UK Civil Aviation Authority

Consultation on a Proposed Electronic Conspicuity Mandate in the UK

CAP 3268

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Foreword

The United Kingdom's lower airspace is changing. General aviation, commercial aircraft, military flights and emergency services now share the sky with a growing number of unmanned aircraft, including those operating beyond the direct sight of the operator. In the near future, this will also include emerging electric vertical take-off and landing (eVTOL) aircraft expected to enter service in the coming years. This consultation is relevant to all of these communities.

Electronic Conspicuity (EC) means the use of equipment that allows an aircraft to broadcast its position electronically and to receive position information from other nearby aircraft. It can support the long-established 'see and avoid' principle for crewed aircraft, which means pilots must maintain a visual lookout and take action to avoid collisions.

For unmanned aircraft, EC equipment can also support wider detect and avoid capabilities by helping aircraft identify each other, but it is only one part of that broader system.

Voluntary use of EC equipment has brought real safety benefits in parts of aviation. However, take-up is uneven across sectors and locations, and not all EC equipment works together reliably. As a result, the full potential of EC as a system-wide safety tool is not being realised. While EC equipment does not eliminate collision risk on its own, it is an important part of a wider system to ensure our airspace is safe.

In 2025, the Department for Transport asked the CAA to develop and consult on proposals to introduce a legally binding requirement for aircraft to carry and use EC equipment that meets defined performance standards. Following assessment of the evidence, the CAA has set out its proposed approach to such a national EC mandate ("the EC Mandate") in this document.

The CAA recognises that any new requirement for EC will affect different parts of the aviation community in different ways. Any EC Mandate would need to be practical and deliverable. It must protect fair and safe access to airspace, and support the UK's wider plans to modernise how airspace is used and enable new types of aviation.

The CAA encourages anyone affected by these proposals to read this document carefully and to respond with evidence and practical experience. What you tell us will inform the CAA's position and any steps that follow.

Giancarlo Buono
Group Director, Safety and Airspace Regulation
UK Civil Aviation Authority

CHAPTER 1

Introduction and Purpose

Why we are consulting

1.1 The call for evidence in the consultation on EC Technical Concept of Operations (CAP 3140) identified a range of initial stakeholder views on an EC Mandate, including on impact, practicality, fairness and some of the potential benefits. Informed by this earlier stakeholder engagement, commissioned research and technical detail set out in CAP 3140, the CAA has developed a provisional proposal for an EC Mandate.

1.2 That approach is described in this document.

1.3 This consultation seeks views on the CAA's proposed approach on how an EC Mandate should be designed and introduced in a practical, fair and workable way.

What this consultation addresses

1.4 Some aircraft are already subject to legal requirements to carry EC equipment. For example, certain aircraft operating in designated airspace are required to carry Mode S transponders and/or Automatic Dependent Surveillance-Broadcast (ADS-B) equipment as a condition of access. This consultation is not intended to affect or reopen those existing requirements. It focuses on aircraft that are not already subject to such obligations.

1.5 The CAA's current proposed approach is set out in detail in Chapter 4. This consultation seeks views on the proposed approach and whether it achieves the objectives in Chapter 3.

1.6 In particular, the CAA wants to know whether respondents agree with:

- the proposed scope, including which airspace users would be within or outside the mandate;
- the FL100 altitude threshold; and
- the proposed approach to alternative means of compliance and oversight.

1.7 In addition, the CAA welcomes any views or information which you would like us to take into account when considering matters such as the length of any transition period, the feasibility of supply chain and installation capacity, and the costs and impacts of the proposed approach across different sectors. Chapters 5 and 6 address these questions.

Relationship to our previous work on EC

1.8 This consultation builds on several years of policy and technical development. The key stages are summarised below.

1.9 In December 2022, the CAA and the Department for Transport published a joint statement[1] on the development of a national specification for EC. That statement supported further work on a common technical standard for EC equipment, meaning a single agreed specification that would allow EC equipment from different manufacturers to work together reliably. The statement identified 1090 MHz as the appropriate frequency for crewed aircraft and 978 MHz for certain remotely piloted aircraft use cases. The joint statement was accompanied by three reports commissioned by the DfT from Egis[2], an independent aviation consultancy. The CAA's subsequent EC work has built upon the outcome of these reports. This includes the development of a minimum specification for EC which meets the criteria and is viable in the coming years.

1.10 In 2024, the CAA commissioned five interconnected workstream studies to investigate the real-world carriage, use and performance of EC equipment. The purpose of the studies was to help the CAA understand what EC can do today and to inform the development of an EC Concept of Operations. The consolidated report (CAP 3139)[3] was published in July 2025. This work was supported by the DfT and contributes directly to the delivery of objectives within the Airspace Modernisation Strategy (AMS) and the Future of Flight Action Plan[4].

1.11 In April 2025, the DfT and the Department for Science, Innovation and Technology asked the CAA to develop options for mandating electronic conspicuity. [5]

1.12 The CAA subsequently developed the EC Technical Concept of Operations[6], and consulted on this in 2025. That document explains how a shared technical approach could support safety, help EC equipment from different sources work together, and allow different airspace users to operate alongside each other. It sets out nine positions describing how EC should work technically in UK airspace. Those positions are summarised in Appendix C of this document.

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[1] Joint Statement from CAA/DfT on the Development of a National Standard for Electronic Conspicuity | UK Civil Aviation Authority

[2] CAP2498C: Definition of the regulatory standards and regulatory framework roadmap – Phase 3 Report | UK Civil Aviation Authority

[3] CAP3139: Electronic Conspicuity (EC) Consolidated Study Report | UK Civil Aviation Authority

[4] Future of Flight action plan - GOV.UK

[5] Regulatory Innovation Office and Future Safety and Innovation (FS&I) engagement: letter

[6] CAP3140: Electronic Conspicuity – Initial Technical Concept of Operations (EC ConOps) 2025 | UK Civil Aviation Authority

1.13 The CAA has now published its response[7] to the consultation on the EC Technical Concept of Operations. That response sets out the current technical direction and should be read alongside this document.

[7] CAP3217 Electronic Conspicuity – Initial Technical Concept of Operations: Consultation Response Document

CHAPTER 2

Context and Operating Environment

The changing lower airspace environment

2.1 UK airspace below FL100, approximately 10,000 feet Above Mean Sea Level (AMSL), is used for many different types of flying. This includes General Aviation (GA), which covers a wide range of private, leisure, business aviation pilot training, as well as commercial, state and specialised operations such as police, search and rescue, air ambulance flying, and military flying. A growing number of Unmanned Aircraft Systems (UAS) also operate in this airspace, including some Beyond Visual Line of Sight (BVLOS) operations where the remote pilot cannot keep the aircraft in direct sight. eVTOL are also expected to begin to operate in this environment.

2.2 Many of these activities will take place in airspace where there is no radar coverage, or where an aircraft is not in receipt of a service from an Air Navigation Service Provider (ANSP). In those areas, safety depends on several things working together, including:

- how the airspace is designed and used;
- the rules and procedures that pilots and operators must follow;
- visual lookout and the long-established principle of see and avoid;
- pilot and remote pilot training, competence and judgement; and
- EC equipment, where carried.

Airspace modernisation and integration

2.3 The AMS sets out the long-term plan for how UK airspace is designed and used. One of its aims is to support the safe introduction of new types of aviation, including BVLOS operations and eVTOL. Another aim is to protect access for existing airspace users, including private pilots, glider and balloon operators, pilot training organisations, commercial and specialised aviation, military users, and emergency services.

2.4 Bringing remotely piloted aircraft and aircraft with higher levels of automation into shared airspace creates additional challenges for detecting and avoiding other aircraft. Where aircraft cannot reliably detect each other electronically, it may be harder for different types of aircraft to use the same airspace safely and efficiently. That could increase the need to keep some types of operations segregated, which may reduce flexibility and access for all users.

2.5 The CAA therefore sees wider and more consistent use of EC equipment as a way to maintain safety, enable different types of aircraft to share the same airspace.

Voluntary adoption and the case for a mandate

2.6 In airspace where aircraft are not already legally required to carry Mode S transponders and/or ADS-B equipment, the fitting of EC equipment has so far been voluntary. Voluntary approaches can support innovation and flexibility, and they have brought safety benefits in some areas. However, this means that not all aircraft carry compatible EC equipment. Where take-up varies significantly between groups or locations, the safety benefit of EC equipment is reduced because fewer aircraft can detect one another electronically.

2.7 The CAA has considered whether voluntary approaches alone can deliver the consistent and widespread use of EC equipment needed as part of long-term airspace integration.

2.8 The CAA's current view is that voluntary approaches will not achieve the level of consistency and interoperability to meet that aim. In this context, interoperability means that EC equipment used by different aircraft can work together effectively so that they can detect and identify each other. The CAA therefore considers that an EC mandate is needed to deliver the safety and operational benefits of EC consistently for all airspace users.

2.9 This consultation sets out the CAA’s proposed approach to implementing a national EC Mandate and seeks views on that proposal including any supporting evidence.

CHAPTER 3

Objectives for an EC Mandate

Safety and risk reduction

3.1 The primary objective of any EC Mandate would be to reduce of mid-air collision risk in UK lower airspace. While EC equipment alone cannot eliminate the risk of mid-air collisions, it can improve a pilot's awareness of nearby aircraft by allowing equipped aircraft to share and receive position information. As the number of aircraft carrying compatible EC equipment increases, and system interoperability improves, the potential safety benefit grows.

3.2 The objective is not to eliminate collision risk, which depends on multiple layers of mitigation, but to strengthen one element within that layered system.

Interoperability and system consistency

3.3 A further objective is to ensure that EC equipment from different manufacturers can work together reliably, creating a consistent and trustworthy picture of who is operating in the airspace. Where aircraft carry incompatible EC equipment, or do not carry EC equipment at all, the safety benefit is reduced.

3.4 Stipulating clear legal requirements for EC would give pilots, manufacturers and other airspace users a better understanding of what is required and what they can rely on, while retaining sufficient flexibility for new technology to develop within that framework.

Supporting integration and equitable access

3.5 The AMS seeks to enable the safe integration of new and emerging airspace users, including BVLOS operations and eVTOL, while maintaining access for existing users. If aircraft cannot reliably detect one another electronically, it may be harder for different types of aircraft to share the same airspace. That could lead to greater reliance on keeping some types of aircraft apart through segregated airspace, limiting access and flexibility for all users.

3.6 The aim is to support integration in a way that is fair and protects access for existing users while enabling new ones.

Practicality and deliverability

3.7 Any EC Mandate must be practical and deliverable. The CAA recognises that the impact of any requirement will vary significantly across different types of aircraft and operation. In considering the impacts of any requirement across different aircraft types and sectors, the CAA will take into account:

- the cost of EC equipment and installation across different aircraft types;
- how practical the requirement would be for different categories of operator;
- whether compliant EC equipment is available in sufficient quantity;
- the impact on existing airspace users;
- the timetable for implementation and what is achievable; and
- whether the overall safety and integration benefits justify the burden on individual operators.

Regulatory clarity and certainty

3.8 An EC Mandate would need to operate consistently with:

- international obligations under the Chicago Convention and the associated standards and recommended practices set by the International Civil Aviation Organization (ICAO); and
- the treatment of foreign-registered aircraft operating in UK airspace.

3.9 Some operators have said that, when EC equipment is only recommended and not required, it is not always clear what they need to carry or how compliance is assessed. A clear and stable legal requirement could give operators and manufacturers greater certainty and make oversight more straightforward. The CAA and the DfT will consider the extent to which detailed technical specifications for EC equipment may be contained in other documents such as guidance or means of compliance.

CHAPTER 4

The CAA's Proposed Approach

4.1 This chapter sets out the CAA's proposed approach to an EC Mandate. It explains who the EC Mandate would apply to, what affected operators would be required to do, and how the CAA has approached the key design questions.

4.2 For a step-by-step guide to understanding whether and how the EC Mandate would apply to your aircraft or operation, see Appendix A.

Scope: who the EC Mandate would apply to

Who would be within scope

4.3 The EC Mandate would apply to all civil general air traffic that is not already required to carry and use ADS-B equipment under Commission Regulation (EU) No. 1207/2011 (Article 5 Interoperability Requirements) and the UK Aeronautical Information Publication (GEN 1.5 Aircraft Instruments, Equipment and Flight Documents). This applies within UK sovereign airspace up to FL100.

4.4 The EC Mandate would also apply to foreign-registered aircraft operating within UK sovereign airspace. Such aircraft would be subject to the requirements set out in paragraphs 4.3 and 4.5, where applicable.

4.5 eVTOL and all UAS conducting BVLOS operations will also be within scope of the EC Mandate, except for state BVLOS operations which are discussed further below.

Who would not be within scope

4.6 The following would not be within scope of the EC Mandate:

- **aircraft already legally required to carry ADS-B equipment under existing requirements** – the CAA currently intends that these requirements should continue unchanged by any EC mandate;
- **military aircraft -** the CAA and the Ministry of Defence are continuing to work together on coordinated arrangements for shared airspace;
- **Visual Line of Sight (VLOS) UAS operations**.

4.7 The position regarding non-military state aircraft, including some police and emergency service operations, remains under consideration. See "State aircraft" below.

Geographic and altitude application

4.8 The EC Mandate would apply uniformly across UK sovereign airspace, meaning the airspace above UK land and the sea within 12 nautical miles of the coast, below FL100. A single UK-wide approach is the most practical option. A mandate applying only in certain parts of the country could create confusion at boundaries and make compliance harder to assess, particularly for operators who cross those boundaries during a single flight.

4.9 FL100 has been chosen as a practical and well-targeted threshold. It covers the large majority of GA and BVLOS activity, which is predominantly concentrated below this level, and reflects the reduced availability of radar surveillance and separation services in much of lower airspace. Above FL100, many aircraft are already subject to surveillance equipage requirements, including ADS-B, as a condition of operating in that airspace. The FL100 threshold is therefore intended to focus the proposed EC Mandate on the lower airspace environment where a common baseline of electronic visibility does not currently exist.

4.10 The FL100 threshold is not a precise safety boundary but a practical line chosen to focus the requirement where it will have the greatest effect. Risk does not change suddenly at that altitude.

4.11 Implementation would require updates to the UK Aeronautical Information Publication (AIP) and notification to relevant international aviation bodies, including national aviation authorities and organisations such as ICAO and Eurocontrol.

4.12 The CAA has considered alternatives, including a lower altitude limit or different rules for different classes of airspace. A lower threshold might reduce the impact on some operators but would reduce the number of aircraft visible within the system. Applying different rules to different airspace classes might better reflect local risk levels but would add complexity, particularly where airspace classification changes during a single flight.

What operators would be required to do

4.13 Aircraft within scope would be required to carry EC equipment that transmits position information in a format compatible with ADS-B and meets the minimum performance standards set out in CAP 3140. For BVLOS UAS, the equipment would also be required to receive position information. This equipment would need to be used during flights in UK sovereign airspace below FL100.

4.14 In broad terms, depending on the type of aircraft or operation:

- crewed aircraft operating at less than 140 knots would need to carry and use ADS-B equipment that broadcasts position and identity information meeting the minimum performance standards for lower-speed aircraft in CAP 3140. In practice this could be met by some CAP 1391 approved devices or a compliant Mode S transponder with ADS-B extended squitter;
- crewed aircraft operating at more than 140 knots would need to carry and use a Mode S transponder with ADS-B extended squitter functionality meeting the higher performance standards in CAP 3140;
- BVLOS UAS would need to emit a 978MHz UAT ADS-B signal meeting the performance standards in CAP 3140, and be equipped to receive both 1090MHz ADS-B and 978MHz UAT signals to detect both manned and unmanned aircraft.

4.15 These are indicative descriptions only. The precise technical requirements are set out in CAP 3140 and summarised in Appendix C. Respondents are encouraged to engage with those technical positions when considering the questions at the end of this chapter.

4.16 The CAA recognises that BVLOS operations will have to rely on additional technological mitigations, including detect and avoid systems, and that their operating profiles may differ from those of traditional GA aircraft. These differences are relevant to the balance of impacts across different sectors and to how the requirement will interact with existing regulatory frameworks such as the UK Specific Operations Risk Assessment framework (UK SORA) within UK Regulation (EU) 2019/947.

State aircraft

4.17 The CAA recognises that non-military state aircraft have specific operational needs and requirements when it comes to complying with a legal requirement to carry and use EC equipment. Given the complexity and variety of these operations, the CAA does not consider it practical or workable at this stage to set out a single blanket policy position covering all such users and operations. The CAA will work with these operators and relevant Government departments to explore how an EC Mandate might interact with their operations.

4.18 Military aircraft are not expected to be subject to the EC Mandate in the same way as civil aircraft.

Use of EC equipment during flight

4.19 Simply carrying EC equipment would not be sufficient to meet the stated objectives of an EC Mandate: EC equipment must also be switched on and transmitting position information.

4.20 Any EC Mandate would therefore be expected to cover both carriage and active use. The CAA recognises that this raises practical questions around equipment failure, human factors, and appropriate treatment where equipment is not functioning as expected. The CAA is exploring appropriate provision for equipment malfunction and exceptional circumstances.

Alternative means of compliance

4.21 The CAA recognises that in some operational contexts the objectives of the EC Mandate may be achievable through means other than direct carriage of EC equipment. Where an operator is able to demonstrate an alternative means of compliance that meets the same safety outcome, the CAA will consider this on a case-by-case basis. It is not an exemption or a carve-out from the requirement, but an alternative way of meeting it.

4.22 This would require the operator to demonstrate to the CAA's satisfaction that the relevant safety objectives are being achieved.

Funding and the EC Rebate Scheme 2020 to 2024

4.23 The UK Government previously supported the voluntary uptake of EC equipment through the EC Rebate Scheme, which ran from 2020 to 2024 and was administered by the CAA. Many operators invested in EC equipment as part of that programme. The CAA acknowledges that investment and the safety benefits it delivered.

4.24 The standards used for the rebate scheme reflected what was appropriate at the time. The programme delivered real safety benefits by helping more aircraft become electronically visible to each other. Many aircraft fitted with EC equipment through the rebate scheme have already provided several years of safety benefit. For some operators this may be up to eight years by the time any mandate could come into effect. In many cases those devices may continue to provide safety benefits for years after that.

4.25 The proposed approach does not include Government funding to support operators in meeting the EC Mandate requirement. The cost of compliance will fall on individual operators. The CAA is seeking quantitative evidence on costs through this consultation to inform the assessment of the overall impact of the proposed mandate.

4.26 Operators may not necessarily be required to remove EC equipment fitted through the rebate scheme, even where that equipment does not meet the proposed mandate standard. Such equipment may continue to be used alongside any mandated EC equipment and will continue to provide safety benefits, though the CAA notes that considerations such as electromagnetic interference may affect whether retention is practical in all cases.

Oversight

4.27 The CAA's proposed approach is to assess compliance through existing oversight processes that already apply to aircraft equipment, rather than through a separate enforcement regime specific to EC equipment.

4.28 For aircraft categories that do not fall within a formal oversight regime, the CAA will consider whether the oversight requirements may be conducted through other means.

Consultation questions

1. The CAA's proposal is that the EC Mandate should apply to all civil general air traffic that is not already required to carry and use ADS-B equipment, operating below FL100 in UK sovereign airspace, subject to the exceptions for military and state aircraft and VLOS operations described in this chapter. Do you agree with that proposal?

Please explain your reasoning and provide any supporting evidence. If you think the scope should be drawn differently, please explain why and what alternative you would propose.

2. Do the minimum performance requirements set out in CAP 3140 provide appropriate and workable technical requirements for the EC Mandate?

Provide evidence where technical requirements may affect overall impacts, implementation feasibility, interoperability or operational practicality.

3. CAP 3140's Position 6 sets out the ADS-B IN receive capability for crewed aircraft should remain a voluntary, operator-led choice rather than a mandatory requirement. Do you agree with this position?

If no, please explain what approach you would propose and why, including the operational and safety implications. Please provide supporting evidence where available.

4. In which circumstances, if any, could the objectives of an EC Mandate be met through means other than direct carriage of EC equipment by the aircraft?

Please explain how any alternative approach would deliver the objectives of the EC mandate set out in Chapter 3. Please provide evidence on the operational contexts where this might apply.

5. The CAA and the Department for Transport are looking at how to balance clear rules with the flexibility needed as technology develops. This includes whether detailed technical requirements for EC equipment should

be set out in guidance or other non-legislative documents, rather than in legislation.

Is there anything you think we should take into account when considering this?

6. **Is there anything you would like us to consider as we develop our oversight and compliance approach to support effective implementation of an EC Mandate across different aircraft categories and operational contexts?**

   Please provide examples where possible, including any aircraft categories where existing oversight mechanisms may not be appropriate or sufficient, and suggestions for how compliance might be assessed in those cases.

CHAPTER 5

Implementation and transition arrangements

5.1 The feasibility of implementation depends on sufficient EC equipment being available, and sufficient installation capacity existing to fit it. The CAA recognises that:

- there must be enough compliant EC equipment available to purchase within the transition period;
- aircraft maintenance organisations approved to carry out this type of installation work may face significantly higher demand;
- some aircraft types may require bespoke installation solutions that take longer to develop and approve;
- operators with limited financial resources may find it more challenging to plan financially for a short compliance deadline.

5.2 The CAA's current view is that it would be appropriate for a transition period of approximately two years between any change to the law introducing an EC Mandate and the date when compliance becomes mandatory. This is intended to reflect:

- maintenance cycles and so how far ahead GA operators can plan financially;
- the capacity of aircraft maintenance organisations to handle additional installation work;
- the time needed for compliant EC equipment to become available in sufficient quantity; and
- the need for operators across all affected sectors to understand what is required and prepare accordingly.

5.3 The CAA recognises that different sectors may face different constraints. The CAA would welcome views on the appropriateness of the proposed two-year period before reaching a final view on the length of any transition period

Simultaneous introduction or phased implementation

5.4 The CAA's current view is that, after an adequate transition period, a single start date would better support the objectives of an EC Mandate than a phased approach. A single start date would create a common and consistent level of equipage, ensuring that aircraft in scope can reliably detect and be detected by

one another. It would also avoid extended periods of partial electronic visibility in the airspace, and make communication and oversight more straightforward.

5.5 The CAA will consider evidence on supply chain capacity, installation feasibility and proportionality before reaching a final view. If the evidence demonstrates that a phased approach may be necessary to make implementation achievable, the CAA will consider that question further.

5.6 The CAA will also consider the need for other transitional arrangements. For example, where an installation has been booked but has not yet taken place when the compliance date arrives, where an aircraft is undergoing scheduled maintenance when the requirement comes into force, or where compliant EC equipment is temporarily unavailable due to supply disruption.

Communication and sector readiness

5.7 The CAA intend to develop a communication and engagement plan alongside any final policy decision to ensure operators across all affected sectors receive clear, timely and accessible information about what is required and when.

Consultation questions

7. Do you agree that a single compliance start date, following an adequate transition period, is preferable to a phased approach?

If not, please explain what phased or alternative delivery model you would propose, which categories it should apply to, and why. Please provide supporting evidence.

8. Is the proposed transition period of approximately two years achievable across different operations?

Please explain your reasoning and provide supporting evidence. Please include evidence on how quickly operators in your sector could realistically equip, whether sufficient EC equipment and installation capacity would be available, and what transition period would be more appropriate if two years is not sufficient.

If you are a manufacturer or supplier of EC equipment, please provide evidence on your current production capacity, any constraints that could limit supply within this timeframe, and whether compliant equipment could be made available in the quantities needed. If not, please explain what timeframe would be more appropraite and why.

9. Is there anything you want to tell us about the availability of compliant EC equipment and the capacity of the installation and maintenance sector to support implementation within the proposed timescales?

If so, please provide specific evidence on equipment availability, installer capacity, lead times, and any other supply chain considerations relevant to your sector.

CHAPTER 6

Impacts and Evidence

6.1 The CAA recognises that any decision to introduce an EC Mandate will need to take into account its likely impacts across the aviation community. Those impacts will vary between sectors, aircraft types and operational contexts. Evidence gathered through this consultation, alongside technical, operational and regulatory analysis, will contribute to the CAA's ongoing consideration of policy in this area.

6.2 We welcome any relevant evidence from stakeholders on the issues set out below, as well as any other related matters you consider we should take into account.

Costs and financial impacts

6.3 Quantitative evidence on the cost of acquiring, installing, maintaining and operating compliant EC equipment across different aircraft types and sectors. This includes one-off capital costs, ongoing maintenance costs, aircraft downtime during installation, and any administrative costs associated with compliance. We are particularly interested in any impacts of the proposed EC Mandate on recreational flyers, operators of older or lower-value aircraft, or seasonal operators.

Operational impacts

6.4 The CAA is seeking evidence on any operational risks or unintended consequences that the EC Mandate might create, including effects on airspace access, flight operations, and the behaviour of pilots and remote pilots in response to EC information.

Equality and accessibility impacts

6.5 Evidence on whether the proposed EC Mandate would affect particular groups more than others, whether positively or negatively. The CAA is particularly interested in evidence on impacts on recreational flying, and on communities where aviation plays an important social or economic role.

Installation and supply chain feasibility

6.6 Evidence on whether compliant EC equipment would be available in sufficient quantity within the proposed transition period, and whether the aircraft maintenance and installation sector has, or could develop, the capacity to carry out the necessary work. This includes evidence on lead times for equipment,

availability of approved installers, and any aircraft-type-specific installation challenges.

6.7 The CAA also welcomes evidence from manufacturers, installers and operators regarding existing capability, planned capacity growth, and areas where implementation challenges may be manageable within the proposed transition period.

How to provide evidence

6.8 Respondents are encouraged to provide quantitative evidence wherever possible, including cost estimates, safety data, operational statistics, and any relevant studies or reports. Where precise figures are not available, well-reasoned estimates with clearly stated assumptions are helpful.

6.9 You do not need to address every category of evidence. Please focus on the areas where you have direct experience or data. Evidence from operators, manufacturers, maintenance organisations, representative bodies and safety experts is all relevant.

Consultation questions

10. What costs would the proposed EC Mandate impose on you or the sector you represent?

Please provide quantitative estimates where possible, including equipment purchase, installation, maintenance, training and any operational costs. If you consider that costs would fall on particular groups within your sector, please explain why and provide supporting evidence.

11. What evidence do you have on the likely operational impacts of the proposed EC Mandate?

Please provide data, studies, or operational experience where available.

12. Are there groups, sectors, aircraft types or regions that would be affected more than others by the proposed EC Mandate, either positively or negatively?

Please explain and provide evidence where possible, including any equality, accessibility or unintended consequences. Please consider both the costs and the benefits when describing differential impacts

13. Based on the evidence available to you, do you consider the CAA's preferred approach would meet the safety and integration objectives set out in Chapter 3?

Please explain your reasoning and provide supporting evidence. If you consider any aspects of the proposal would not meet those objectives, please identify which aspects and what changes you would propose.

CHAPTER 7

Consultation Process and Next Steps

How to respond to this consultation

7.1 The CAA welcomes responses from anyone with an interest in this consultation, including pilots, aircraft owners, operators, manufacturers, maintenance organisations, representative bodies, air traffic controllers, flight information service officers, airspace users and members of the public.

7.2 Responses should be submitted by 22 September 2026.

7.3 You can respond through the CAA's dedicated online consultation platform a https://consultations.caa.co.uk/safety-and-airspace-regulation-group/ec-mandate

7.4 You do not need to answer every question. You can respond only to the sections that are most relevant to your interests, experience or operations. Where possible, please support your views with evidence, data or practical experience.

7.5 Responses should address the issues raised in this document. You are also welcome to suggest alternative approaches that you consider would better achieve the objectives described in Chapter 3, provided you explain your reasoning and provide supporting evidence.

Confidentiality and data protection

7.6 The CAA intends to publish a summary of responses following the close of the consultation.

7.7 Individual responses will also be published on the consultation platform where the respondent has given permission through the consultation survey.

7.8 All personal data will be handled in accordance with applicable data protection legislation. Further information on how the CAA processes personal data is provided in the privacy notice accompanying this consultation, available on the consultation platform.

What happens next

7.9 Following the close of the consultation, the CAA will review and analyse all responses received. The CAA will then publish a consultation response document setting out:

- the main themes raised by respondents;
- the CAA's position on those themes;

- the CAA's final policy position on whether and how to introduce an EC Mandate; and
- the next steps in the policy and legal process.

APPENDIX A

Am I in scope of the proposed EC Mandate?

Step 1: Are you already required to carry ADS-B?

Check whether your aircraft is subject to the ADS-B carriage requirements set out in Commission Regulation (EU) No. 1207/2011 (Article 5) and UK AIP GEN 1.5.

- **Yes:** you are not intended to be within scope of this mandate. Your existing ADS-B obligations are intended to continue unchanged.
- **No:** go to Step 2.
- **Not sure:** contact airspacemodernisationdelivery@caa.co.uk before responding.

Step 2: Is your aircraft crewed or uncrewed?

- **Crewed aircraft:** go to Step 3.
- **Uncrewed (UAS):** go to Step 4.

Step 3: Crewed aircraft: what standard would apply?

Your aircraft is in scope. The technical standard you would need to meet depends on your aircraft's speed:

- **Less than 140 knots:** you would need to carry and use a 1090MHz ADS-B device with a Signal Integrity Level (SIL) and System Design Assurance (SDA) of at least 1. Some CAP 1391 approved devices meet this standard. Alternatively, a TSO-C112 and TSO-C166 compliant transponder with extended squitter connected to a TSO-C199 class B or TSO-C145 GNSS source would also comply.
- **More than 140 knots:** you would need to carry and use a Mode S transponder with ADS-B extended squitter functionality, with SIL of 3 and SDA of 2. This would typically be a TSO-C112 and TSO-C166 compliant transponder connected to a TSO-C145 GNSS source.

Step 4: UAS: what type of operations do you conduct?

- **BVLOS operations:** you are in scope. You would need to emit a 978MHz UAT ADS-B signal functioning in accordance with RTCA minimum performance standards DO-282B, with SIL and SDA of at least 1. You would also need to be equipped to receive both 1090MHz ADS-B and 978MHz UAT signals in order to detect both manned and unmanned aircraft.
- **VLOS operations only**: you are not in scope of the mandate.

APPENDIX B

Consultation questions in full

The CAA's Proposed Approach

1. The CAA's proposal is that the EC Mandate should apply to all civil general air traffic that is not already required to carry and use ADS-B equipment, operating below FL100 in UK sovereign airspace, subject to the exceptions for military and state aircraft and VLOS operations described in this chapter. Do you agree with that proposal?

Please explain your reasoning and provide any supporting evidence. If you think the scope should be drawn differently, please explain why and what alternative you would propose.

2. Do the minimum performance requirements set out in CAP 3140 provide appropriate and workable technical requirements for the EC Mandate?

Provide evidence where technical requirements may affect overall impacts, implementation feasibility, interoperability or operational practicality.

3. CAP 3140's Position 6 sets out the ADS-B IN receive capability for crewed aircraft should remain a voluntary, operator-led choice rather than a mandatory requirement. Do you agree with this position?

If no, please explain what approach you would propose and why, including the operational and safety implications. Please provide supporting evidence where available.

4. In which circumstances, if any, could the objectives of an EC Mandate be met through means other than direct carriage of EC equipment by the aircraft?

Please explain how any alternative approach would deliver the objectives of the EC mandate set out in Chapter 3. Please provide evidence on the operational contexts where this might apply.

5. The CAA and the Department for Transport are looking at how to balance clear rules with the flexibility needed as technology develops. This includes whether detailed technical requirements for EC equipment should be set out in guidance or other non-legislative documents, rather than in legislation.

Is there anything you think we should take into account when considering this?

6. Is there anything you would like us to consider as we develop our oversight and compliance approach to support effective implementation of an EC Mandate across different aircraft categories and operational contexts?

Please provide examples where possible, including any aircraft categories where existing oversight mechanisms may not be appropriate or sufficient, and suggestions for how compliance might be assessed in those cases.

Implementation and transition arrangements

7. Do you agree that a single compliance start date, following an adequate transition period, is preferable to a phased approach?

If not, please explain what phased or alternative delivery model you would propose, which categories it should apply to, and why. Please provide supporting evidence.

8. Is the proposed transition period of approximately two years achievable across different operations?

Please explain your reasoning and provide supporting evidence. Please include evidence on how quickly operators in your sector could realistically equip, whether sufficient EC equipment and installation capacity would be available, and what transition period would be more appropriate if two years is not sufficient.

If you are a manufacturer or supplier of EC equipment, please provide evidence on your current production capacity, any constraints that could limit supply within this timeframe, and whether compliant equipment could be made available in the quantities needed. If not, please explain what timeframe would be more appropriate and why.

9. Is there anything you want to tell us about the availability of compliant EC equipment and the capacity of the installation and maintenance sector to support implementation within the proposed timescales?

If so, please provide specific evidence on equipment availability, installer capacity, lead times, and any other supply chain considerations relevant to your sector.

Impacts and Evidence

10. What costs would the proposed EC Mandate impose on you or the sector you represent?

Please provide quantitative estimates where possible, including equipment purchase, installation, maintenance, training and any operational costs. If you

consider that costs would fall on particular groups within your sector, please explain why and provide supporting evidence.

11. What evidence do you have on the likely operational impacts of the proposed EC Mandate?

Please provide data, studies, or operational experience where available.

12. Are there groups, sectors, aircraft types or regions that would be affected more than others by the proposed EC Mandate, either positively or negatively?

Please explain and provide evidence where possible, including any equality, accessibility or unintended consequences. Please consider both the costs and the benefits when describing differential impacts

13. Based on the evidence available to you, do you consider the CAA's preferred approach would meet the safety and integration objectives set out in Chapter 3?

Please explain your reasoning and provide supporting evidence. If you consider any aspects of the proposal would not meet those objectives, please identify which aspects and what changes you would propose.

APPENDIX C

Positions from the EC Technical Concept of Operations

The role of EC in UK airspace

Position 1. EC will be an enabler for both air-to-air tactical and strategic deconfliction within non-segregated airspace. Tactical deconfliction will be the primary mitigation, while strategic deconfliction will enhance risk management. Ground infrastructure will enhance both mitigations where appropriate.

Airspace architecture

Position 2. The overall performance of the EC system will be enhanced, where appropriate, through a combination of interoperable airborne and ground-based systems that build on existing architecture.

Position 3. EC with an appropriate level of accuracy and performance set out in CAP 3140 will aspire in the short term to support operations for the following: detect and avoid by unmanned aircraft; where equipped, position information to and from some air navigation service providers; traffic and situational awareness for manned aircraft; and some limited interaction with traffic collision avoidance systems for manned aircraft.

Equipage requirements — manned aircraft

Position 4. Within non-segregated airspace, aircraft operating at less than 140 knots indicated air speed must use 1090MHz ADS-B devices emitting a SIL and SDA of at least 1, such as some CAP1391 devices. Alternatively, a TSO-C112 and TSO-C166 compliant transponder with extended squitter connected to a TSO-C199 class B or TSO-C145 GNSS source.

Position 5. Within non-segregated airspace, aircraft operating at more than 140 knots indicated air speed must use a Mode S transponder with ADS-B extended squitter functionality and SIL = 3, SDA = 2, typically a TSO-C112 and TSO-C166 compliant transponder connected to a TSO-C145 GNSS source.

Position 6. Any ADS-B IN carriage for manned aircraft will remain a personal or organisational risk-based choice for the manned aircraft operator.

Equipage requirements — unmanned aircraft

Position 7. Within non-segregated airspace, UAS in the Specific Category operating BVLOS must emit a 978MHz UAT ADS-B signal. The device should function in accordance with the RTCA minimum performance standards DO-282B, and emissions must meet SIL and SDA of at least 1.

Position 8. Specific Category UAS operating BVLOS in non-segregated airspace must be equipped to receive ADS-B 1090MHz and 978MHz UAT in order to detect both manned and unmanned aircraft.

Responsibility for EC installation and efficacy

Position 9. Aircraft operators, both manned and unmanned, are responsible for ensuring that their EC device is installed in accordance with the equipment manual and any CAA advice. Pilots must also ensure their device is functioning effectively.