
UK
Civil Aviation
Authority
SHARE
THE AIR
ELECTRONIC CONSPICUITY

Summary of call for evidence and Share the Air

Colin Chesterton

What we think can be achieved

- Enhance safety by mitigating the risk of mid-air collisions with increasing demand
    - (Stem the increase in numbers of reported airprox: 2018 saw 319 reported airprox, 138 of which were reported as involving UAS. Corresponding numbers for 2017 were 272 (112 UAS related)).
- Improve efficiency, by offering all airspace users access to the airspace they require to conduct their operations and enable innovative usage without further segregation.
- Enable UAS integration (via BVLOS) by establishing a comprehensive foundation of electronic conspicuity that UAS operators can rely on to detect and avoid other airspace users remotely or automatically using connected technologies.

Call for Evidence '… on a new strategy.'

- Aimed to test whether:
  - The proposed approach is correct
  - We are considering the right issues
  - We have developed the right options or whether others are needed
  - The right stakeholders are engaged

CfE: Timeframe and principles

The call for evidence ran from 18th March to 25th May

Benefits and Dis-benefits

Potential benefits and dis-benefits of coordinating the full adoption of EC solutions that will inform our decisions about the deployment approach

EC Deployment Scenarios

Three simple scenarios for the full adoption of EC solutions in different blocks of airspace and the potential benefits and dis-benefits

Technical Functions of EC Solutions

Establishing a common set of technical functions and minimum standards or requirements for interoperable EC solutions

Coordinating Adoption

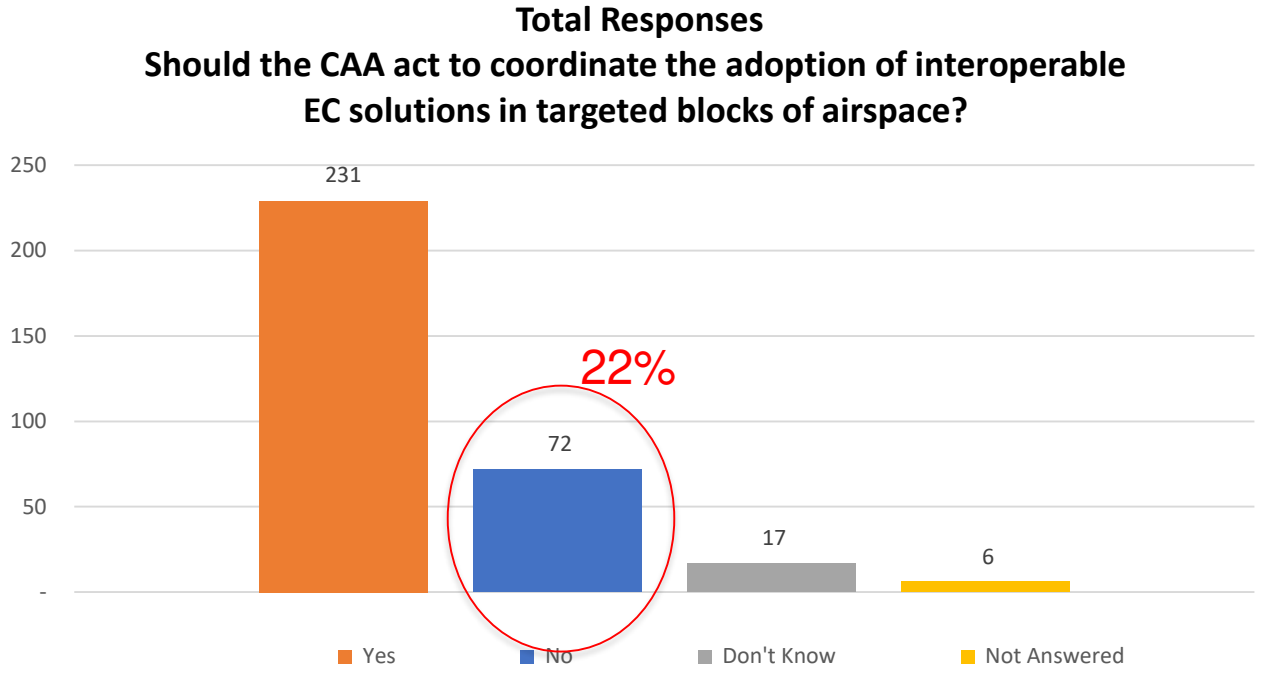
Considers the approach to coordinating full adoption of EC solutions in targeted blocks of airspace and conduction of live trials to test key parts of our suggested approach

Call for Evidence Qs:

- Should the CAA act to coordinate the adoption of interoperable EC in targeted blocks of airspace?
- Do you agree with our strategy to coordinate the full adoption of interoperable EC in targeted blocks …via
- location specific mandates?
- What functions should we focus on?
- What evidence should we use?
- Have all options been considered?
- Do you have any specific feedback?

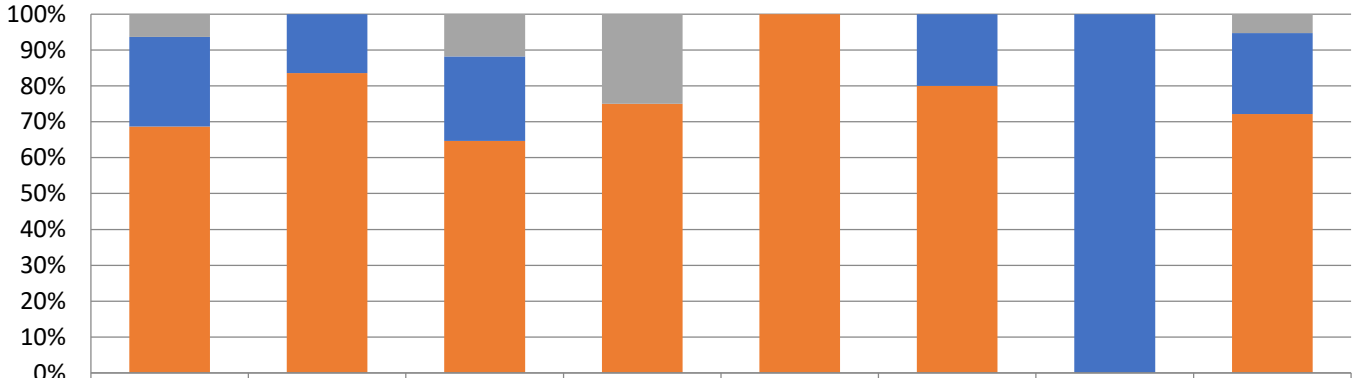
CfE: Overall response rate

326 responses received



CfE: Response rate groups

Should the CAA act to coordinate the adoption of interoperable EC solutions in targeted blocks of airspace?

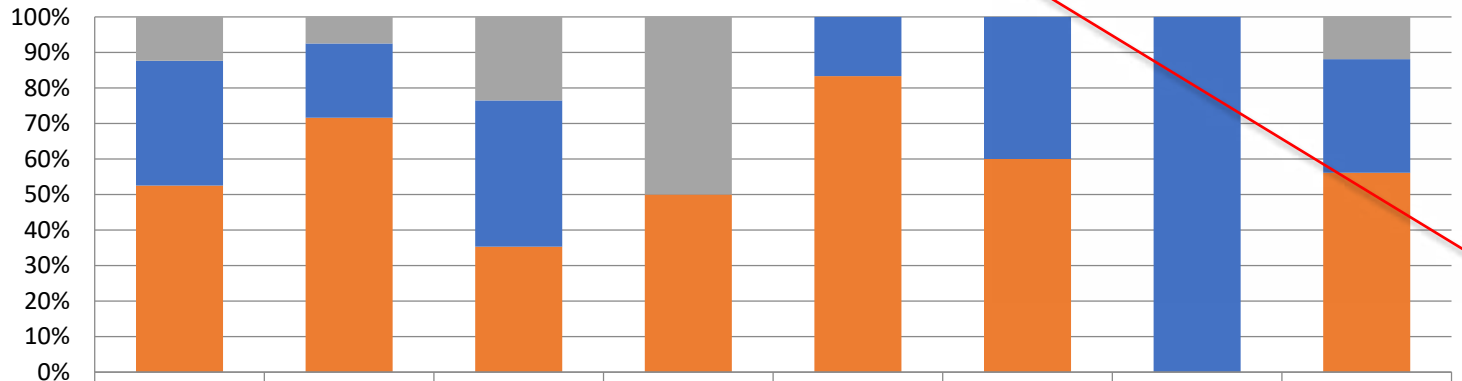


	General Aviation	Other Airspace Users	Key Orgs.	Aerodrome	Air Traffic	EC Solutions Orgs.	Interest Not identified	Overall
Don't Know	14	-	2	1	-	-	-	17
No	55	11	4	-	-	1	1	72
Yes	151	56	11	3	6	4	-	231

20-30%

CfE: Support for approach

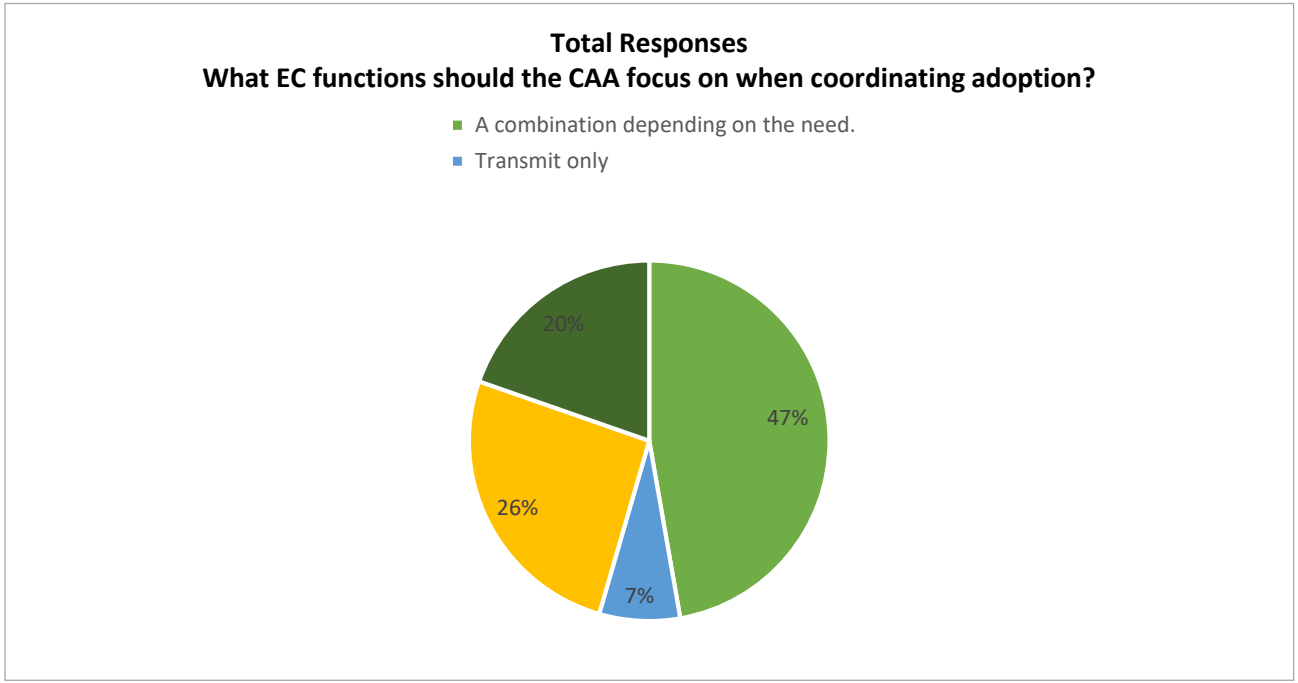
Do you agree with our strategy to coordinate the full adoption of interoperable EC solutions in targeted blocks by using location specific mandates?



	General Aviation	Other Airspace Users	Key Orgs.	Aerodrome	Air Traffic	EC Solutions Orgs.	Interest Not identified	Overall
Don't Know	27	5	4	2	-	-	-	38
No	77	14	7	-	1	2	1	102
Yes	115	48	6	2	5	3	-	179

Why?

CfE: Functionality



CfE: (High-level) Themes

- Cost vs Benefit across different users Groups
- Interoperability
- Practicality
- Human Factors
- Technical Limitations
- Airspace Expansion and Complexity

Guiding principles

- There is general support for this work, some uncertainty around the CAA's role.
- Our approach needs to recognise different available technologies.
- Our approach needs to be flexible to meet local demand.
- There is some uncertainty about mandating location specific areas.
- GA is a diverse group and we need to recognise their differing needs.
- UAS cannot see and avoid, UAS need the capability to sense and avoid.
- Continued segregation is unsustainable.
- We will continue to require research, help from industry and an agile strategy.

Our vision

- We are working towards a fully coherent solution to realise the maximum number of benefits;
- The first step in developing our strategy (based largely on the call for evidence feedback and feedback we have had to date) is to test whether multiple systems could be used, however in our view the core of such a solution is ADS-B;
- Equally, in our view we need to start with targeted blocks of airspace based on evidence gathered about the risks and potential benefits;
- A system utilising different technologies is dependent on interoperability, there are many ways to achieve this – our work will explore this.

Challenges

- How we define interoperability.
- Frequency saturation - we need confirmation of 1090MHz ability to support future demands in the short, medium and long term.
- We need a methodology for identifying key volumes of airspace that should be considered for adoption.
- Understand and set appropriate system level cost of ground and air infrastructure required for integration.
- Availability of sufficient aircraft addresses to be allocated to additional aircraft in uncontrolled airspace.

Share the Air – Key Messages

- Technology and Spectrum considered major concerns.
- Costing and funding issues need to be address.
- Varity of opinions on what solution should look like.
- Continued engagement required.
- Availability of sufficient aircraft addresses to be allocated to additional aircraft in uncontrolled airspace.
- Approach should be to collaborate before mandate, be proportionate to risk, agile and recognise the diversity of general aviation.

Trial and Next Steps

- We will be conducting a trial early next year
- Establishing technical working group to address challenges and requirement setting
- Full strategy being developed
- Consultation next year

Ways to get involved

- EC is clearly a necessary step towards airspace integration, unsegregated BVOS and UTM.
- Participate in trial work
- Expanding out our current working group to include all airspace users
- CAA EC activity will continue to feed into the Pathfinder programme, inc. Pathfinder Challenges.
- Talk to us, either via the Innovation Team or Future Airspace