UK Civil Aviation Authority

Test & Evaluation Annual Report 2024-2025

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Civil Aviation Authority
Aviation House
Beehive Ring Road
Crawley
West Sussex
RH6 0YR

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Enquiries regarding the content of this publication should be addressed to:
testand.evaluationteam@caa.co.uk

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Introduction

The Test & Evaluation (T&E) Team was established a year ago to support the Civil Aviation Authority's (CAA) mission of enabling safe and efficient test flights in integrated airspace. Aligned with key national initiatives, including the Airspace Modernisation Strategy (AMS), UKRI Future Flight Challenge, and the Department for Transport's (DfT) Future Flight Industry programme, the T&E Team plays a crucial role in ensuring that innovation in aviation can progress in a safe, structured, and data-driven manner.

Over the past year, the T&E function has made significant strides in facilitating test and evaluation activities, gathering critical data, and streamlining regulatory processes to enhance efficiency. The team's work has been centred on three strategic priority areas:

1. **CAA-Driven Data and Intelligence Gathering** – The team has actively conducted test and evaluation activities to acquire data that informs emerging policy areas, such as Detect and Avoid (DAA) and Atypical Air Environment (AAE) policies. This data-driven approach has allowed the CAA to test hypotheses, refine policy concepts, and enhance regulatory decision-making.
2. **Facilitation and Support of T&E Operations** – By supporting industry operators in obtaining necessary authorisations and approvals, including through Regulatory Sandboxes, the team has enabled the safe execution of test flights that generate valuable insights for both regulators and industry stakeholders.
3. **Enabling Industry Testing** – Recognising the need for industry to conduct independent trials efficiently, the T&E Team has developed best practices that allow operators to perform testing without direct CAA supervision. This includes exploring alternative means of compliance (AltMoC) in key policy areas such as Electronic Conspicuity (EC) and DAA, ensuring safety while reducing regulatory burden.

Through these efforts, the T&E Team has enhanced the UK's ability to support aviation innovation while maintaining the highest safety standards. Looking ahead, the team will continue to refine its approach, strengthen collaboration with industry, and leverage insights from testing activities to shape future policy and regulatory frameworks.

This report outlines the key achievements of the past year, the challenges encountered, and the roadmap for the future of the Test & Evaluation function.

Annual Report

Data and intelligence gathering

The work of the Test & Evaluation (T&E) Team, along with support from industry, is fundamental to enabling data-driven decision making in the CAA. Data collected from operations is being used to refine policy concepts and will facilitate progress in key areas such as Detect-and-Avoid (DAA) and UAS Traffic Management (UTM) which are critical to scaled integrated UAS operations in the future.

Creating the data collection process

The initial challenge in the first year has been how to enable data collection to balance the needs of the CAA without placing an undue burden on industry. The T&E Team worked with CAA colleagues and industry stakeholders to identify the opportunities, limitations and solutions options.

The T&E data collection journey is collaborative and iterative; the five stages of the process are outlined below:

- **Stage 1 Data request**
  - Data requests are submitted to T&E and include the hypotheses to be tested and connected policies or regulation.
- **Stage 2 Data collection plan**
  - The data collection plan is drafted to meet the data request and includes details such as what data will be gathered, when and how. The plan is agreed with industry before data collection begins.
- **Stage 3 Data collection**
  - When operations begin, data collection also starts.
- **Stage 4 Data analysis**
  - Data specialists will conduct analysis to identify learnings related to the hypotheses provided to T&E at Stage 1.
- **Stage 5 Data reporting**
  - Reports are produced to feed back into CAA teams and provide the learning and insights identified from the data to answer the hypotheses.

Defining the process has established the foundations for data collection and marks one of the first significant achievements of the team. As we work with more projects and UAS Operators, the processes will be refined to ensure they continue to deliver for the CAA and industry alike.

Data collection activity

Routine data collection, analysis and reporting activity is now a business-as-usual (BAU) function of T&E. Within a few months, the data collection process was created, projects were onboarded, and data collection, analysis and reporting began. The speed of delivery for this work is a further achievement of T&E but this is a deliverable we share with those in industry we have worked with. Together we have built positive relationships and worked closely to ensure valuable data is being provided to the CAA. We share this success with the industry stakeholders we work with daily and look forward to onboarding more in the coming year.

Data collection work is ongoing for five Atypical Air Environment (AAE) operations and three BVLOS Temporary Reserved Area (TRA) Sandboxes. Some operations are flying and providing data whilst others are in the preliminary engagement or T&E planning phase. Future T&E Annual Reports will include more information about the learnings and insights gathered from operations and how that has directly informed data-driven decision making and policy refinement.

Intelligence gathering

A further achievement this year has been the team's work to identify and highlight the needs of industry to inform decision-making about where the CAA's resources can be targeted. For example, detailed information about the use and limitations of the Atypical Air Environment Policy has been shared across key CAA teams and is now informing the next iteration of the Policy Concept.

Understanding and sharing the challenges and opportunities in the UAS industry will continue to be part of our role in the coming year as more projects work with the T&E Team to share data and information about the UAS industry today.

Facilitation and support of T&E operations

T&E guidance and support to projects and UAS Operators was a key part of the CAA's achievement of Strategic Objective 1 (SO1), Demonstration of BVLOS UAS operations in non-segregated airspace. The team led activity across numerous projects in a range of different areas from technical pre-application support to provision of regulatory and policy guidance.

The UAS expertise within the T&E Team was a significant benefit to the projects we worked with and also other CAA teams. By reducing requests for resource on other teams, T&E has ensured colleague's time could be focused on crucial work such as the introduction of the UK Specific Operation Risk Assessment (SORA).

Enable industry testing

In June 2023, the CAA conducted a survey of organisations involved in testing activity to understand industry needs. The findings from that survey have been summarised in CAP 3011, CAA consultation on test site requirements for aviation innovators.

The T&E Team is working to resolve the challenges highlighted in the survey, with UAS testing being our focus initially as this is the area of greatest industry demand. We recognise that there is an urgent need to enable safe and effective trials of new technology.

Two main workstreams have been identified for the initial work:

- **UAS Specific category applications** – one of the challenges of conducting testing activity in the Specific category is the application and authorisation requirements which can limit UAS Operators' ability to make changes. The first proposal was a pre-defined risk assessment (PDRA) for these operations, whereas the introduction of UK SORA and the digital platform presented alternative options.
- **Test site recognition** – alongside the UAS application guidance, we have also been developing a test site methodology to recognise these sites across the UK. We have considered areas such as how test sites will function for different UAS operations such as BVLOS and VLOS, the facilities available at sites and how they can support Specific category applications by removing some of the workload from UAS Operators.

UAS Specific category applications

The T&E Team has collaborated closely with colleagues introducing UK SORA to identify the most efficient and effective route to authorisation for testing flights. Throughout this work, we have balanced the requirements of the regulatory framework, the opportunities UK SORA and the digital platform will bring, and the needs of industry.

We reviewed UK SORA acceptable means of compliance (AMC) and guidance material (GM) along with policies providing information about changes that can be made to a UAS and associated operation post-authorisation. The outcome of the work showed that the UK's SORA digital platform provided the most effective option for UAS Operators conducting flights at test sites.

We will publish a guidance document in Q3 of 2025 which will explain how applications for test site Specific category operations can be submitted using UK SORA and the digital platform. This document will be the first step and T&E will continue to refine this guidance as we gather feedback from industry.

Test site recognition

Several different areas of work have been completed around the recognition of test sites. This includes CAA considerations such as applicable regulations, selection and oversight, publication of test site information and requirements to enable different UAS operations to be conducted at those locations. We have also held meetings with test site teams and UAS Operators who have given us valuable information about the considerable opportunities this work can unlock for industry and the frictions that need to be addressed.

Next steps

We are currently finalising our Test Site Methodology document and plan to publish the work and a call to industry for participation around Q3 of 2025.

We will monitor the progress of UK SORA-based applications to conduct flights at test sites to ensure the right information is being provided and identify any areas of friction which remain in the process.

Other areas of achievement

The theme running through all our work though has been our focus on the UAS industry. We have highlighted challenges and frictions, as well as commercial opportunities and socio-economic benefits. We have also established positive relationships based on trust and provided valuable support to numerous industry stakeholders and CAA colleagues.

The T&E Team’s role in the BVLOS Inbox has been fundamental to the successful establishment and delivery of this service. Around forty enquiries have been received with support being provided to a range of different BVLOS projects. Services such as the BVLOS Inbox offer industry an excellent opportunity to engage with the CAA and discuss options for future operations. It was a significant achievement for T&E to create the processes behind this service and provide valuable guidance to the UAS industry.

Throughout the year, T&E has completed numerous, diverse tasks from stakeholder management and industry support meetings to UK SORA preparation and technical contributions to CAA policies and guidance documents. This has been in addition to the milestones we have achieved in our three strategic priority areas. Our broad portfolio of completed work has shown the flexibility and capability of the T&E Team.

APPENDIX A

Abbreviations

Abbreviations	
AAE	Atypical Air Environment
AMC	Acceptable Means of Compliance
AMS	Airspace Modernisation Strategy
BAU	Business as usual
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DAA	Detect and avoid
DfT	Department for Transport
EC	Electronic Conspicuity
GM	Guidance Material
PDRA	Pre-Defined Risk Assessment
SORA	Specific Operations Risk Assessment
SO1	Strategic Objective 1
T&E	Test & Evaluation
UAS	Unmanned Aircraft System
UK	United Kingdom
UKRI	UK Research and Innovation
UTM	UAS Traffic Management
VLOS	Visual Line of Sight