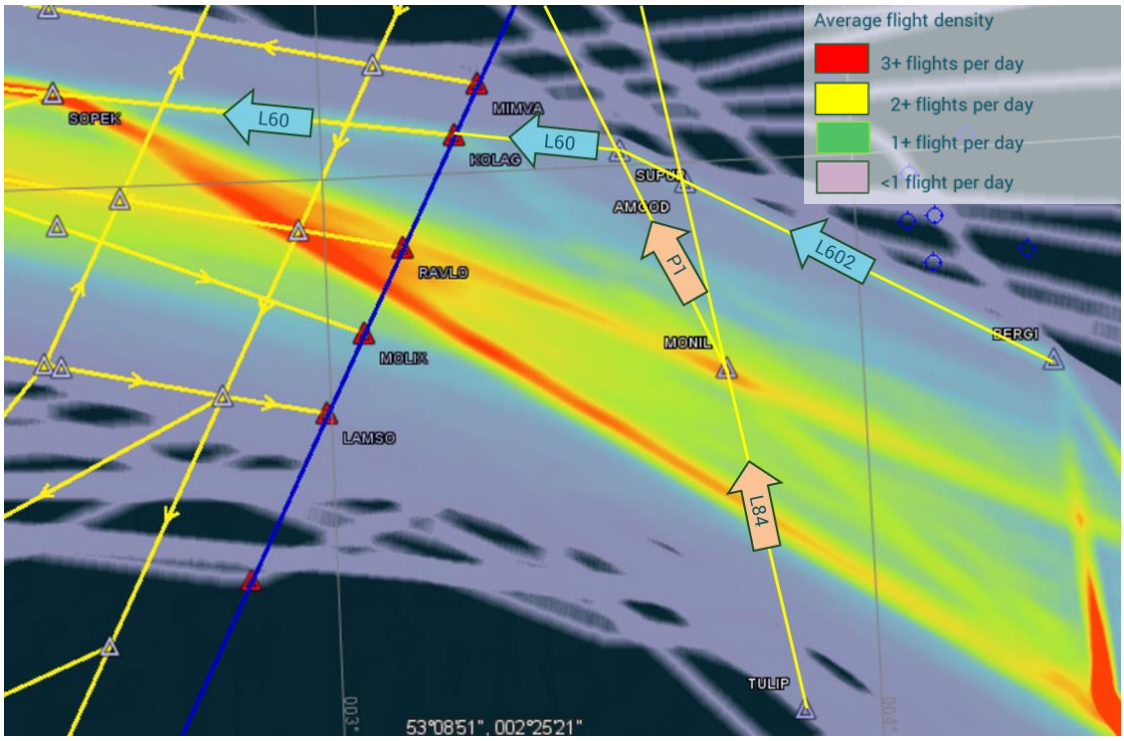


Figure 6 Current Day Traffic Flows and Westbound Route Structure: KOLAG COP <FL245 (Nov 2023)

3.6.5. Current routing: BERGI -L602-SUPUR-L60-KOLAG-L60-SOPEK. Within the UK AIP, L60 KOLAG-SOPEK is FL175-FL460. Within the Dutch AIP, L60 KOLAG-SUPUR is published FL175-FL660.

3.6.6. LVNL provide ATS service up to FL245 and MUAC provide ATS service FL245 and above.

3.6.7. KOLAG was a FRA exit point from MUAC airspace into UK airspace, for traffic over FL245. However, from 22 February 2024 the FRA 'X' designator was removed from the AIP Netherlands, and the section of L60 from SUPUR-KOLAG was RAD restricted by MUAC and this route is not flight plannable above FL245.

3.6.8. Typically, traffic flight plans FL245 at KOLAG, and is managed by LVNL on this route.

3.6.9. Approximately 16,000 flights flight planned this route in 2023[5].

3.6.10. A small number of flights file via MONIL – KOLAG – SOPEK, less than 70 per annum.

[5] All traffic data is based on Jan – Dec full year 2023 traffic sample, using flight plan data. Current day traffic diagrams all use November 2023 actual data.

4. Stage 2: Develop and Assess

4.1. Design Option Development: Component 1

4.1.1. This ACP proposes to formalise the revision of lateral boundaries of the EAMTA (described in 0) in the UK AIP, facilitating the realignment of adjacent ATS routes to enable flight plannable CO_2e benefits for affected traffic.

4.1.2. A single design option was developed, which replicates current tactical flight behaviours when the extant EAMTA is not active (as described in Section 3).

Northbound Routes – Design Option

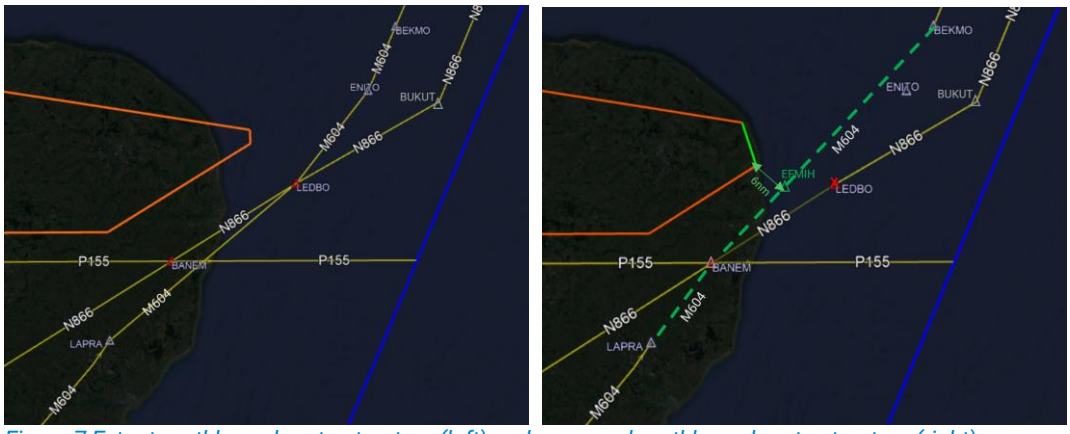


Figure 7 Extant northbound route structure (left) and proposed northbound route structure (right)

4.1.3. M604 is realigned LAPRA – BANEM – BEKMO. This is over 5NM from the MTA, in accordance with the CAA Safety Buffer Policy (2024) (Ref 2).

4.1.1. A new waypoint on M604 ('EFMIH') provides a 'level by' waypoint to remain above FL245 when TRA003 is active (as LEDBO does today).

4.1.2. LEDBO and ENITO are removed from M604. LEDBO becomes redundant so will be withdrawn.

4.1.3. N866 BUKUT-BANEM (currently bi-directional) becomes southbound only for inbound traffic.

Southbound Routes - Design Option:

4.1.4. The M604 realignment facilitates a more direct routing for inbounds from the northeast, with a new ATS route (Z150) direct from KUBAX to MEGEL.

4.1.5. BARMI 1N (EGGW) and BARMI 2A (EGSS) STARs are truncated to MEGEL, and renamed MEGEL 1N / MEGEL 1A, in accordance with SARG Policy 133 (Ref 3).

4.1.6. A new 'level at' waypoint ('AMFEP') will be positioned on Z150 abeam BARMI.

4.1.7. These changes replicate tactical flight behaviours seen today.

4.1.8. There would be no anticipated change to traffic mix because of this change.

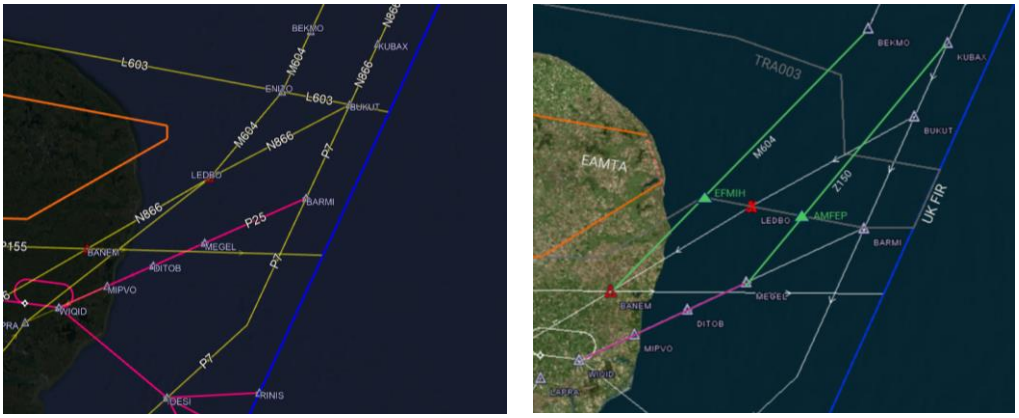


Figure 8 Extant southbound route structure (left) and proposed southbound route structure (right)

4.2. Design Principle Evaluation: Component 1

4.2.1. A qualitative assessment was conducted of the proposed designs for Component 1 against the design principles.

4.2.2. All design principles are assessed to be met, and the design option was progressed to Stage 3, Consult/Engage.

Table 2 – Component 1: Design Principle Evaluation & Proposal Impacts

MDP Safety	MET	This change will maintain current safety levels. M604 will be separated from the military training area in accordance with the required buffer stated in the CAA Policy for Special Use Airspace (Ref 2) (5NM).
MDP Policy	MET	This proposal maintains safety (AMS 'end' Safety). It optimises the airspace for military use with a more usable airspace (EAMTA) and facilitates more efficient routing for commercial airspace users, in compliance with SARG Policy 133 (Ref 2) and the AMS 'end' Integration. Reduces complexity and workload by reducing the need for tactical intervention from ATC, complying with AMS 'end' Simplification. Provides environmental benefit with CO_2 savings from reduced flight plannable track mileage (AMS 'end' Environment)
MDP Environment	MET	This change would enable flight plannable CO_2e savings from reduced flight plannable track mileage. No impacts on aircraft noise or local air quality emissions as all changes are above FL175.
Other Design Principles	MET	All other design principles will be met by this proposal.

4.3. Design Option Development: Component 2

4.3.1. This component proposes to relocate the COP (currently KOLAG) and realign the connecting routes, enabling flight plannable CO_2e benefits for this traffic which replicate current tactical flight behaviours.

4.3.2. This aspect of the change in response to a request from KLM airline to optimise this airspace for EHAM departures.

4.3.3. The proposed revision is shown in Figure 9. The new COP would be positioned between KOLAG and RAVLO. ATS route L60 would be realigned from SOPEK through the new COP and be extended direct to BERGI. The section of L60 SUPUR – KOLAG would be removed, as would KOLAG.

4.3.4. This facilitates a more direct routing, with reduced track mileage of approximately 1NM in the planned route from BERGI-SOPEK, enabling flight plannable CO_2e benefits for approx. 16,000 flights per annum.

4.3.5. During early engagement, LVNL asked NERL to ensure any other EH departures using KOLAG be considered. This includes a small number of Rotterdam (EHRD), Kempen (EHBD) and Eindhoven flights (EHEH) which route via MONIL P1 SUPUR L60 KOLAG.

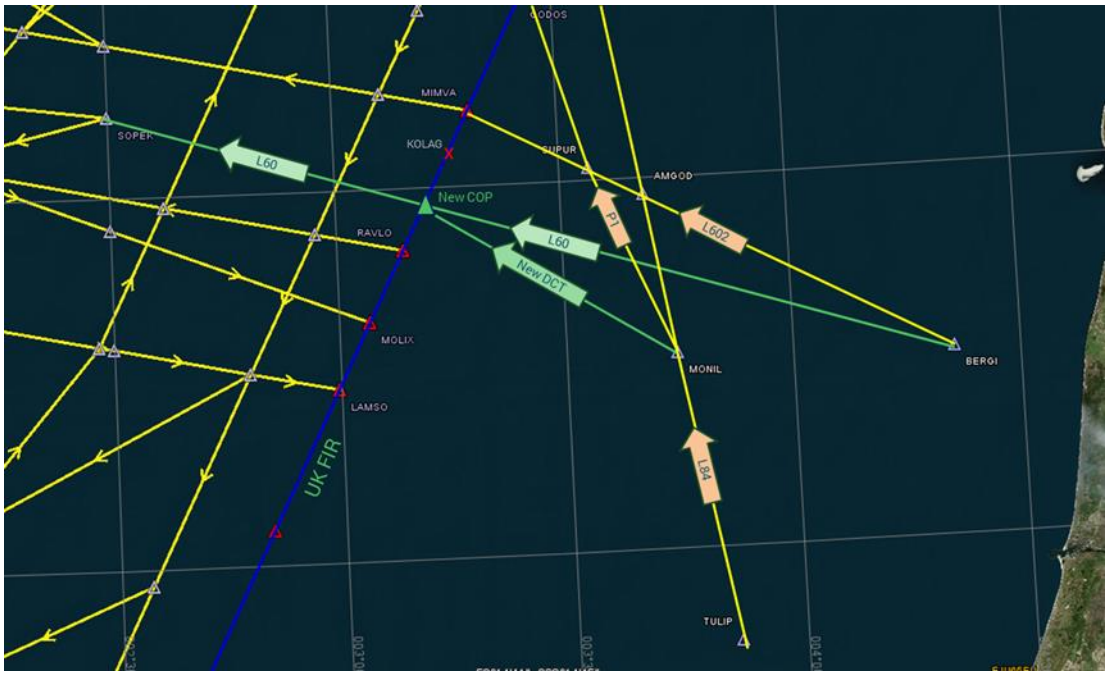


Figure 9 Proposed revision to the westbound route structure at KOLAG

4.3.6. NERL proposed a new DCT could accommodate the small number of flights from other EH airports which route via MONIL, direct to the new COP. This would reduce planned track mileage for this route by approximately 5NM, enabling flight plannable CO_2e benefits for approx. 60 flights per annum.

4.3.7. These changes replicate tactical flight behaviours seen today.

4.3.8. There would be no anticipated change to traffic mix as a result of this change.

4.4. Design Principle Evaluation: Component 2

4.4.1. A qualitative assessment was conducted of the proposed designs for Component 2 against the design principles.

4.4.2. All design principles are assessed to be met, and the design option was progressed to Stage 3, Consult/Engage.

Table 3 Component 2: Design Principle Evaluation

MDP Safety	MET	This change will maintain current safety levels.
MDP Policy	MET	This proposal maintains safety (AMS 'end' Safety). Civil airspace users would benefit from more direct routings, with economic and environmental savings from fuel uplift reductions. No anticipated impact on military or other airspace users, in support of AMS 'end' Integration. Reduces complexity and workload by reducing the need for tactical intervention from ATC, complying with AMS 'end' Simplification. Provides environmental benefit with CO_2 savings from reduced flight plannable track mileage (AMS 'end' Environment).
MDP Environment	MET	This change would enable flight plannable CO_2e savings from reduced flight plannable track mileage. No impacts on aircraft noise or local air quality emissions as all changes are above FL175.
Other Design Principles	MET	All other design principles will be met by this proposal.

4.5. Habitats Regulation Assessment

4.5.1. Q1. Are there any changes to air traffic patterns or number of movements expected below 3,000 feet due to the airspace change proposal?

4.5.2. No. The changes are all above FL175 and affect traffic over the sea. The Habitats Regulation Assessment is not required.

5. Stage 3: Consult / Engage

5.1. Engagement Strategy

5.1.1. This engagement strategy describes the objectives, intended audience, engagement materials and engagement activities, which demonstrates how we facilitate effective engagement with our relevant stakeholders for this change proposal.

5.1.2. This is a Level 3 ACP, and the changes proposed are all above FL175, primarily replicating tactical activity undertaken today.

5.1.3. The drivers for change are to enable flight plannable environmental benefits and reduce complexity/workload.

5.1.4. Given the nature of the change proposed, it has been agreed with the CAA that targeted engagement with relevant stakeholders is appropriate for this change proposal, rather than full consultation.

5.2. Objectives

5.2.1. The objectives of the engagement are:

- to share design options in their formative stage with relevant stakeholders, informing stakeholders of the impacts of each design option
- to obtain their views on the proposals and consider any feedback in the design.

5.3. Engagement Audience (Stakeholders)

5.3.1. At the Assessment Meeting, it was agreed with the CAA that as this ACP proposes change predominantly contained within the Upper Airspace, the stakeholders would be limited to Top 10 airlines, relevant NATMAC members, relevant ANSPs and the MoD, and these were the targeted stakeholders for Stage 1.

5.3.2. Targeted stakeholders remained the same as Stage 1:

Relevant ANSPs:

- Maastricht Upper Area Control (MUAC) (Key Stakeholder) operates as the ANSP for the Dutch airspace adjacent to the change boundary.
- LVNL (Dutch ANSP) (Key Stakeholder) is the ANSP operating the lower airspace adjacent to the change boundary.

Ministry of Defence (MoD) (Key Stakeholder)**:** engaged through Defence Airspace and Air Traffic Management (DAATM). DAATM is a focal point for all aviation matters which may impact military airspace and operations. DAATM collects feedback from all branches of the military which may be impacted to provide a single response.

Top 10 airlines: NERL analysed flight plan data for the key routes in the area: flights via LAMSO; inbounds to EGGW/EGSS via RINIS or BARMI, and flights via BANEM – LEDBO. 75% of the traffic in this area was flown by the Top 10 airlines.
We have targeted these airlines with our engagement as those most impacted by the change. The top 10 airlines are: -

- KLM
- Lufthansa
- Ryanair
- TUI
- Wizzair
- Aer Lingus
- Jet2
- Delta
- easyJet
- Emirates

Relevant National Air Traffic Management Advisory Committee (NATMAC) members: we limited this to those organisations which have members which operate in the upper airspace[6].

- Airlines UK
- Heavy Airlines
- Low Fare Airlines
- Guild of Air Traffic Control Officers (GATCO)

During the design option development, revisions were proposed to the arrival routes for some airports. It was identified that impacted airports should be engaged and they were added as stakeholders in due course.

Relevant airports: The airspace change proposes truncations to the Standard Arrival Routes (STARs) for London Luton and Stansted Airports.

These were added as key stakeholders in March 2024, and the design agreed, at which point Cambridge Airport were also added as a stakeholder as they utilise the Stansted STARs.

Affected airports added to our stakeholders.

- Stansted Airport (Key Stakeholder)
- London Luton Airport (Key Stakeholder)
- Cambridge Airport

5.3.3. Only the organisations listed were formally contacted for feedback. However, NERL welcomes feedback from any individual or organisation which considers the changes within this ACP may impact them.

5.4. Engagement materials

5.4.1. A PowerPoint briefing pack (Appendix 1) describes the current day scenarios and the proposed airspace changes. This contains quantitative fuel and CO_2e data using a 1-year traffic sample to help our stakeholders understand the environmental impacts of the proposed changes, as well as a qualitative assessment of other impacts[7].

5.5. Engagement Activity

5.5.1. During Stage 1, we sent emails to our targeted stakeholders asking for feedback on the Design Principles. We received feedback from 2 stakeholders, MUAC and the MOD, which informed our final Design Principles. For full details of these earlier activities, see the Stage 1B Design Principles document on the CAA portal.

5.5.2. For Stage 2 onwards, we have mapped our stakeholders into 2 groups, to ensure we could target our engagement most effectively: Evidence of the engagement activity correspondence and material is provided in Annex A.

Key stakeholder groups: ANSPs, MoD, Airports

5.5.3. Key stakeholders are assessed to be those most impacted by the change, and we strive for 'active engagement'. This includes activities such as face to face briefing sessions to discuss aspects of the design.

[6] This includes organisations representing additional airlines; it was deemed relevant to include these should they wish to provide a response on behalf of their members.
7 For the Level 3 change, only qualitative assessment was required however the engagement for this ACP commenced prior to the release of the new CAP1616 ed5.

5.5.4. The engagement period for this active engagement was December 2023 to June 2024. During this period, we held face to face briefings with the key stakeholders and presented the briefing material. We have had follow-up meetings to discuss design and implementation issues.

Other stakeholder groups: Airlines, NATMAC members, Airports

5.5.5. Other stakeholders are assessed as having an interest in the change, but less impacted. These stakeholders are 'kept informed', with the change briefing pack provided via email, with an online feedback response form to capture stakeholder responses to the proposed changes.

5.5.6. Stakeholders were given 3 weeks to provide feedback on the proposed changes. An email was sent on 19th December 2023, and feedback was requested by 10th January 2024. A reminder email was sent on 2nd January 2024 to encourage responses.

5.5.7. An email was sent to Cambridge Airport (after they were identified as stakeholders) on 3rd June 2024, with feedback requested by 24th June 2024.

5.5.8. This is deemed proportionate for this group of stakeholders given the nature of the proposed changes, above FL175, providing operational and environmental benefit, and primarily reflecting current day tactical activity.

5.5.9. In response to this engagement, we received 3 responses via MS Forms, and 1 email, from 17 stakeholders contacted. We received no emails asking for further time or asking any questions on the change proposal.

5.5.10. With the enhanced engagement activity with the key stakeholders, this response rate is considered sufficient, and representative given the scope and impact area of these proposed changes.

Engagement Evidence: see Annex A: Engagement Material

5.5.11. Table 4 summarises the engagement activity undertaken with all identified stakeholders, with a reference number to the engagement evidence in Annex A.

5.5.12. As this ACP was initiated under CAP1616 Ed4, initial engagement material contains some quantitative data which was used to engage with stakeholders (Annex A, Ref 1).

5.5.13. In January 2024, this material was revised in line with the requirements of CAP1616 Ed 5 Level 3 guidance (CAP1616h), and this revised material (Annex A Ref 5) was used for subsequent engagement activities.

Table 4 Targeted Engagement Activities to Key Stakeholders

Date	Stakeholder(s)	Activity & Feedback mechanism	Ref
19/12/2023 – 03/06/2024	All stakeholders ANSPs, MoD, Airports, Top 10 Airlines, NATMAC	Engagement material sent via targeted emails. Feedback requested via Microsoft Forms. A follow up email was sent if stakeholders had not responded to the initial email.	1
22/08/2023 – 27/06/2024	LVNL	Meetings via TEAMS to discuss the proposal and carry out joint design development work. Evidence of engagement: Meeting minutes	2
04/12/2023 – 13/12/2023	MoD	Meetings via TEAMS to discuss the proposal. Evidence of engagement: Meeting minutes; emails	3
29/04/2024 –	MUAC	Meetings via TEAMS to discuss the proposal. Evidence of engagement: Meeting minutes	4
14/03/2024 & 18/03/2024	Stansted Airport, Luton Airport,	Meeting via TEAMS to brief the proposal/email copy of engagement material. Feedback requested via MS Forms.	6
24/06/2024	Lead Operator Carrier Panel: Relevant airlines in attendance: Delta, easyJet, Ryanair (Top 10) Other airlines in attendance: United Airlines, Virgin Atlantic	Presentation given by NERL on proposed changes. Evidence of engagement: Meeting minutes	7

5.6. Engagement Summary & Design Update

5.6.1. We engaged our stakeholders on the above proposed design in accordance with our engagement strategy, and received the responses shown in Table 5:

Table 5 Component 1: Engagement feedback for EAMTA and adjacent route revisions

Stakeholder	Response	Comments
LVNL	Support	No comments
MUAC	Support	No comments
MoD	Support	Aligns with LoA
Luton Airport	Support	Revisions above FL200 have minimal impact. Should improve fuel usage.
easyJet	Neutral	No comments
Emirates	Neutral	No comments
Lead Operator Carrier Panel	Support	Airlines agreed that these OSEP deliveries were valuable. The shorter the routing, the better, with these small benefits all adding up over time.

5.6.2. For component 1, we received no feedback which may impact the design, so we progress this component as described in Section 4.

Table 6 Component 2: Engagement feedback for optimisation of westbound structure at KOLAG COP

Stakeholder	Response	Comments
LVNL	Support	New waypoint ENZEN (new COP) reserved for use. EHRD/EHEH/EHBD traffic will run MONIL-DCT–ENZEN as proposed. DCT will be used AMGOD to ENZEN for outbound EHLE traffic, no ATS route.
MUAC	Support	KOLAG is not flight plannable. This will be removed from the Dutch AIP, and L60 realigned L60 up to FL660. No issues with design.
MoD	Neutral	No impact of this change
Luton Airport	Support	Revisions above FL200 have minimal impact. Should improve fuel usage.
easyJet	Support	FL200 should not impact domestic traffic, which should reduce regulations being applied.
Emirates	Neutral	No comments
Lead Operator Carrier Panel	Support	Airlines agreed that these OSEP deliveries were valuable. The shorter the routing, the better, with these small benefits all adding up over time.

5.6.3. For component 2, we received no feedback which may impact the design, so we progress this component as described in Section 4.

5.6.4. The new COP will be identified as ENZEN on the FIR boundary.

6. Stage 4: Update & Submit

6.1. Final Design Option & Impacts

6.1.1. Following the engagement, the final design options are summarised in Table 6.

Table 7 Summary of proposed airspace changes & impacts

	Current Structure / Routing/Procedure	Proposed structure / routing/procedure	Summary of Change/Impacts
Component 1: Northbound	EAMTA as per extant AIP	EAMTA as per extant LOA with MoD	Permanent realignment of EAMTA. Optimises the EAMTA for military use with a more usable airspace.
	BANEM N866 LEDBO M604 ENITO M604 BEKMO:	BANEM M604 EFMIH M604 BEKMO	Route realignment N866. Reduces track mileage (1-2NM per flight) and enables flight plannable fuel/CO_2e benefits for approx. 1,500 flights per annum.
	LAPRA M604 LEDBO M604 ENITO M604 BEKMO	LAPRA M604 BANEM M604 EFMIH M604 BEKMO	Route realignment M604. Reduces track mileage (1-2NM per flight) and enables flight plannable fuel/CO_2e benefits for approx. 9,000 flights per annum.
Component 1: Southbound	KUBAX N866 BUKUT P7 BARMI 1N/1S MEGEL	KUBAX Z150 AMFEP Z150 MEGEL	New ATS route and STAR truncation. Reduces track mileage (3NM per flight) and enables flight plannable fuel/CO_2e benefits for approx. 4,600 flights per annum.
	BARMI 1N STAR: BARMI MEGEL DITOB WIQID MUCTE OFJES UDDIZ COCCU JUMZI ZAGZO	MEGEL 1N STAR[8]: MEGEL DITOB WIQID MUCTE OFJES UDDIZ COCCU JUMZI ZAGZO	
	BARMI 2A STAR: BARMI MEGEL DITOB LAPRA ABBOT	MEGEL 1A STAR: MEGEL DITOB LAPRA ABBOT	
Component 2	BERGI L602 SUPUR L60 KOLAG L60 SOPEK	BERGI L60 ENZEN L60 SOPEK	Realigned L60, new COP (ENZEN); KOLAG removed. Reduces track mileage (1NM per flight) and enables flight plannable fuel/CO_2e benefits for approx. 16,000 flights per annum.

[8] Named in accordance with ICAO STAR naming protocols

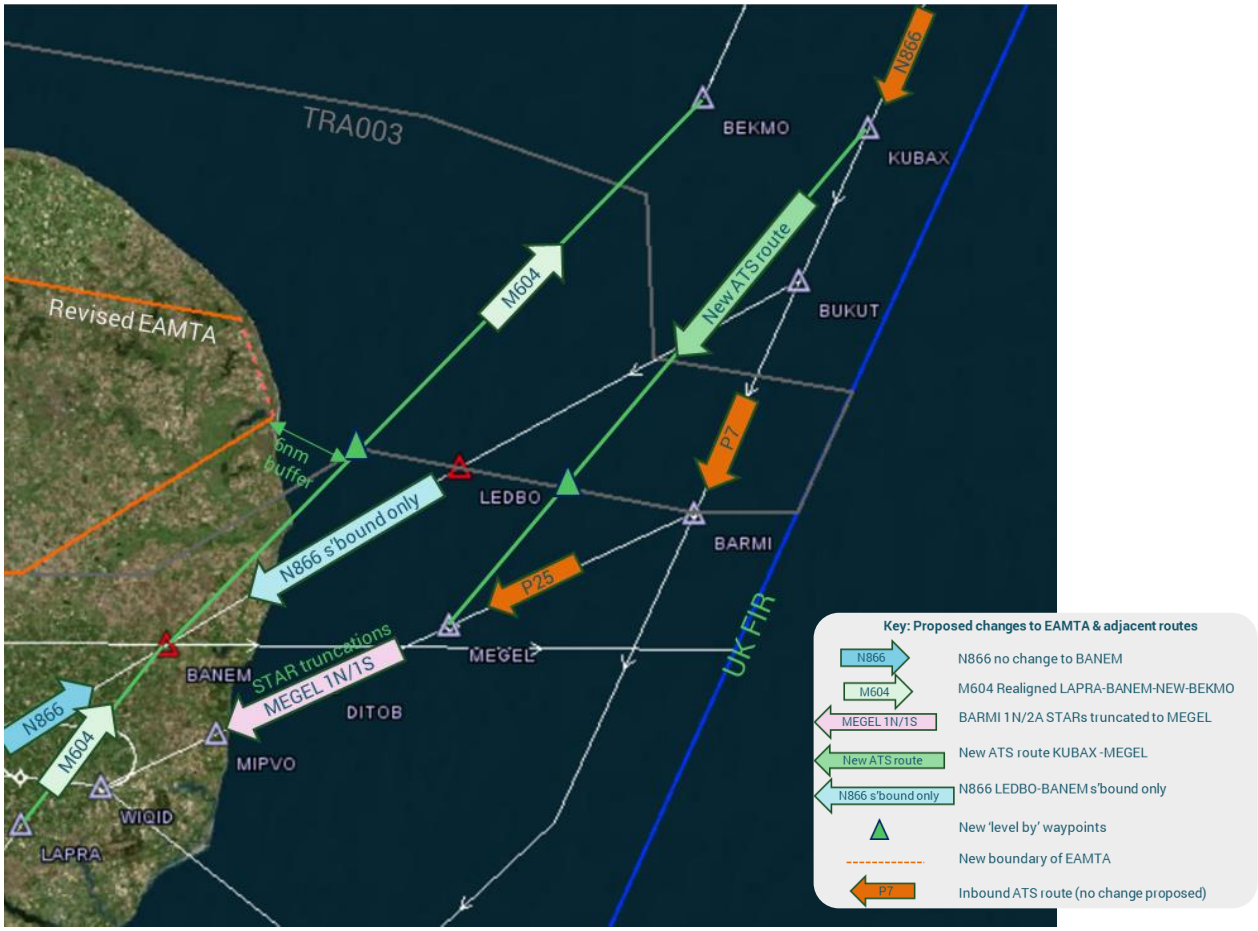


Figure 10 Final design option: Component 1 EAMTA and adjacent route structures

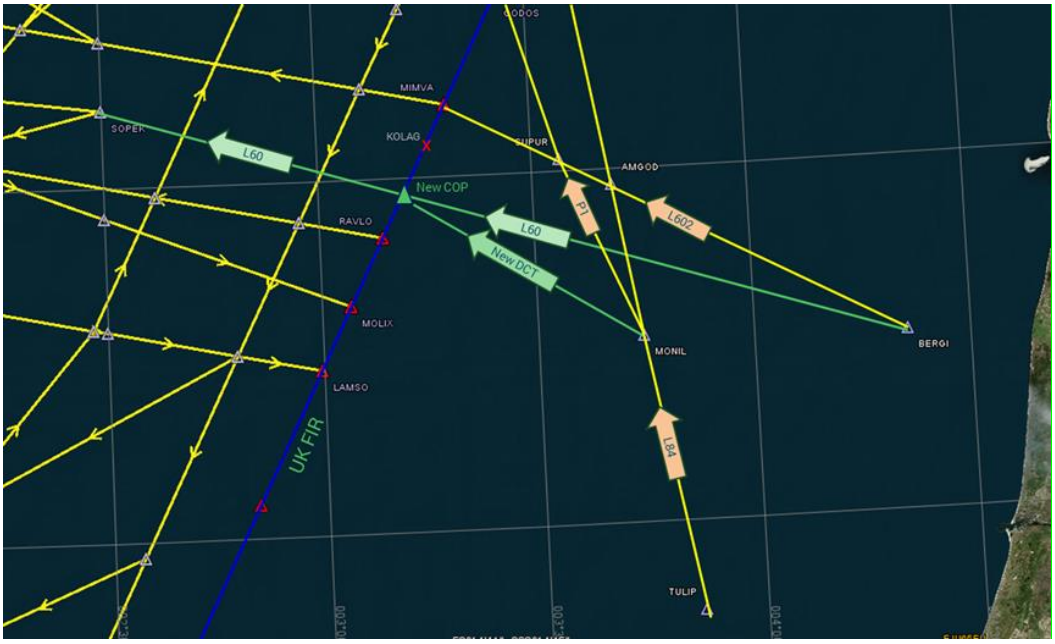


Figure 11 Final design option: Component 2 Realignment of L60

6.2. Regulations, Policies and Harmonisation

6.2.1. The following regulations and policies will be complied with in delivery of this airspace change:

Policy	Adherence
CAA Policy for Special Use Airspace (SARG Policy 133) (Ref 2).	M604 will be separated from the military training area in accordance with the required buffer stated in this policy.
International Civil Aviation Organisation (ICAO) STAR naming policy (Ref 4).	The new MEGEL STARs will be named in accordance with this.
CAA STAR truncation policy (SARG Policy 113) (Ref 3)	The BARMI STARs are truncated to MEGEL in accordance with this.
UK Airspace Modernisation Strategy (Ref 1)	Design options have been evaluated against the 'ends' of the AMS. Safety: the final design will maintain current safety levels. Integration: the EAMTA realignment optimises the airspace for military use with a more usable airspace. Environment: Facilities more efficient routing for commercial airspace users, providing flight plannable fuel and CO_2 savings. Simplification: reduces complexity and workload by reducing the need for tactical intervention from ATC.

6.3. Anticipated Operational Impacts

Military Impacts

6.3.1. The redesign of EAMTA has been done in collaboration with the MoD to make their airspace more operable, whilst enabling the realignment of M604 and N866.

6.3.2. This revised shape would benefit the MoD as the obtuse corner angles provide a more accessible airspace for manoeuvres than the narrow corners of the extant EAMTA.

Commercial Airspace Users

6.3.3. This change will have minimal operational impact for airspace users. Airlines utilising affected routes will benefit from reduced track mileage and flight plannable fuel efficiencies.

6.3.4. KLM airline, who requested the change for BERGI-SOPEK routing, has advised that shortening this route will save approx. 110,000kgs fuel annually for KLM/KLC flights (see Annex A, Ref 8).

Relevant Airports

6.3.5. This change will have minimal operational impact for airports. The truncation of the BARMI STARs and provision of a shortcut route direct to MEGEL will provide reduced fuel burn and CO_2 benefits. There will be no changes between the hold and runway.

Other Airspace users

6.3.6. There will be no impacts on other airspace users.

6.4. Safety

6.4.1. In line with the SARG CAP760 (Ref 5) process, safety assurance work has been conducted.

6.4.2. A pre-validation safety assurance exercise (HAZID) was undertaken by NERL in May 2024, and there are no safety risks identified by controllers. This has been supplied to the CAA.

6.4.3. A validation simulation was conducted on 2 July 2024, and ratifies this, finding no safety risks with the design. This has been supplied to the CAA as part of this submission.

6.5. Environmental Assessment

6.5.1. As described in Table 6, the realignment of M604 and N866 will reduce the track mileage for these ATS routes by 1-2NM per flight. This will enable flight plannable fuel savings and CO_2e reductions for all traffic utilising these routes.

6.5.2. The new ATS route Z150 and the truncation of MEGEL STARs for Luton and Stansted traffic will reduce track mileage by approximately 3NM per flight. This will enable flight plannable fuel savings and CO_2e reductions for all traffic utilising these routes.

6.5.3. The realignment of L60 from BERGI to SOPEK will reduce track mileage by approx. 1NM per flight. This will enable flight plannable fuel savings and CO_2e reductions for all traffic utilising these routes.

6.6. List of Supplementary documents

6.6.1. The following technical documents provide further information on the proposed designs and are supplied to the CAA with this submission:

- Aerodata spreadsheet

7. Appendix A: Glossary

Acronym	Definition
ACP	Airspace Change Proposal - the formal process by which changes to the design or structure of airspace are proposed and evaluated. This process involves collaboration between stakeholders, regulatory authorities, and the public to assess the potential impacts of proposed changes and make informed decisions, currently under CAP1616..
AIP	Aeronautical Information Publication – contains static aeronautical data, which is updated regularly, on the regulation, procedures, and other information pertinent to flying aircraft in the particular country to which it relates. The AIP is made up of three parts relating to general, en route and aerodrome information.
ANSP	Air Navigation Service Provider - an organisation or agency responsible for managing and providing air traffic control, navigation, and other air traffic services within a specific airspace region.
AMS	Airspace Modernisation Strategy - produced by the CAA and Department of Transport, it sets out the ends, ways and means of modernising UK airspace through a series of 'delivery elements' that will modernise the design, technology and operations of airspace.
ATC	Air Traffic Control - a service provided by ground-based controllers to guide and manage the movement of aircraft within airspace. ATC ensures safe separation between aircraft, issues clearances, and provides assistance to pilots, contributing to the overall safety and efficiency of air travel.
ATS	Air Traffic Service - a system that provides for the safe and efficient movement of aircraft within airspace.
COP	Coordination point – waypoint on the FIR boundary between neighbouring ANSPs
FL	Flight level - a standard measure of altitude used in aviation, particularly in high-altitude cruising. Flight Level is expressed in hundreds of feet and is based on a standard atmospheric pressure at sea level.
NATMAC	National Air Traffic Management Advisory Committee a non-statutory advisory body chaired by the CAA; the NATMAC is consulted for advice and views on any major matter concerned with airspace management and strategy matters.
NOTAM	Notice to Airmen - a notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard; the timely knowledge of which is essential to personnel concerned with flight operations. It will cover notifications of temporary information (usually of less than 90 days duration), or permanent information not yet included in the AIP.
STAR	Standard arrival route - a standard ATS route identified in an approach procedure by which aircraft should proceed from the en-route phase to an initial approach fix.
UIR	Upper Information Region -flight information region in upper airspace

[End of Document]