

Swanwick Airspace Improvement Programme - Airspace Deployment 6 (SAIP AD6)

Airspace Change Decision - Full Reasons

CAP 2288

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Executive summary

Objective of the Proposal

1. Under the modular Swanwick Airspace Improvement Programme, Airspace Deployment Number 6 (SAIP AD6), National Air Traffic Services (NATS) En Route Ltd (NERL) and London Luton Airport Operations Ltd (LLAOL) (EGGW) (the Sponsors) proposed the implementation of Standard Arrival Routes (STARs) in order to maintain a high standard of safety by reducing complexity, air traffic controller (ATC) workload and delays for EGGW arrivals and consequential delays to London Stansted (EGSS) arrivals. Full details of the proposal can be found on the CAA's Airspace Change Portal. The main proposed airspace changes, submitted for approval are:
 - a. to implement 10 new STARs into EGGW removing the interdependency of the current STARs and shared holds with EGSS;
 - b. to implement a new distinct EGGW hold (ZAGZO);
 - c. to establish new Control Areas (CTAs) as Class C airspace in order to provide the requisite safe containment of the new STARs and;
 - d. the re-classification, to Class G, of two volumes of existent controlled airspace (CAS) adjacent to EGSS, resulting in new vertical profiles for 8 EGSS standard instrument departures (SIDs).
2. A diagram of the existing airspace structure and traffic flow has been presented by the Sponsors in an updated Technical Map published on the CAA's Airspace Change Portal.

Summary of the decision made

3. The CAA has decided to approve the implementation of all the proposed changes to airspace design, including approving the proposed 10 EGGW STARs, the introduction of a distinct hold (ZAGZO) for EGGW and establishing new volumes of Class C airspace in the form of CTAs to afford protection to aircraft using the new hold and revised STARs.
4. The CAA's decision has also approved the re-classification of a portion of a EGSS CTA (3), (which is currently Class D airspace) as Class G and the lower 1000ft of LTMA (2) (which is

currently Class A airspace) as Class G, resulting in it being subsumed by LTMA3. The CAA has also approved an amendment of the vertical profiles of 8 EGSS SIDs.

5. CAA's decision is made subject to the following pre-conditions:
 - a. all the draft Letters of Agreement (LoAs), shared with the CAA, must be finalised;
 - b. the training of the requisite staff to safely implement the changes must be completed;
 - c. ATC Instructions, which include the proposed ATC mitigation procedures, charts, etc must be submitted at least 30 working days prior to implementation of the change; and
 - d. assurance that Human Performance monitoring on controller performance post implementation will be presented at Stage 7 (Post implementation review).

6. Our decision to approve the proposal was made on 24 November 2021 and published on the CAA's airspace change portal. More information on our decision and the reasons for it are set out in this document and the CAA's assessments are also published together with this document on the CAA's Airspace Change Portal.

Next Steps

7. Implementation of the revised airspace will be notified through a single AIRAC cycle (AIRAC 2/2022) and will become effective on 24 February 2022.

8. The CAA's Post Implementation Review (PIR)¹ of the changes approved by the CAA in this decision is due to commence no sooner than one year after implementation of these changes². It is a condition of the CAA's approval, that the Sponsors provide the data required by the CAA throughout the year following implementation to carry out that PIR. In due course, the Sponsors 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, in which the CAA reviews how the airspace change has performed, including whether anticipated impacts and benefits in the original proposal have been delivered

² At the date of the CAA's decision commencement of data collection for PIRs has been paused. [Airspace changes post implementation reviews | UK Civil Aviation Authority \(caa.co.uk\)](#)

Decision Process and Analysis

Chronology of Proposal Process

Statement of Need and Assessment Meeting

9. NERL submitted an initial Statement of Need (SoN) on 9 October 2018. Following further consideration by the Sponsors, a revised SoN was submitted 2 January 2019, in which the Sponsors stated that they wished to have the proposal prioritised and that it would be a joint application between NERL and EGGW. An Assessment Meeting (AM) was held on 8 January 2019, at which, the Sponsors outlined the scope of the ACP which included a description of the Sponsors' operational risk in the TC Essex sectors. The CAA requested that the Sponsors provide more evidence so that a fully informed determination, of the prioritisation being requested, could be made. The AM was carried over to the 6 February 2019; the CAA was able to determine that the proposal was in scope of the ACP process and agree the provisional timeline with the Sponsors. Minutes of the AM were published on the CAA Airspace Change Portal 14 February 2019.
10. The Sponsors were unable to meet the original agreed timeline, which resulted in four amendment requests and a 3rd SoN, which acknowledged the initial timeline changes.

Process followed to arrive at the proposal's design principles (Stage 1, Step 1B)

11. The Sponsors developed an appropriate set of Design Principles (DPs), through targeted engagement with representative groups of community and 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 meetings, workshops and focus groups to initiate discussion. Responses from aviation and community stakeholders, were analysed in April 2019 and an updated set of combined and prioritised DPs was produced by the Sponsors. Detail of the finalised 15 DPs was submitted to the CAA in the Step 1B Design Principles document and following some clarification questions regarding what occurred at the local community stakeholder focus group, together with the presentation of the DPs within the document, a v1.4 was published on the CAA Airspace Change Portal.

Define Gateway

12. A Define Gateway Assessment for SAIP AD6 was held on 26 April 2019. The CAA was content that the DPs had been developed through appropriate engagement with relevant stakeholders and that they took account of the 6 criteria set out in CAP1616, Appendix D. The Sponsors however appeared to imply that the workshops had considered the DPs for FASI(S) and this ACP at the same workshop. The CAA requested clarification from the Sponsors, to confirm that, adequate steps were taken to ensure, the ACP's stakeholders understood, that they were distinct proposals. The Sponsors confirmed that the adequate steps had been taken and that they were satisfied that the ACP's stakeholders understood and updated the consultation document accordingly.
13. The following statement was uploaded to the CAA Airspace Change Portal on. "The CAA has completed the Define Gateway Assessment for SAIP AD6 and is satisfied that the 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)

14. The Sponsors' options development was centred around the following 2 main areas of airspace development:
 - a. Establish upper options that split the combined EGSS and EGGW flows so that there is a reduction in controller interventions; and
 - b. Introduce lower options into EGGW that link with the different upper options.
15. Meetings were held with relevant stakeholders to present and discuss the design options. Presentations were tailored in order to help understanding for the different stakeholder categories.
16. 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 'accept' or to 'reject'. The result was that only one of the upper options was progressed and that this upper option would be compatible with all the accepted lower options taken forward. The Sponsors developed upper and lower options in order to highlight that the key issue to be addressed, the 'latent risk' described in the SoN, was in the upper element of the proposal. The segregation of the options into upper and lower categories aided the Sponsors in identifying the localised and cumulative impacts of the ACP.

Develop and Assess Gateway

17. Clarification was sought, prior to the Gateway, regarding details of the participating stakeholders, the threshold for meeting a design principle (DP) and the application of DP8 to the upper options, which resulted in administrative amendments to the Design Options and Design Principal Evaluation (DPE) documents (14, 15 and 20 November 2019). A Develop and Assess Gateway was held on 29 November 2019. The CAA were satisfied that the proposed options had been developed through suitable engagement.
18. The following statement was published on the CAA airspace change portal on 29 November 2019; “The CAA has assessed the Options Appraisal (Phase 1 – Initial) and consider that it is satisfactory against the requirements at CAP1616 Appendix E. The CAA approves the Design Principal Evaluation submitted by the Sponsors. The CAA has completed the Develop and Assess Gateway Assessment and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA has determined that it will be a Level 1 proposal. The CAA approves progress to the next Step.”
19. Following Stage 2, the Sponsors informed the CAA that they had carried out simulator testing on the preferred upper option from Stage 2, which resulted in revisions to the dimensions and positioning of volumes of the CAS from Stage 2. Because the development of the revisions was transparent and resulted in a design that did not require re-evaluation against the Design Principles, the CAA was satisfied that the proposal could be taken forward to the next stage.

Consult Gateway

20. The Consultation Gateway was first held 26 March 2020. The CAA reviewed the Sponsors consultation and engagement strategy against the criteria set out in CAP1616. The CAA determined that the Sponsors had not provided clear and sufficient information to enable stakeholders to make informed judgements. The CAA informed the Sponsors and provided feedback. A statement was uploaded to the CAA airspace change portal which set out why the Sponsors’ submission had not passed through the Gateway.
21. The Sponsors requested an amendment to their timeline, which was accepted by the CAA. The Sponsor re-submitted documentation for the Stage 3 Gateway of 28 August 2020. The CAA determined that the second submission was satisfactory and approved the strategy; however, given the given Sponsors intended to provide much of the consultation virtually, some feed-back was provided to the Sponsors, which included, ensuring that the progress of the consultation was monitored closely and that the CAA was provided with relevant updates.

22. The following statement was published on the CAA airspace change portal on 1 September 2020; “The CAA has now completed a second Consult Gateway Assessment (28 Aug 2020) and is satisfied that the change sponsor has met the requirements of the Process up to this point. The CAA now approves progress to the next Step”. The period of consultation was 19 October 2020 to 5 February 2021.

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

23. Consultation related to this ACP commenced on 19 October 2020. The Consultation was carried out mostly online due to the impacts of Covid-19. This was done using the citizen space platform via the CAA airspace change portal linking to a virtual exhibition, video conferencing (webinars), the consultation strategy and consultation documents. Social media and traditional media methods, such as TV interviews and newspapers were used to publicise the consultation.
24. The CAA were briefed by the Sponsors on 20 November 2020 and 15 December 2020 on the progress of the consultation. On 14 January 2021 an issue was raised by the Sponsors regarding the duplication of a table (N65 overflight) that may have been confusing to a reader. The Sponsors replaced the table and highlighted the correction in a v1.1 of the consultation document. The CAA were satisfied that this was a proportionate and transparent response to a minor error concerning supplemental data.
25. To maximise participation, the Sponsors sent reminder emails to stakeholders at the consultation mid-point and three weeks ahead of consultation end date and undertook a refresh of their media campaigns.
26. On conclusion of the consultation phase the Sponsors submitted a Step 3D (Collate and Review Responses) consultation feedback report and their categorisation of responses. The Sponsors’ analysis and categorisation identified themes (the specific aspect of each element of the ACP to which it referred) that had the potential to impact the final proposal, and these were progressed to Step 4A for consideration. The CAA reviewed a random sample of consultation responses and were of the view that the Sponsors had categorised them fairly.

Proposal Updates and submission to the CAA (Stages 4 and 5)

27. Step 4A provided detail of design amendments resulting from ACP stakeholder consultation. Updated final options appraisal analysis of the environmental and safety assessment tables reflected the impact of these design changes.

28. Step 4B was the Sponsors' formal submission of the Airspace Change Proposal.
29. The Sponsors submitted Step 4A(i) Consultation response Document, Step 4A(ii) Final Design Option 1A Technical Map, 4A(iii) LLA Arrival Final Options Appraisal, and 4B (Airspace Change Proposal) documents on 25 June 2020. These documents were submitted, prior to the CAA completing its review of the Step 3D categorisation of responses and as a result of changes to this document, the hyperlinks in the submission docs were amended 5 July 2020.
30. The Sponsors were asked a number of clarification questions by the CAA during Stage 5 in accordance with CAP1616 Para 222. These were answered on the CAA airspace change portal during October and November 21.
31. The Sponsors informed the CAA, 28 September 21, that if the proposal was approved, and the airspace to the south-east of EGSS was re-classified to Class G (raise the base levels of the current CAS) then it was anticipated that the aircraft utilising a number of the SIDs from EGSS would no longer be sufficiently contained within controlled airspace which does not align with CAA Policy³. As a consequence, the Sponsors' proposed amendments to the EGSS SIDs in order to ensure that aircraft utilising the affected SIDs continue to be contained within CAS.
32. To allow the CAA to determine the anticipated impacts of amending EGSS SIDs vertical profiles, a number of clarifications were sought and obtained from the Sponsors. Responses to which were published on the CAA's Airspace Change Portal. The CAA was satisfied, following a review of the responses provided by the Sponsors, the proposed amendments to the EGSS SIDs could be added to the scope of this ACP. The CAA concluded that there was no need for the Sponsors to carry out a further consultation exercise because the CAA agreed with the Sponsors' assessment that no additional adverse environmental impacts were anticipated as a consequence of the proposed change to the EGSS SIDs⁴. The Sponsors did however conduct engagement activity with targeted aviation stakeholders which would look to fly the revised SID profiles if approved.
33. The Sponsors informed the CAA, 12 October 2021, that they intended to amend the easterly STARs (the entry design into the ZAZGO hold) due to issues identified during a simulation.

³ [CAA Controlled Airspace Containment Policy](#)

⁴ CAA Environmental Assessment Para 16.1

The CAA asked the Sponsors for an impact assessment of the amendments (15 October 21). The first response received stated that there would be no impacts as a result of the STAR amendments. The CAA has asked for further clarification on the modelling that had been used to show that there would be no impacts (2 November 21) and for assurance regarding the stated safe containment of the procedures (10 November 21). The final updates regarding the STAR amendments were posted on the CAA Airspace Change Portal on 19 November 2021.

Secretary of State call-in

34. The ACP was assessed against the [Secretary of State for the Department for Transport \(DfT\) Call-in Process](#) and was found to meet Criterion D⁵. The CAA's assessment document, CAP2233, was published 20 August 2021 and a corrected v.2 was published 24th August 2021.
35. The ACP was not subject to call-in by the Secretary of State for the DfT and the letter⁶ from DfT explaining why, was published on the CAA's Airspace Change Portal on 15 November 2021. It is therefore a CAA decision whether to approve this proposal.

Public Evidence Session and written statements

36. The CAA determined that it was proportionate to hold a Public Evidence Session (PES) for this ACP. The PES was held 22 September 2021 and had 8 attendees who gave verbal evidence (CAP2263) in addition to 4 written submissions. All the written statements and the verbal evidence were saved on the CAA Airspace Change Portal. The CAA acknowledged all the evidence received in the CAA PES response document, which is published on the CAA Airspace Change Portal.

Draft Decision

37. The CAA's published process for the approval of airspace change proposals (CAP 1616) sets out that the CAA will normally publish a draft decision for Level 1 ACPs. In certain circumstances however, the delay caused by publishing a draft decision may be considered disproportionate to the benefits of publishing a draft decision. In such circumstances, the CAA may choose not to do so⁷.

⁵ Could lead to any volume of airspace classified as Class G being reclassified as Class A, C, D or E.

⁶ Letter to CAA re Call-in Request

⁷ See Para G46, CAP1616

38. The CAA therefore considered whether the benefits of publishing a draft decision outweighed likely disbenefits of a delay to the implementation of this proposal.
39. The CAA was made aware by the Sponsors that the proposal required an update to the National Airspace System (NAS) software. Updates to NAS software, due to the inherent complexity, only occur 4 times per year (February, May, September and November). The Sponsors stated that they had secured an implementation slot for February 2022 AIRAC with an Aeronautical Information System (AIS) data submission of the 26th November 2021. The CAA was mindful of the delay to our decision that publishing a draft decision would cause, and the CAA considered it more likely than not, that this would result in the Sponsors forgoing their secured slot. This would mean the Sponsors would have to wait until the next suitable NAS software update which, if the CAA's decision was to approve the change, would have risked the implementation of the proposal being delayed by up to a year. Given Sponsors' proposal primary objective was to maintain a high standard of safety by addressing a latent risk, the CAA therefore determined that the risks of a delay to the proposal's implementation outweighed any potential benefits which may have arisen had it decided to publish a draft decision. In deciding not to publish its draft decision, the CAA satisfied itself that it had adequately understood and taken into account the views of stakeholders through the PES and received written statements.
40. Taking the above factors into account, the CAA determined that the possible benefits which may have resulted from publishing a draft decision did not outweigh the likely risks of a delay to the implementation of the proposed change. Accordingly, the CAA did not publish a draft decision for this ACP.

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

41. Through the mechanism of developing an initial, full and final options appraisal the Sponsors have demonstrated an appropriate level of engagement with a targeted but relevant body of stakeholders. At the same time as it has been developing this ACP, London Luton Airport Ltd (LLAL) (the owners of the airport site), have been considering and preparing an application for a Development Consent Order (DCO). If granted and implemented, the DCO will enable more passengers at the airport. LLAL, as the promoter of the DCO, have been undertaking targeted engagement with stakeholders. The CAA understands that both LLAOL and LLAL, as part of their engagement activities have made it clear that this proposal is not related to nor dependant on that DCO. As part of their submission however, the Sponsors have provided analysis on the expected impacts and benefits both on the basis that the DCO

is granted and implemented and the contrary positions, where the DCO is either not implemented or is unsuccessful.

42. The final proposed option is assessed using the DfT's Transport Appraisal Guidance (TAG) environmental impacts workbooks for noise and greenhouse gases (GHG). According to the outputs of the TAG workbooks, when applied to the Development Consent Order (DCO) scenarios the design would yield a positive Net Present Value (NPV) of £402,581⁸ for noise and a negative GHG NPV of £434,606 for the non-traded sector, in addition to a negative NPV of £1,262,843 for the traded sector⁹ which reflects a disbenefit in greenhouse gases and fuel burn. For the without-DCO scenario, the Sponsors assessed the noise NPV as -£30,221¹⁰ and the GHG NPV as -£432,274 (non-traded) and -£1,253,159 (non-traded).
43. Overall, the proposed airspace change with DCO scenario has a NPV of -£10,864,000 and with DCO a NPV -£10,892,000. The benefit cost-ratio (BCR) is therefore less than 1, which means that the proposed airspace change would have higher costs than benefits.
44. TAG does not include a metric for the impact on safety.
 45. Therefore, the calculation of neither of the NPV figures includes the positive anticipated impact on safety.

CAA Analysis of the Material provided

46. The CAA considered all the documentation listed on the CAA airspace change portal, for this ACP, while completing our regulatory assessment. The core document Airspace Change Proposal Issue 1.0 was used to determine our decision. It was assessed in conjunction with the associated supplements (some of which are not publishable in an unredacted format,¹¹ due to legitimate commercial interest being asserted by the Sponsors), clarification question answers and technical instrument flight procedure reports.
47. As a record of our analysis of this material the CAA has produced the following:
 - SAIP AD6 Consultation Assessment;
 - SAIP AD6 Final Options Appraisal Assessment;
 - SAIP AD6 Environmental Assessment;
 - SAIP AD6 Operational Assessment; and

⁸ Excluding impacts below 51dB

⁹ NPV of the traded sector is not summarised as part of the sponsor's assessment score as the traded sector is assumed to be internalised through marked prices.

¹⁰ Excluding impacts below 51dB

¹¹ See CAP 1616 Para 71

SAIP AD6 Safety Review Summary Letter of Acceptance.

The CAA Assessments will be published on the CAA airspace change portal together with this document.

CAA assessment and decision in respect of Consultation

48. During the consultation the Sponsors could have enhanced the way in which they responded to requests for additional and/or clearer information from stakeholders. The consultation responses demonstrated that there was a strength of feeling around the general way in which the proposal was presented and the accessibility and publicity of the consultation itself. However, the Sponsors generated a good response rate and made revisions in light of feedback received. On balance, the Sponsors have demonstrated that meaningful consultation had been achieved. 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 Sponsors before, during and after the consultation. Furthermore, the Sponsors 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 account 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

49. When making this decision the CAA is carrying out one of its Air Navigation functions given to the CAA by the Secretary of State in their Air Navigation Directions 2017 pursuant to Section 66 Transport Act 2000. The CAA's statutory duties when carrying out this function are laid down in Section 70 of the Transport Act 2000. An explanation of our understanding of our statutory duties as they apply to our function to make decisions on proposals for permanent changes to airspace design, and which the CAA has applied here, are set out in

Appendix G to CAA's Guidance on the regulatory process for changing the notified airspace design (CAP 1616)¹²

Conclusions in respect of safety

50. 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.¹³
51. 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 reasons set out in the CAA's Safety Review Summary¹⁴. By way of summary only these reasons are:
 - a. The Sponsors have demonstrated that the proposed procedures will maintain a high standard of safety by addressing the latent risk consequential on the existing complexity of the airspace and impact on controller workload identified in the SoN.
 - b. CAS has been proposed to provide safe containment of the proposed flight procedures (STARs) of the necessary but minimum size required to do so. Changes to the SIDs at Stansted have been proposed so that aircraft utilising them remain contained in CAS.
 - c. The Sponsors have made appropriate commitments in respect of training the required air traffic controllers and support staff in order to safely implement the proposed changes and ongoing operation of those procedures.

Conclusions in respect of our duty to secure the most efficient use of airspace and an expeditious flow of traffic

52. The CAA has a duty to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic.
53. 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'.
54. 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.
55. In this respect the CAA is satisfied that the increased systemisation possible as an impact of the proposed changes will better distribute traffic and contributes to the safe and efficient

¹² [CAP 1616](#)

¹³ Transport Act 2000, Section 70(1).

¹⁴ See CAA Safety Review Summary for ACP 2018-65 SAIP AD6 – Stage 5 Letter of Acceptance, for more detail.

operation of aircraft inbound to EGGW and consequentially EGSS. This will reduce the requirement for flow restriction measures which can cause delays. The additional volumes of controlled airspace, hours of operation and airspace classification are appropriate to meet the task and are consistent with the requirements outlined in the Sponsors' SoN.

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

56. As one of our statutory duties when considering whether or not to approve a proposal for a permanent change to airspace design, the CAA is obliged to take account of the extant guidance provided by the Secretary of State,¹⁵ namely the 2017 Guidance to the CAA on its Environmental Objectives (ANG 2017)¹⁶. This includes a requirement that the CAA make an **Environmental Statement** which verifies that all of the environmental factors have been considered in accordance with the ANG 2017. The CAA confirms that all such factors have been considered as it has set out below and in more detail in SAIP AD6 Environmental Assessment (published on the CAA's airspace change portal).
57. In its ANG 2017, the government has set environmental objectives with respect to air navigation. These environmental objectives are "designed to minimise the environmental impact of aviation within the context of supporting a strong and sustainable aviation sector. The objectives are, to:
- Limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise;
 - Ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions; and
 - Minimise local air quality emissions and in particular ensure that the UK complies with its international obligations on air quality".
58. In addition, "the government laid out the altitude based priorities which should be taken into account when considering the potential environmental impact of airspace changes:
- a) In the airspace from the ground to below 4,000 feet the government's environmental priority is to limit and, where possible, reduce the total adverse effects on people.

¹⁵ Transport Act 2000, Section 70(2)(d)

¹⁶ [Air navigation guidance 2017 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624222/ANG-2017-Guidance-to-the-CAA-on-its-Environmental-Objectives.pdf)

- b) Where options for route design from the ground to below 4,000 feet are similar in terms of the number of people affected by total adverse noise effects, preference should be given to that option which is most consistent with existing published airspace arrangements.
 - c) In the airspace at or above 4,000 feet to below 7,000 feet, the environmental priority should continue to be minimising the impact of aviation noise in a manner consistent with the government's overall policy on aviation noise, unless the CAA is satisfied that the evidence presented by the Sponsors demonstrates this would disproportionately increase CO₂ emissions.
 - d) In the airspace at or above 7,000 feet, the CAA should prioritise the reduction of aircraft CO₂ emissions and the minimising of noise is no longer the priority.
 - e) Where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over Areas of Outstanding Natural Beauty (AONB) and National Parks; and
 - f) All changes below 7,000 feet should take into account local circumstances in the development of the airspace design, including the actual height of the ground level being overflown, and should not be agreed to by the CAA before appropriate community engagement has been conducted by the Sponsors¹⁷.
59. The Sponsors have asserted that the proposed airspace design is not anticipated to result in any additional adverse impacts on local air quality, tranquillity or biodiversity. For the reasons set out in the CAA's SAIP AD6 environmental assessment the CAA agrees with that assessment¹⁸.
60. There is no one threshold at which all individuals are considered to be significantly adversely affected by noise, however, the Government has set a Lowest Observed Adverse Effect Level (LOAEL) that is regarded as the point at which adverse effects begin to be seen on a community basis. The noise modelling outputs concluded that the SAIP AD6 Proposal would result in decreases in the population encompassed by noise levels in excess of the daytime LOAEL of 51 dB L_{Aeq,16h} (-0.3% to -0.9%) and increases in the population encompassed by noise levels in excess of the night-time LOAEL of 45 dB L_{Aeq,8h} (+0.3% to +0.6%). The Sponsors monetised the anticipated noise impacts using the DfT's Transport Appraisal Guidance (TAG) as -£30,221 (No DCO scenario) and £402,581 (with DCO scenario). The CAA notes that there is no material change to aircraft behaviours below 5,000ft and in general

¹⁷ Paragraphs 3.2 and 3.3 ANG 2017

¹⁸ See CAA SAIP AD6 Environmental Assessment Section 9 (local air quality), Section 10 (tranquillity) and Section 11 (biodiversity),

noise from aircraft flying at or above 4,000 feet is less likely to affect the key noise metrics used for determining adverse effects. The CAA has concluded that because the driver for this change is maintaining a high standard of safety the anticipated noise impact is not inconsistent with the Government's altitude-based priorities.

61. The Sponsors conclude that implementation of the change would likely to lead to an increase in fuel burn and therefore consequential Greenhouse Gas (GHG) emissions (expressed as CO₂e), as compared to the current airspace design. The proposed airspace design will result in aircraft arriving into EGGW, which will now no longer share the same holds as aircraft arriving at EGSS, to fly further before they land. The likely impact of increased CO₂ emissions applies whether or not EGGW's DCO application is granted, which would result in the *potential* for more air traffic movements than was the case in 2019. In the introductory year (2022), the proposed change is likely to lead to a disbenefit of 6,144 tCO₂e (both with and without DCO scenarios) and in 2032 (when the DCO promoter anticipates that the development is likely to have been completed); a disbenefit of 4,229 tCO₂e for the with-DCO scenario and 4,166 tCO₂e for the without-DCO scenario. Over the 10-year forecast period the with-DCO scenario is appraised by the Sponsors as leading to an increase of 57,052 tCO₂e and without-DCO as 56,703 tCO₂e.
62. The CAA has concluded that because the driver for this change is maintaining a high standard of safety the anticipated impact on CO₂ emissions is not inconsistent with the government's altitude based priorities The CAA has taken the estimated impacts on CO₂ emissions into consideration when coming to its decision, which is described in further detail below.

Conclusions in respect of aircraft operators and owners

63. The CAA's duty is to satisfy the requirements of operators and owners of all classes of aircraft.¹⁹ The Sponsors have proposed new CAS to safely contain new STARs, meaning there will be a known or predictable environment for aircraft arriving into EGGW and that the new airspace design is anticipated to reduce delays for such aircraft, their operators and passengers.
64. At the same time the proposed new CAS volumes and the selected classification provide safe access to suitably equipped GA²⁰ aircraft. The CAA is satisfied that the proposal satisfies the requirements of operators and owners of all classes of aircraft e.g. due to the minimum new

¹⁹ Transport Act 2000, Section 70(2)(b).

²⁰ UK General Aviation including Sports and Leisure flying

volumes of CAS being proposed which is all above 7500feet²¹. The proposed reduction in CAS, to the south east of EGSS, will increase airspace access.

Conclusions in respect of the interests of any other person

65. The CAA's duty is 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.
66. Noting the anticipated impact of this proposal, if implemented, will serve to maintain a high standard of safety, this proposal will in turn contribute to a reduction on third-party safety risk. This proposal is jointly sponsored by the airport operator of EGGW and NERL and therefore meets the needs of the relevant Air Traffic Controllers (ATC). This proposal also meets the known requirements of EGSS and ATCs in the surrounding airspace. The proposed airspace design is not anticipated to have an adverse noise impact on the health and quality of life of the general public due to the altitudes at which new overflight is likely to occur.

Integrated operation of ATS

67. The CAA's duty is 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.²²
68. In this respect the CAA is satisfied that the impacts of the revised structures and new procedures associated with this ACP will not impede the operational requirements of the MoD as the Sponsors have developed a Letter of Agreement (LoA) with the MoD. It is anticipated that any other possible impacts on other relevant Air Traffic Service Providers will also be addressed by the Sponsors through LoAs.

Interests of national security

69. The CAA's duty is to take account of the impact any airspace change may have upon matters of national security.²³
70. In this respect, the CAA is satisfied that the proposal has no impact on national security.

International obligations

71. The CAA's duty is to take account of any international obligations entered into by the UK and notified by the Secretary of State.

²¹ Or Flight Level 75.

²² Transport Act 2000, Section 70(2)(e).

²³ Transport Act 2000, Section 70(2)(f).

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

CAA's Regulatory Decision

73. After consideration of the impacts and benefits identified in the Sponsors' proposal as described in this document and the documents referred to in it, the CAA has decided to approve the proposed EGGW STARs, holds, associated CAS to safely contain them, the proposed re-classification of airspace to the south east of EGSS and the amendments to the vertical profiles of the impacted EGSS SIDs. Full details of the reason for the CAA's decision can be found in the CAA documents referred to at paragraph 45 above. By way of summary only, the CAA has made this decision for the following reasons:
74. The CAA's primary duty is to maintain a high standard of safety and this is to have priority over the application of all our other statutory duties in s70 Transport Act 2000. The CAA has concluded that an airspace change, which achieves a reduction in the complexity as a result of increased systemisation within the TC Essex sectors/airspace concerned, and thereby a reduction on controller workload, is justified to address the latent risk identified by the Sponsors in order to maintain a high standard of safety.
75. The CAA has considered the Sponsors' and the European Network Operations Plan traffic forecasting²⁴ and the impact of the COVID-19 pandemic on traffic levels in the area of the proposal and globally. The CAA has also taken into account the on-going uncertainty on future traffic levels. Nevertheless, and noting this uncertainty, the CAA has concluded that the latent risk, identified by the Sponsors should be resolved as set out in this proposal.
76. Noting that the CAA's primary duty is to maintain a high standard of safety and this is to have priority over the application of all our other statutory duties in s70 Transport Act 2000, the CAA has nevertheless also considered the impact of our other statutory duties as noted in this document.
77. In making our decision the CAA has taken into account the identified anticipated negative impact on carbon emissions. The Sponsors have identified that overall, there could be a net-disbenefit to CO₂ output and fuel usage compared with the baseline do nothing scenario. The Sponsors have been clear that the purpose of the proposal is to address a "latent risk within the sector" and "to look at options to address the safety issues identified". The CAA agrees with the conclusion that options for developments to maintain a high standard of safety without such a negative impact on CO₂ emissions could not be achieved by the Sponsors due to the constraints of the current wider LTMA airspace design. The CAA has decided to

²⁴ The Sponsors have stated that they anticipate forecast traffic levels will return to 2019 levels in 2022. The European Network Operations Plan dated 12th November 2021 suggested an increase in December 2021 to 81% of 2019 traffic levels across ECAC

approve this change notwithstanding this anticipated impact, in order to maintain a high standard of safety.

78. In making our decision the CAA has also noted that it is anticipated there will be no additional adverse impact (as that is described the CAA's SAIP AD6 Environmental Assessment) on the noise experienced, as a consequence, of the change proposed.
79. In making our decision the CAA has also noted the impact of the proposed change on the requirements of operators and owners of all classes of aircraft. The CAA has noted the Sponsors analysis that it is anticipated that there will be a 30% increase in resilience overall within TC Essex Sectors as a result of the proposed airspace design leading to less likelihood of delays. However, part of the design introduces a new hold for EGGW arrivals, which will result in an increase in CAS within this area. The Sponsors proposal sets out that this increase in controlled airspace is "mitigated by an 88nmsq reduction in the area of controlled airspace below 4000ft". The CAA has concluded that all these factors including the release of controlled airspace and the proposed classification of the new areas of CAS as Class C is relevant to our duty to satisfy the requirements of operators and owners of all classes of aircraft
80. Noting our duty to take account of the interests of any person in relation to the use of airspace the CAA has taken into account the fact that the proposal is anticipated not to have an adverse impact on the operations at EGSS because the scope of the proposal was able to be revised to include an amendment to the vertical profile of eight EGSS SIDs which for the reasons set out in this document the CAA was also able to approve.

Conditions attaching to the CAA's decision

81. It is a condition of our decision to approve the proposal that the Sponsors meet the following conditions prior to implementation:
- 1) All the draft Letters of Agreement (LoAs), shared with the CAA, must be finalised.
 - 2) The training of the requisite staff to safely implement the changes must be completed.
 - 3) ATC Instructions, which include the proposed ATC mitigation procedures, charts, etc must be submitted at least 30 working days prior to implementation of the change.
 - 4) Assurance that Human Performance monitoring on controller performance post implementation will be presented at Stage 7 (Post implementation review).

Implementation

82. The revised airspace will become effective on 24 Feb 22. Any queries are to be directed to the SARG Project Leader, by emailing airspace.policy@caa.co.uk.

Post Implementation Review

83. In accordance with the CAA standard procedures, the implications of the change will be reviewed after one full year of operation²⁵, at which point, CAA staff will engage with interested parties to obtain feedback and data to contribute to the analysis.

84. The Sponsors will be sent a letter detailing the PIR requirements.

Civil Aviation Authority

24 November 2021

²⁵ Subject to ongoing Covid-19 impacts, see [CAA Website](#) for updates.