Civil Aviation Authority

Safety and Airspace Regulation Group

NATIONAL AIR TRAFFIC MANAGEMENT ADVISORY COMMITTEE

MINUTES OF THE 92nd PLENARY MEETING HELD AT AVIATION HOUSE ON 13TH OCTOBER 2022

Present:

CHAIR

Jon Round	Head, Airspace, ATM & Aerodromes

REPRESENTATIVES OF MEMBER ORGANISATIONS

Steve Kay	Airlines UK
Matt Wilshaw-Rhead	AOA
Mark Gibb	AOG
Martin Robinson	AOPA
Mark Swan	ACOG
Rupert Dent	ARPAS-UK
Tim Thomas	AEF
Mike Gunston	BBAC
Wally Epton	BBGA
Pete Stratten	BGA
Tim Fauchon	BHA
Rob Hughes	BMAA
Tony Butler	British Skydiving
Nathan Butler	Drone Major
Roger Hopkinson	GAA
Jeremy James	HCGB
James Corkhill	Isle of Man CAA
Francis Richards	Low Fare Airlines
Sqn Ldr Kate Read	MoD DAATM
Patrick Giles	NATS
Lt Cdr Andrew Plenty	Navy Command HQ
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
Mark Simmons	Principal, Airspace Regulator
Jonathan Smith	Airspace Modernisation Lead
Stu Wain	Manager, Future Airspace
Stuart Lindsey	Head of Airspace Modernisation
Nick Thorpe	Principal Inspector
Kevin Woolsey	RPAS Technical Policy Manager
Andrew Belshaw	Principal, Future Systems Deployment

INDEX TO NATMAC 92 MINUTES

ANNEXES:

NATMAC 92 MINUTES

1. ITEM 1 – MEETING START - INTRODUCTION

1.1 The **Chair** welcomed representatives to the meeting and asked for introductions around the table.

1.2 The **Chair** reminded the committee that NATMAC is a consultative group, and that the information from the topics discussed should be cascaded down to the people and organisations that are represented among the committee. The **Chair** also welcomed any issues and/or concerns to be raised within the meeting or within the group in general, with the offer extending to a presentation to be given on a particular subject that someone may wish to raise.

2. ITEM 2 – NATMAC 91 MINUTES

2.1 The **Secretary** confirmed that the minutes were distributed on the 18th May 2022 and invited associated feedback/comment. Apart from a few grammatical changes, nothing was raised so the minutes were accepted as a true record of NATMAC 91.

2.2 **Roger Hopkinson** (GAA) noted a small point that his apologies were not recorded in the NATMAC 91 minutes. The **Secretary** has since checked and can confirm that no apologies have been recorded in meeting minutes for a few years. For now, we will keep to the existing format of including the attendees only.

3. ITEM 3 – ACTION LIST FROM NATMAC 91 AND MATTERS ARISING FROM PROGRESS REPORT

3.1 The **Secretary** confirmed that three actions were raised at NATMAC 91, and that all three have been addressed and would be closed off. The **Secretary** provided a summary of the actions and explained that related information was available in the Progress Report. Two of the actions would be addressed in the Airspace Change Proposal Update and the Future Airspace update. Associated feedback/comments were invited but nothing was raised.

4. ITEM 4 – CHAIR'S REPORT

4.1 The **Chair** provided a summary of his report and highlighted the review of the Terms of Reference document that was sent out prior to the meeting. The **Chair** invited feedback/observations to further add to the document. No comments were made and so the document has now been accepted as the new Terms of Reference document for NATMAC.

4.2 The **Chair** invited comments after the summary of the report. **Martin Robinson** (AOPA) asked when GNSS approaches would be put into more GA airfields. The **Chair** mentioned that there is little appetite for this right now, even with added government funding. The **Chair** did confirm that there was more appetite for PinS (Point in Space operations) for blue light services such as the air ambulance services into hospitals. **Martin Robinson** (AOPA) mentioned there are a few airfields with GNSS approaches within the CAA system, Haverfordwest and Stapleford being examples, and that these have taken a long time to get through the process. The **Chair** confirmed that the original GNSS Approaches proposals are almost through the system now but highlighted that these airfields don't have access to the help and experience needed to get through the process.

The **Chair** also said he was happy to discuss the specifics of some of the proposals but stressed that there is little appetite for these approaches. **Martin Robinson** (AOPA) also said that he was struggling to get a letter of agreement arranged with Southend Airport for approaches into Stapleford. **Stu Wain**, Manager Future Airspace, offered to talk to Martin Robinson after the meeting on these issues, as they are directly related to the work of the GNSS team and the Airspace Classification Team.

Action: Secretary

4.3 **Dai Whittingham** (UKFSC), believes the issue that Martin is talking about is subject to varying levels of risk appetite across the organisation, which inevitably can hold things up at desk level. This is not unusual to see within many regulatory systems with EASA mentioned as a prime example. The **Chair** recognised the point of things becoming blocked at desk level, and the CAA is grappling with this currently. The **Chair** also pointed out that with very little take up on GNSS Approaches, there is the potential for cuts to be made to the funding given.

4.4 **Matt Wilshaw-Rhead** (AOA), asked if a seat at the table would be offered to Ofcom or Spectrum to deal with the growing spectrum challenges and integration of new technologies into the ATM environment. And, if a seat would be made available outside of the military to other UK security services who use UAS/drones particularly the Police with the recent Commonwealth Games activities. The **Chair** said that there were two colleagues within his team that have 'Spectrum' in their title who could from time to time be invited to talk at NATMAC, but no permanent seat was required at this time. The **Chair** also mentioned the CAA were actively engaged with the Police on matters of Drone Jamming exercises.

5. ITEM 5 – AIRSPACE MODERNISATION STRATEGY (AMS) UPDATE

5.1 **Stuart Lindsey**, Head of Airspace Modernisation, provided an update on the Airspace Modernisation Strategy (slides attached at Annex A).

5.2 **Rupert Dent** (ARPAS-UK) asked when it would be expected for full BVLOS integration in the UK. **Stuart Lindsey** said that this was still a live conversation within the CAA currently and recognised that seamless integration for BVLOS was unlikely to happen within a few years but added that there would be a better system in place than there is today. **Kevin Woolsey**, RPAS Technical Policy Manager acknowledged that while fully integrated routine BVLOS operations is a long way off, there are milestones that are achievable much sooner, that are not fully dependant on the AMS.

5.3 **Dai Whittingham** (UKFSC) said that to release the economic benefits of drones and advanced urban air mobility operations, we should expect the right to roam will have to come with increased Electronic Conspicuity responsibilities. **Dai Whittingham** asked if it would be helpful for those who plan to respond to the consultation of the review of the CAA, to comment on the need for some central funding to help fund airspace change for new entrants to the market as an example. **Stuart Lindsey** acknowledged the CAA is not an airspace designer, but there is a rationale for a central function, and that it won't hurt for this to be mentioned.

5.4 **Martin Robinson** (AOPA) asked with advanced air mobility operations carrying fare paying passengers, what airspace classification would be used to protect these operations given the risk to third parties. **Stuart Lindsey** made an example of a manned electric helicopter using a similar airspace classification as per what is used currently but noted that more work is required in this space to be able to answer this question going forward.

5.5 **Martin Robinson** (AOPA) asked if Electronic Obstruction Beacons could be used at airfields using GNSS approaches. **Stuart Lindsey** answered that in theory they could but stressed that Electronic Obstruction Beacons are being used as part of a trial which is due to end at the end of November.

5.6 **The Chair** invited further questions after the lunch break, as time was cut short. **Matt Wilshaw-Rhead** (AOA) raised a point with **Stu Lindsey** over lunch about the sustainable and environmental capacity and safety elements of RP 3 into RP 4, with the potential for key elements to fall into the AMS. The **Chair** welcomed the point.

6. ITEM 6 – AIRSPACE CHANGE ORGANISING GROUP (ACOG) BRIEFING

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

6.2 **Pete Stratten** (BGA) mentioned that the FASI programme relies on airports working together, and asked **Mark Swan** if he was confident that this collaboration would continue, and if not, what could be done about it. **Mark Swan** said that ACOG does not have any powers to enforce collaboration but is acting as a facilitator/coordinator and has constantly pointed Airports towards the CAP1616 process. **Mark Swan** also said that where an airport was not doing what they should be, ACOG could take it up with the CAA before the airport's next gateway. **Pete Stratten** pointed out that without enforcement capabilities the airports could put in ACPs that meet the requirements of CAP1616 but are perhaps not necessarily holistic in nature and do not make the most of the whole airspace change exercise. **Mark Swan** acknowledged this was a risk but said that because of the size and complexity of some of the ACP clusters, it was within the interests of all airports to have a holistic view in their ACP activity. **Mark Swan** also said that Tony Rapson the GA coordinator for ACOG, has been looking into instances where GA elements have not been considered.

6.3 **Pete Stratten** (BGA) was encouraged to see that Farnborough is now part of the FASI South programme and asked if adjacent airports would now be forced to work with Farnborough for a better operational and environmental airspace solution. **Mark Swan** reiterated that he has no enforcement powers but bringing Farnborough into the programme provides a better route to a more efficient airspace design, with the least amount of controlled airspace needed, while reaping the environmental benefits.

6.4 **Martin Robinson** (AOPA) pointed out that the shape of controlled airspace is not the concern, it is how the traffic is being managed within a volume of controlled airspace to reflect the classification, and that these conversations are not taking place. **Mark Swan** agreed and stated ACOG have kicked off a project on continuous climbs and descents to try and stop aircraft levelling off unnecessarily. **Mark Swan** said the narrative has shifted from the Transition Altitude being the main cause of this to current procedures and traffic management which ultimately need to change within the London TMA.

7. ITEM 7 – AIRSPACE CHANGE PROPOSAL UPDATE

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

7.2 **Steve Kay** (Airlines UK) thought that Virgin Orbit were conducting their 2nd launch to the North of the UK after the first launch. **Ben Lippitt** confirmed there was another Space ACP from Virgin Orbit in the system that they have not started looking at yet, as all the work is currently geared up for the first launch phase but said a lot of safety work would be required for the Northern launch.

7.3 **Matt Wilshaw-Rhead** (AOA), said that feedback from some of his members have highlighted that there is a lack of tactical and flexible use of the PPR process, which is putting people off, **Matt Wilshaw-Rhead** asked if there was much uptake for PPR and whether there was an opportunity to review it. **Ben Lippitt** said there wasn't any uptake at all, and the team is focussed on the CAP1616 review now but offered to take this back to the team to talk about, and asked **Matt Wilshaw-Rhead** to put a few words together to take away.

Action: Secretary

7.4 **Patrick Giles** (NATS) added to the previous point that from a consultee stakeholder point of view some of the temporary changes are just as difficult to deal with as the permanent ones, despite how scalable the temporary ones can be. **Ben Lippitt** recognises the work involved particularly with the traffic analysis and impact but doesn't see a time where there would be multiple temporary changes all at once.

7.5 **Mark Gibb** (AOG) raised a few concerns about the Virgin Orbit launch over the airspace that will be closed for the launch to take place and mentioned seeing more temporary airspace closures happening and asked whether they would be an associated cost for a drone to transit through controlled airspace and asked if Virgin Orbit were paying the CAA to cover costs. **Ben Lippitt** noted the funding model challenges that **Stu Lindsey** was talking about earlier on and said that in both the ACP process and the Space ACP process, the impact on all stakeholders is considered, but recognises there is still much work to be done here taking note of how the FAA conduct space launches in the USA and other European nations looking to also make their own launches**. Ben Lippitt** also acknowledged that a constant flow of temporary airspace changes is not a sustainable approach to take forward. **The Chair** confirmed the CAA and very few parties have not been paid for the work of the Virgin Orbit launch, and highlighted that there is a lot of political desire to get this launch over the line, and that the impact of the launch has been mitigated to great effect, but that it will provide a learning exercise for the CAA not just on the ACP process side but for a future financing model as well for UK aviation. **Rupert Dent** (ARPAS-UK) confirmed that Drones are paying airports to be able to operate in their FRZs.

BREAK FOR LUNCH

8. ITEM 8 – CAP1616 REVIEW

8.1 **Mark Simmons**, Principal Airspace Regulator, presented an update on the CAP1616 Review (slides attached at Annex A). In the update **Mark Simmons** asked attendees to keep up to date with the latest developments of the review via the dedicated website, and welcomed the committee to share, promote and participate in the consultation when it opens.

8.2 **Mark Swan** (Head of ACOG) made a plea for the CAP1616 review to be done as quickly as possible to try and align with the timeline for key stages within the airspace change programme that ACOG are coordinating, so that the programme can reap the benefits of a refreshed process. **Ben Lippitt** acknowledged the need for this to be done quickly but also said the project needs to be delivered right first time, and more resources have been allocated into the review. Also, the team will be looking at the transitional arrangements from the existing CAP1616 process to the reviewed CAP1616 process, and where this can be done earlier.

8.3 **Roger Hopkinson** (GAA) wanted to know if there were any lessons learned on recent ACPs that had been rejected in the early stages. **Mark Simmons** mentioned a piece of work that looked at the gateways within the past 4 years, and where an ACP didn't make a gateway, why that was the case. The focus being on stage 2 gateways which have been the most challenging for sponsors to get through. **Roger Hopkinson** noted that the primary issue is the lack of engagement for the cause of the rejections. **Mark Simmons** highlighted the feedback they had received to date has been more towards the quality of engagement.

8.4 **Dai Whittingham** (UKFSC) referred to **Mark Swan's** point on the timing and suggested that as the CAA has already consulted on the CAP1616 Review, then a preferred option should be announced, selected, and published, and if there is significant push back to conduct a further review.

8.5 **Steve Kay** (Airlines UK) asked if there was anything getting in the way of speeding up the review and understood the CAA could not lobby government but said that Airlines UK could and asked if there was anything they could do. **Mark Simmons** said it was mainly down to balancing out the competing demands on the team, and stressed the team is following a project plan to get where they are now to an updated CAP. A lot of the detail has been worked through, and a comprehensive list of actions has been compiled to follow through. The **Chair** did highlight that staff turnover has been a factor that has dislocated the project a little, with promotions, a growing team, and internal moves being the cause. But assured the committee that resource was being provided for the project.

8.6 **Martin Robinson** (AOPA) mentioned that some of the roadblocks in the past have been around staffing levels within the instrument flight procedure area. **Ben Lippitt** understands IFP resource is challenging but did mention that the headcount for IFP at the CAA has doubled and that they are looking at increasing this again. There is ongoing work with an external consultancy to help with the 5 yearly review work, and a potential MOU to be set up with the GNSS implementation team under **Stu Wain** all to help increase the working capacity of the IFP team.

9. ITEM 9 – FUTURE AIRSPACE UPDATE

9.1 **Stu Wain**, Manager Future Airspace, provided an update on Airspace Classification, Electronic Conspicuity, GNSS and Infringements. The **Secretary** gave a quick introduction to the Airspace Analyser Tool (slides attached at Annex A).

9.2 **Martin Robinson** (AOPA) asked in the GNSS application packs that have been sent out, if it is explained to the applicant that additional investment will be required in things like MET observers and MET equipment and mentioned about the ongoing costs of having GNSS approaches. **Stu Wain** thinks all of this is explained in the guidance material that accompanies the application but made an action to check this is the case, as there are other elements that the applicant needs to be aware of as well. **Stu Wain** also added that there is no ground infrastructure to worry about.

Action: Secretary

9.3 **Tim Fauchon** (BHA) asked if the 75% funding for GNSS applicants covers paying consultants to do the CAP1616 work. **Stu Wain** answered that it does, however cautioned that even with the 75% of costs covered, there still might be a bill of £25,000 on top depending on the complexity of the work involved.

9.4 **Martin Robinson** (AOPA) mentioned the possibility of arranging a webinar to go through some of the concerns that potential interested applicants may have, as his concern is that not enough activity in using GNSS approaches would mean the aerodrome would not be able to cover the costs of having them there. **Stu Wain** said that in Phase 3 of the GNSS work, the team has been more diligent in who they take through the process to ensure the applicants are equipped in their responsibilities to take these procedures on. The team has also reached out individually to all 52 sites to go through all the requirements before having any conversation about an application, but there was a lot more interest from PinS right now. The **Chair** added that the applicants for PinS such as blue light services have a business case, and that not many small aerodromes have a business case for GNSS approaches.

9.5 **Rob Hughes** (BMAA) highlighted that the £500 EC device that his members were buying for light flying activities runs on the 800MHz frequency mode of operation, so they can see on 978MHz and 1090MHz but are not able to be seen on 978MHz and 1090MHz. **Stu Wain** asked what device the BMAA members were buying. **Rob Hughes** answered to say that his members were buying Pilot Aware in the thousands. **Stu Wain** responded to say that to date 3500 Sky Echo 2 devices had been processed through the CAA's EC Rebate scheme which are 1090MHz devices and were £500 per device when the rebate scheme was set up. **Rob Hughes** said that with his membership combined with the LAA and BHPA represents around 10,000 pieces of equipment, and that his members were buying lighter, cheaper and lower powered devices rather than the Sky Echo device. **Kevin Woolsey** said that the EC rebate scheme allows pilots to have freedom of choice in whatever device they want, knowing that using an EC device is better than using nothing at all but noted that the side effect of this is that devices that are not on 1090MHz may not be compatible with future EC strategy.

9.6 **Martin Robinson** (AOPA) disagrees with the statement that something is better than nothing, noting that some devices don't see others and doesn't believe it has improved the safety of Class G airspace overall. The **Chair** advised that the CAA were told how this had to be played out and that it had to be system agnostic. The **Chair** confirmed that 787 Pilot Aware devices had been processed through the EC Rebate Scheme to date.

9.7 **Roger Hopkinson** (GAA) pointed out that there is some variation in knowing what EC devices are out there now, and that some work is needed to determine this. **Stu Wain** confirmed the numbers he was reading are not based on what is out there, they are figures based on the numbers of processed EC rebate claims. **Roger Hopkinson** said more data was required on the aircraft fitment side.

9.8 **Pete Stratten** (BGA) said that he could not believe that widespread use of varying levels of EC has not improved airspace safety and added that in the gliding community FLARM has helped improve safety and reduced the risk of a mid-air conflict. **Pete Stratten** asked if the EGIS Report will be challenged in any way. **Stu Wain** answered that the intention is to use the EGIS report to develop an EC standard going forward. **Martin Robinson** (AOPA) wanted to restate that AOPA supports a cooperative surveillance environment but added how it is achieved should be up to the regulator.

9.9 **Roger Hopkinson** (GAA) has reported some concerns with a few areas on the EGIS report, the main one he pointed out was the scoring system that was used to arrange the priorities has not been explained. **Stu Wain** said that we now need to take what we know and develop it into a national standard, but the method of how we get there is not known at this time. **Roger Hopkinson** said that he raised this concern at the last AMS meeting, and that no one had been consulting with them or talking to them about it. **Stu Wain** confirmed that all the relevant briefings have been done with the electronic conspicuity working group and the GA Partnership and restated that this piece of work has been conducted between EGIS as the report writer, and the manufacturing industry that provide EC equipment, of note Pilot Aware was one of those included in this work.

9.10 **Jonathan Smith**, Airspace Modernisation Lead wanted to address the point that Rob Hughes made about interoperability of EC devices. And said that the money used for the EC rebate scheme was not wasted, as each device offers a certain level of protection depending on the environment you are flying in. **Jonathan Smith** said he did not believe that with almost 4000 Pilot Aware units sold, that this is not contributing significantly to the EC environment and ultimately safety, and that there is a degree of interoperability between the EC devices that have been funded by the EC rebate scheme. **Rob Hughes** (BMAA) doesn't believe that 1090MHz and 978MHZ is the answer for EC going forward. **Stu Wain** said that it has not been worked out how everything will be integrated into what a future picture might look like, and that right now nothing has been ruled out. The **Chair** stated he can't believe that 7500 new EC devices have not gone towards improving the safety of Class G airspace. The **Chair** understands that we all want better and want something that will do the job.

9.11 **Simon Oldfield** (UKAB) provided a view from the Airprox Board and said that 92% of their work involved GA aircraft including light flyers such as hang gliders. UKAB have seen a huge uptake in EC, but in some cases, there has been incompatibility with the kit, which has led to evidence to suggest that some pilots have equipped their aircraft with these devices not knowing what they do.

This means there is a lot of responsibility on the pilot to ensure that the device they are using is fully functional to be able to do its job properly. **Simon Oldfield** also said that the longer we go forward with uncertainty over what the EC standard will be, the more diversity of EC products there will be in the market, and to integrate everyone safely it will need to work the same way for everyone. **Simon Oldfield** also said that with FLARM he hasn't seen a single Glider VS Glider Airprox in over 4 years, and that they do a great job at mitigating the mid-air collision risk, what he does see all the time is a Glider VS a single engine aircraft that didn't see each other by look out or by an EC device.

9.12 **Tim Fauchon** (BHA) mentioned it is difficult to find the FCS1522 form on the CAA website and said if you don't know the name of the form you won't know how to get to it. **Stu Wain** confirmed the FCS1522 form is on the Airspace Classification webpage of the CAA website.

9.13 **Pete Stratten** (BGA) mentioned that dealing with the Airspace Classification Team has been a positive experience and is impressed with the team's ability to challenge an airspace controlling authority over how the airspace is being used.

9.14 **Sqn Ldr Kate Read** (MoD DAATM) mentioned that as the Airspace Classification team moves to the Barnsley region, she will continue to work closely with the Airspace Classification team and will ask the MAA to provide input to the review as well.

10. ITEM 10 – AOB

10.1 The **Chair** asked if there were AOB items.

10.2 **Martin Robinson** (AOPA) said that if no mandate for EC was going to be made, he asked why there was a statement of need submitted for an EC mandatory zone in the Scottish Highlands, as he has not come across an EC mandatory zone before. **Ben Lippitt** suspects the airspace change sponsor probably means a TMZ, and that when it comes to talking to the sponsor, they will find out what the sponsor's intent is, but it is more likely the wording that the sponsor has used. The **Chair** wanted to remind the committee that although no blanket mandate for EC will be made, there will be times when a more localised mandate will be required in specified airspace volumes. The **Chair** said not to get too drawn into the words the sponsors have written in their ACP documents, as it usually differs to what the CAA agrees.

10.3 **Steve Kay** (Airlines UK) asked if we would consider holding the next face to face NATMAC in Canary Wharf as this would be easier to get to. The **Chair** advised the difficulty would be in getting a room big enough to fit everyone but will check.

Action: Secretary

11. ITEM 11 – DATES OF FUTURE MEETINGS

The **Chair** confirmed that the next NATMAC will be held virtually on Microsoft Teams.

- NATMAC 93 – 13th April 2023
- NATMAC 94 – 12th October 2023
- NATMAC 95 – 11th April 2024

12. ITEM 12 – ADDITIONAL INPUT RAISED

12.1 **Pete Stratten** (BGA) has since provided additional points to the EC conversation.

- A SkyEcho 2 EC device can be configured to display and warn of nearby FLARM equipped aircraft on commonly used moving map/EFB apps – subscription required to enable this.
- Voluntary equipage of FLARM is widespread because of clear recognition of proven benefits in addition to the critically important SA and collision warnings.
- Transponder equipped operators wrongly assume that they are EC interoperable with other transponder equipped users. Most GA transponder users are reliant on human rebroadcast information i.e., from an air traffic service.

NATMAC 92 – ACTION LIST

Actions arising from NATMAC 92

4.2	The **Chair** invited comments after the summary of the report. **Martin Robinson** (AOPA) asked when GNSS approaches would be put into more GA airfields. The **Chair** mentioned that there is little appetite for this right now, even with added government funding. The Chair did confirm that there was more appetite for PinS (Point in Space operations) for blue light services such as the air ambulance services into hospitals. **Martin Robinson** (AOPA) mentioned there are a few airfields with GNSS approaches within the CAA system, Haverfordwest and Stapleford being examples, and that these have taken a long time to get through the process. The **Chair** confirmed that the original GNSS Approaches proposals are almost through the system now but highlighted that these airfields don't have access to the help and experience needed to get through the process. The **Chair** also said he was happy to discuss the specifics of some of the proposals but stressed that there is little appetite for these approaches. **Martin Robinson** (AOPA) also said that he was struggling to get a letter of agreement arranged with Southend Airport for approaches into Stapleford. **Stu Wain**, Manager Future Airspace, offered to talk to Martin Robinson after the meeting on these issues, as they are directly related to the work of the GNSS team and the Airspace Classification Team.	**Secretary**
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NATMAC 92 – 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 92

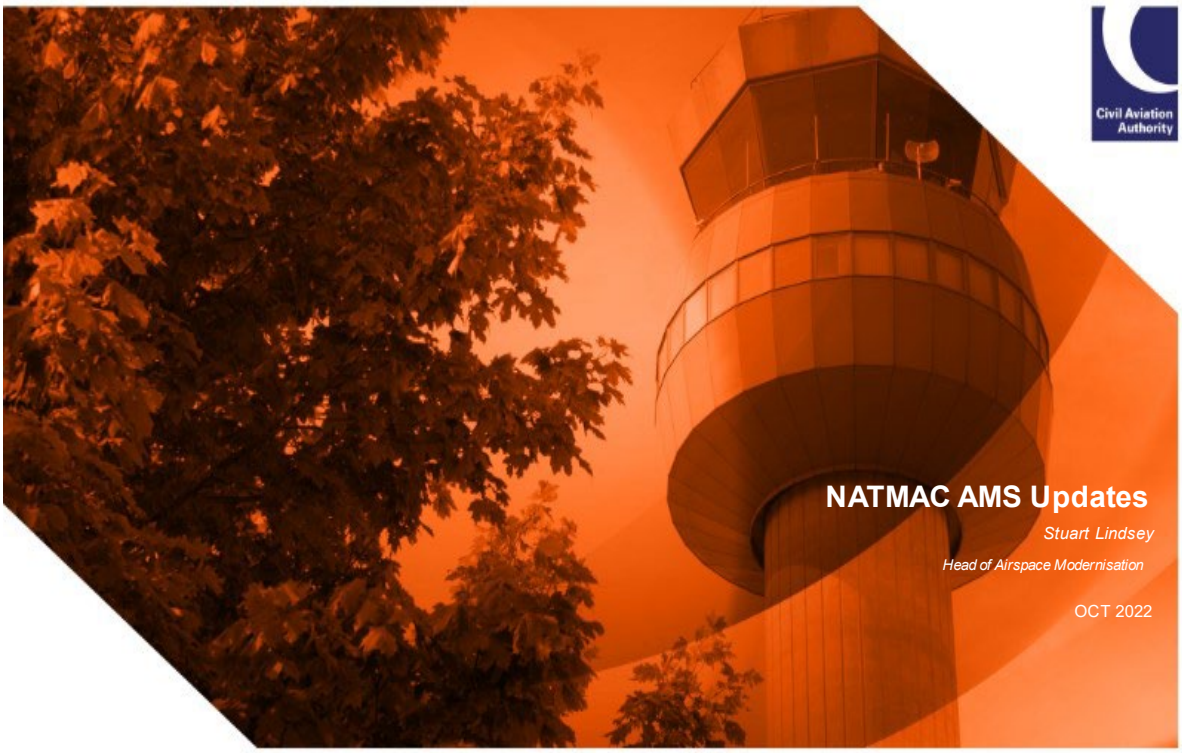
Thursday 13th October 2022

1

NATMAC 92 Agenda

- 10:00 – Teas and Coffees available
- 10:30 - Introduction
- 10:35 – Minutes of NATMAC 91
- 10:40 – Actions List / Progress Report
- 10:45 – Chair's Report
- 11:00 – Airspace Modernisation Strategy Update
- 11:30 – Airspace Change Organising Group Briefing
- 12:00 - Airspace Change Proposal Update
- 12:30 to 13:30– Lunch (Served in Jupiter Meeting Room nearest the lifts)
- 13:30 – CAP1616 Review
- 13:50 – Future Airspace Update
- 14:20 – Any Other Business
- 14:25 – Wrap Up

2



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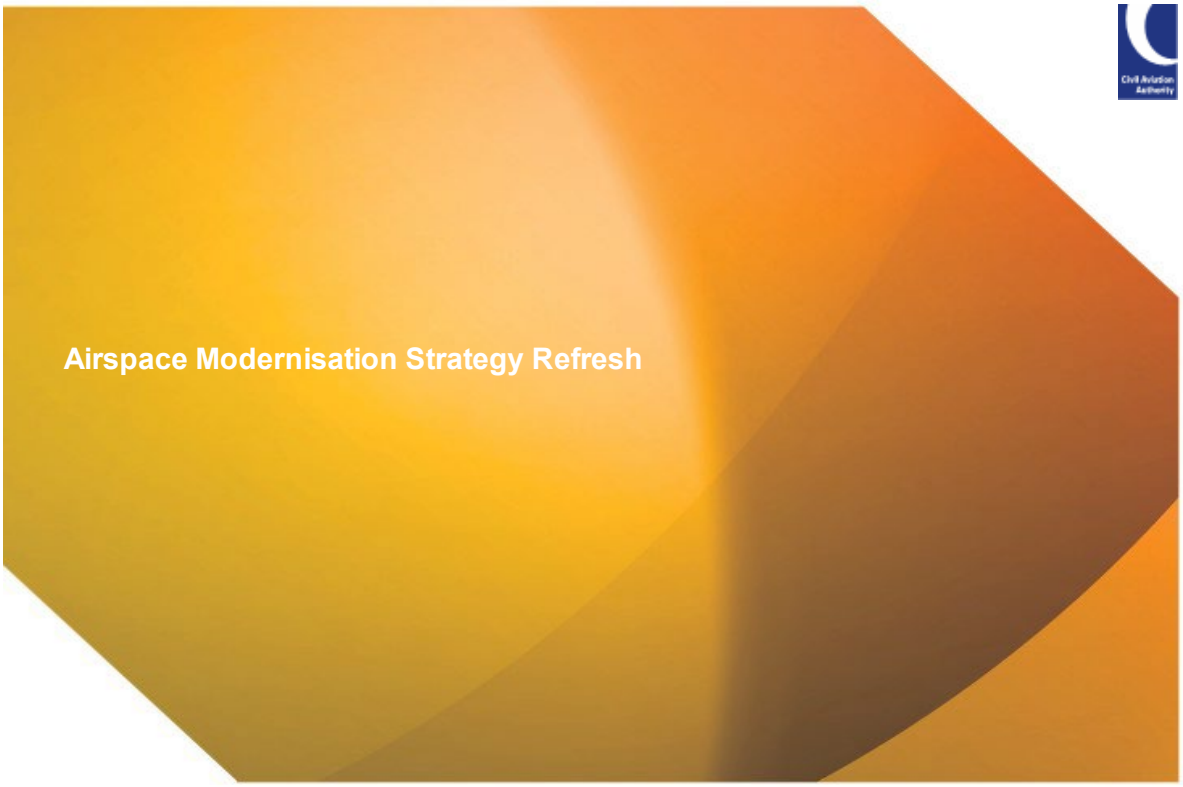
Agenda

1. Airspace Modernisation Strategy Refresh
2. CAA's Environmental Sustainability Strategy
3. AMS Support Fund

4



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What we consulted on

- Having carried out a pre-consultation stakeholder engagement to establish an overall vision, the CAA's 12-week public consultation on a draft refreshed AMS ran from 10 January to 4 April.
- The draft extends the AMS coverage out to 2040. The consultation also sought views on improving the current governance structure.
- The draft AMS keeps as its vision *"Deliver quicker, quieter and cleaner journeys and more capacity for the benefit of those who use and are affected by UK airspace"*. It is structured around four strategic objectives:
    1. Maintain & enhance high aviation safety standards
    2. Integration of diverse users & meet defence/security needs
    3. Simplification – reduce complexity & improve efficiency
    4. Sustainability – improve aviation's environmental impacts

6

What we consulted on

- AMS strategic objectives and AMS delivery plan now form separate documents, because the delivery plan will need more frequent updates
- The draft AMS is structured to align with the ICAO Global Air Navigation Plan (ICAO strategy driving evolution of the global air navigation system)
- Delivery 'elements' enable GANP and UK-specific modernisation requirements
- Environmental factors (noise, greenhouse gas emissions and air quality) become overarching principles
- Although not yet embedded, the AMS should be used to assist in the prioritisation of UK airspace rulemaking activity (which replaces the EASA process) to help ensure a timely and coordinated implementation of modernisation initiatives

Respondents included…

- **GA:** A4A Trust, AOPA, BGA, BHGPA, LAA, LMA
- **Enviro/campaign groups:** AEF, HACAN, CAGNE + 10
- **ANSPs:** NATS, ANS
- **Airports:** AOA, Heathrow, Gatwick, Manchester AG, Luton, HIAL + 5 regional/GA airports
- **Airlines:** Airlines UK, IATA, Virgin, easyJet, Ryanair
- **Government etc:** MoD, Met Office, FAA, local govt
- **New entrants:** 12 RPAS inc ARPAS or Advanced Air Mobility related (some chose other categories) – no specific space-related

We received around 250 A4 pages of free -text comments.

General support for…

- The refresh and/or modernisation, vision, strategic objectives and future direction of travel, recognising its complexity.
- Continuing redesign of airspace used by commercial air transport that is already underway, coordinated by ACOG.
- Treating environmental sustainability as an overarching principle throughout the strategy.
- The broader focus that includes modernisation outside controlled airspace including a new Lower Airspace Service and bringing Flight Information Service into line with the ICAO/international approach; maximising access to airspace, including using flexibly managed airspace; and the safe integration of new types of user using the latest technology and innovation.
- Alignment with ICAO Global Air Navigation Plan.
- The AMS to be the single roadmap to guide the CAA's approach to its airspace policy and rulemaking development.

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No fundamental change to overall approach

- Much useful feedback. Some responses questioned the delivery model, suggesting more info needed on delivery/deployment, e.g. how it will be achieved, by whom and with what funding & resources.
- We agree much work remains to be done as we develop AMS Part 3 (deployment) – for example, work on the fundamentals needed for developing an integrated airspace is underway.
- We need to set the strategy first, and we didn't see fundamental challenges to the approach adopted in the refreshed AMS. Our strategic direction therefore still stands.
- Major objections from communities and environmental groups, but mainly questioning Government policy on aviation's environmental impacts, rather than the CAA's AMS.
- Concerns raised by some Class G users, in particular General Aviation, around modernisation concepts, but clearly some misunderstandings, e.g. we are not increasing controlled airspace.

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More work needed

We have grouped this under five headings:

1: demonstrating how sustainability will be treated as an overarching principle, in line with the recently published CAA environmental sustainability strategy

2: how to / who will deliver and deploy key aspects of airspace modernisation, including the role of ACOG, NATS and airports

3: governance and leadership of the modernisation programme

4: funding and resourcing the broader modernisation envisaged by the refreshed AMS

5: improving Class G users of modernisation concepts – some responses interpreting the vision as meaning more controlled airspace or national mandates for electronic conspicuity and flight-plans

1: Sustainability as an overarching principle (1)

- Responses broadly supported the principle, but questioned what it actually means, how we would achieve it and against what policy criteria when trade-offs were required, some saying that government policy was unclear.
- We are aligning the refreshed AMS with the CAA's new Sustainability Strategy and its 'prioritisation principles'. There is a limit to the extent we can do this.
- While environmental considerations will form an overarching principle across the AMS delivery workstreams, airspace redesign (e.g. FASI airspace change programme) must adhere to the govt policy framework. Environmental impacts often involve trade-offs between differing airspace objectives, such as increasing airspace capacity, reducing emissions and managing noise; policies informing such decisions are for elected representatives, not CAA/industry.

[continued…]

1: Sustainability as an overarching principle (2)

We will amend the refreshed AMS to say:

- we must apply government airspace/noise policy & Air Navigation Guidance to airspace decisions, e.g. noise prioritised over emissions < 4000ft
- for non-airspace decisions, we will look at wider govt environmental objectives for which there is no hierarchy and apply the prioritisation principles* e.g. prioritise (subject to safety) an AMS element which enables carbon savings
- following the transfer of ICCAN responsibilities to CAA, DfT has commissioned technical advice from the CAA to inform govt policy on trade -offs resulting from different airspace design options, including between noise and carbon (e.g. aircraft flying a longer routeing to provide noise respite)
- we will continue to engage with govt on its evolving environmental policy, principles and targets – DEFRA currently consulting under Environment Act 2021 – to better understand how these inform the refreshed AMS.

** subject to CAA consultation on pp*

2: Delivery model for airspace change

- In the current delivery model, mainly airports and ATC providers sponsor airspace change proposals. The CAA oversees the process and adjudicates in a pure regulatory mode. This model is complicated, with multiple interdependencies:
  - not all sponsors have the expertise to progress a technically complex change themselves
  - the technical airspace consultancy market can provide this expertise, but it's a limited, dispersed resource set, that is not always consistent
  - the ACOG -coordinated masterplan is progressing but adds additional complexity
- Consultation responses have helped evidence the problem statement and inform the need for a project to consider whether the current delivery model needs review. We must, however, ensure that this does not undermine existing AMS activities.

3: Governance and leadership of the modernisation programme (1)

- The consultation sought views on how effective the existing 2018 AMS governance structure had been, which was mostly focused on commercial air transport, controlled airspace and larger air navigation service operations.
- The refreshed AMS has broader focus, in particular around integration – e.g. seamless integration of BVLOS drone ops, a Lower Airspace Service to better support both self-management of autonomous, piloted VFR (Visual Flight Rules) aircraft and drone operators in class G airspace, flight progress info sharing to facilitate increased VFR access to class D airspace, improved class G structure, etc.
- Not all of these sit readily with the current AMS delivery, governance and funding. We asked what changes were needed to deliver the AMS but made no proposals since we were still consulting on the content, particularly the delivery elements.

[continued…]

3: Governance and leadership of the modernisation programme(2)

- Many responses thought improvements in governance were needed. We are now working on what immediate changes are needed.
- Some of this has already happened, e.g. we have set up:
  - an internal AMS Assurance Group, which coordinates across the CAA on the implications of development or deployment of CAA activities and resources, and takes decisions on AMS support fund applications
  - in support of airspace integration, a steering/working group to develop a concept of operations and roadmap for coordination with related workstreams, and helping to inform work on service delivery and charging.
- Looking further ahead beyond publication of the refreshed AMS, the governance structure will be kept under constant review.

4: F unding and resourcing the broader modernisation envisioned by the AMS

- Many responses questioned or commented on how some delivery elements supporting the envisioned new integrated airspace would be funded, either seeking a user-pays approach or government funding.
- Existing users tended to say they should not fund, through current charges, work which was essentially for the benefit of new entrants.
- Where a delivery element has genuine stakeholder support, a standalone project will work through the detail of what the concept concerned looks like in practice, and to try to identify the funding stream to develop, implement and support it.
- This will not be achieved in time for publication of the refreshed AMS. It will need to be considered in parallel with other CAA activities, such as our economic regulation of NATS.

5: Improving the Class G users's perception of modernisation concepts (1)

Many negative responses from the lighter side of GA

- No overwhelming objection to any one concept from multiple consultees
- Various concerns about 'right to roam', being funnelled between controlled airspace, impact of drones, 'nothing in it for me'
- Responses sought more detail on modernisation concepts, e.g. clarity about operating modes and frequencies for new services
- Some appeared to misunderstand the modernisation concepts, e.g. they suggested that CAA was proposing national mandates for electronic conspicuity or flight plans, or that airspace reclassification / strict ICAO service provision required a significant increase in controlled airspace – none of which is the case.

[continued…]

5: Improving the Class G users's perception of modernisation concepts (2)

Reminder of the key elements:

- Radio Mandatory Zones in lieu of the current Aerodrome Traffic Zone, regardless of the licensed status of that airfield.
- Surveillance Mandatory Zones (TMZs) in support of Flight Information Services provision for operations in Class G, including GNSS approaches and BVLOS integration.
- Enhance airspace sharing arrangements– switchable airspace.
- FIS-B (Flight Information Service – Broadcast) & TIS-B (Traffic Information Service –Broadcast) deployment.
- UK Flight Information Services replacement.
- Flight Plan data – voluntary submission and sharing of the intention of flight.
- Electronic Obstruction Beacons.

[continued…]

5: Improving the Class G user's perception of modernisation concepts (3)

Further CAA engagement on key elements:

Working with the CAA & DfT's GA teams, we will:

- Produce targeted, graphically rich, storyboard-type engagement for each of the key Class G elements
- Elaborate on each element with additional detail including operating frequencies, modes, prospective procedures etc with the caveat that these elements form part of a Strategy and the detail will come with operational deployment.
- Articulate how each and every element contributes to the AMS vision for future user operations.
- Continue to listen and act upon feedback received from the Class G users.

Next steps

- **August 2022** Paused to re-engage with key stakeholders through our AMS Co-Creation and Review Groups, and some follow-up engagement targeted at the GA community to clarify the AMS vision
- Began considering changes to AMS governance structure
- **Autumn 2022:** Publish a consultation response document explaining what we are changing in response to feedback
- **November 2022:** Formally consult the Secretary of State on draft AMS
- **December 2022:** Publish a refreshed AMS 2022-2040 Part 1 (overall strategy and vision), Part 2 (supporting development and delivery activities) and the AMS governance structure
- **Continue** work on delivery, including existing programme and Part 3 deployment plans, and in particular how to fund, deliver and oversee the broader modernisation envisaged by the refreshed AMS

CAA's Environmental Sustainability Strategy

CAP2361 CAA Environmental Sustainability Strategy

Published in May, sets out our key environmental priorities, focusing across every area of our regulatory, facilitating and enabling work

Provides clarity on our roles, remit and ambition as we work together to improve environmental performance in the aviation and aerospace systems for the benefit of consumers, users and the wider community

Highlights our aim to work to improve environmental performance across the aviation and aerospace system

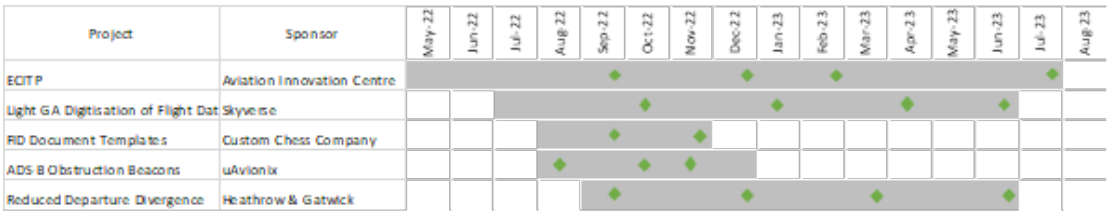
We already undertake a number of activities where sustainability is central or where environmental objectives are taken into account as a material factor in the exercise of our functions. With this in mind, the strategy breaks down our generic regulatory role into the different ways in which we apply it: leading, regulating, influencing, observing and communicating.

The strategy features a specific section on our role co-leading the modernisation of the airspace, which sets out the context and broader ambitions within which our work to review the AMS sits, and can be read alongside the refreshed AMS for an understanding of the broader policy landscape within which is sits, but does supersede the detail with the AMS.

Achieving successful and sustainable aviation is a significant challenge for the industry, which is one of the hardest sectors to decarbonise. All parts of the aviation system need to work together on this goal, from those investing in and developing new technologies, the Government that sets targets and key policy levers, and the regulator.

AMS Support Fund

AMS Support Fund 2022 – September Update



- The Aviation Innovation Centre and Skyverse have received Grant Funding Agreements (GFA) to start their projects which are now in progress.
- The remaining projects approved have been baselined during the ASF Programme Board held in August 2022 and in the process of finalising signatures on the contracts.
- Two resubmissions from projects participating in the May'22 call have been received and approved in September
- **TOTAL INVESTMENT TO DATE: ~£2.15M**

Light GA Digitisation of Flight Data - ASF_21_03

Skyverse Ltd

Summary	Scope	Benefits	Alignment with AMS
Light General Aviation (GA) rely on radiotelephony (RT) and telephones to pass their details to Air Traffic Services (ATS) based at origin, transit and destination aerodromes. The problems of using RT for passing basic Light GA flight details are: - Wastes Controller time - Prone to errors - Causes Controlled Airspace disruption - Difficult to investigate infringements This project will demonstrate the feasibility of digitising end -to-end Light GA flight details in order to substantially cut RT volume, reduce ATCO and pilot workload, enhance safety and reduce commercial flight disruption. The project will build and test a system of three interconnected elements: i) Create a standard, Prior Permission Request (PPR) app/webapp ii) Equip three aerodromes (Biggin Hill, Redhill & Brighton City) with a digitally networked Electronic Flight Progress Strip (EFPS) system iii) Connect both the PPR and EFPS systems to AFTN/AMHS/SWIM	1. Booking via website or app 2. Pending departure 3. Engine start 4. Departure 5. ANSP access 6. Transit 7. Arrival 8. Landing	- Enhanced safety - Increased aerodrome capacity by reducing ATCO workloads - Lower environmental impact from reduced fuel burn and noise footprint - Improved cost effectiveness of aerodrome ATS provision through use of low cost digital flight strips - New paradigm of data interoperability by bringing GA Air Traffic Services into the digital era and providing information exchange	**Initiatives:** 12. Cross-industry plan for the efficient use of radio - frequency spectrum. 13. Cross-industry plan for the full adoption of datalink communications. 15. Air traffic management to modernise systems, tools and procedures. **Elements:** #4 Integration #6 Data Services #7 Future Surveillance & Spectrum
Cost (Inc contingency)		**£338,800** (Total cost of project £460,450)	**In Progress**
Timeframe		Jun 2022 - May 2023	

EC Interoperability Test Programme- ASF_21_02

The Aviation Innovation Centre at Goodwood Aerodrome

Summary	Scope	Benefits	Alignment with AMS
The objective of the ECITP is to provide a rapid test facility with the expertise, systems and operational capability to gather accurate data about the interoperability of airborne and ground -based EC solutions and the performance of the associated airspace integration concepts that they are intended to enable. Specifically, the ECITP is focused on the performance of EC solutions to support GA and UAV operations below 1000ft. in service of unmanned traffic management (UTM) detect and avoid capabilities. The widespread adoption of interoperable EC solutions that make all aircraft more visible is needed to maintain high safety standards in uncontrolled airspace, especially around smaller aerodromes that have limited surveillance capabilities and in areas with a high density of airspace users that may be harder to see with the naked eye, such as light aircraft, gliders	• Phase 1: Apr-Sep 2022: programme initiation, rapid test facility deployment and creation of a performance baseline for the ground-based network. • Phase 2: Sep-Dec 2022: Calibrate the performance baseline using other 1090MHz EC devices and EC devices that operate on non-protected portions of the aviation spectrum. • Phase 3: Dec 2022 - Feb 2023: regulatory approval to introduce the use of a FID system into the AFIS operation at Goodwood. • Phase 4: Feb-Apr 2023: Examine the potential for EC solutions to enable advanced airspace integration concepts, incorporating manned and unmanned traffic and multiple air navigation and data service providers. Produce an updated Final Report covering the outputs of all four phases of the programme and the alignment with the complimentary ASF initiatives (#03 and 08).	Alongside safety improvements, airspace integration and interoperable EC solutions are expected to enable greater sharing of UK airspace structures.	**Initiatives:** 11. Electronic surveillance solutions **Elements:** #4 Integration
Cost(estimated) (Inc contingency)	**£843,500**	Phase 1: £425,150 Phase 2: £218,800 Phase 3: £101,400 Phase 4: £77,150	**In Progress**
Timeframe	April 2022 and April 2023 (4 phases)		

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FID Template Documentation for AFIS Airfields- ASF_22_01

Custom Chess Company

Project description	Output / Deliverable	Benefits	Alignment with AMS
This project will create a set of product agnos FID template documentation providing suitab guidance and Acceptable Means of Complianc to reduce the burden on AFIS units, whilst also providing some common standards to the documentation that will improve the efficienc of the CAA's approval process and encourage common standards across industry.	Microsoft Word format of: - Template Safety Case - Template Manual of Flight Information Services (MAFIS) Amendment - Template Unit Training Plan Amendment - Template Unit Training Cours Material	Enhanced situational awareness of FISOs improves the integration and safety of traffic, helping to mitigate the risk of: • Mid-air collision in the airfield circuit • CAS infringement • Controlled flight into terrain Enhanced situational awareness of electronically conspicuous UAS operations aids the integration of UAS with manned aviation	#11 Electronic Surveillance Solutions Aircraft-based Navigation Surveillance EC
Cost (Inc contingency)	**£ 22,500**		**In Progress - Awaiting Signatures**
Timeframe	01 Aug 2022 – 30 Nov 2022		

28

Trial of ADS-B Obstruction Beacons on 978Mhz UAT - ASF_22_02

uAvionix

Project description	Output / Deliverable	Benefits	Alignment with AMS
The purpose of the trial is to evaluate the efficacy of the obstruction beacons from the point of view of the operator and of other airspace users. This will be achieved by gathering feedback both verbally, by email an via questionnaires. The results of an analysis of the trial and feedback will be provided in a report to the CAA.	- Trial report and feedback - After the Trial all the equipment will become the property of the CAA for use as they see fit	• 978Mhz UAT Obstruction Beacons will increase situational awareness of live activities that can pose an airborne hazard to other airspace users. • UAS operations, especially BVLOS, if equipped to detect the 978Mhz UAT Obstruction Beacons, would also benefit from improved situational awareness. Enhanced situational awareness for DAA UAS BVLOS operations aids the integration of UAS into shared airspace.	Airspace Managemen t
Cost (Inc contingency)		**£ 129,248**	**In Progress - Awaiting Signatures**
Timeframe		10 Aug 2022 to 30 Dec 2022	

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Reduced Departure Divergence Industry Research for Updated Minimum Standards

ASF_22_06

Heathrow & Gatwick Airports

Project description	Output / Deliverable	Benefits	Alignment with AMS
Proposal to conduct an industry led research project that aims to produce a UK Minimum Standard for the angle of divergence required between Performance-based Navigation (PBN) departure routes. The objective of the research project is to reduce the existing minimum standard angle of divergence for conventional departures below 4 validated using flight data from existing Standar Instrument Departure (SID) routes and a robust analytical approach to loss of separation risk modelling.	It is envisaged that the outputs of this phase of industry research will be used by the CAA to support the enhancement of UK guidance for PBN implementation and the industry standards for route spacing therein.	• The outputs of the research project will make a direct contribution to the delivery of near term improvements in flight efficiency, runway throughput and environmental performance that ar fundamental to the Airline, Airport and ANSP business cases for PBN implementation across the UK aviation sector. • A reduction in the standard minimum angle of separation between successive departures is required to optimise the benefits of the PBN routes	#4 & #5 FASI
Cost (Inc contingency)		**£ 230,750**	**In Progress - Awaiting Signatures**
Timeframe		July 2022 to March 2023	

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Masterplan Cumulative Impact Assessment and Trade -off Analysis

ASF_22_03

Glasgow & Edinburgh Airports

Project description	Output / Deliverable	Benefits	Alignment with AMS
The proposal is to conduct a pilot project that develops a robust and practical approach to conducting Cumulative Impact Assessments and Trade-off Analysis for the Scottish TMA cluster of ACPs, which is easily transferable to the other three Masterplan TMA clusters in the West Manchester and London.	Document containing approach, worked examples, templates and detailed advic and recommendations	• Airspace modernisation in the ScTMAs a core part of FASI-North that aims to fundamentally redesign the terminal airspace which serves t large commercial air transport airports in Scotland and Northern England. FASIN is based on the widespread introduction of PBN routes. • Designing routes with greater precision and flexibility reduces track miles and increases the potential for continuous climbs and descents, increasing flight efficiency and environmental performance. • Noise mitigation	#4 & #5 FASI
Cost (Inc contingency)		**£ 350,000**	**Initial ASFPB in October**
Timeframe		~~July 2022 to March 2023~~TBC	

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Fair and Equitable Distribution of Aircraft Noise - Community Research - ASF_22_05

Gatwick Airport

Project description	Output / Deliverable	Benefits	Alignment with AMS
Community research project to better mitigate environmental impacts, conducting an in-depth qualitative assessment, working directly with community stakeholders, defining the performance qualities and metrics by which the value attached to different interpretations of FED can be captured in the ACP process. The objective of the project is to fully understand the nature of the FED concept and reach a broad consensus on the application of a FED approach fo the Masterplan ACPs.	- Focus Groups - Workshops - Final report - Outputs integration with Masterplan	• Engaging community to demonstrate that feedbac from stakeholders in the early stages of the ACP influences the overall approach to airspace modernisation. • Help airport ACP sponsors to demonstrate how difficult tradeoff decisions to prioritise the improvements delivered by airspace modernisation one area at the expense of others have been made a fair and transparent manner. • Encourage a broader mix of potentially affected stakeholders to engage in the development of the Masterplan ACPs	#4 & #5 FASI
Cost (Inc contingency)		**£ 239,320**	**Initial ASFPB in October**
Timeframe		~~01 Aug 2022 – 30 Nov 2022~~TBC	

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ACOG

AGENDA

- Airspace Change Programme Update
- Masterplan Iteration 3 Development
- ACOG Environment Strategy
- Engagement Campaign Update

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- Grant funding for FY22/23 fully apportioned to support Stage 2 activities.
- New Farnborough ACP incorporated into Masterplan with co -sponsors' approval.
- Liverpool ACP to restart at Stage 2 and align with the wider MTMA cluster.
- AMS Support Funding agreed to deliver the first cumulative impact assessment, (for the STMA cluster) and create template materials for other ACPs.
- ACOG, NERL and CAA working to determine the regulatory approach for developing and deploying the LTMA ACPs in modules.

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- Agreed scope and structure of the Masterplan Iteration 3 with the co -sponsors including the approach and timelines for conducting a Public Engagement Exercise (PEX) in Q1-2023.
- Cumulative Analysis Framework (CAF) under development to guide the identification and assessment of cumulative impacts across interdependent airspace design options following the Stage 2 Gateways.
- ACOG GA Coordinator recruited to lead the development of the GA Impact Assessment for Iteration 3.
- Masterplan Safety Assurance Strategy under development for inclusion in It3.

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- ACOG published its Environmental Strategy in Sept -22, about how to address the environmental challenges and opportunities created by modernisation, including how airspace change can contribute early progress towards a Net Zero future.
- ACOG is working in collaboration with EUROCONTROL to compile baseline data about aircraft noise and emissions that can be used to model the expected outcomes of different design options.
- ACOG will continue to work closely with the CAA on the production of a Strategic Environmental Assessment (SEA) of the Masterplan, required for Iteration 4.

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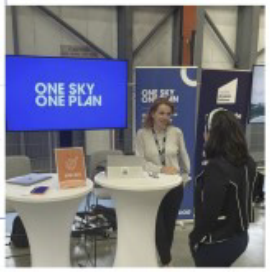
One Sky One Plan campaign - recent activity and look ahead

A sustained and proactive campaign to raise awareness of the airspace change programme and the forthcoming public engagement exercise on the Masterplan.

- ✓ We worked closely with the DfT around the launch of the Jet Zero Strategy, with a quote from ACOG included within the Government press release.
- ✓ We have recently met with Aviation Week and FLYER magazine to provide background briefings and articles have been published in both to coincide with the launch of the Environment Strategy.
- ✓ We have launched the ACOG Environment Strategy to help maintain the strategic case for airspace change by linking our plan in with the Government's jet zero agenda
- ✓ We attended EasyJet's launch of their net zero roadmap
- ✓ We have a full stakeholder engagement plan prepared now that the new Government is in place. This plan includes reaching out to new Ministers, re-engaging with the Opposition and writing to new heads of APPGs and Select Committees.
- ✓ Alongside Sustainable Aviation, we will be hosting an event in Parliament in November.
- ✓ We have begun sending out a quarterly newsletter update to our key stakeholders, encouraging sign ups via our social channels.


News story

Sky's the limit as UK sets out strategy to reach net zero aviation and deliver guilt-free flying



AVIATION WEEK NETWORK

ONE SKY ONE PLAN

42

NATMAC 92 – Thursday, 13th October 2022

Airspace Change Proposal Update

Manager Airspace Regulation – Ben Lippitt

Dataset: Tuesday, 27th September 2022

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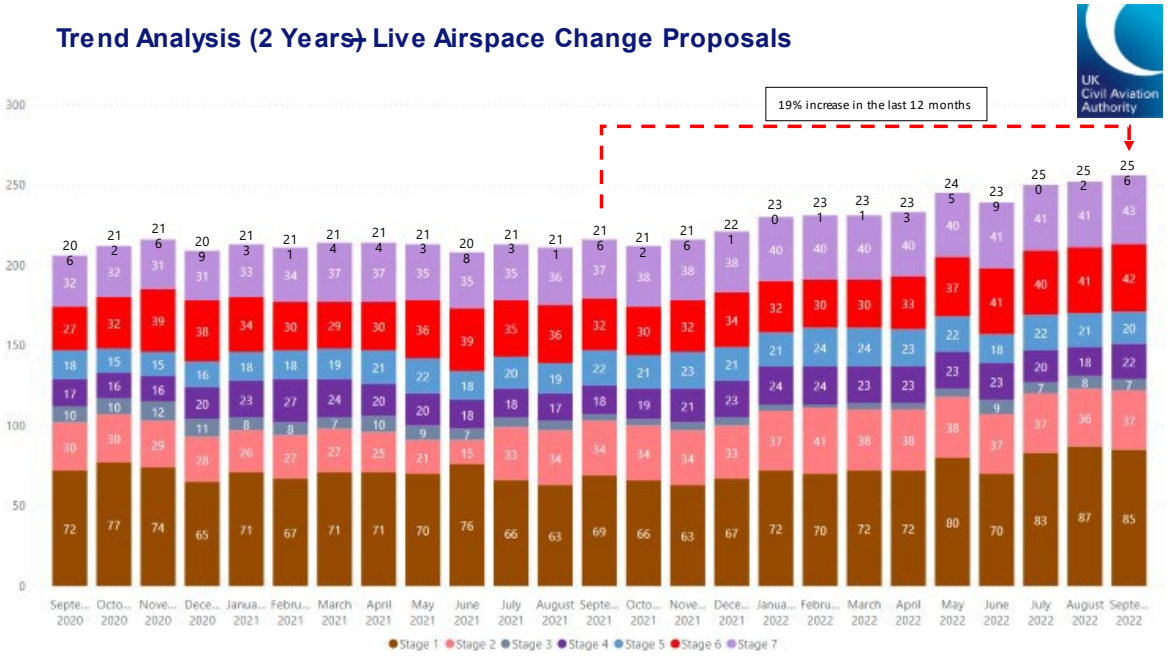
Trend Analysis (2 Years) Live Airspace Change Proposals



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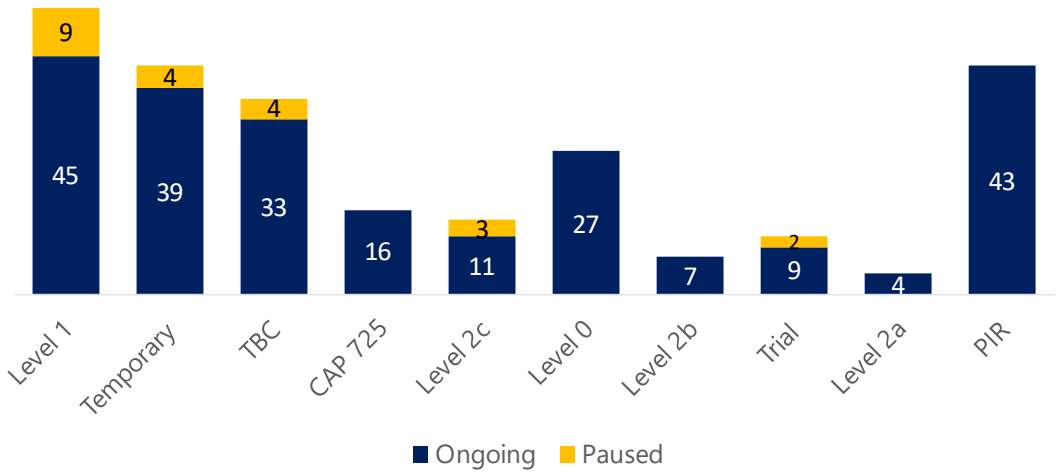
Current Type/Level of Airspace Change Proposals ('In Progress' and 'Paused')



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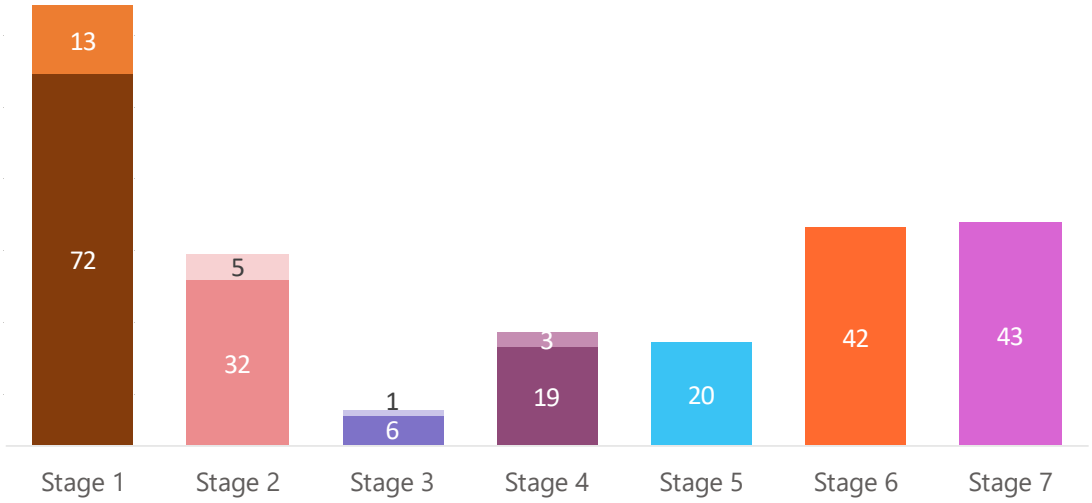
Current Stage of Airspace Change Proposals ('In Progress' and 'Paused')



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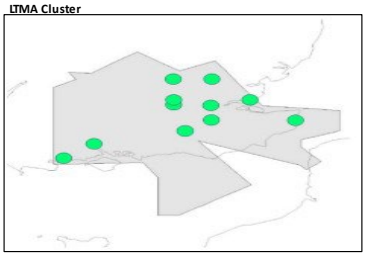
Airspace Change Programmes
Future Airspace Strategy Implementation (FASI)

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

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

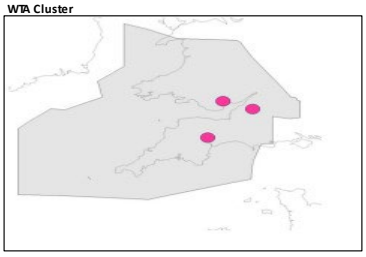
LTMA Cluster



- **'WTA' Cluster**
  - **5** ACPs currently within this Cluster
    - **5** 'In Progress', **0** 'Paused'
    - **1** in **Develop & Assess (Stage 2)**
    - **3** in **Consult (Stage 3)**
    - **1** in **Stage 5 (Decide).**

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

WTA Cluster



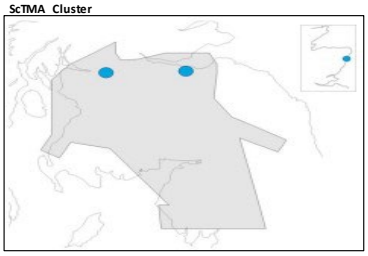
*Does not include Farnborough which has now been accepted into the Masterplan by the co -sponsors.

Airspace Change Programmes
Future Airspace Strategy Implementation (FASI)

- **''ScTMA' Cluster**
  - **4** ACPs currently within this Cluster
    - **4** 'In Progress', **0** 'Paused'
    - **2** in **Develop & Assess (Stage 2)**
    - **2** in **Consult (Stage 3).**

- Aberdeen
- Edinburgh
- Glasgow
- ScTMA

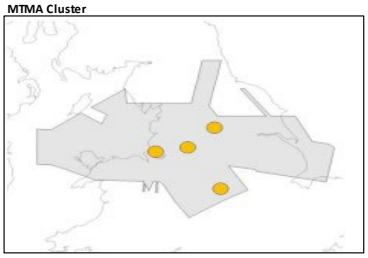
ScTMA Cluster



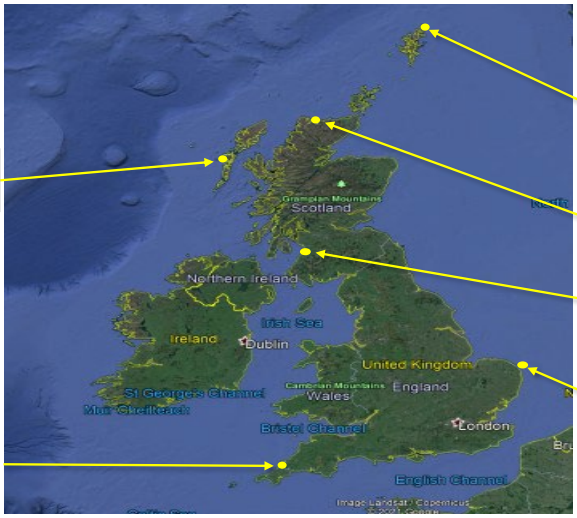
- **'MTMA' Cluster**
  - **6** ACPs currently within this Cluster
    - **5** 'In Progress', **1** 'Paused'
    - **5** in **Develop & Assess (Stage 2)**
    - **1** in **Update & Submit (Stage 4).**

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

MTMA Cluster



Space Launch Sites
ACPs Ongoing



Spaceport-1
Raptor

Spaceport Cornwall
Virgin Orbit

SaxaVord Spaceport
ABL
HyImpulse
B2Space
Skyrora

Space Hub Sutherland
Orbex

Prestwick Spaceport
Astraius

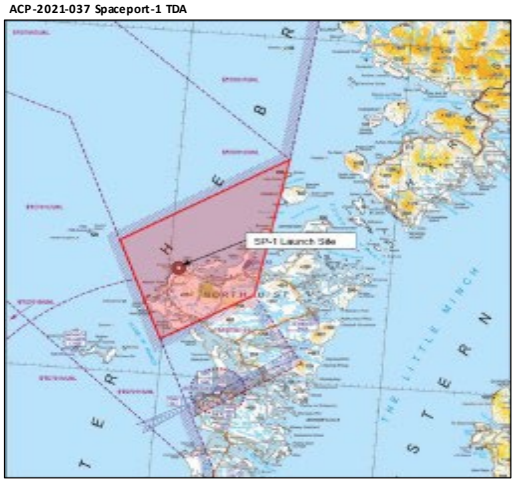
Raptor Aerospace
Raptor (Paused)

Airspace Change Proposals
Space Launches

Spaceport-1 (North Uist – Outer Hebrides)

- Permanent (ACP-2021-021):
  - Currently in Stage 2 (Develop & Assess)
  - CAA Decision expected 23 February 2024
  - Target AIRAC 08/2024
- Temporary (ACP-2021-037):
  - CAA Decision expected Q1 2023
  - First launch expected March 2023.

ACP-2021-037 Spaceport-1 TDA

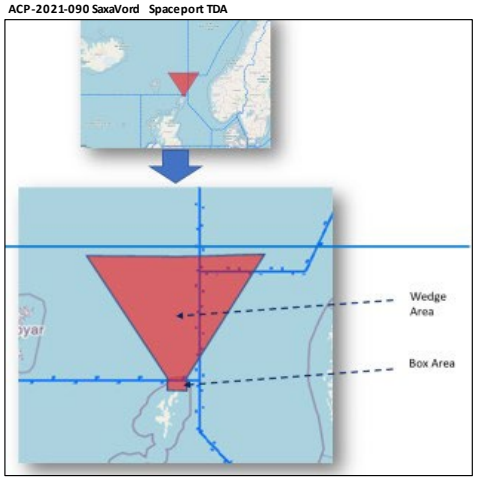


Airspace Change Proposals
Space Launches

SaxaVord Spaceport (Shetland Islands)

- Permanent (ACP-2017-79):
  - Currently in Stage 2 (Develop & Assess)
  - CAA Decision expected 24 November 2023
  - Target AIRAC 03/2024
- Temporary (ACP-2021-090):
  - CAA Decision expected 28 October 2022
  - First launch expected March 2023.

ACP-2021-090 SaxaVord Spaceport TDA

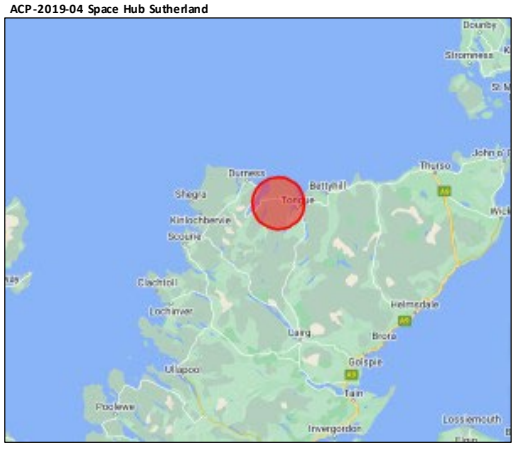


Airspace Change Proposals
Space Launches

Space Hub Sutherland (A' Mhòine Peninsula)

- Permanent (ACP-2019-04):
  - Currently in Stage 2 (Develop & Assess)
  - CAA Decision expected 26 April 2024
  - Target AIRAC 08/2024
- Temporary:
  - Not Started
  - Statement of Need for a Temporary ACP expected to be submitted in due course.

ACP-2019-04 Space Hub Sutherland

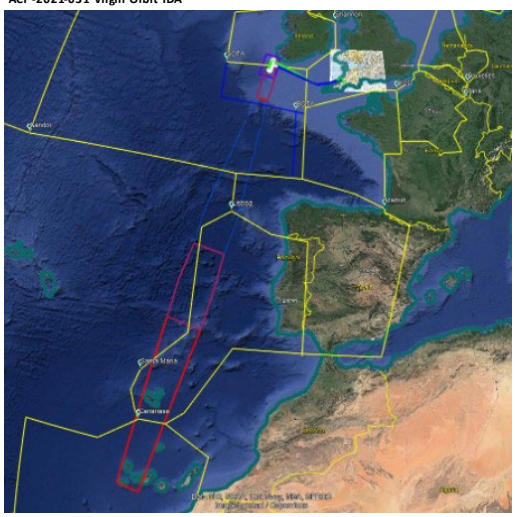


Airspace Change Proposals
Space Launches

Virgin Orbit (Cornwall Spaceport)

- Temporary (ACP-2021-031):
  - CAA Decision expected Q4 2022
  - First launch not before 29 October 2022.

ACP-2021-031 Virgin Orbit TDA

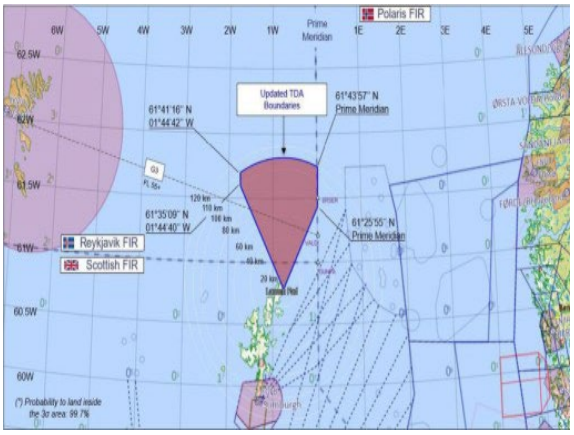


Airspace Change Proposals
Space Launches

HyImpulse (Shetland Islands)

- Temporary (ACP-2021-058):
  - CAA Decision expected 20 January 2023
  - First launch expected March 2023 from SaxaVordSpaceport.

ACP-2021-058 HyImpulse TDA



Any Questions?

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Break for lunch

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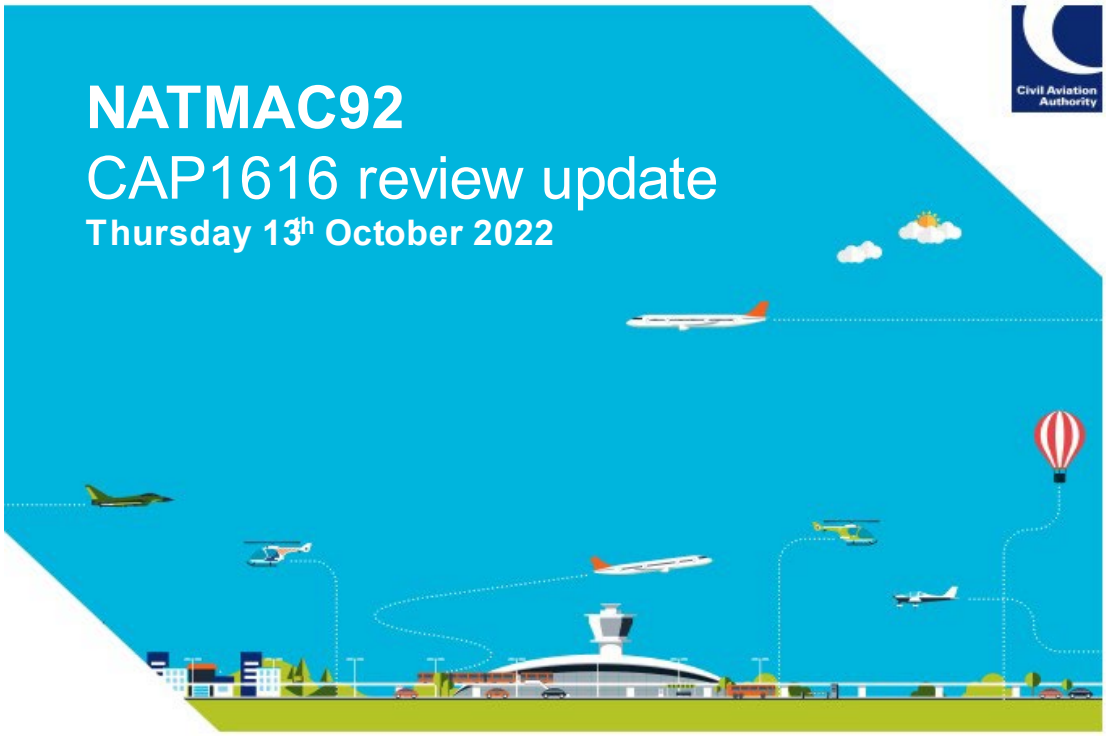
NATMAC92

CAP1616 review update

Thursday 13th October 2022



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What will be covered?

- Reminder of key feedback themes
- Update on progress made
- Next Steps
- What do you need to do?
- Questions

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Feedback themes

Several themes identified through our analysis of the feedback received:

Process

- Too long/complex/expensive
- Difficult to remain engaged
- Stifles good ideas
- Guidance heavily caveated
- More certainty required
- Needs to be interpretable

"The process is incredibly complicated and difficult to remain engaged with due to the length of time it takes"

Document structure

- Clear regulatory requirements/expectations
- Too much repetition
- More guidance, not more requirements
- Very fragmented

"Chapters should focus on process requirements/related outputs and appendices on providing guidance"

Feedback themes cont…

Stages/Steps/Gateways

- Shouldn't change dramatically
- Opportunity to simplify
- Need more flexibility on Gateway dates
- Lack of confidence in CAA's ability to meet agreed timescales

"Simplify the whole process…it is a burdensome cost to aviation"

Scalability

- Not well defined
- More guidance required
- Need more options to scale
- Retain 'multi-gateways'
- Abridged process for temporary to permanent
- Requirements need to be proportionate

"Flexibility of the system to allow projects that are multi faceted and have interdependence"

Feedback themes cont…

Engagement

- Requirements need to be proportionate
- 'Design objective(s)' engagement
- Needs of stakeholders not properly understood
- "Dismissive sponsors" / "disruptive stakeholders"

"…it also forces stakeholders into making hurried comment because adequate time has not be given."

Clarity

- Legislative/policy framework
- Key terminology needs defining (e.g. Design Options, baseline)
- Roles & responsibilities
- Separate the 'must do's' from the 'could/should do's'
- Environmental requirements

"There has been an inconsistent approach…with regards to the transition from a comprehensive list, to a longlist and then on to a shortlist"

Update on progress made

Progress has been slower than we anticipated due to high ACP workload.

Since the last NATMAC meeting we have:

- Finalised the Engagement Summary Report – this will be published imminently.
- Developed interim clarification on Stage 2 (design options/options appraisal) requirements.
- Consolidated a longlist of options into a shortlist. We are currently 'maturing' the shortlisted options for consultation.

Next steps

- Prepare for and conduct formal consultation on proposals to modify CAP1616
- Complete analysis of feedback and publish consultation response document
- Undertake follow-up engagement activities where required
- Publish revised version (v5) of CAP1616

Related updates will be published on our dedicated CAP1616 Review webpage: www.caa.co.uk/review-of-CAP-1616.

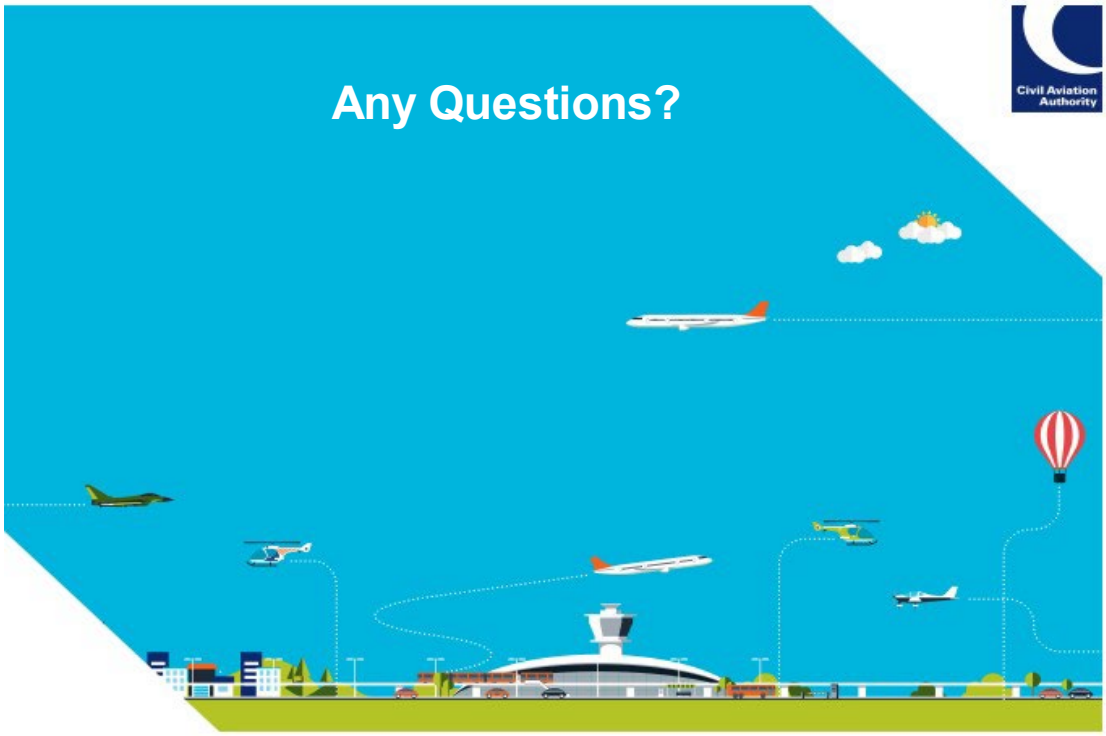
What do you need to do?

Monitor our dedicated CAP1616 Review webpage: www.caa.co.uk/review-of-CAP-1616 for the latest updates.

When the consultation is launched, please use your own channels to raise awareness and encourage response.

If you have a dedicated communications team, please share their contact details so that we can make sure they are included.

Outside of the formal consultation process, please address any CAP1616 review related queries to the airspace.policy@caa.co.uk


Any Questions?
Civil Aviation Authority

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Civil Aviation Authority
Future Airspace Update
Stu Wain

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Agenda

1. GNSS Update
2. Electronic Conspicuity Update
3. Airspace Classification Update
4. Airspace Analyser Tool Introduction
5. Airspace Infringement Update

GNSS Approaches - Highlights

Expansion of the UK GNSS rollout programme launched 01 September 2022

- Recognising the significant safety benefits from the intro of GNSS architecture, the CAA/DfT successfully launched **Phase 3** of the programme:
  - 52 eligible Fixed wing sites
  - 11 Rotary AOC holders introducing PinS approaches to “Blue light” operators
- Strong level of interest from the community with 50+% level of interest from eligible sponsors within the first 3 weeks of launch.
- Phase 3 level of DfT funding available increased to 75% of total cost. Aim is to encourage as many sponsors as possible to take advantage of safety enhancements.
- Target to introduce 40 new approaches over a multi year programme of activity delivered by the CAA.

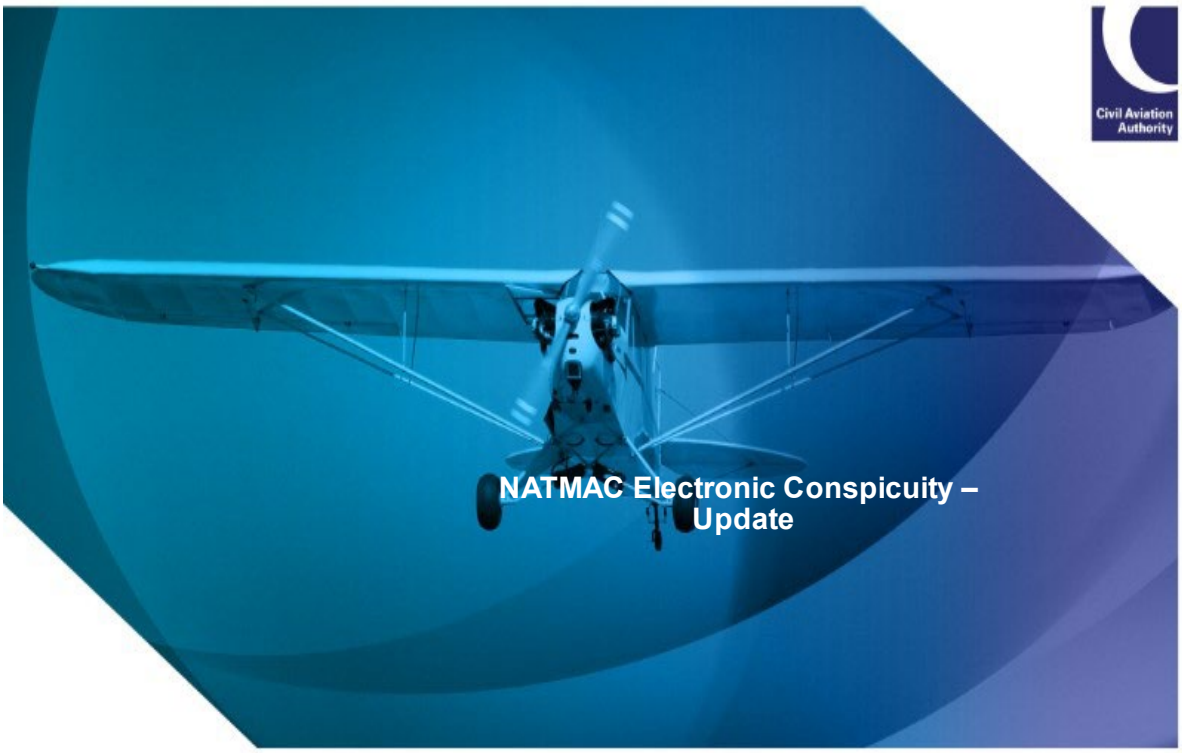
GNSS Approaches - Challenges

- Complexity in making and dealing with applications.

CAA has refined CAP 1616 introducing:

reducing the regulatory burden for sponsors by almost 50%.

- CAA will continue to identify efficiencies in order to streamline the process to achieve DfT ambitions.



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Electronic Conspicuity

- Standard intended to enable BVLOS and Flexible Use of Airspace as well as safety within Class G
- This brief provides an overview of:
  - Result of EGIS study
  - Standard based on 1090MHz and 978MHz.
  - Trials

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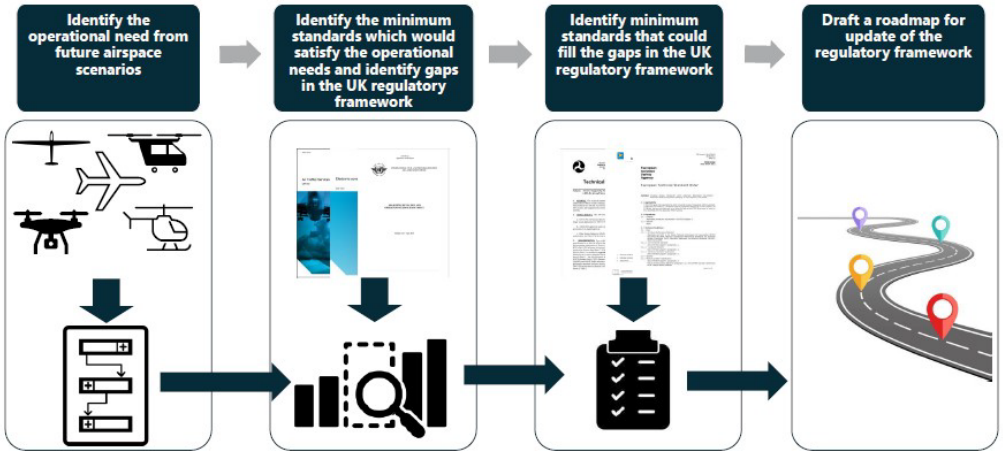
EGIS Study

SCOPE OF THE PROJECT



Option ID	Option Description	MCDA Score
5B	Mandate all airspace users to equip with regulated EC devices. Manned aircraft use 1090MHz, UAS use 978MHz.	158
3A	Adopt existing global standards for EC. Mandated for use in specified airspace volumes. Voluntary uptake elsewhere. Manned aircraft use 1090MHz, UAS use 978MHz.	151
3D	Adopt USA model. Mandated 1090 MHz for Class A and above FL180. Other specified airspace requires equipage of 978MHz. Utilises ADS-R/TIS-B	148
5C	Mandate all airspace users to equip with EC devices. Existing equipped aircraft remain on 1090MHz, remainder with equipment that meets a Design Assured Performance Based Standard (on protected band).	144
4D	Performance Based Standard. Mandated for use in specified airspace volumes. Voluntary uptake elsewhere. Existing equipped aircraft remain on 1090MHz. Remaining aircraft equip according to Performance Based Standard (Protected Aviation Band frequencies.).	143

*Note. The scoring range for all 15 options was from 98 to 158.
MCDA analysis government Green Book standard for assessing options with qualitative and quantitative criteria. Weightings reflect inputs from task force, previous studies, AMS objectives and industry experience.

EGIS Conclusions – Next Steps

- **Consider possible New category of CAP1391 device**
  - Need for Assured data
  - Consider existing international standards
  - Decide on a Minimum Specification for EC
- **Liaise with OFCOM on the use of 978Mhz**
- Update CAPs

EC: Trials and Studies

- FIDs
  - Barton + others – **complete**
- ADS-B Beacons
  - ADS-B Obstruction Beacons for gliding, hang gliding, paragliding and model flying sites in large scale UK trials – **ongoing**
  - More Information - uAvionix to provide ADS-B Obstruction Beacons for gliding, hang gliding, paragliding and model flying sites in large scale UK trials– uAvionix
- FIS-B/TIS-B/VOLMET
  - **'In train…'**
  - **Human Factors**

NATMAC Airspace Classification – Update

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Airspace Classification

The Cotswold Review

- In July 2022 we published our Final Report into the Cotswold Region (CAP2359) accompanied by a GA podcast
- It set out our final position on volumes to take to Amend, along with the rationale for those we were not progressing:
  - Daventry CTA 6 has been taken forward to Amend, under CAP 1991 process and we are working with NERL to progress this
  - Volumes where changes to be made via another mechanism:
    - RAF Lyneham ATZ – now removed from the AIP
    - R154 / R155 / R322 to be disestablished
- Feedback on the value of AIAAs has been passed to the relevant team in the CAA

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Our Impact Stretches Beyond Changes to Airspace Classification

- Improved communication between stakeholders as our task is demystified
- Developing strong working relationships within and beyond the CAA
- Using our findings to reinforce ongoing safety / education work, including that carried out by UKAB and the Infringement Team
- Feeding our findings into the AIP Working Group
- Development and further enhancement of our Airspace Analyser Tool to give us greater ability to scrutinise how airspace is currently used
- Implementing a procedure for the handling of FCS 1522 Refusal of Service forms, resulting in positive feedback from those who have submitted them
- Aiming to transform the culture of airspace change by changing the conversation to one whereby ACAs demonstrate why they need the airspace as opposed to us having to prove that they do not
- Sharing our findings, both internally and externally to ensure the insight goes direct to where it's needed

Where next?

- We are now planning to review the Barnsley region, and will be launching a “Call for Evidence” in October

- Following feedback from stakeholders and internal research, our initial focus in this region will be on the Manchester Low Level Route

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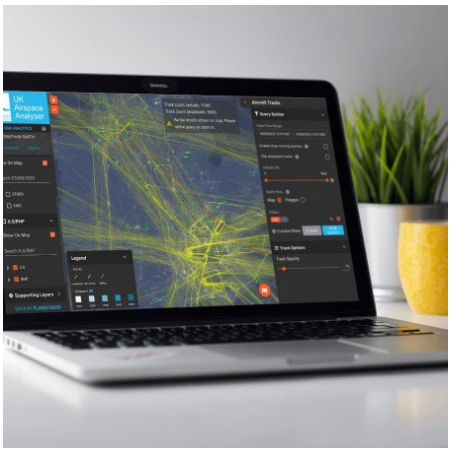
Airspace Analyser Tool – what is it? why do we need it?

- In order to facilitate the Airspace Classification review task, the team needed a reliable and efficient way of understanding how UK airspace is currently and historically used. This would then allow the team to facilitate conversations with stakeholders based on credible data.
- We started working with Emu Analytics, and their data partner Plane Finder, to develop an aircraft tracking and surveillance platform that could provide the insights needed to understand how UK Airspace is utilised historically and in real-time.



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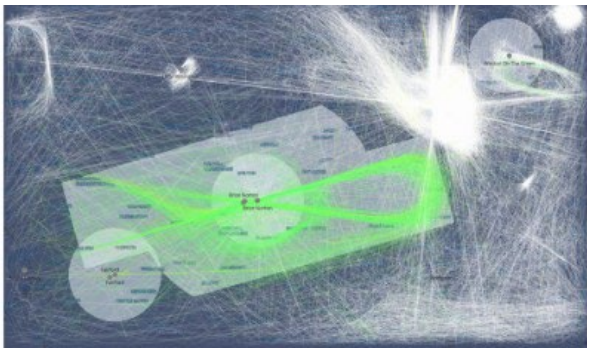
How does the Airspace Analyser Tool Work?

- It is important to understand the limitations of the data that is within the tool and of the tool itself. The data is supplied by Plane Finder which records aircraft that are visible to their detection systems.
- Not all aircraft that operate in the airspace are visible on the tool. Aircraft are detected and recorded using the systems below,:
- *ADS-B (Automatic Dependant Surveillance-Broadcast)*
- *FLARM: A system that calculates and broadcasts aircraft position and future flight path*
- *MLAT (Multilateration, using multiple radar heads and Mode-S transponders)*
- The tool can also present different layers of airspace, and this allows us to see the usage and interactions between different types of airspace users.



Brize Norton CTR / Fairford MATZ / D129 with Military (Green) & Non-Commercial (White) traffic movements.

Success/Outcomes from using the tool

- The tool has enabled us to form a good picture of how the airspace we have been reviewing is currently used, by whom, when and at what altitude, and has helped to influence and shape our discussions with ACAs and airspace users.
- The tool also allows us to overlay safety data such as known airproxes and airspace infringements. This adds a significant layer of intelligence to help us generate effective and positive evidence-based insights.
- Findings from the tool have fed into other pieces of work outside of the Airspace Classification Review team's primary task, such as MAC, EC, moving maps and pilot knowledge/skills .

Airspace Infringements

Statistics

- 2019 to 31 Aug – 1003 – benchmark year
- 2022 to 31 Aug – 1033
- 3% increase on 2019 raw data
- Approx. 10% decrease when normalised against airspace/rule changes (Farnborough and Manchester LLR)

- Significant statistics:
  - 12% of all AI are by non-UK based European pilots
  - >75% of Manchester CTR AI are non-compliance with the LLR rule set (approx. 5% of UK numbers)
  - 7% of all AI are by military aircraft (historic norm circa 4%)

Airspace Infringements

Aims and Strategies

- Reduce airspace infringements numbers and to reduce safety and operational impact of occurrences
- Greater data/intelligence analysis from:
  - Occurrence reports (ANSP and pilot)
  - Local Airspace Infringement Teams (LAIT)
  - Engagement with aviation community
  - Other CAA Capability Areas
- Increase number of LAIT from 9 to 12 with establishment of:
  - Oxfordshire (Oxford/Brize)
  - Severn (Bristol/Cardiff)
  - Scottish (Edinburgh, Glasgow, Prestwick)

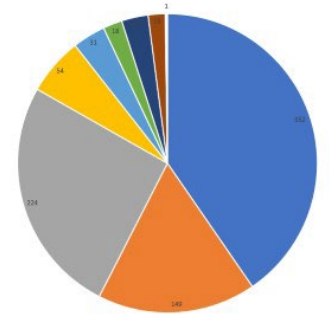
Airspace Infringements

Aims and Strategies

- LAIT to focus on local issues:
  - Airspace design and procedures such as airspace design, Visual Reference Points, Local Flying Areas etc
  - Improve pilot/controller relationships through engagement
  - Develop national strategy though 'idea sharing' between Teams
  - CAA Airspace Classification Team standing members to ensure expedient collation of ideas/proposals.
- Greater understanding of CAP1404 Post-infringement process by extending invitation to Infringement Coordination Group beyond GA Associations to industry representatives within ANSP and airports.
- Developing communication and working relationships with ANSP and airports to ensure emerging/developing risks and trends are captured and treated
- Targeted/focused communications to help pilots learn from data and intelligence. Portal will remain the Airspace and Safety Initiative website (https://airspacesafety.com)
- Diversify communications to meet the demands/needs of a diverse aviation community

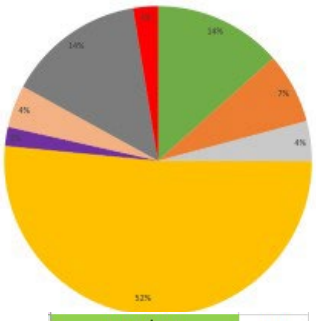
2022 Year to Date

AI by Airspace



Control Area	352
Terminal Control Area	149
Control Zone	224
Aerodrome Traffic Zone	54
Perm Prohibited/Restricted/Danger Areas	31
Temp Restricted/Danger Areas	18
Transponder Mandatory Zone	25
Radio Mandatory Zone	16
Temporary Controlled Airspace(CAS-T)	1
Upper Information Region	1

Post-AI Decisions



No AI/NFA	109
Mil	60
Student	34
Education Letter	417
Online Tutorial and Test	16
Practical Training	36
AIAC	117
Provisional Suspension	21
Revocation of Licence	0

Questions?

Any Other Business?

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Dates of future NATMAC meetings

- NATMAC 93 – 13th April 2023
- NATMAC 94 – 12th October 2023
- NATMAC 95 – 11th April 2024
- NATMAC 96 – 10th October 2024

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