Civil Aviation Authority

Safety and Airspace Regulation Group

NATIONAL AIR TRAFFIC MANAGEMENT ADVISORY COMMITTEE

MINUTES OF THE 93rd PLENARY MEETING HELD REMOTELY (MICROSOFT TEAMS) ON 13TH APRIL 2023

Present:

CHAIR

Jon Round	Head, Airspace, ATM & Aerodromes

REPRESENTATIVES OF MEMBER ORGANISATIONS

Mark Swan	ACOG
Tim Thomas	AEF
Steve Kay	Airlines UK
John Brady	Airspace4all
Adelle Gammarano	AOA
Mark Gibb	AOG
Martin Robinson	AOPA
Rupert Dent	ARPAS-UK
Spencer Norton	BA
Christopher Birkett	BAE Systems
Mike Thrower	BALPA
Mike Gunston	BBAC
Pete Stratten	BGA
Tim Fauchon	BHA
Rob Hughes	BMAA
William Arinze	Drone Major
Roger Hopkinson	GAA
Nick Goodwyn	HCAP
Jeremy James	HCGB
Ian Roy	Heavy Airlines
Simon Tilling	LAA
Francis Richards	Low Fare Airlines
Cdr Lynne Crompton	MAA
Sqn Ldr Kate Read	MoD DAATM
Gp Capt Jonathan Whitworth	MoD DAATM
Lt Cdr Patricia Chatfield	Navy Command HQ
Timothy Nathan	PPL/IR Europe
Simon Oldfield	UKAB
Dai Whittingham	UKFSC

CAA STAFF

Jonathan Beadle	Airspace Classification, Charting (Secretary)
Rob Daniel	Principal, Airspace & ATM Policy
Nikki Deeley	Principal, Airspace Classification
Ben Lippitt	Manager, Airspace Regulation
Jonathan Smith	Airspace Modernisation Lead
Stu Wain	Manager, Future Airspace
Kate Bromley-Fox	Manager, AAA Policy
Rob Lewis	Manager, Aerodromes & ATM
Mike Fox	Future Technology Policy Specialist

Andrew Belshaw	Principal, Future Systems Deployment
Rachel Sowerby	Manager, AMS Development
Billie Winwood	Communications Specialist
Imogen Middleditch	Airspace Specialist (Engagement & Consultation)
Alyson Devereux	Airspace Classification Lead Projects
Sean Pearch	RPAS Policy Specialist
John Dow	Airspace Modernisation Lead
Seonaid Reed	Strategic Airspace Change Manager

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NATMAC 93 MINUTES

1. ITEM 1 – INTRODUCTION

1.1 The **Chair** welcomed representatives to the meeting.

1.2 The **Chair** welcomed thoughts for bringing NATMAC back to a face to face only meeting.

1.3 The **Chair** reminded the committee that NATMAC is a formal consultative group and is often used by the CAA to get a broader industry perspective on upcoming plans. The **Chair** also welcomed committee members to bring any item they wish to the group for future meetings.

2. ITEM 2 – NATMAC 92 MINUTES

2.1 The **Secretary** confirmed that the minutes were distributed on the 11th January 2023 and invited associated feedback/comment. Nothing was raised so the minutes were accepted as a true record of NATMAC 92.

2.2 The **Secretary** said that the minutes for NATMAC 92 will be published on the CAA NATMAC webpage.

3. ITEM 3 – ACTION LIST FROM NATMAC 92 AND MATTERS ARISING FROM PROGRESS REPORT

3.1 The **Secretary** confirmed that four actions were raised at NATMAC 92, and that three have been closed off, and one will be addressed in the review of the PPR process. The **Secretary** explained that all related information was available in the Progress Report that was sent out prior to the meeting and invited associated feedback/comment. No comments or feedback was raised.

4. ITEM 4 – CHAIR'S REPORT

4.1 The **Chair** provided a summary of the report.

4.2 The **Chair** invited comments after the summary of the report. **Martin Robinson** (AOPA) said there needed to be greater transparency in the DfT's approach to a future UK SBAS solution and said that he understood that funding has not been approved for a future solution, and without funding no timescales can be plotted. The **Chair** acknowledged that perhaps there needed to be some better communications on what we are doing but is certain that funding has been approved for the next phase of the trials.

4.3 **Dai Whittingham** (UKFSC), acknowledged that a future SBAS solution is a political decision and asked if there were any indications from the opposition party on what its position is on EGNOS. The **Chair** advised that the CAA are not able to speak to the opposition (e.g., the Labour party) as the organisation must work with the current elected government. The **Chair** highlighted the need and strength for the UK to have its own separate SBAS solution to meet its own needs of security and that of other non-aviation beneficiaries.

4.4 **Timothy Nathan** (PPL/IR Europe), wanted clarity on whether we are confusing a constellation of GNSS satellites with the EGNOS satellite as there is a big financial and technical difference between the two applications. The **Chair** confirmed there was no confusion on the CAA's part but will make sure the CAA is clear on the distinction between the two applications.

4.5 The **Secretary** pointed to a question in the chat from **Roger Hopkinson** (GAA) who asked if there was any benefit for stakeholders to pre-review the annual AMS progress report to the Secretary of State for Transport. The **Chair** advised this year's report would be different and contain a lot more content due to the refreshed AMS. **John Dow** clarified that it is a collation of evidence from various programmes, so not just answered by the CAA alone. **John Dow** offered to take this away to speak with the AMS team on how they would do this, with the possibility of exposing the document to NATMAC before it reaches the Secretary of State. The **Chair** offered to take this away to see if the barebones of the report could be available at the Autumn NATMAC.

Action: Secretary

5. ITEM 5 – FUTURE AIRSPACE UPDATE

5.1 The **Secretary** started the Future Airspace Update with a demonstration of the CAA's Airspace Analyser Tool.

5.2 **Timothy Nathan** (PPL/IR Europe) asked when using the analyser tool, does the team look at Non-Commercial IFR traffic. The **Secretary** confirmed that the team looks at all traffic (Commercial, Non-Commercial, Military) regardless of the rules the pilot is flying by (IFR/VFR). An example used on the tool was the bottom 2000ft of Daventry CTA 6 mainly used by business jets into and out of Luton Airport.

5.3 **Gp Capt Jonathan Whitworth** (MoD DAATM) acknowledged that the analyser tool has some very useful capabilities and asked if this tool was available externally. The **Secretary** answered that the tool is restricted for CAA use at this time, as the tool has been developed solely for the airspace classification task. But the team is looking at how the tool could be offered to an external audience.

5.4 **Dai Whittingham** (UKFSC), disagreed that the CAA needed to organise itself with how the tool would be used, and mentioned that the tool was funded by the user community. **Dai Whittingham** also stated exposure of the tool to the wider community may take the CAA down avenues that the regulator has not thought about. The **Secretary** acknowledged the points and stated that the tool is still in its infancy and would need a lot of work prior to releasing it to the wider community. **Dai Whittingham** re-iterated that the tool being exposed to a different part of the community will open avenues for our own work that we have not explored.

5.5 **John Brady** (Airspace4all) highlighted that the concept of such a tool started with a piece of work that Airspace4all did a few years ago. And some of the manual work they conducted saw that the Southampton CTA was unused and enabled Airspace4all to conduct an Airspace Change proposal. Therefore, the tool is valuable to individuals outside of the CAA and agreed that it should become available to anyone who wants to use it. The **Secretary** responded to advise that all the work we do in the tool does not replace any engagement activity we conduct with stakeholders. The data in the tool allows the team to have informed discussions over how the airspace is being used, leading to how we can use the CAP 1991 process to

look at amending an airspace classification, as we have a separate process for amening airspace to CAP 1616.

5.6 **Jeremy James** (HCGB) was very impressed with the tool, and reiterated its usefulness for both the CAA, and the GA community for transparency and to ensure the airspace is being properly looked at. The **Secretary** pointed out that the tool does have its limitations, one of which is that it doesn't see everything, the tool only picks up ADS-B, FLARM and MLAT.

5.7 **Pete Stratten** (BGA) wanted clarification on whether airspace regulation was using the tool as part of the airspace change approval process. **Ben Lippitt** advised that the tool is not being used for any decision-making in airspace regulation but is being used for post implementation reviews.

5.8 The **Secretary** gave an update on the Airspace Classification Review, (slides attached at Annex A).

5.9 **Timothy Nathan** (PPL/IR Europe) commented that Manchester Airport do not provide crossing clearances over its Class D airspace and wanted to know how this could be changed. The **Secretary** answered that the team is looking at the Manchester Low level Route to see if access can be improved and highlighted the use of the 1522 Refusal of Access Forms if denied a crossing clearance. **Timothy Nathan** (PPL/IR Europe) responded to say that these forms are not filled in because pilots don't bother to ask for crossing clearances from Manchester anymore. The **Secretary** acknowledged the point but said that pilots should still request for a crossing clearance if that is part of their planned route but have another route in mind if their crossing clearance was not given. The **Secretary** also pointed out that the team was looking at whether access could be improved by amending the Manchester Low level Route (returning some airspace to class G for example). **Timothy Nathan** (PPL/IR Europe) asked for a follow-on conversation to go through his reasoning and concerns. The **Secretary** and **Nikki Deeley** agreed to arrange a chat and bring in colleagues who are working on the Manchester Low level Route.

Action: Secretary

5.10 **Stu Wain** gave an update on Electronic Conspicuity, (slides attached at Annex A).

5.11 **Martin Robinson** (AOPA), asked how important it would be to have a common altitude reference capability, as GA aircraft and drones use different altimeter devices (e.g., Baro/GNSS). **Rob Daniel** said that this is something that is being looked at within the scope of the UAS traffic management work. **Martin Robinson** (AOPA) said he was aware of the work being done in one of the SESAR projects (Single European Sky ATM Research) but wanted to know if any work was being done in the UK. **Rob Daniel** responded that he didn't know of any now but wouldn't be surprised if any UTM (Unmanned Traffic Management) companies wanting to operate in the UK would be looking at this problem. **Stu Wain** acknowledged this was something that needed to be tackled.

5.12 **Pete Stratten** (BGA) wanted to know if the CAA was looking in the right places to fully understand the potential of re-broadcast of EC information. **Stu Wain** reassured that his team are looking to better understand what EC systems can and cannot do, and therefore what needs to be done to bring certain EC systems into the 978MHz and 1090MHz process. **Andy Belshaw** advised that if anyone had any questions on EC or the work being conducted, to email EC@caa.co.uk

6. ITEM 6 – CAA Policy Concept: Airspace Structures to facilitate BVLOS UAS flight

6.1 **Rob Daniel**, provided a briefing on the new Policy Concept for BVLOS UAS flight, (slides attached at Annex A).

6.2 **Martin Robinson** (AOPA) asked where does unmanned aerial systems fit into the rules of the air particularly with powered aircraft giving way to non-powered aircraft, and whether the CAA considers all UAS flights to be IFR operations or a mix of IFR and VFR operations. **Rob Daniel** mentioned that right of way is being discussed at ICAO level on the RPAS panel, with the current thought that unmanned aircraft should be considered powered aircraft for right of way purposes, but **Rob Daniel** acknowledged that this might not necessarily work for all categories of unmanned aircraft, and that the CAA will look at how the rules of the air might need to adapt to accommodate unmanned aircraft. **Rob Daniel** acknowledged the IFR/VFR piece on UAS is not there yet and needs to be done with international stakeholder's input.

6.3 **Martin Robinson** (AOPA) raised a concern that the UK may follow the USA in that responsibility of avoiding action should be taken by the unmanned aerial vehicle. **Rob Daniel** said that the basis of see and avoid is that all airspace users take avoiding action and stressed that this topic is a huge challenge in the international community right now, and is the reason why segregated airspace still exists, and the route to integration is complex.

6.4 **Rupert Dent** (ARPAS-UK) asked how this policy concept fits in to atypical air environment legislation that is imminent. **Rob Daniel** responded to say that they are working on this policy now, with a final state level hazard identification safety risk analysis session set up for early May, but to bear in mind that if an aircraft is operating in atypical air environment, then the new policy concept for BVLOS UAS flights would not apply.

6.5 **Timothy Nathan** (PPL/IR Europe) wanted to know how many people working on this policy are pilots and understand how see and avoid is a flawed concept, as many of the aircraft seen electronically are never visually seen by the pilot. **Rob Daniel** advised that he and other colleagues have considerable flying experience and acknowledges that the limitations of see and avoid are known. **Andy Belshaw** added that the CAA is conducting a human factors piece of work around see and avoid using an EC device in the cockpit.

6.6 **Pete Stratten** (BGA) asked if the work on integrating drones into airspace considers the need to be assured of airworthiness and operator training standards. **Rob Daniel** answered that it is, as the policy concept put emphasis on the role of the safety management system and the safety risk assessment process to develop the operating procedures and airspace management requirements, all of which will allow the temporary reserved area integration.

7. ITEM 7 – AIRSPACE CHANGE ORGANISING GROUP (ACOG) BRIEFING

7.1 **Mark Swan**, Head of ACOG, provided a briefing on ACOG activities (slides attached at Annex A).

7.2 **Martin Robinson** (AOPA) welcomed the news that Tony Rapson would be kept on at ACOG for another year.

7.3 **Pete Stratten** (BGA) mentioned the Scottish TMA discussions had been challenging for the gliding community with the airspace change sponsors. But appreciated Tony Rapson's extended appointment with ACOG as he could be useful as a backup in these circumstances. **Mark Swan**, Head of ACOG couldn't answer for the individual airspace change sponsors but advised that ACOG's interests were aligned with the GA community in seeing the benefits of airspace modernisation below 7000ft. **Mark Swan** also advised to take part in the stage 3 consultations in the ACPs when they come about, and to also use Tony to capture the GA impact of such airspace change proposals.

7.4 **John Brady** (Airspace4all) raised a question about the Performance Based Navigation Implementing Rule, and how implementation of such procedures would be balanced against the frequency of traffic and cost of implementing such procedures and used Southampton airport as an example. **Mark Swan**, Head of ACOG answered that not all of the implementing rule was transferred into UK law, and that the London TMA is where a PBN mandate should be made to reduce the amount of airspace required and optimise the amount of usable airspace within the TMA. **Mark Swan** also mentioned that PBN is the way forward in terms of aircraft navigation, and that it should allow reduced separation criteria while also maintaining air traffic safety.

BREAK FOR LUNCH

8. ITEM 8 – AIRSPACE CHANGE PROPOSAL UPDATE

8.1 **Ben Lippitt**, Manager Airspace Regulation, provided an overall update on ACPs (slides attached at Annex A).

8.2 **Ben Lippitt**, Manager Airspace Regulation, asked if there were any questions. No questions were raised.

9. ITEM 9 – CAP1616 REVIEW

9.1 **Ben Lippitt**, Manager Airspace Regulation, presented an update on the CAP1616 Review (slides attached at Annex A).

9.2 **Martin Robinson** (AOPA) asked how the CAA will prioritise noise over emissions or emissions over noise and what formula would be used. **Ben Lippitt** answered that there are no plans to change the current policy which prioritises noise below 4000ft, and that any change to prioritisation of noise/emissions would come down from the DfT to the CAA.

9.3 **Martin Robinson** (AOPA) asked where an ACP is putting in an approach procedure to an aerodrome, how will the CAA mitigate against noise below 4000ft against the requirements of local communities on the ground. **Ben Lippitt** expects these thoughts to be applied by the sponsor in the ACP process, with assistance from the air navigation guidance 2017, of which a further update is due later this year.

9.4 **Pete Stratten** (BGA) mentioned that the BGA raised a concern in the CAP1616 Review consultation, that Stage 2 of the 1616 process includes illustrative design options but does not include specific airspace design options (which appear in stage 3 of the 1616 process), this makes it difficult for the BGA to understand the impact of the options on gliding operations. This point is also made in AOB paragraph 11.5 as this was raised prior to the meeting. **Ben Lippitt** acknowledges that engagement with stakeholders needs to be clearer and meaningful at the earlier stages of the 1616 process which the review is looking to address. **Ben Lippitt** also said that it is about striking a balance between stakeholders wanting to comment on the drawn lines, and stakeholders also wanting to be able to see where the line goes to begin with, some ACPs will be able to plot the lines on a chart early on, but other ACPs may struggle to do this so early on.

9.5 **Roger Hopkinson** (GAA) asked how the CAA measures efficient use of airspace and what formula is used. **Ben Lippitt** said there is an official definition around 'efficient use of airspace' which is to do with a given number of aircraft through a volume of airspace and is mainly commercial based, and that is a reason why it cannot be used on its own, as it does not take into account new entrants to UK airspace, and Section 70 of the transport act requires the CAA to take into account other users requirements as well. **Ben Lippitt** offered to find out more and give a better response to the question.

Action: Secretary

9.6 **Martin Robinson** (AOPA) mentioned that for GA aerodromes considering putting in an approach procedure through the process, that a conversation needs to take place with the sponsor to visualise what a successful outcome would look like, so that sponsors can decide whether to proceed or withdraw at an early stage. **Ben Lippitt** answered that the CAA are trying to make the process much more transparent and predictable from the outset, specifically on the requirements and decision criteria needed, that will help aerodromes determine whether they have the necessary resources to undertake such an application.

10. ITEM 10 – ACOMS DEMONSTRATION

10.1 **Ben Lippitt**, Manager Airspace Regulation, provided an overview of the Airspace Utilisation team, activities and gave a demo of the ACOMS tool, (slides attached at Annex A).

10.2 **Rupert Dent** (ARPAS-UK) asked if the ACOMS tool would be used for all drone flights to file the equivalent of a flight plan. **Ben Lippitt** answered that its only where NOTAMs are currently required via the Airspace Utilisation Team. The **Chair** added that the portal is replicating an existing system while also adding extra functionality to deal with the crane notification requirements etc.

11. ITEM 11 – AOB

11.1 The **Chair** asked if there were any AOB items. **Pete Stratten** (BGA) had raised four items listed below prior to the meeting.

11.2 **Pete Stratten** (BGA): *Please could we have a clear briefing on the status of all the CTR and CTA airspace established by CAA for Doncaster Sheffield Airport following their 2010 and subsequent DSA ACPs, and next steps in terms of the anticipated use and status of that airspace. We're aware there are new, interrelated ACPs underway that CAA will not comment on*. **Ben Lippitt**, Manager Airspace Regulation addressed this point in the Airspace Change Update item by explaining that the CAA are sponsoring an ACP right now to look at the airspace and what needs to happen going forward. There was an engagement window that ended mid-March, which took feedback from aviation stakeholders to inform the CAA's opinion and will ultimately lead to a decision by the regulator later this year. The **Chair** asked **Pete Stratten** if there was anything further to add. **Pete Stratten** (BGA) responded to say that it was still unclear whether the Doncaster airspace situation was temporary or permanent, as the CAA charts still show the airspace, but his electronic moving map no longer shows the airspace. The **Chair** acknowledged that it was an unusual situation, and that there is a long way to go to resurrect the airport back to an operational state, but importantly the CAA need to fully understand the impacts on other airspace users before permanently removing the airspace.

11.3 **Pete Stratten** (BGA): *Containment Policy. It is well known that the true benefits of PBN, especially inside volumes of airspace closet to airports, cannot be fully developed because of the 2014 CAA document 'CONTROLLED AIRSPACE CONTAINMENT POLICY'. We've seen nothing in the AMS to suggest the policy is up for review. Please can we have a statement from CAA explaining the current situation and how it intends to ensure its containment policy is modernised to match how modern aircraft navigate and operate*. **Pete Stratten** (BGA) further added that the BGA's concern was that there was no noticeable difference between the 2014 Containment Policy and the new 2022 policy. **Rob Daniel** sent a written response to this question as follows:

"The 'Controlled Airspace Containment Policy' was withdrawn on 11 August 2022 and replaced by the 'Policy for the Design of Controlled Airspace Structures'. The new policy was informed by consultation with the NATMAC which ran from April to July 2021, with our consultation report sent to NATMAC members in April 2022. We then ran a supplementary engagement on a small number of specific issues from April to June 2022, with the report on that sent to members in August 2022. Within our April 22 consultation report, the CAA acknowledged "that improvements in aircraft navigational performance, alongside other factors, offer an opportunity to review the airspace containment values cited within Annex B" of the 'Policy for the Design of Controlled Airspace Structures'. We have concluded this review and are working to finalise our report to the NATMAC on our findings. Essentially, the review has identified that the extant policy continues to offer the most appropriate, proportionate and effective mitigation to the risk of mid-air collision associated with controlled airspace infringement and excursion.

A key aspect of this proportionality is the flexibility afforded to airspace change sponsors to present proposals for a controlled airspace design which results in a lateral containment of IFPs and ATS routes less than that specified in Annex B. That said, we have also identified an opportunity to reduce the lateral containment for 'straight-legs' and 'fixed-radius' (RF) legs of RNAV 1 routes from 3 nautical miles

(NM) to 2 NM. As soon as we are able, we will present our report to NATMAC and amend Annex B to incorporate the reduced lateral containment criteria."

Rob Daniel to send a report to NATMAC of a review on how the UK compares to many other states in the world with regards to the criteria used in the design of controlled airspace, specifically its lateral dimensions.

Action: Secretary

11.4 **Pete Stratten** (BGA): *Airspace modernisation. NATS and other ANSPs are driving forward with ACPs that are claimed to align with AMS and result in more controlled airspace, including arrival and MAP holds etc that are established 'just in case' (ref LBA). The modernising tools that should be available to and required to be used airspace designers do not yet appear to exist. As a result, we're just seeing more of the same inaccessible airspace designs wrapped around more routes being concreted in place for the benefit of airports that don't appear to be and are not expected to be interested in the bigger picture. ACPs don't start from a blank sheet and seem to be following the traditional model of the airports doing their own thing using the lowest cost design model they can get away with. It astounds the BGA that there appears to be no requirement for CAA to assess environmental impacts of climb gradients etc. Please can we have a statement from CAA describing when and how recreational aviation airspace stakeholders will be able to benefit from airspace modernisation in terms of airspace access? We'd be grateful if the response isn't conflated with the TDA topic.* The **Chair** answered that it is the CAA's ambition that the FASI ACPs seeking to modernise the airspace are all aligned with the AMS rather than ensuring they are not going in the opposite direction and that ACPs check to ensure this is the case and emphasised that the process allows for every party to have their say. **Rob Daniel** also highlighted that value could be added through the airspace change process, where policy requirements can be stipulated to industry, in the way that airspace is designed. **Rob Daniel** sent a written response as follows:

For reference only, the 'Policy for the Design of Controlled Airspace Structures' states:

4.2 CAP785B, Implementation and Safeguarding of Instrument Flight Procedures (IFPs) in the UK, stipulates that a full review of IFPs is required on a 5-yearly basis[1112] . The CAA considers that where controlled airspace is established to contain these IFPs, and where such a review identifies the need for changes to that IFP, it is axiomatic that there may be a subsequent and associated need to amend the airspace containing that IFP. Moreover, multiple references within the ATM/ANS Implementing Rule[13] highlight that the management and safety management systems of air navigation service providers (ANSPs) should seek to review and examine particular elements or procedures of a specific operation and their functional system[14]. The purpose being to ensure that the ANSP can provide its services in a safe, efficient, continuous, and sustainable manner, consistent with any foreseen level of overall demand for a given airspace[15].

4.3 As such, the review should include the airspace design and volume, associated ATS routes and/or SIDs and STARs and the associated ATS arrangements, to ensure that the airspace:

- satisfies changing safety, operational and environmental conditions and requirements; and,
- meets the principle stated in paragraph 2.6 above

[11] CAP 785B Implementation and Safeguarding of Instrument Flight Procedures in the UK Chapter 3 (transposed from ICAO Annex 11 Appendix 7 Paragraph 6).

[12] Clarification on the responsibility for the conduct of the review is contained within CAP 785B Chapter 1.

[13] UK Reg (EU) 2017/373.

[14] For example, UK Reg (EU) 2017/373 Annex III Subpart B ATM/ANS.OR.B.005(a)(4) and AMC2 ATM/ANS.OR.B.005(a)(3) point (b)(5).

[15] UK Reg (EU) 2017/373 Annex III Subpart B ATM/ANS.OR.B.001.

As we discussed, the challenge in the text above is ensuring that industry are complying with the requirement.

11.5 **Pete Stratten** (BGA): *ACPs. The CAP1616 process results in ACP sponsors providing complex design options at stage 2 including swathes that do not include airspace design options. We recognise that these consultations are primarily pitched at people on the ground. However, the approach taken at stage 2 means that we are unable to assess the impact of the DO's. Once airspace designs appear at stage 3, its usually too late for sponsors to make any substantive changes. Which loses the whole point of early sensible engagement supporting process efficiency, equity and proportionality. Please can we have a statement from CAA that identifies how this fundamental problem can be addressed?* **Ben Lippitt**, Manager Airspace Regulation addressed this point in the CAP1616 Review item – see paragraph 9.4 for the response.

11.6 **Martin Robinson** (AOPA) asked what the timescale for full integration of autonomous flight systems into a manned aviation environment is. The **Chair** recognised there were quite a few hurdles to clear before full autonomy is achieved, and that a number would be meaningless right now. **Rob Daniel** highlighted the digital flight rules concept that NASA have been developing and they mention a date of between 2040-2050 for delivering full autonomous integrated flight.

12. ITEM 12 – DATES OF FUTURE MEETINGS

The **Chair** confirmed that the next NATMAC will be held in person at Aviation House.

- NATMAC 94 – 12th October 2023 – to be held at Aviation House.
- NATMAC 95 – 11th April 2024
- NATMAC 96 – 10th October 2024

NATMAC 93 – ACTION LIST

Actions arising from NATMAC 93

4.5	The **Secretary** pointed to a question in the chat from **Roger Hopkinson** (GAA) who asked if there was any benefit for stakeholders to pre-review the annual AMS progress reports to the Secretary of State for Transport. **John Dow** offered to take this away to speak with the AMS team on how they would do this, with the possibility of exposing the document to NATMAC before it reaches the Secretary of State. The **Chair** said we would take this away to see if the barebones of the report could be available at the Autumn NATMAC.	**Secretary**
5.9	**Timothy Nathan** (PPL/IR Europe) commented that Manchester Airport do not provide crossing clearances over its Class D airspace and wanted to know how this could be changed. The **Secretary** answered that the team is looking at the Manchester Low level Route to see if access can be improved and highlighted the use of the 1522 Refusal of Access Forms if denied a crossing clearance. **Timothy Nathan** (PPL/IR Europe) responded to say that these forms are not filled in because pilots don't bother to ask for crossing clearances from Manchester anymore. The **Secretary** acknowledged the point but said that pilots should still request for a crossing clearance if that is part of their planned route but have another route in mind if their crossing clearance was not given. The **Secretary** also pointed out that the team was looking at whether access could be improved by amending the Manchester Low level Route (returning some airspace to class G for example). **Timothy Nathan** (PPL/IR Europe) asked for a follow-on conversation to go through his reasoning and concerns. The **Secretary** and **Nikki Deeley** agreed to arrange a chat and bring in colleagues who are working on the Manchester Low level Route.	**Secretary**

9.5	**Roger Hopkinson** (GAA) asked how the CAA measures efficient use of airspace and what formula is used. **Ben Lippitt** said there is an official definition around 'efficient use of airspace' which is to do with a given number of aircraft through a volume of airspace and is mainly commercial based, and that is a reason why it cannot be used on its own, as it does not take into account new entrants to UK airspace, and Section 70 of the transport act requires the CAA to take into account other users requirements as well. **Ben Lippitt** offered to find out more and give a better response to the question.	**Secretary**
11.3	**Rob Daniel** to send a report to NATMAC of a review on how the UK compares to many other states in the world with regards to the criteria used in the design of controlled airspace, specifically its lateral dimensions.	**Secretary**

NATMAC 93 – GLOSSARY

(This Glossary is not necessarily limited to acronyms used in these Minutes, but is intended to assist members with the variety of NATMAC correspondence promulgated)

AAA	Airspace, ATM & Aerodromes
ACOG	Airspace Change Organising Group
ACP	Airspace Change Process
ADS-B	Automatic Dependent Surveillance - Broadcast
AIP	Aeronautical Information Publication
	Administrative Incentive Pricing (spectrum)
AIMWG	Aeronautical Information Management Working Group
ANSP	Air Navigation Service Provider
AIWG	Airspace Infringement Working Group
AMS	Airspace Modernisation Strategy
ATSOCAS	Air Traffic Services Outside Controlled airspace
ATM	Air Traffic Management/Movement
ATWP	Air Transport White Paper
ATZ	Aerodrome Traffic Zone
AWG	Airlines Working Group
BVLOS	Beyond Visual Line of Sight
CMIC	Civil/Military Interface Committee
DMO	Delivery Monitoring and Oversight
DfT	Department for Transport
DGCA	Director General of Civil Aviation
EASA	European Aviation Safety Agency
EHS	Enhanced Mode S
ELS	Elementary Mode S
ECAST	(EASA) European Commercial Aviation Safety Team
EGAST	(EASA) European General Aviation Safety Team
FAA	Federal Aviation Authority
FAB	Functional Airspace Block
FAB EC	Functional Airspace Block Europe Central
FASI	Future Airspace Strategy Implementation
FFC	Future Flight Challenge
FIS	Flight Information Service
FUA	Flexible Use of Airspace
GAWG	General Aviation Working Group
HMT	Her Majesty's Treasury
ICAO	International Civil Aviation Organisation
IFP	Instrument Flight Procedures
NATS	National Air Traffic Services
NPA	Notice of Proposed Amendment (EASA)

NSA	National Supervisory Authority
PinS	Point in Space
PPR	Planned and Permanent Redistribution of air traffic
PRC	EUROCONTROL Performance Review Commission
PRNAV	Precision Area Navigation
PSSTG	Public Sector Spectrum Test Group
RPAS	Remotely Piloted Aircraft System
RMZ	Radio Mandatory Zone
RICBAN	Regulatory Information and Co-ordination Board Area North-West
SARG	Safety & Airspace Regulation Group (CAA)
SASWG	Spectrum & Surveillance Working Group
SBAS	Satellite-Based Augmentation System
SES	Single European Sky
SES IR	SES Implementing Regulation
SESAR	Single European Sky ATM Research Project
SESAR JU	SESAR Joint Undertaking
SSC	Single Sky Committee
TDA	Temporary Danger Area
TMZ	Transponder Mandatory Zone
UAM	Urban Air Mobility
UAS	Unmanned Aircraft Systems
UAV	Unmanned Aerial Vehicle
UTM	UAS Traffic Management
WRC	World Radio Conference

National Air Traffic Management Advisory Committee (NATMAC) Meeting NATMAC 93

Thursday 13th April 2023

1

NATMAC 93 Agenda

- **11:00 – Meeting Start / Introduction**
- 11:05 – Minutes of NATMAC 92
- 11:10 – Action List / Progress Report
- 11:15 – Chair's Report
- 11:30 – Airspace Analyser Tool Demo / Future Airspace Update
- 12.00 – Airspace Structures to Facilitate BVLOS UAS Flight
- 12:20 – Airspace Change Organising Group Briefing
- ***12:40 to 13:10– Lunch***
- 13:10 - Airspace Change Proposal Update
- 13:30 – CAP1616 Review
- 14:00 – ACOMS Demonstration
- 14:20 – Any Other Business
    - Doncaster Airspace (Pete Stratten- BGA)
    - Containment Policy (Pete Stratten- BGA)
    - Airspace Modernisation (Pete Stratten- BGA)
    - ACPs (Pete Stratten- BGA)
- **14:25 – Wrap Up**

2

Civil Aviation Authority
Future Airspace Update
Stu Wain

3

Civil Aviation Authority
NATMAC - Airspace Analyser Tool Demo

4

5

We have initiated our next regional review: Barnslev

- Call for Evidence closed on 8 Jan – 120 responses
- Detailed analysis of the issues raised is now underway
- Planning ACA visits over the coming months to discuss issues, including aerodromes, airfields
- Encourage GA attendance at LAITs, RAUWGs
- Note – we are NOT looking to adjust boundary of ASR

6

In the interim, we are undertaking a deep dive of the MLLR

Over 90% of the Barnsley Call for Evidence responses commented upon the MLLR

Key issues raised:

- Risk of overflying towns at insufficient altitude
- Proximity to other airspace users
- *Unwillingness* of Manchester ATC to provide crossing clearances resulting in being forced to use the MLLR
- Difficulty in monitoring Manchester radio frequency
- Incorrect squawk in MLLR treated as an airspace infringement
- Barton departures/ arrivals
- Lateral boundaries of MLLR

Proposals for improvement:

- Expanding the MLLR laterally and vertically
- Separating northbound and southbound traffic within MLLR
- Reviewing Barton departure procedures
- Aligning lateral boundaries of MLLR with recognizable ground features
- Establishing RMZ, TMZ or both: in the entirety or parts of MLLR
- MLLR should be class G
- Dedicated frequency and ATS service
- Abolishing MLLR rule change treating any aircraft not squawking 7366 in MLLR as an infringer

MLLR: Next steps

- Longer term design opportunity presented by ongoing Manchester and Liverpool ACPs
  - imperative that the ACAs work together to achieve a mutually beneficial solution with support to be provided by our team
  - ACP timelines essential in steering what we do with the MLLR
- Risk from adding to confusion or imposing resource costs by implementing multiple changes in a short time frame.
- Equally, we recognise that something needs to be done to assist with VFR transits of this airspace.

- Our Report containing detailed investigation and findings to be published End April

NATMAC 93

Electronic Conspicuity– where are we?

9

Story so far

- Much history
- CWG
  - ECWG
    - TCG
- Coherent CAA/DfT view
- Meanwhile:
  - GA has adopted solutions that are having a positive impact on safety
- BUT…
  - Disparate solutions are limiting interoperability and are not suitable for a ‘safety of life’ solution to integrated airspace

We HAVE to enable the production of an end -to-end cooperative picture.

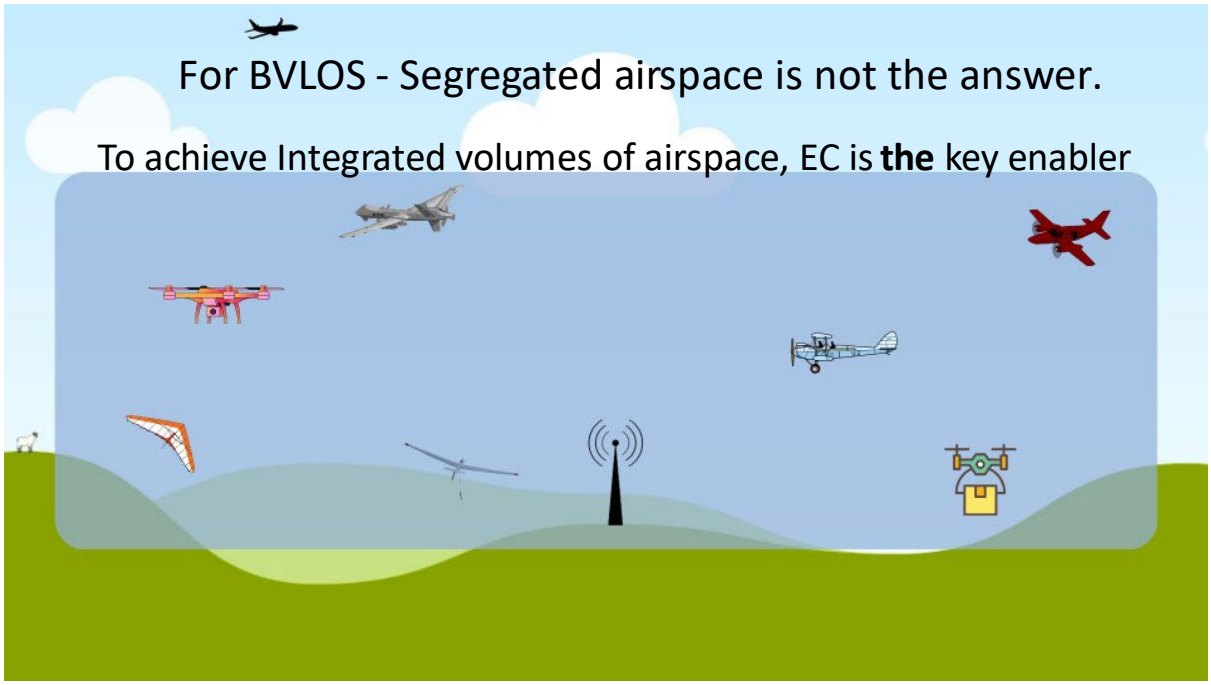
10

Story so far (contd)

- Egis report and Joint Declaration
- Engagement with Stakeholders
- Smaller group of Tech experts:
  Technical Cooperation Group (TCG)
  - GA organisations
  - ANSPs
  - Emergency services
  - Military
  - RPAS
  - DfT
- Plus – NATMAC/GAP/MAC CG/JANSC/…
  - And targeted engagement events plus consultation on specific elements as we move forward.

- We have our 'direction'
- We now need to answer some questions:
  - What is the risk tolerance in integrated airspace?
  - How will that airspace operate with EC?
  - What specification of equipment will be needed to operate in the airspace?
  - What are the equipment constraints ?

11



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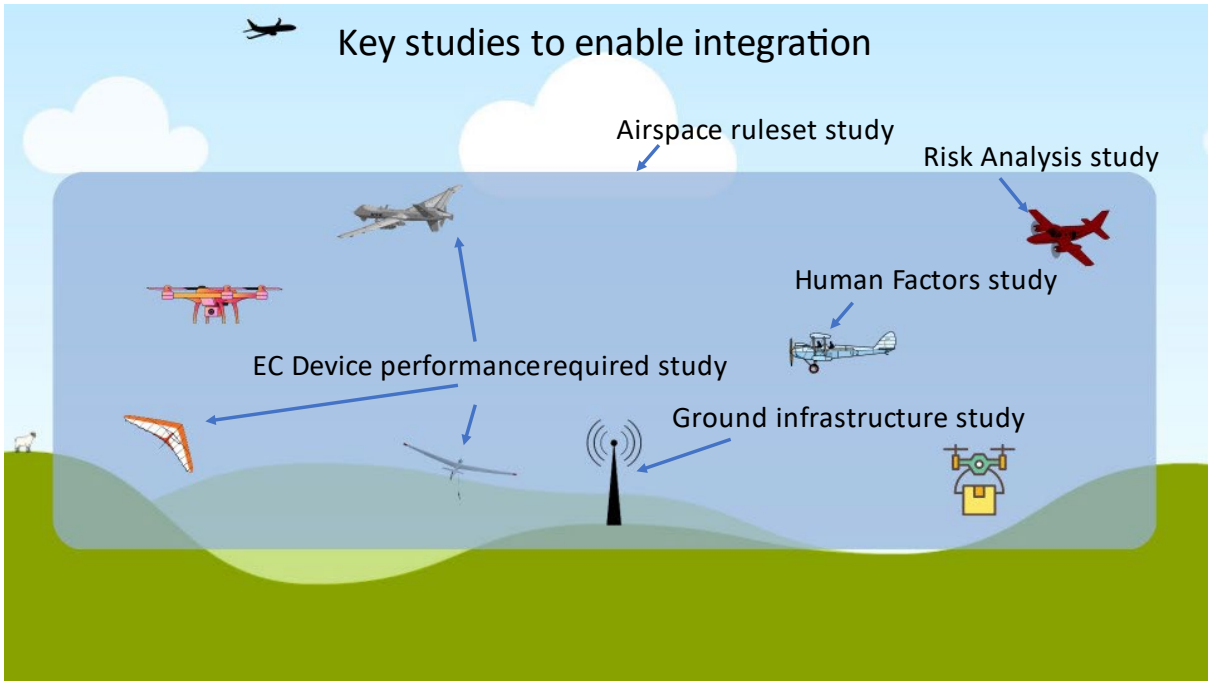
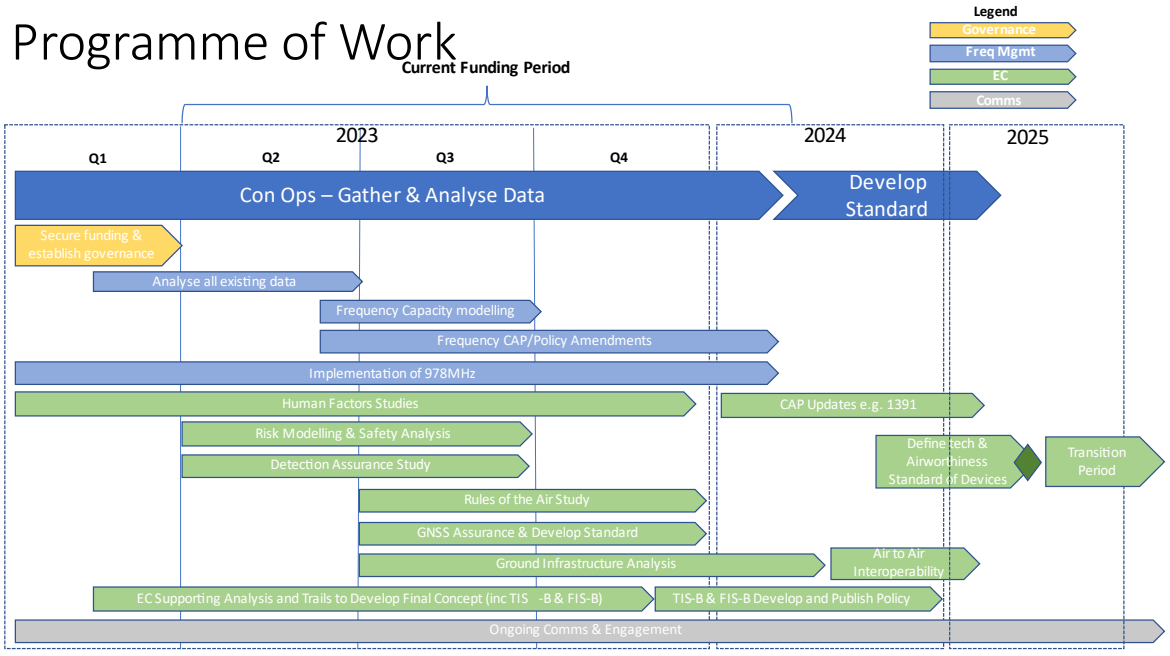

Key studies to enable integration
Airspace ruleset study
Risk Analysis study
Human Factors study
EC Device performancerequired study
Ground infrastructure study

13


Programme of Work
Legend
Governance
Freq Mgmt
EC
Comms
Current Funding Period
2023
2024
2025
Q1
Q2
Q3
Q4
Con Ops – Gather & Analyse Data
Develop Standard
Secure funding & establish governance
Analyse all existing data
Frequency Capacity modelling
Frequency CAP/Policy Amendments
Implementation of 978MHz
Human Factors Studies
CAP Updates e.g. 1391
Risk Modelling & Safety Analysis
Detection Assurance Study
Define tech & Airworthiness Standard of Devices
Transition Period
Rules of the Air Study
GNSS Assurance & Develop Standard
Ground Infrastructure Analysis
Air to Air Interoperability
EC Supporting Analysis and Trails to Develop Final Concept (inc TIS -B & FIS-B)
TIS-B & FIS-B Develop and Publish Policy
Ongoing Comms & Engagement

14

Next Steps

- Determine route to market and commence tender activities for:
  - Consolidate global 978/1090 knowledge and outputs
  - Frequency capacity modelling
  - Risk modelling & safety analysis
  - Detection assurance study
  - Airspace safety case
  - Options for Rules of the Air in a mixed environment
  - Trials...
- Continue to develop the programme plan and cost forecast to provide the next level of detail and further validate cost estimates
- Ongoing engagement internally with AMS, Innovation, RPAS, GA teams and EC Working Group
- Prepare for next EC TCG in May 23

CAA Airspace Policy Concept

Managed Integration of BVLOS UAS Flight

Rob Daniel
AAA Principal Airspace & ATM Policy
13 April 2023

17

The context

Airspace Modernisation Strategy 2023–2040

Integration

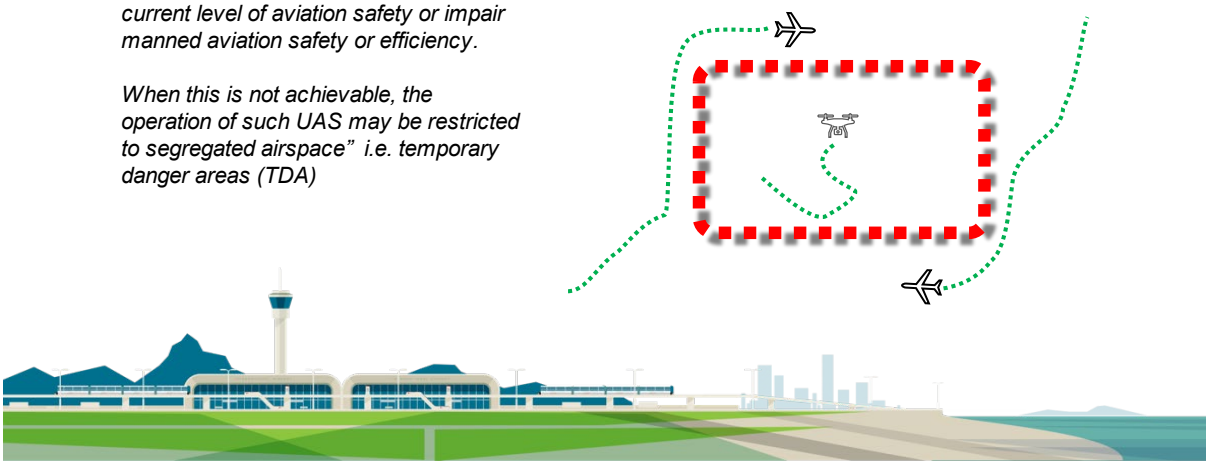
18

Today

Segregation

"UAS operations must not degrade the current level of aviation safety or impair manned aviation safety or efficiency.

When this is not achievable, the operation of such UAS may be restricted to segregated airspace" i.e. temporary danger areas (TDA)



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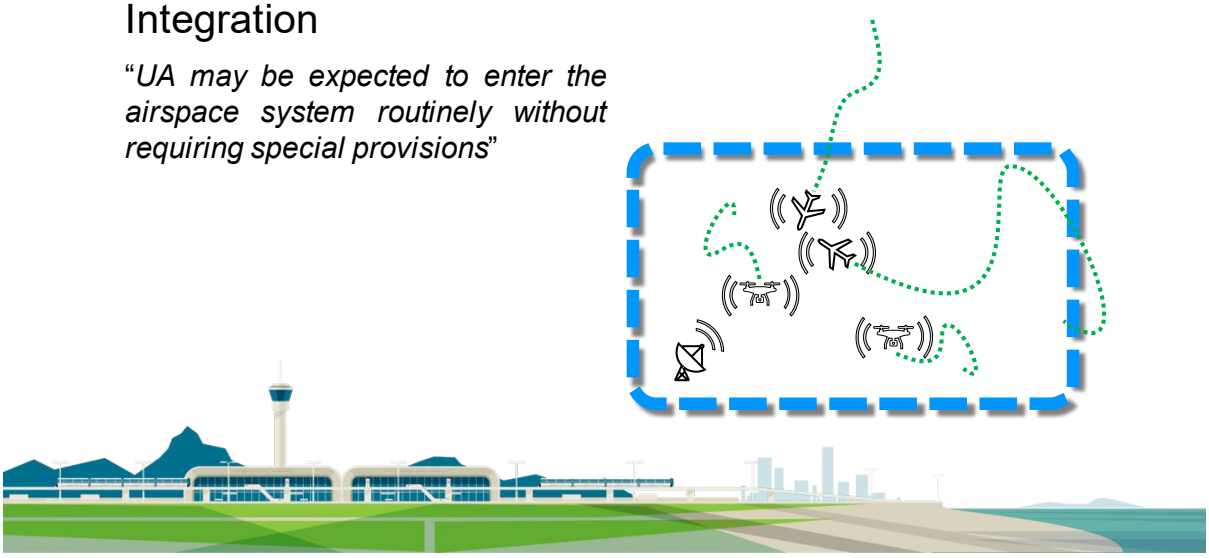
The Future

Integration

"*UA may be expected to enter the airspace system routinely without requiring special provisions*"

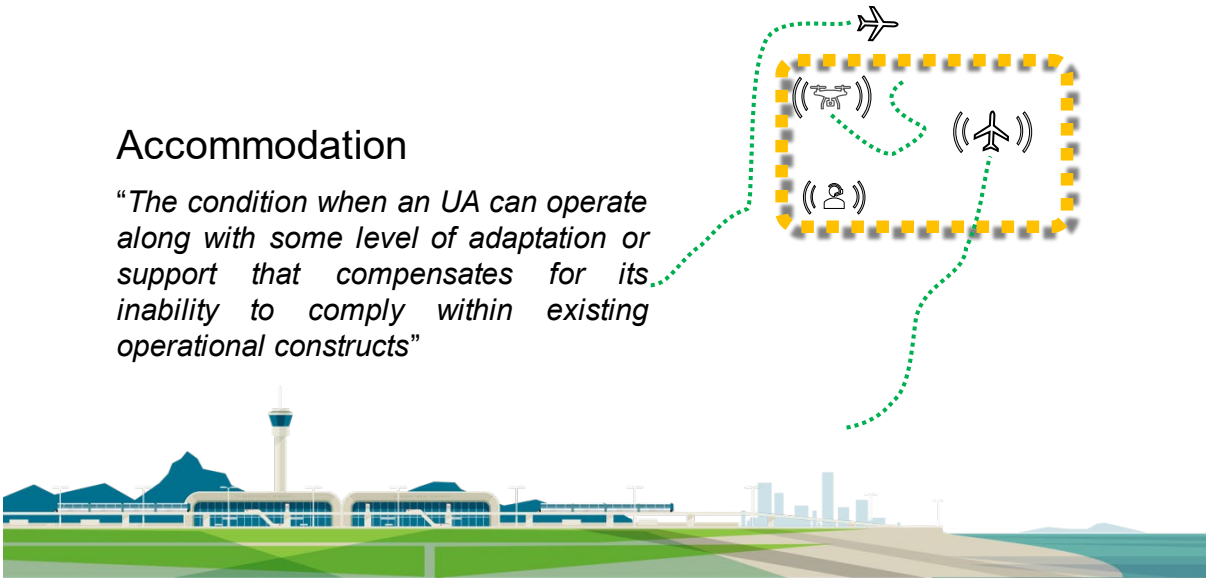


20

Transition between Segregation and Integration

Accommodation

"*The condition when an UA can operate along with some level of adaptation or support that compensates for its inability to comply within existing operational constructs*"



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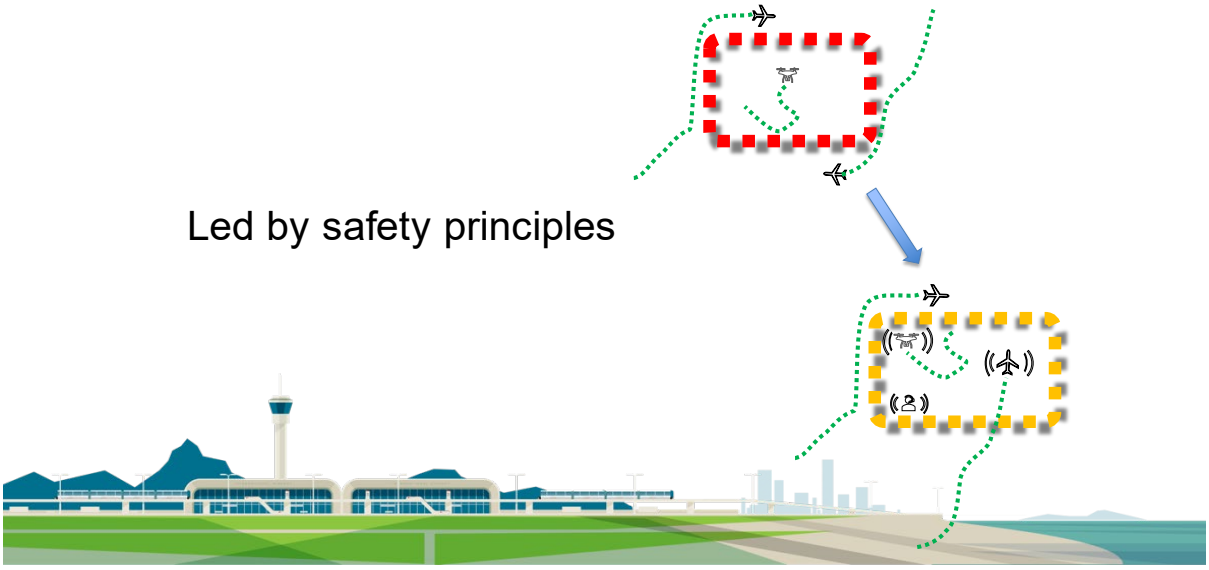
Transition from Segregation to Accommodation

Led by safety principles



22

Transition from Segregation to Accommodation

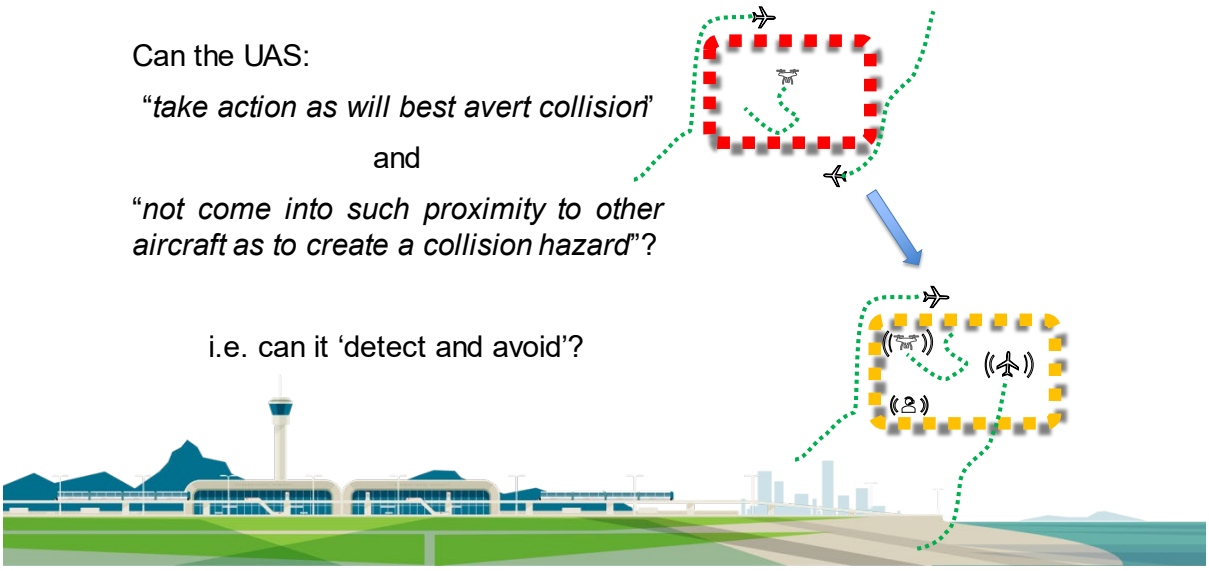
Can the UAS:

"*take action as will best avert collision*"

and

"*not come into such proximity to other aircraft as to create a collision hazard*"?

i.e. can it 'detect and avoid'?

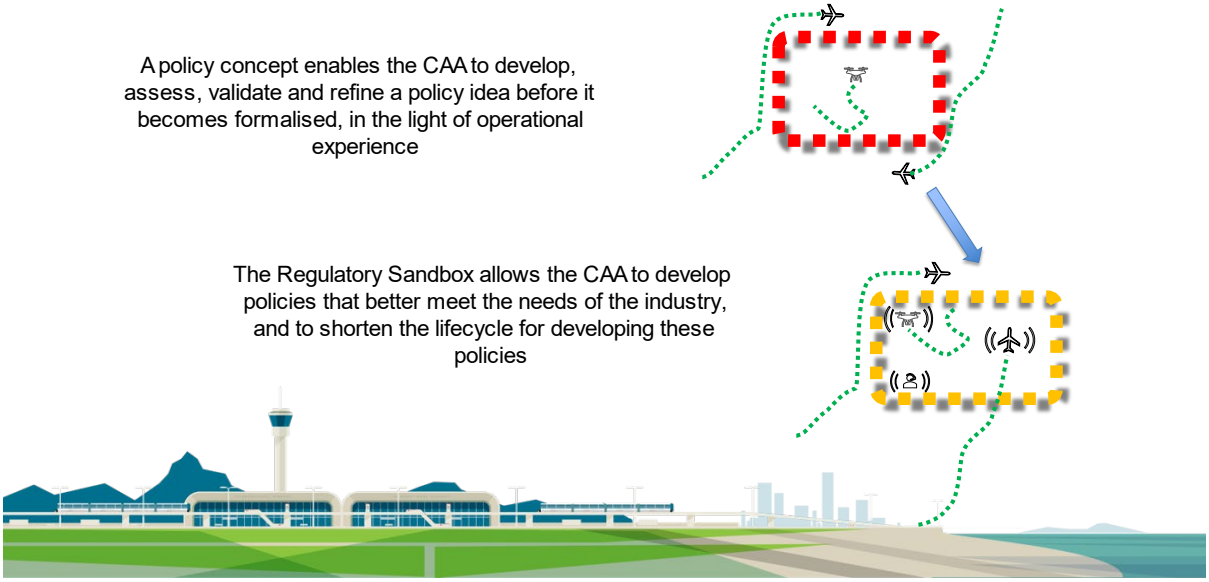


23

Policy Concept & the Regulatory Sandbox

A policy concept enables the CAA to develop, assess, validate and refine a policy idea before it becomes formalised, in the light of operational experience

The Regulatory Sandbox allows the CAA to develop policies that better meet the needs of the industry, and to shorten the lifecycle for developing these policies



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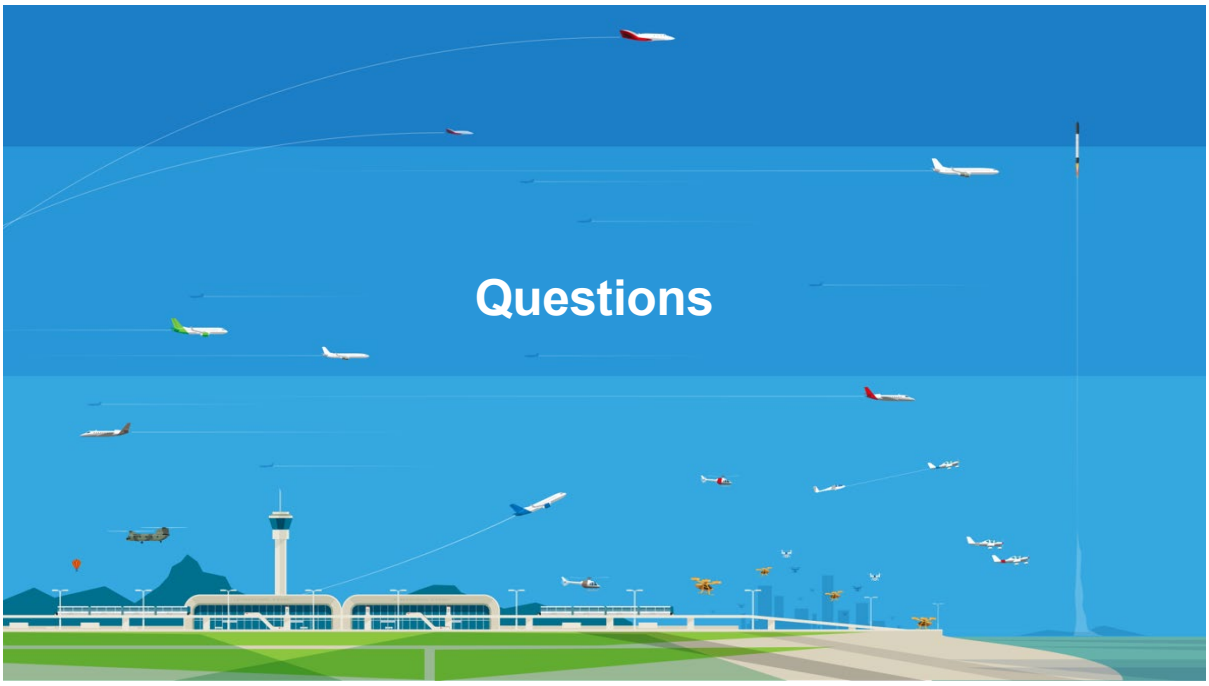
Questions

25

ACOG Update
Mark Swan – Head of ACOG
NATMAC Meeting #93
April 2023
ACOG
Airspace Change Organising Group

26

AGENDA

- Airspace Change Programme Update
- Masterplan Iteration 3 Development
- ACOG Economic Benefits Review

27

28

- First practical application of the ACOG Cumulative Analysis Framework (CAF) conducted with the Scottish TMA ACP sponsors to identify potential design conflicts and the trade-offs.
- Guiding principles for forming an ACP development and deployment plan in the London and Southeast cluster agreed with CAA. Detailed planning activity with the LTMA airports and NERL to conclude in May 2023.
- ACOG delivered advice to the co-sponsors (DfT and CAA) on the estimated costs to complete the overall programme of Masterplan ACPs.
- ACOG delivered advice to the co-sponsors on the implications and options associated with Cardiff Airport's intention to withdraw from the West cluster of the Masterplan.

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- Phase one of the Masterplan public engagement exercise, setting out the high -level approach to airspace modernisation at a national level to start at the end of Apr -23.
- Draft Masterplan Iteration 3 content for the Scottish TMA Cluster ACPs developed between Apr-23 and Jun-23.
- Phase two of the Masterplan public engagement exercise concentrating on the overall airspace design proposed for the Scottish TMA to commence in Jul -23.
- Final Masterplan Iteration 3 for the Scottish TMA Cluster, incorporating the feedback from the public engagement exercise submitted to the co -sponsors in Q3-23, for acceptance in Q4-23 enabling STMA ACPs to consult as planned in Q1 -2024.

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- Airspace modernisation will significantly improve air connectivity, which has been found to support trade, tourism, investment and productivity. This translates into higher GDP.
- The additional GDP expected to be delivered by aviation interventions, including airspace modernisation, ranges from £9bn-£50bn+, and the corresponding additional employment ranges from 60,000 to 270,000.
- Failing to modernise UK airspace could lead to 28 million minutes of delay by 2030, costing the UK economy £1.8bn through longer journey times.
- Link to the full report here.

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Break for Lunch

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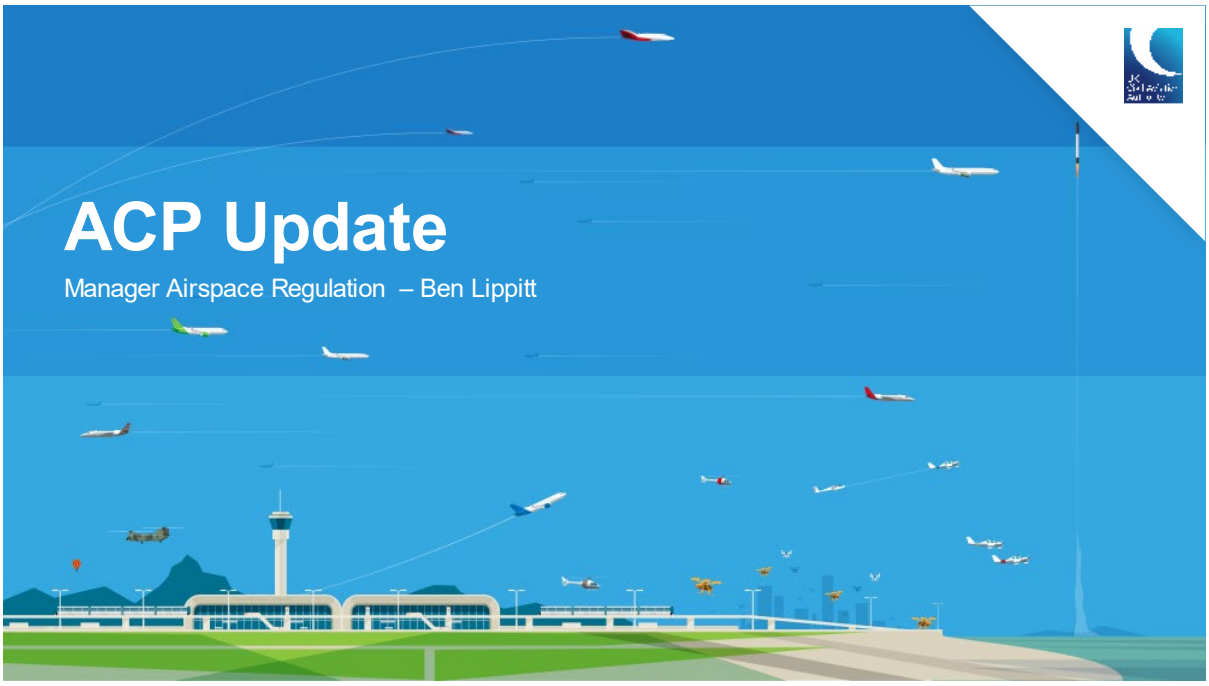

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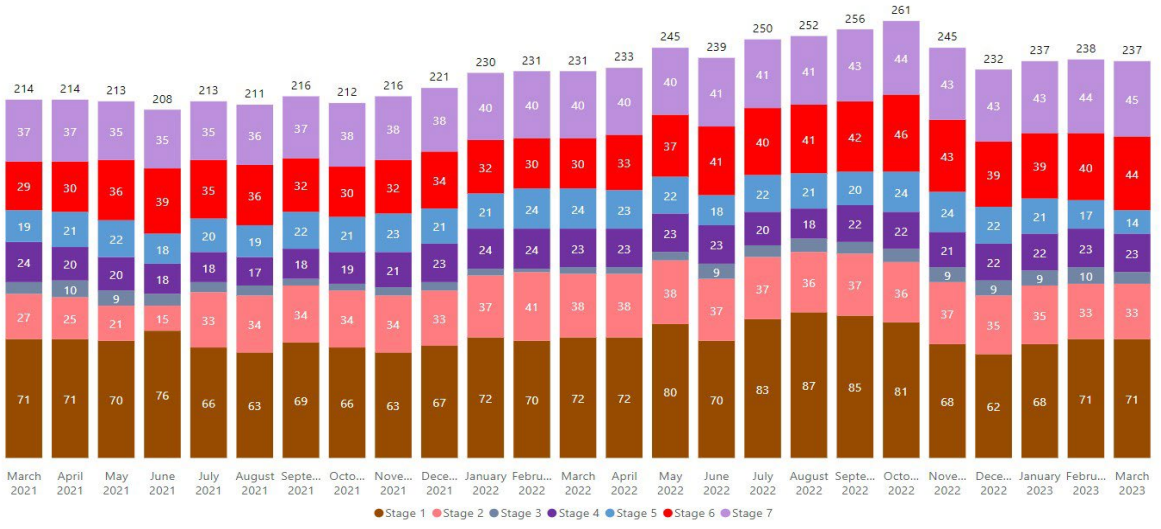
Trend Analysis (2 Years) – Live Airspace Change Proposals



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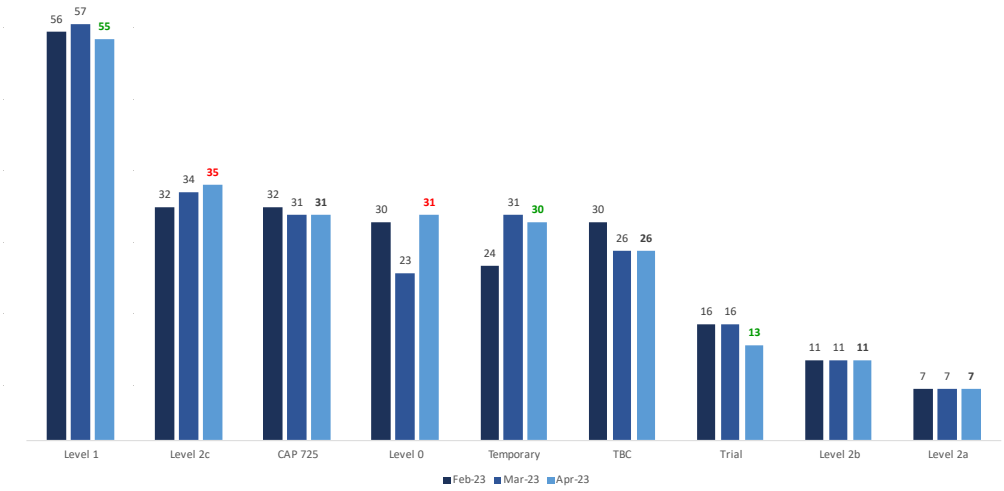
ACP Types year on year comparison



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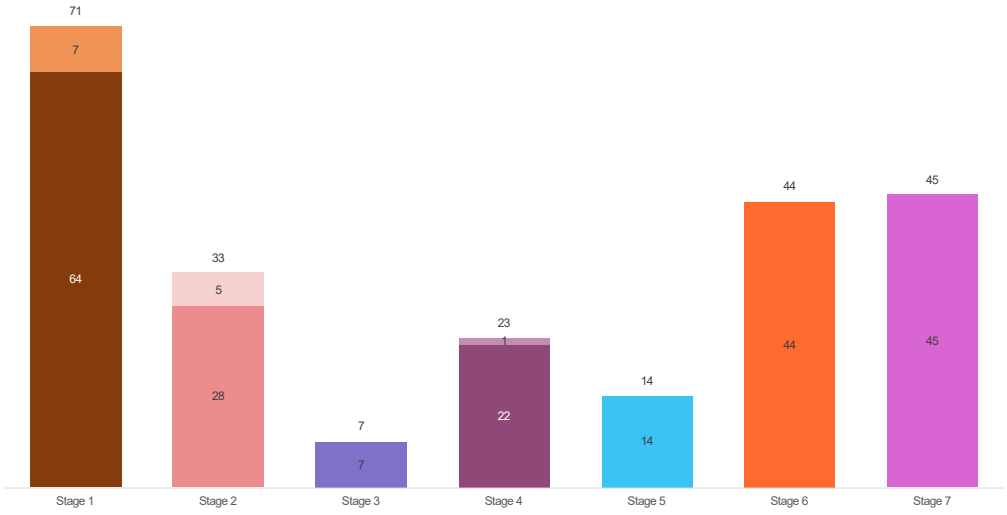
Current Stage of Airspace Change Proposals ('In Progress' and 'Paused')



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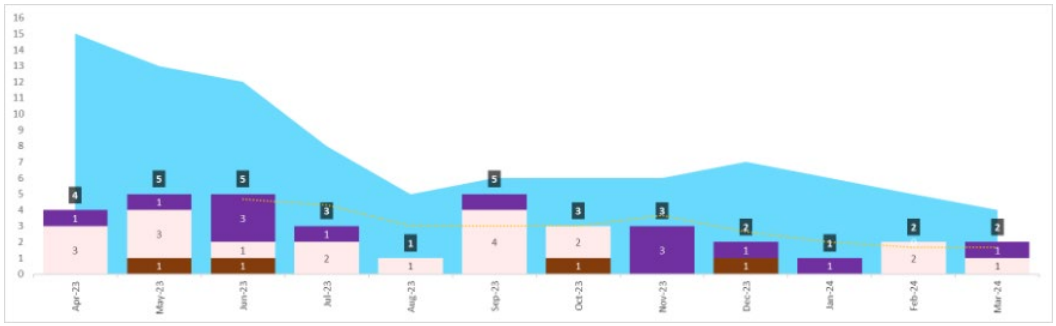
ACP Forecast

Depicts the monthly ACP schedule for Define (brown), Develop & Assess (pink) and Consult (purple) with simultaneous Stage 5 assessments overlayed (blue)



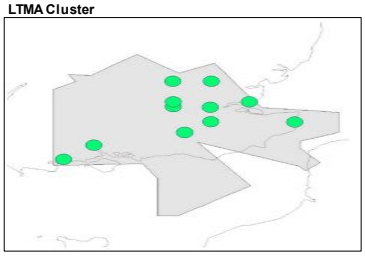
Airspace Change Programmes

Future Airspace Strategy Implementation (FASI)

- **'LTMA' Cluster**
  - **15** ACPs currently within this Cluster
    - **15** '**In Progress**'
    - **1** in **Define (Stage 1)**
    - **7** in **Develop & Assess (Stage 2)**
    - **7** in **Consult (Stage 3).**

- **Heathrow R2**
- **Gatwick**
- **Northolt**
- **Biggin Hill**
- **Stansted**
- **Bournemouth**
- **Luton**
- **Farnborough***
- **London City**
- **Southend**
- **Southampton**
- **LAMP2 D2**
- **LAMP2 D3**
- **LAMP2 D4**
- **Manston**

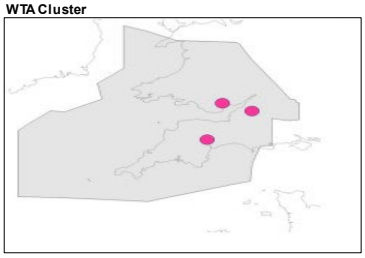
LTMA Cluster



- **'WTA' Cluster**
  - **5** ACPs currently within this Cluster
    - **5** '**In Progress**'
    - **1** in **Develop & Assess (Stage 2)**
    - **3** in **Consult (Stage 3)**
    - **1** in **Stage 6 (Implement).**

- **Exeter**
- **Bristol**
- **Cardiff**
- **LAMP2 D1.1**
- **LAMP2 D1.2**

WTA Cluster



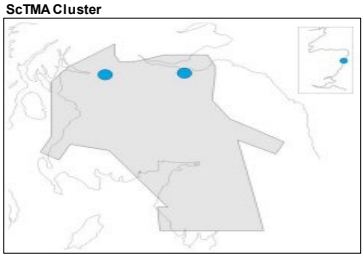
*Farnborough was accepted into the Masterplan by the sponsors in October 2022.

Airspace Change Programmes
Future Airspace Strategy Implementation (FASI)

- **'ScTMA' Cluster**
  - **4** ACPs currently within this Cluster
    - **4** '**In Progress**'
    - **4** in **Consult (Stage 3).**

- **Aberdeen**
- **Edinburgh**
- **Glasgow**
- **ScTMA**

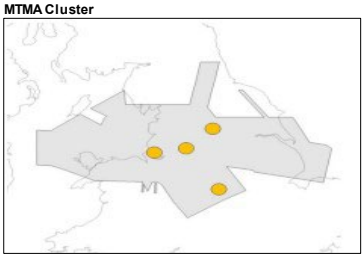
ScTMA Cluster



- **'MTMA' Cluster**
  - 5 ACPs currently within this Cluster
    - **5** '**In Progress**'
    - **4** in **Develop & Assess (Stage 2)**
    - **1** in **Consult (Stage 3).**

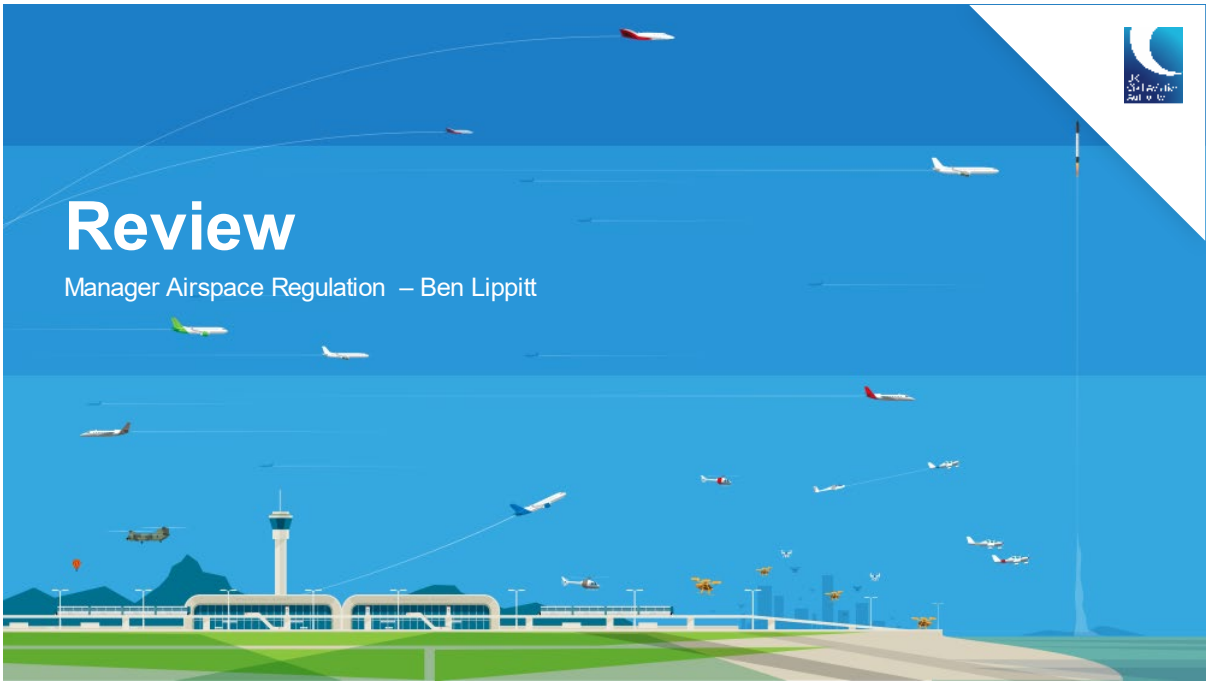
- **Manchester**
- **Liverpool***
- **East Midlands**
- **Leeds Bradford**
- **MTMA**

MTMA Cluster



*Liverpool ACP unpaused in March 2023 and has restarted from Stage 2 'Develop & Assess' (was previously at Step 4).

41



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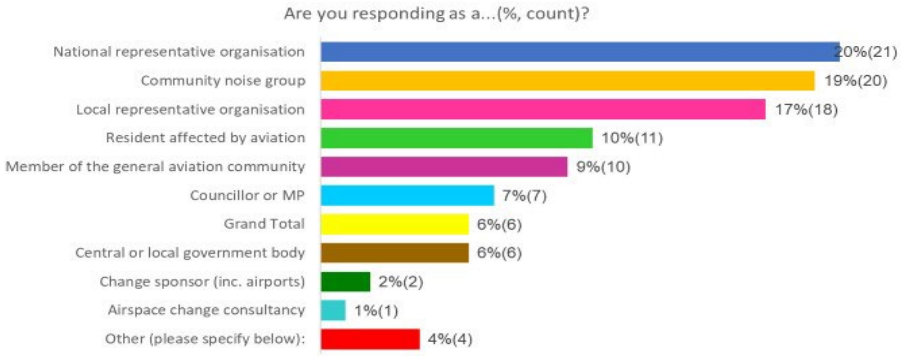
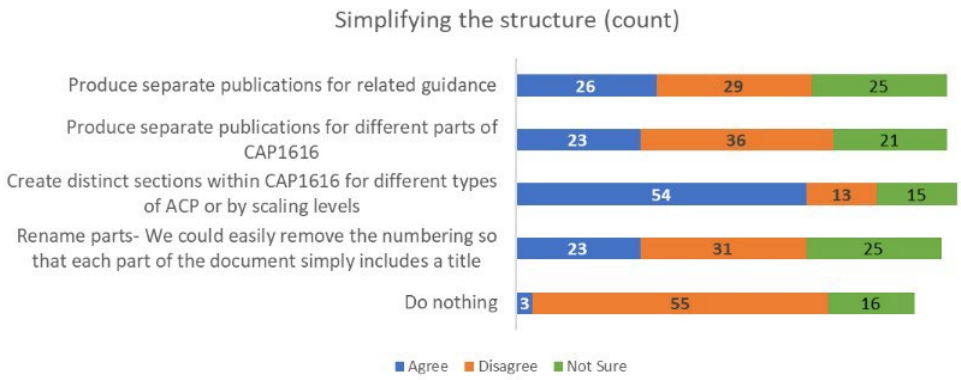
CAP 1616 Review

The consultation was extended by 2 weeks and was completed on the 19 Mar 23, 102 total responses



CAP 1616 Review



CAP 1616 Review

Option 1: Produce separate publications(s) for related guidance	Agree	Disagree	Not Sure	Grand Total
Sponsor related	8	8	5	21
Central/local political	2	2	1	5
Community	3	6	6	15
Member of the general aviation community		6	2	8
Military			1	1
National representative organisation	5	5	5	15
Resident affected by aviation	6	2	4	12
Other	2		1	3
Grand Total	26	29	25	80

Option 2: Produce separate publications for different parts of CAP1616	Agree	Disagree	Not Sure	Grand Total
Sponsor related	7	11	4	22
Central/local political	1	2	2	5
Community	3	7	5	15
Member of the general aviation community	1	6	1	8
Military	1			1
National representative organisation	2	8	4	14
Resident affected by aviation	7	2	4	13
Other	1		1	2
Grand Total	23	36	21	80

Option 3: Create distinct sections within CAP1616 for different types of ACP or by scaling levels	Agree	Disagree	Not Sure	Grand Total
Sponsor related	17	5		22
Central/local political	4		1	5
Community	6	3	5	14
Member of the general aviation community	7	2		9
Military	1			1
National representative organisation	10	1	6	17
Resident affected by aviation	7	2	3	12
Other	2			2
Grand Total	54	13	15	82

Option 4: Rename parts - We could easily remove the numbering so that each part of the document simply includes a title	Agree	Disagree	Not Sure	Grand Total
Sponsor related	7	7	8	22
Central/local political	2	1	2	5
Community	3	6	5	14
Member of the general aviation community	2	5	2	9
Military	1			1
National representative organisation	1	9	4	14
Resident affected by aviation	5	3	3	11
Other	2		1	3
Grand Total	23	31	25	79

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This goes beyond the specific CAP 1616 document, it is clear the overall airspace change process has to work for different concepts in different ways. Snap shot of perspective so far

- CAA
  - Ensure submissions are addressing the requirements we need in a clear way. Reducing failure rate and oversight time
  - Ensure changes are being developed in line with policy and AMS
  - Ensure IFP is considered earlier in the process. Ensure ACP are not progressed that are unprovable or complex to approve in stage 5 elongating the decisions time and increasing resource
  - Ensure proportionality is at the heart of the process
  - Enabling the AMS

- Sponsors
  - Like the gateway approach but need more certainty of success and flexibility in gateway availability. Supporting resourcing and planning
  - Simpler process with a clearer understanding of what is being asked for and why
  - Quicker process overall and clearer understanding of where proportionality can be applied
  - Clearer understanding of the assessment requirements

- Stakeholders
  - Find the documents, process and language confusing
  - Complex to understand what is being asked and why
  - Like the concept of a gateway process as it provides transparency and ensures engagement
  - Strongly feel this review is trying to make changes easier for all aviation, avoiding scrutiny consideration of others and impacting wellbeing
  - Frustration with understanding who to talk to about changes and consultation

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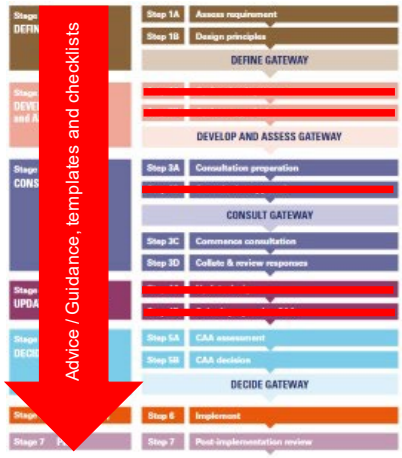
CAP 1616 Review – package of improvement

Simplification – Clarification - Proportionality – Capacity

- Enhancing the structure and presentation of the CAP1616 airspace change process
- Providing clear link to Legislation, Policy and Regulations
- Amend Levels - low, medium, high to allow clear published scaling requirements for each type of change
- Use of flow charts, checklists and templates for submission
- Provision of technical support between gateways
- Remove options development where possible, Options appraisal is required where you have multiple options this process will de-risk where possible
- Redefine requirements to ensure only realistic options are generated at outset
- Allocated team to undertake temporary changes
- Better use of CAA website, publications and notifications to educate and inform stakeholders, explain concepts and process
- Adoption of Prioritisation principals to support CAA resource allocation
- Increase CAA resource to significantly increase Gateway capacity and increase flexibility.

CAP 1616 Review – package of improvement



Stage 1 – Statement of Need objective, modification of the scaling levels, requirement to establish the current day scenario (baseline) moved from Stage 2 and introduction of mandatory DPs

Stage 2 – sub-steps merged and requirement to develop comprehensive list of design options removed

Stage 3 – Step 3B (consultation approval) removed (duplication of Consult Gateway) and potential to consolidate the initial and full options appraisal

Stage 4 – sub-steps merged

Stage 5 – clarification on decision making criteria (e.g. AMS)

Stage 6 – additional guidance on implementation (e.g. change management plan)

Stage 7 – clarification on how PIR process is scaled

CAP 1616 Review – package of improvement

Simplification – Clarification - Proportionality – Capacity

- Complete analysis of feedback and publish consultation response document
- Draft CAP1616 update and amend associated policies
- Draft and coordinate website and portal changes (delivered in an agile way)
- Map those in process across to ensure there is minimal disruption
- Develop communication plan, ensure stakeholders are briefed on changes

Questions

ACOMS

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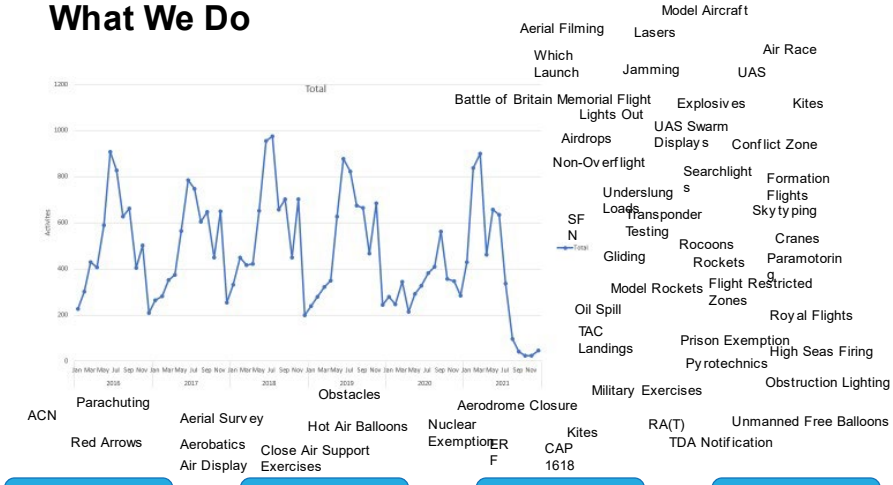
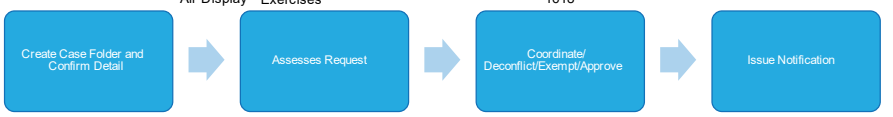
What We Do





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What our vision is for sponsors…

*"The **Airspace Coordination and Obstacle Management Service (ACOMS)***

*Is **for aviation and non-aviation UK airspace users***

*Who want **a transparent end to end service** where activity not already enabled through other mechanisms can be considered against wider airspace requirements to enhance safety*

*The service is **accessible, timely, easy to use** and **tailored to the type of activity***

Unlike the existing service

*This means the service is easy to interact with and **enhances UK aviation safety**"*

What our vision is for the internal team…

*"The **Airspace Coordination and Obstacle Management Service (ACOMS)***

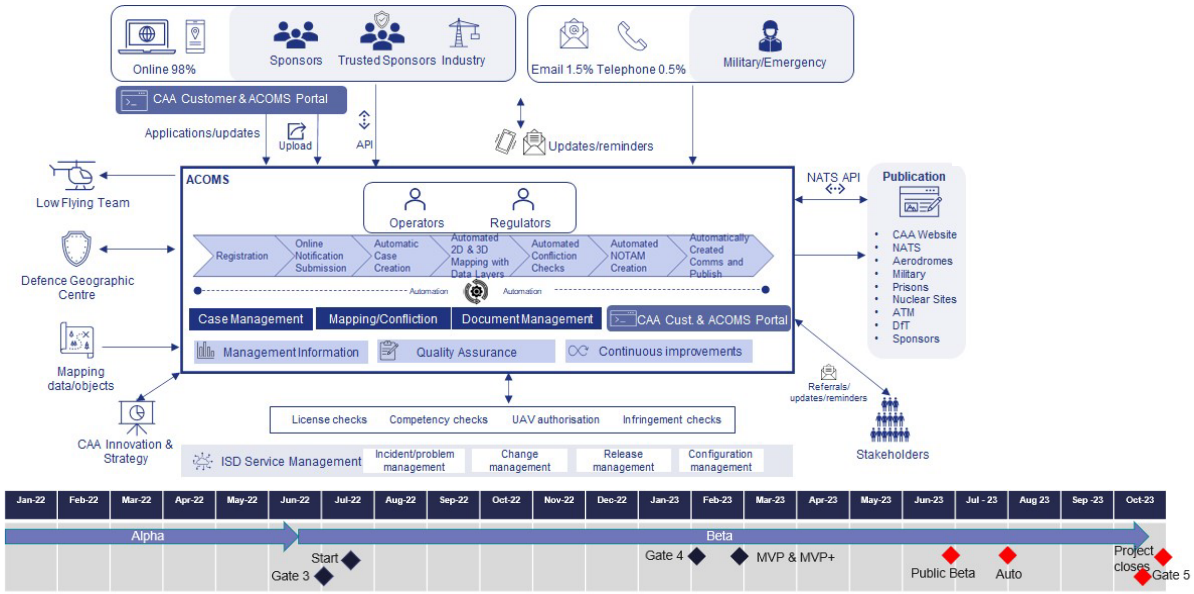
*Is for **airspace Operations, Utilisation and off-route Regulation team***

*Who want a simple easy to use **streamlined activity processing** operation*

*The service is **efficient, secure, available, reliable and scalable** which leads to **improved morale of the team***

Unlike the existing service which is cumbersome, unreliable, slow and prone to errors

*This means the service is **intuitive**, provided visualisations to **support future CAA requirements**"*


Online 98%
Sponsors
Trusted Sponsors
Industry
Email 1.5% Telephone 0.5%
Military/Emergency
CAA Customer & ACOMS Portal
Applications/updates
Upload
API
Updates/reminders
ACOMS
Operators
Regulators
Registration
Online Notification Submission
Automatic Case Creation
Automated 2D & 3D Mapping with Data Layers
Automated Confliction Checks
Automated NOTAM Creation
Automatically Created Comms and Publish
Automation
Automation
Case Management
Mapping/Confliction
Document Management
CAA Cust. & ACOMS Portal
Management Information
Quality Assurance
Continuous improvements
License checks
Competency checks
UAV authorisation
Infringement checks
ISD Service Management
Incident/problem management
Change management
Release management
Configuration management
Low Flying Team
Defence Geographic Centre
Mapping data/objects
CAA Innovation & Strategy
NATS API
Publication
CAA Website
NATS
Aerodromes
Military
Prisons
Nuclear Sites
ATM
DfT
Sponsors
Referrals/ updates/reminders
Stakeholders
Jan-22
Feb-22
Mar-22
Apr-22
May-22
Jun-22
Jul-22
Aug-22
Sep-22
Oct-22
Nov-22
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul - 23
Aug 23
Sep -23
Oct-23
Alpha
Beta
Start
Gate 3
Gate 4
MVP & MVP+
Public Beta
Auto
Project closes
Gate 5

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Demo

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Questions

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Any Other Business?

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Dates of future NATMAC meetings

- NATMAC 94 – 12th October 2023
- NATMAC 95 – 11th April 2024
- NATMAC 96 – 10th October 2024