

# Protecting Consumers in a Future World of AI-Enabled Aviation

CAP 3064G

Published by the Civil Aviation Authority 2023

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First published April 2025

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The latest version of this document is available in electronic format at: [www.caa.co.uk/CAP3064G](http://www.caa.co.uk/CAP3064G)

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# The CAA's Response to AI-Enabled Automation

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## Setting our course with principles-based oversight

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The emergence and rapid evolution of artificial intelligence (AI) technologies represent a substantial step-change for the aerospace sector and the Civil Aviation Authority as its regulator.

The increasing use of AI-based systems, particularly leveraging machine learning techniques, across various aerospace domains poses great opportunities coupled with unique challenges. The evolving AI landscape is characterised by its complexity, rapid pace of development, and the potential for widespread disruption.

Our response establishes a framework and strategic approach that focuses on both the regulation of AI in aerospace and its use within the CAA.

Artificial Intelligence and increasing degrees of autonomy have the potential to impact every part of the sector and across the CAA itself. These effects can be described in 3 broad categories for the CAA:

- Our Response ([CAP3064](#))

This provides the foundations through a common AI Framework that ensures consistency in our approach to building trust in AI across regulation and use.

- Strategy for Regulating AI ([CAP3064A](#))

This outlines how we will regulate AI in aerospace applications that affect safety, security, consumer protection, airspace, and environmental sustainability.

- Strategy for Using AI ([CAP3064B](#))

This describes how we will empower our colleagues with AI technology while maintaining rigorous standards in information and personnel safety and security.

We will continue to develop and refine this approach through engagement with the sector.

You can find the latest information, guidance and opportunities to engage at [www.caa.co.uk/AI](http://www.caa.co.uk/AI) or by contacting us at [StrategyforAI@caa.co.uk](mailto:StrategyforAI@caa.co.uk).

These documents form part of a series of publications that describe our response to emerging AI-enabled automation in aerospace. All are available at [www.caa.co.uk/publications](http://www.caa.co.uk/publications).

# Protecting consumers in an AI-enabled world

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This guide explains how we continue to protect consumers as aviation adopts AI.

It shows how our long-standing consumer protection principles work together with our new AI principles to ensure aviation remains safe, fair, and trustworthy as technology advances.

The aviation industry continues to embrace the transformative power of AI. It enhances efficiency through automated booking systems, improves safety through predictive maintenance, and creates new possibilities in air traffic management. But as these innovations emerge, we must ensure they serve the interests of consumers.

This document is part of the CAA's Strategy for AI and sets out how we will respond to the emergence of AI-enabled automation across aerospace to unlock benefits for consumers, drive UK innovation and economic growth, while maintaining the highest standards of safety and security.

The impact of AI on consumers can be described in three broad categories:

1. What the experience

We are already seeing AI-enabled services reaching consumers, from chatbots handling enquiries to automated booking systems making travel recommendations. This requires confidence that these services are better for consumers than those already available.

2. How they are protected

The power of AI to process large volumes of data and make automated decisions requires new approaches to ensuring consumer protection remains robust and effective.

3. How they are engaged

As AI becomes more prevalent in aviation services, consumers need clear information about how AI is used and confidence that their interests are protected.

# Building consumer trust in AI through aligned principles

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Aligning the AI and Consumer principles is essential because:

- It maintains consumer trust as AI adoption increases.
- It ensures new technology serves consumer interests.
- It provides clear guidance for industry innovation.
- It established consistent standards for consumer protection.

The CAA has been supporting the protection of aviation consumers for over 20 years, helping organisations understand how their activities affect consumers. We aim for a UK aviation sector where consumers can make informed choices between services, trust businesses to meet their obligations, and feel empowered to challenge providers when needed.

[Our Consumer Principles](#) are overseen by the CAA's independent Consumer Panel and remain as relevant as ever.

With the emergence of AI, we have developed additional principles specifically addressing the challenges and opportunities of this technology. These AI Principles are outlined in detail in our guidance document, [CAP2970](#). By aligning these with the Consumer Principles, we create a robust framework that ensures consumer protection in an AI-enabled aviation sector.

The remainder of this document explains how these principles align and work together in practice and we have provided high-level guidance and prompt questions that innovators should consider when developing AI-based systems in aviation. These prompts are intended as starting points – they highlight key areas to explore rather than providing exhaustive requirements. We encourage you to use these as foundations for deeper investigation into how your specific AI applications can best serve consumer interests while maintaining safety and trust.

## [The 5 AI principles for trustworthy aviation](#)

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The CAA has established five core principles that guide how we assess and regulate AI in aviation. These principles ensure that AI technology serves the interests of safety, security, and public trust.

### **Safety, Security, & Robustness**

AI-based systems must function safely and securely in all conditions, maintaining reliable performance even in challenging situations. This means thorough testing, clear safety controls, and consistent performance monitoring.

### **Transparency & Explainability**

People must understand how AI makes decisions. This means clear documentation of AI use, understandable explanations of decision-making processes, and appropriate detail provided at the right time.

### **Fairness & Equity**

AI-based systems must apply equitable treatment to everyone. Systems should be designed and tested to prevent discrimination, checked regularly for bias, and developed to serve all users fairly.

### **Accountability & Governance**

Organisations must take responsibility for their AI-based systems. This means clear ownership of AI operations, proper maintenance throughout the system's life, and compliance with regulations.

### **Contestability & Redress**

People must be able to challenge decisions made using AI-based systems that affect them. This requires accessible dispute processes, clear routes for appeals, and fair systems for addressing concerns.

## **How the AI and consumer principles align**

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### **Safety Security & Robustness versus Safety & Quality**

AI systems must operate safely and securely while maintaining robust performance. This aligns with consumers' fundamental right to safety and quality in aviation services.

Key considerations:

- How do you regularly assess safety of your AI-based systems?
- What processes do you have to maintain aviation safety standards?
- What robust testing and monitoring is in place?
- Do you have clear lines of responsibility for AI operations?
- How do you ensure protection of consumer wellbeing?

### **Transparency & Explainability versus Information & Education**

Consumers need clear information about how AI affects their aviation experience. This brings together transparency in AI systems with consumer rights to information and education.

Key considerations:

- How do you communicate with consumers and authorities about your use of AI?

- How do you communicate the decision-making processes of AI-based systems?
- How do you ensure information is accessible for all consumers?
- What educational resources explain AI capabilities?
- How do you communicate system changes?

### **Fairness and Equity versus Access & Choice**

AI systems must treat all consumers equitably while ensuring fair access to services. This combines AI fairness requirements with consumer rights to access and choice.

Key considerations:

- How do you ensure equitable access to services?
- What prevents discriminatory outcomes?
- How do you maintain fair pricing and commercial practices?
- Do you use inclusive design principles for AI-based services?
- How do you ensure regular assessment for bias?

### **Accountability & Governance versus Economic Interests**

Clear organisational responsibilities for AI-based systems must protect consumer economic interests and rights alongside business interests.

Key considerations:

- Are you clear on your organisational responsibilities?
- How do you assure value for money?
- What data protection frameworks are in place?
- How do you maintain regulatory compliance?
- What consumer protection measures exist?

### **Contestability & Redress versus Consumer Rights**

Consumers must have clear routes to challenge AI-driven decisions and seek redress when needed.

Key considerations:

- Do you have accessible complaints processes in place?
- How do you manage and ensure fair dispute resolution?
- Are appeal mechanisms clear for consumers?



- How do you ensure timely responses?
- Are accessible consumer feedback channels available?

## Implementing the principles in practice

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When implementing AI systems in aviation, organisations need a structured approach to protecting consumer interests while enabling innovation.

These four areas provide a framework for considering how Consumer and AI principles work together throughout the system lifecycle.

### **Assess the impact**

- Map how AI affects your consumers.
- Identify potential consumer-related risks.
- Consider diverse consumer needs.
- Evaluate accessibility implications.

### **Design the controls**

- Build in consumer protections from the start.
- Establish monitoring systems.
- Create accessible and effective feedback mechanisms.
- Ensure appropriate human oversight.

### **Monitor performance**

- Track consumer outcomes and feedback.
- Measure effectiveness.
- Proactively gather feedback.
- Regularly update systems to respond to feedback.

### **Maintain engagement**

- Keep consumers informed with clear, non-technical language.
- Provide clear and accessible information.
- Offer channels that enable support and engagement.
- Respond to consumer concerns.

# How we protect consumers while supporting a competitive aviation market

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## CAA Consumer Strategy

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Our vision is for the UK to have a competitive aviation market where consumers:

- Have access to a choice of services.
- Are informed enough to make the most of available choices.
- Have confidence businesses will meet obligations if things go wrong.
- Are empowered to challenge businesses if they don't.

We will achieve this by providing effective statutory consumer protection, leading improvements in accessibility and furthering the interests of air transport users when fulfilling our regulatory duties.

## Our approach

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We are guided by our regulatory principles in making independent decisions to deliver on our vision, acting within the legislative and policy framework set by Parliament and Government. We are supporting in this by the CAA Consumer Panel which provides independent expert advice to ensure the consumer voice is heard. You can learn more about our approach by following these links:

- Our Consumer Strategy  
[www.caa.co.uk/our-work/about-us/consumer-strategy/](http://www.caa.co.uk/our-work/about-us/consumer-strategy/)
- Independent Consumer Panel  
[www.caa.co.uk/our-work/about-us/caa-consumer-panel/](http://www.caa.co.uk/our-work/about-us/caa-consumer-panel/)
- Contact us  
[consumerpanel@caa.co.uk](mailto:consumerpanel@caa.co.uk)

## Our key focus areas for consumer protection

- Promote improvements for consumers in vulnerable circumstances.
- Improve routine compliance with consumer protection legislation.
- Empower consumers to take full advantage of the competitive market.
- Further consumer interests in competition and growth.
- Embed consumer interest in CAA governance and policy development.

# Looking ahead to an AI-enabled future

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The alignment of Consumer and AI Principles will continue to evolve as technology advances and consumer needs change.

The CAA will:

- Review and update this guidance regularly.
- Monitor emerging AI applications.
- Assess new consumer impacts.
- Update protection frameworks as necessary.
- Engage with stakeholders.

This is a living framework that will adapt to ensure consumer protection remains robust as AI technology develops.

## Getting involved

We welcome engagement from all stakeholders in shaping how these principles work in practice.

- Visit our dedicated AI webpage: [www.caa.co.uk/AI](http://www.caa.co.uk/AI)
- Contact our AI team: [StrategyforAI@caa.co.uk](mailto:StrategyforAI@caa.co.uk)

We encourage:

- Feedback on implementation
- Sharing of experiences
- Participation in consultations
- Ongoing dialogue about consumer protection