

Innovation Hub
Detect & Avoid Ecosystem
For BVLOS in Non-Segregated Airspace

Overview

The purpose of this guide is to build on the concept of a Detect & Avoid Ecosystem, and to provide a framework to support the development and eventual approval of a proposed DAA solution.

In October 2020 we updated our guide, CAP1861, on the fundamentals of flying Beyond Visual Line of Sight (BVLOS), the current need for airspace segregation, which also shared our thoughts on the concept of a Detect & Avoid *Ecosystem*. [Page 3](#) provides a quick reminder.

There are a number of functions that contribute to the DAA Ecosystem, outlined on [page 4](#). It is your responsibility to consider each of these in the context of your operation.

The definitions of each function of the DAA Ecosystem are provided on [page 5](#) to help you define the design of your DAA solution.

The DAA Ecosystem functions have the potential to demand complex technological and procedural solutions. The DAA Evidence Framework on [page 6](#) is provided to help you to understand and describe your proposed solution.

To further explore these issues and opportunities, we will be working closely with our Sandbox participants, and will continue to share learnings of the DAA Solutions that are tested. [Page 7](#) provides a brief overview of the next steps.

Finally, it should be noted that CAP722, CAA's Unmanned Aircraft Systems Policy & Guidance, referenced on [page 8](#), remains as the primary reference point for operating BVLOS.



BVLOS in Non-Segregated Airspace

In October 2020 we updated our guide, CAP1861, on the fundamentals of flying Beyond Visual Line of Sight (BVLOS), the current need for airspace segregation, which also shared our thoughts on the concept of a Detect & Avoid Ecosystem.

This additional guidance takes the next steps on from CAP1861 by further describing the methodology for Detect & Avoid (DAA). But before we do, here's a reminder of the key points.

- Detect & Avoid is an **Ecosystem**
- There is **no 'silver bullet'** solution for DAA
- A DAA solution is dependent on the specifics of the **operation** and the **environment**.



DAA Ecosystem

The DAA Ecosystem describes the architectural framework for DAA.

This CAP provides more information on the DAA Ecosystem.



DAA Solutions

A DAA Solution is the method by which you will apply the DAA Ecosystem to your specific operation.

There will be many DAA Solutions for different operations.

The DAA Solution Matrix

We also identified that a DAA Solution is likely to include some combination of the following technologies:



Ground-Based Infrastructure

Supplementing the ability to detect cooperative and non-cooperative aircraft



Electronic Identification & Conspicuity*

Identification, position, speed, heading and altitude



On-Board Detect & Avoid Equipment

Sensors for detect & flight controllers for avoid



Traffic Management

Data fusion, processing and presentation, traffic management services, plus ATM interaction

Electronic Conspicuity primarily contributes to being **detected by other aircraft, but is also intended here as a means to detect other cooperative aircraft.*

Detect & Avoid (DAA) Definition

The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.