

Airspace Modernisation – 2020 Progress Report

CAP 2016



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Contents

Contents.....	1
Executive Summary	2
Chapter 1.....	7
Delivery plans and progress 2020	7
Chapter 2.....	53
Co-sponsor updates	53
Governance.....	53
The Role of The Co-Sponsors: Policy and Regulation	54
Progress and Risks in 2020	62
Chapter 3.....	66
Stakeholder Engagement & Commitment	66

Executive Summary

1. In 2017, the Government updated the Civil Aviation Authority's (CAA's) strategic role for airspace modernisation by issuing new Air Navigation Directions. Consistent with our role as specialist aviation regulator and our statutory responsibilities, we are required to prepare and maintain a co-ordinated strategy and plan for the use of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace.
2. Our Airspace Modernisation Strategy¹ (AMS) responds to that requirement, setting out the detailed initiatives that industry must deliver to achieve the objectives envisaged in current government policy.
3. The strategy sets out the ends, ways and means of modernising airspace, initially focusing on the period until the end of 2024.² The **ends** are derived from UK government and relevant international policy and the **ways** of achieving them are set through 15 initiatives that include new airspace design, new operational concepts and new technologies. To establish the **means** of delivering modernised airspace, such as the resources needed, the strategy requires the entities responsible for delivering the initiatives to draw up delivery plans, with progress overseen by the CAA.
4. The CAA must report to the Secretary of State annually on the delivery of the strategy. The update provided within the following chapters of this report comprises of detail on the progress made by the industry, as well as on the work the CAA have conducted in 2020, in response to the challenges facing the airspace change programme.
5. In 2020 the COVID-19 pandemic has had an unprecedented impact across the world. People's lives have changed, and governments around the world

¹ [CAP1711 Airspace Modernisation Strategy December 2018](#)

² [2024 corresponds to the end of the next Single European Sky Performance Scheme reference period \(RP3\)](#)

have had to introduce new laws and policies to keep people safe. On a local scale, people have had to maintain social distancing and self-isolation. On an international scale, borders have been closed. The aviation sector has been dramatically affected, and work in 2020 has focused on identifying which initiatives in the AMS can and should continue, and which may need the co-sponsors to consider a different approach or additional support. The most prominent impact of the pandemic has been observed in delays to delivery of the FASi airspace change programmes,

6. In Chapter 1 we provide an overview of the current initiatives and our assessment of progress towards completion of each one. This has been done in the form of a 'RAG' status and compared against progress made in 2019.
7. Four of the fifteen initiatives are assessed as on track overall (green), in comparison with six reported green in 2019. Nine initiatives require attention (the same number as reported last year), whilst both FASi airspace change programmes have been assessed as having 'major issues'.
8. In light of the COVID-19 pandemic and its impact on the industry, key activities planned for 2020 across all fifteen AMS initiatives have been either paused or delayed, which had a direct impact on delivery.
9. With that, some progress was made under deployment of the Advanced Flexible Use of Airspace - initiative 3, where NATS En-route Limited (NERL) has undertaken feasibility planning activities for the Flexible Use of Airspace State Programme, with Ministry of Defence submitting an airspace change proposal for a trial to assist in developing their Flexible Use of Airspace requirements.
10. Under the initiatives that set out a major national programme of airspace redesign (FAS Implementation South and North, initiatives 4 and 5 respectively), most airspace change sponsors paused work on their airspace change proposals (ACPs) due to the impact on resources caused by the pandemic. The Airspace Change Organising Group (ACOG)

published their report on 'Remobilising the Airspace Change Programme'³, in which they made ten recommendations to the DfT and CAA, based on plausible scenarios set against different recovery models for aviation, and the ability or appetite of sponsors to continue with modernisation. In October 2020 the CAA published guidance⁴ setting out the evidence and assurance that sponsors resuming an existing paused airspace change will need to provide to the CAA, before restarting and progressing further. The CAA also developed and engaged on draft criteria for acceptance of the airspace change Masterplan⁵, which set out the proposed requirements for ACOG's development of the Masterplan, and the analysis the DfT and the CAA will undertake, before deciding whether to accept the Masterplan into the Airspace Modernisation Strategy. ACOG have established the FASI Programme Management Working Group, to coordinate the production of a joined-up Programme Plan for inclusion in the Masterplan; and a FASI Technical Working Group, for all participants, to share information about their emerging airspace design options, and to identify the interdependencies.

11. At the time of writing this progress report, the Department for Transport (DfT) and CAA have yet to respond to all of the recommendations in ACOG's 'Remobilising the Airspace Change Programme' report. This includes ACOG's recommendation that the Department provide funding to airspace change sponsors to remobilise the airspace change programme. Therefore, whilst there has been some progress in the governance and planning of these initiatives, the CAA has concluded there is a risk to their progression unless a source of funding is identified.
12. Under the Satellite Navigation Route Replication - initiative 7, the CAA has submitted a State PBN Deployment Plan to EUROCONTROL, which was accepted; and a PBN Implementation State Report to the Network

³ [ACOG: Remobilising Airspace Change Report July 2020](#)

⁴ [CAA: Airspace Modernisation Update](#)

⁵ [CAP1887 Proposed Criteria for Assessing and Accepting the Airspace Change Masterplan](#)

Manager. The CAA has also updated its PBN web pages, to include a link for submittal of the individual stakeholders' PBN Transition Plans.

13. Under Review of Air Traffic Service Provisions in the UK - initiative 9, the CAA continued work on the development of a draft FIS procedures, with planned stakeholder engagement for next year.
14. There were several achievements under the Airspace Classification Review - initiative 10, where the CAA have prepared, consulted on and published a new procedure for reviewing the classification of airspace. Earlier in the year the CAA have also publicly called for suggestions from stakeholders for volumes of airspace that might be considered for reclassification under the new process. The CAA have also commenced recruitment of a new team, which will be responsible for tasks under the airspace classification review workstream.
15. Under Deployment of Electronic Surveillance Solution - initiative 11, the DfT has made available funding to encourage the adoption of Electronic Conspicuity within the UK's General Aviation and Remotely Piloted Aircraft Systems communities, with the CAA responsible for distributing these funds via a rebate scheme.
16. Under Efficient Use of Radio Frequency Spectrum - initiative 12, the CAA have reached an Agreement in Principle with Ofcom, for the use of 978MHz, for some form of additional electronic conspicuity capacity, with trials planned for early 2021 to demonstrate how the frequency will be used. The trials will be covering Beyond Visual Line of Sight (BVLOS) operations and provision of Traffic Information Service from ground to air.
17. Under Full Adoption of Datalink Communications - initiative 13, the UK have achieved full compliance with Datalink IR 29/2009, which was implemented on the 5th of February 2020.
18. Under Air Traffic Management - initiative 15, NERL has nearly completed the initial build phase of the Voice and En Route systems. NERL has also secured Data Centres to host virtualised system architecture, equipage of Swanwick and Prestwick Ops rooms, and undertook 23 of 24 factory

acceptance tests for the main voice system. NERL has also achieved completion of the connection of NERL network, across the entirety of the UK. iTEC achieved Factory Acceptance Testing for the version that will be used for Limited Operational Service (LOS) at Prestwick. NERL has also collaborated with the CAA on the development of the RP3 Roadmap for AIS delivery.

19. In Chapter 2 we provide an update from the co-sponsors on governance, policy and regulatory process since the last publication of the progress report in 2019 and the publication of the AMS in 2018.
20. Chapter 3 outlines 2020 stakeholder engagement activity undertaken by the CAA and the entities leading on the delivery of initiatives under the AMS. The chapter also sets out the approach for engagement plans in the future.

Chapter 1

Delivery plans and progress 2020

- 1.1 The means of delivering airspace modernisation, such as the resources needed to bring in changes, ultimately rests with the industry organisations that will use airspace. For example, the CAA can set out why airspace redesign is needed and the policy ends it must achieve, but we cannot do that airspace change ourselves. Delivery plans must be set out by the organisations that will undertake this design, or integrate the concepts and technologies.
- 1.2 A reminder of the delivery entities for each initiative, and the means of tracking progress is captured in Figure 1.1
- 1.3 Table 1.1 below provides an overview for each initiative. Progress towards completion indicated in delivery plans has been indicated by a green, amber or red status and compared with progress indication made in the previous year:
- **green** status indicates that the initiative is on track to be completed in the timescales expected;
 - **amber** status indicates that the initiative needs attention from key stakeholders to ensure completion in the timescales expected, or that there may be merit in reconsidering deadlines where possible;
 - **red** status indicates there are major issues with the initiative and a significant risk that completion will not be achieved in the timescales expected.
- 1.4 Key dependencies and risks to the realisation of modernisation benefits are also summarised in Table 1.1. The risks are assessed on a 1 (low) to 5 (high) scale against likelihood (L), and severity (S).

Figure 1.1 – Delivery Entities and Progress Tracking

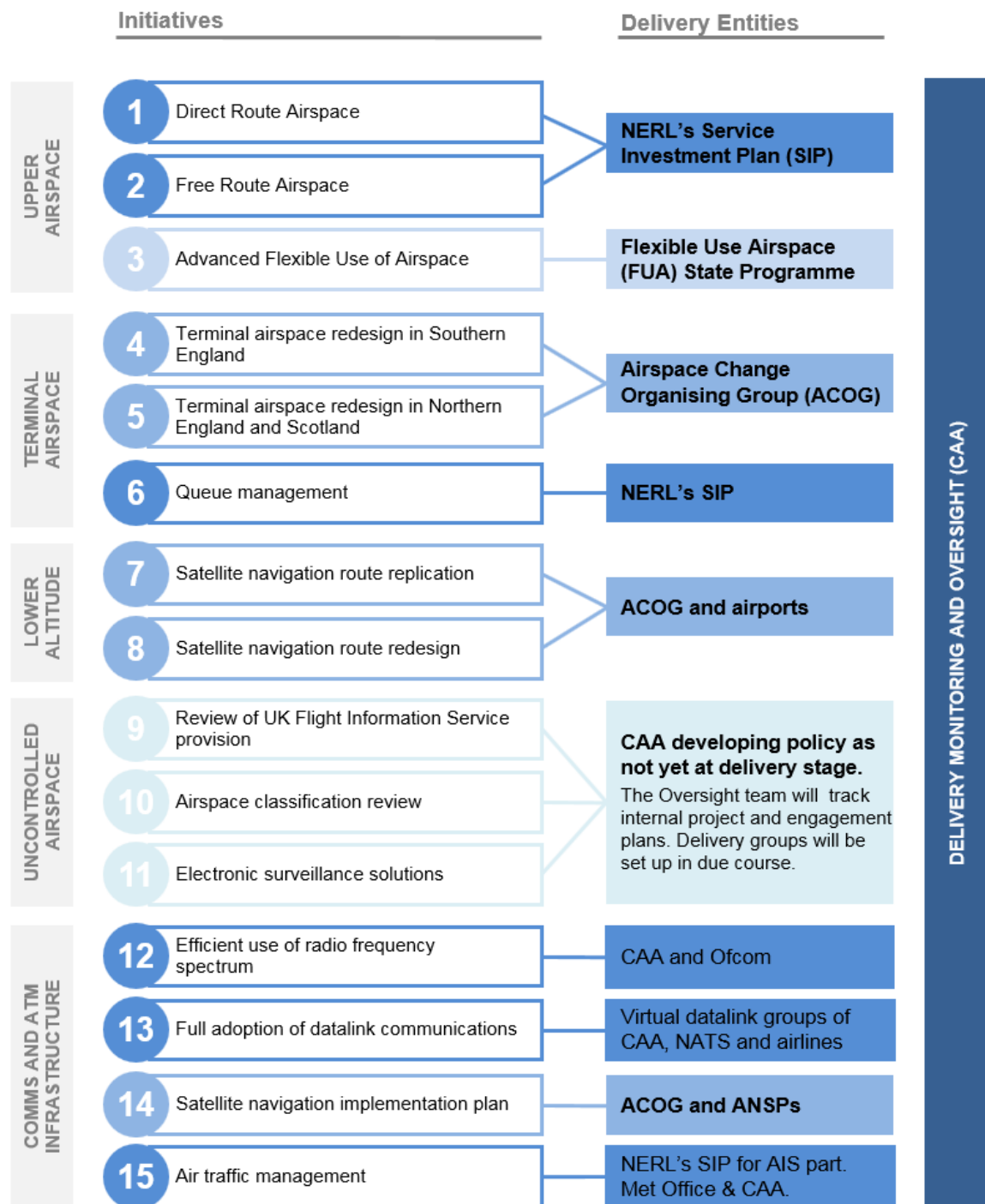


Table 1.1 Initiative plan and progress status - December 2020

Direct Route Airspace		1	NERL's SIP
UPPER AIRSPACE	Description: deployment of additional waypoints to the existing route network.		Implemented
	1.1 New waypoints	1.2 Established procedures	1.3 Airline flight planning system
	Timescale: by 2022	Driver: EU ATM Masterplan	
	Stage: Implemented	Mechanism: NERL's SIP	
	<u>Progress Update</u>		
	The implementation of Direct Route Airspace (DRA) was mandated in European Law under the EU Implementing Regulation EU716/2014 as a steppingstone towards Free Route Airspace (See Initiative 2). DRA has been introduced by NERL and optimised ahead of the required timescales. NERL continues to develop the airspace design on an iterative basis, including waypoint location, to optimise the airspace. DRA was deployed with no anticipation of delivering environmental benefits. Post Implementation Review (PIR) undertaken by NERL indicated 3,541T fuel and 11259T of CO2 benefit realized in 2015. This initiative is now considered as implemented and closed, due to the fact that NERL has dedicated efforts and resource to further optimise airspace design under the Free Route Airspace concept, as described below under initiative 2.		
	Risks to benefit realisation: n/a		Score: n/a

Free Route Airspace

2

NERL's SIP

Description: removal of all fixed routes so aircraft can fly fully optimised routes.

2019

➔

2020

2.1 Remove fixed route network

2.2 New procedures

2.3 Airline flight planning system

Timescale: 2025

Driver: EU ATM Masterplan

Stage: Delivery

Mechanism: NERL's SIP

Scope

Free Route Airspace (FRA), as defined by EUROCONTROL, is a 'specified airspace within which users can freely plan a route between a defined entry point and a defined exit point, with the possibility of routing via intermediate (published or unpublished) waypoints, without reference to the Air Traffic Services (ATS) route network, subject of course to availability. Within such airspace, flights remain subject to air traffic control'.

The implementation of FRA was mandated in European Law under the EU Implementing Regulation EU716/2014. NERL is intending to cover these requirements and Borealis Alliance⁶ ambitions for the UK, whilst managing the deployment in line with other simultaneous airspace modernisation projects.

The programme was originally initiated in January 2015, to fulfil the key free route planning principles, where users could ultimately flight plan to preferred trajectories, irrespective of the air traffic control responsibility boundaries across the Borealis-controlled airspace.

Key Milestones

Delivery Plan:

2019

2020

2020

2021

Deployment 1: Scotland/Northern Ireland

2021

2022

2023

Deployment 2: South West England/most of Wales

UPPER AIRSPACE

⁶ The Borealis Alliance is a group of ANSPs collaborating on a major programme to deliver free route airspace across the whole of Northern Europe.



Although Deployment Plans for phases 1 and 2 (D1, D2) have now shifted by approximately 12 months, in comparison with the plans set out in the 2019 progress report, delivery of the initiative is currently expected to meet the required timescales.

With NERL's proposed phased approach to delivery over the whole RP3 period, deployment dates for Northern England/North Wales and the South East England are yet to be confirmed.

Key Achievements

The initial work undertaken, focused on collaborative development of the Concept of Operation at a European level, with NERL initiating the CAP1616 airspace change process for local deployments phase 1 & 2. The airspace change proposal phase 1 (FRA D1: ACP-2018-1) is currently at step 4a⁷ of the airspace change process. The online Airspace Change Portal includes up to date information and documents for this change, which can be accessed [here](#).

The airspace change proposal phase 2 (FRA D2: ACP-2019-12), which supports deployment of FRA across the Swanwick West Sector Group, is currently at stage 3a of the airspace change process. The online Airspace Change Portal includes up to date information and documents for this change, which can be accessed [here](#).

FRA deployment in the PEMAK triangle and TAKAS box areas of airspace (FRA D2.1: ACP-2020-39) is currently at step 2b, with the Stage 2 Develop & Assess gateway passed in November 2020. The online Airspace Change Portal includes up to date information and documents for this change, which can be accessed [here](#).

The programme was paused as a result of COVID-19, in consultation with customers, and permission to restart the programme was received in September 2020. The phased introduction of FRA will lead to a further two deployments, though a Statement of Need has not yet been submitted to the CAA for either.

Dependencies

Deployments 3 & 4 are dependent on the iTEC platform installation, which is part of Initiative 15, with timescales yet to be confirmed.

⁷ [NATS: Free Route Airspace Deployment 1 Stage 3](#)

Benefits

The key benefit of Free Route Airspace delivery is an improvement of Upper Airspace efficiency. In line with requirements set out within the AMS and the EU Reg. 716/2014 – Pilot Common Project, it will deliver airspace harmonisation at a European level, enabling operational and fuel consumption cost savings, whilst reducing CO2 emissions, in line with environmental objectives set out within DfT's Air Navigation Guidance 2017.

During the Options Appraisal Phase II stage NERL submitted information regarding anticipated deployment benefits, which detail can be accessed through the links provided under the 'Key Achievements' section above. NERL estimated that D1 deployment would deliver up to 3,841T of fuel and up to 12,214T of CO2 benefit.

D2 benefit analysis undertaken by NERL in September 2020, estimated a potential fuel benefit of up to 3,157T, dependent on the scale of structural limitations required. Integration with Systemized Airspace model P8 is likely to change this interim estimate, with figures planned for an update in 2021.

Both D1 and D2 fuel and CO2 figures are enabled benefits, and therefore realized benefits are contingent on airline flight planning behavior. In addition, the above presented figures have been based by NERL on pre-COVID-19 forecasts and cannot be validated at this stage, due to volatile impact of the pandemic on traffic levels.

Benefit scoping of D3 and 4 D4 is yet to be undertaken by NERL, with no further information available at this stage on the impact of later delivery.

Stakeholder Engagement

NERL engaged with stakeholder groups, consisting of Air Navigation Service Providers, Airlines, Airports, Data Houses/ Flight-planning providers; National Air Traffic Management Advisory Committee (NATMAC) Members and the Ministry of Defence, as part of D1 consultation.

Consultation responses were Collated and Reviewed in March 2020, as part of Step 3d of the CAP1616 process.

NERL have also commenced engagement on the Investment Programme with a virtual pre-SIP Customer call held in September, followed by airspace investment workshop in October and a Technical Infrastructure Sustainment and Transformation workshop in November. NERL has welcomed feedback from the call participants, as well as presenting investment proposals and benefits. The engagement is an ongoing process and will continue into 2021.

Stakeholder Impact

With deployment affecting operations above 25,500ft, it is anticipated, based on NERL's assessment, that the programme will not bring significant change to noise or visual intrusion below 7,000ft (DfT specified threshold), therefore bringing no change to impact on stakeholders on the ground.

It is also expected that large scale military operations will be managed through flight plan restrictions, notifiable by NOTAM, therefore deployment of Free Route Airspace is expected not to have an adverse impact on military operations.

	Whilst commercial airlines' operations will be positively impacted by deployment of Free Route, the expectation is that the general aviation sector will not be impacted in an adverse manner.
	Risks to benefit realisation That aircraft operators do not invest in the flight planning system upgrades required to use Free Route options effectively and maximise the benefits of implementation. Score: 8 (Likelihood:2) * (Severity:4)

Advanced Flexible Use of Airspace

3

FUA State Programme

UPPER AIRSPACE

Description: to increase airspace configuration options supporting more efficient use.		2019	➔	2020
3.1 New airspace structures	3.2 New procedures	3.3 Airspace management tools		
Timescale: 2022-24	Driver: EU ATM Masterplan and UK State Requirements			
Stage: Delivery	Mechanism: Flexible Use of Airspace State Programme (FSP) Working Group			
<u>Scope</u>				
Established in 2016, the Flexible use of Airspace State Programme (FSP) Working Group have developed the Advanced Flexible Use of Airspace (AFUA) concept and a co-ordinated plan, based on design principles to accommodate both civil and military user requirements, through improved management of special use airspace (SUA) and flexible airspace structures (FUA) for commercial and military use.				
The main activities that will deliver this initiative include:				
• airspace changes and redesign of airspace structures to offer more flexible locations, in line with military requirements and civil traffic flows • extending Airspace Management (ASM) tools, processes and data sharing, through access and use of LARA (Local and Regional Airspace Management tool) • implementing a new performance framework to provide statistics and trend analysis				
<u>Key Milestones</u>				
Re-planning activity of the programme is expected to commence as part of the RP3 consultation. The next steps are to progress into the identify and define phases of programme, which will provide more granular detail to the plan and establish projects and ACPs to progress delivery.				
As the programme matures and other influencing developments require change, such as regulatory direction or defence security reviews, this plan will be updated to ensure alignment.				

Key Achievements

In light of the COVID-19 pandemic and its impact on the industry, key activities planned for 2020 have been paused, with areas of progress listed below:

MoD

- requirements development and trial ACP submission
- commenced collaborative work with NERL on identifying and agreeing where primacy of civil access at peak network demand can be improved

NERL

- ongoing ASM data integration with ATM systems (DSESAR platform)
- feasibility planning activities for FSP

Risks

- The concept cannot be realised without improved utilisation performance, which relies on true interoperability, integration and commonality of tools, support systems and processes between the civil and military users.
- To mitigate against safety risks and enhance CDM, integration of ASM data to provide a level of automation is required.
- Due to the complexity of the programme and dependencies, any larger MoD ACP will not be delivered until after Free Route Airspace implementation.
- Lack of resource and funding availability may hinder implementation of the programme in the planned timescales. Mitigation activity is dependent on the RP3 plan agreement, for which NERL is in the process of undertaking consultation engagement activity. Scalable and cost-efficient technical solutions are also being investigated by all stakeholders and MOD continue to review workforce resource to enhance ASM.

Dependencies

It is recognised that successful implementation of AFUA is dependent on other AMS initiatives, namely initiatives 2 - Free Route Airspace and initiative 10 - Airspace Reclassification, as well as other programmes aiming to create opportunities that enable airspace efficiency and optimisation.

The programme is also dependent on technical solutions, service and user agreements and enhanced airspace management processes, which must be articulated and agreed, in order to facilitate any future airspace changes. The detail of these activities will be developed as the programme moves forward. Funding arrangements for airspace management tools need to be confirmed before procedures can be developed.

Benefits

The key benefit brought about by the deployment of AFUA is efficient airspace management. It will make planning and sharing of airspace between agencies more collaborative and predictable. Reservation of any volumes of airspace needed for a particular exercise or mission will be more efficiently tailored, thereby delivering

operational efficiencies to MoD, whilst minimising as far as possible any disruptive impact on other Airspace Users.

With that, additional airspace capacity will reduce the risk factors associated with traffic congestion and peaks in controller workload. Increasing the number of route options available to airspace users will allow air traffic controllers to manage more flights through the same sectors and aircraft will have the flexibility to plan and re-plan flightpaths in response to poor weather, segregated areas and airspace restrictions.

The programme will further support delivery of environment benefits, with aircraft having the flexibility to flight plan and fly more direct routes at more efficient altitudes and speeds, than with limited fixed waypoints, reducing emissions per flight and saving fuel.

Finally, with the military having efficient and effective access to suitably sized and sited volumes of airspace to complete its missions, information on actual planned utilisation of reserved airspace will be shared in real time, enabling airspace to be handed between users with minimal unutilised time.

Stakeholder Engagement

The FSP working group is chaired by the CAA and is supported by members from stakeholder organisations including MoD, NERL, Airline operator representatives and ATM consultants, whilst members of General Aviation community and other interested parties will be consulted on, in line with the requirements of the CAP1616 process.

Stakeholder engagement continually undertaken over the last 3-year period under FSP enables both NERL and MoD to ensure that stakeholders develop their current procedures and extend the use of LARA throughout their organisations and operational areas. Future stakeholder engagement through FSP will establish forums and mechanisms to strengthen collaboration between the key industry stakeholders, where dependencies on each stakeholder group will be examined, to support delivery of each programme milestone.

The engagement will cover the following:

- enhancements to En-route air navigation (e.g. Free Route Airspace) and the introduction of trajectory management for commercial air transport flights (NERL, Airlines, Flight Plan System Providers)
- co-dependent airspace changes at lower altitudes (sponsored by airports) and in the terminal network (sponsored by NERL) that impact on FUA structures
- the deployment and integration of more advanced and interconnected Airspace Management Tools for the temporary booking and release of FUA structures (NERL, MOD, Airlines)
- new and amended policy and regulatory outputs required to guide the development and operation of FUA improvements in the UK (DfT, CAA and MOD)

	- activities to align FUA improvement activities with ANSPs and Military stakeholders in other European States (NERL, MOD, CAA) - Deliver a programme of engagement with key stakeholders to refine and agree the scope of any dependencies and the actions required to manage them effectively - Create the forums and programme management mechanisms to track the progress of each action and monitor the impact on the dependencies.
	Risks to benefit realisation That the implementation of new airspace structures restricts the access of civil and/or military traffic to key routes or volumes of airspace, generating inefficiencies and capacity constraints in certain areas of the UK; and that AFUA will not deliver sufficient airspace to facilitate military activity. Score: 9 (Likelihood:3) * (Severity:3)

FAS implementation South		4	ACOG		
TERMINAL AIRSPACE	Description: redesign of the terminal network in Southern England.		2019	↓	2020
	4.1 Terminal airspace redesign	4.2 New procedures	4.3 Not Applicable		
	Timescale: 2026	Driver: EU ATM Masterplan and airports NPS			
	Stage: Delivery	Mechanism: Airspace Change Organising Group (ACOG)			
	Scope				
Of the 15 initiatives in the AMS, two are known as Future Airspace Strategy Implementation – South, and Future Airspace Strategy Implementation – North (known as FASI-S and FASI-N respectively). These are complex airspace design programmes that require coordination between the different sponsors of airspace changes. The CAA and the DfT have commissioned NERL to lead the FASI-S programme to create a coordinated plan for airspace changes in the South of the UK (or Masterplan for short). NERL has been asked to establish an impartial team known as the Airspace Change Organising Group (ACOG) to carry out this task. In due course, the Masterplan will identify the individual airspace change proposals, that will need to be developed to achieve the necessary modernisation. The sponsors involved in the FASI-S programme are NERL (which manages upper airspace and its design) and the airports, which for FASI-S are: Biggin Hill, Bournemouth, Bristol, Cardiff, Exeter, Gatwick, Heathrow, London City, Luton, Manston, RAF Northolt, Southampton, Southend and Stansted.					

The FASI-S airspace change programme is particularly complicated due to the number of changes necessary to achieve modernisation over the South of the UK.

The programme paused in March 2020 when COVID-19 hit, and all the FASI airports were compelled to refocus their attention on conserving liquidity and managing the crisis. A report by ACOG 'Remobilising the Airspace Change Programme'⁸, assessed the impact of the pandemic on the Masterplan and the airspace changes within it and, amongst a series of ten recommendations, requested that the government fund the component airspace changes up to the end of stage 2 of the airspace change process.

The CAA has supported the DfT in assessing the potential to fund this work and ensure the continuation of the programme, to realise the environmental and other benefits to be realised through it. At the time of writing this document there has been no formal decision about whether the airspace change programme can be funded externally. Without a solution to the problems that have led to the pausing of this programme, the CAA considers the delivery of this initiative to be at risk.

Masterplan approach

The purpose of the Masterplan is to set out where airspace change could be taken forward, to provide benefits and to consider potential conflicts, trade-offs and dependencies. The Masterplan does not set the detail of individual airspace designs or solutions. It will include a programme plan for the development of the individual changes that together will make up the Masterplan as well as an implementation plan for those changes. It will identify where any airspace changes would be needed to deliver a range of benefits, including to reduce noise, deliver air quality or fuel efficiency benefits or where more direct routes are possible that could reduce controlled airspace.

Key Achievements

NERL has now established ACOG and submitted Iteration 1 of a Masterplan, for changes in Southern England to the CAA. The CAA and DfT, as co-sponsors, intended to publish this along with CAA's assessment of it in early 2020, however publication was delayed due to COVID-19.

ACOG's work since Iteration 1 was produced, has refocussed the direction of the Masterplan, however the CAA intends to publish its feedback on Iteration 1 of the Masterplan, undertaken before ACOG was established, for completeness.

Masterplan Acceptance Criteria

Acceptance of the Masterplan is a separate regulatory decision to airspace change decisions.

ACOG proposed an iterative approach to the development of the Masterplan, which recognises that different information and levels of detail will be available at different points as the plan develops. The Masterplan which ACOG produces will be formally assessed by the CAA and the DfT as co-sponsors and, subject to that assessment, accepted into the AMS.

⁸ [ACOG: Remobilising Airspace Change](#)

That acceptance makes the Masterplan, together with CAP 1616, the legal basis against which the CAA makes decisions on individual airspace change proposals, including those individual proposals that are in the Masterplan.

Between February and June 2020, the CAA carried out an engagement exercise on the draft criteria for acceptance of the Masterplan. The draft criteria set out the proposed requirements for ACOG's development of the Masterplan and the analysis the DfT and CAA will undertake, before deciding whether to accept the Masterplan. That analysis seeks to determine whether the commission for the Masterplan is being met, and that the Government's policy objectives are being delivered.

The CAA is currently analysing the results of the engagement exercise and expect to publish the acceptance criteria in Spring 2021.

ACOG - Structure

ACOG manages the delivery of FASI-S and FASI-N initiatives. The requirement for ACOG is defined in the AMS, and the DfT and CAA co-sponsor the AMS and monitor and report on ACOG's activities, as in this progress report. NERL provide ACOG with facilities and administrative support.

The ACOG team operates with oversight from an impartial Steering Committee, comprising of senior experts drawn from across the aviation sector. ACOG team is recruited and organised into three delivery areas: Programme Management, Coordination and Integration, and Communications and Engagement. The team leaders in each area report to the Head of ACOG, with delivery progress overseen by the ACOG Steering Committee.

ACOG's report – Remobilising Airspace Change

ACOG were due to produce Iteration Two of the Masterplan by Summer 2020.

COVID-19 has caused most sponsors (airports and NERL) to pause their airspace change programmes, while they focus on more immediate operational priorities. In light of this, ACOG were asked to consider plausible scenarios set against different recovery models for aviation and the ability or appetite to continue with modernisation, in light of the devastating effects of the pandemic. The resulting analysis has produced a set of predictable outcomes that have informed ACOG's assessment of the impacts on stakeholders and generated ten recommendations.

There were four illustrative options that demonstrated the range or breadth of activity that could be undertaken, dependent principally on the availability of funding, to remobilise the programme.

The DfT and CAA immediately accepted three of ACOG's recommendations, namely to:

- ask ACOG to establish clear protocols for:
 - the airports that are able to resume work on airspace change;
 - engagement with those that remain paused;
 - the exit process for those that decide to opt out (subject to their criticality to the programme);

- ask NERL and ACOG to work together to re-evaluate NERL's 2018 feasibility report into airspace modernisation, specifically in order to identify the core set of airport-led airspace changes, that will be required in the post COVID-19 world;
- in the short term, work with ACOG to ensure that work on airspace change, that can still progress, does not conflict with or constrain the broader programme.

The DfT and CAA committed to consider the remaining recommendations in further detail, given the range and scale of the options proposed. The CAA has since provided with an update aimed at Sponsors restarting a 'paused' ACP, on how the CAA intends to assure, that ACPs in the FASI-S programme, that are progressing to a CAP1616 Stage 2 Gateway assessment, do not constrain the optimisation of the wider network.

Sponsors restarting a 'paused' Airspace Change Proposal (ACP)

In October 2020, the CAA published updated guidance, which sets out what evidence and assurance that sponsors resuming an existing airspace change will need to provide to the CAA, before restarting and progressing further. This guidance applies whether they are part of the FASI programmes or not, and which have been paused.

There are a number of considerations that the CAA will need to understand in terms of any relevant changes in the background context, including;

- any changes to the issue or opportunity identified in the Statement of Need, operating environment or geographical area in which the ACP is being developed;
- changes to law, government policy or CAA requirements that would affect the development of an ACP, or parts of an ACP;
- changes to identified stakeholders.

If there have been relevant changes in context, the sponsor will need to consider whether previous work is still appropriate, can be adjusted or requires an element of work or stage of the CAP1616 process to be revisited.

The ACP restart guidance⁹ includes our current understanding of the government's position on relevant policy and our approach to actual and traffic forecasts during, and as a result of, the COVID-19 period.

The aim is to avoid requiring sponsors to repeat work previously conducted where possible. However, there may be circumstances where work will need to be revisited or further information provided on a case by case basis to minimising the possibility of the ACP failing at a later stage due to context changes during the pause.

⁹ [CAA: ACP Restart Guidance](#)

Risks

A number of high priority risks have been identified by ACOG during its first full year of operation. These could significantly impact on the scope and timeframes of the Programme when it remobilises and are identified as follows:

- insufficient short-term funding to remobilise the Programme – airport ACP sponsors and NERL are restricted in their ability to invest in airspace developments, especially in the near term due to impact of COVID-19 on their revenue;
- insufficient resources - linked to the funding risk, redundancy schemes at many of the airports have created significant resource gaps across the Programme and reduced the availability of specialists with important technical knowledge and experience.
- uncertainty around traffic recovery profile and future traffic levels impact the ability to develop required scope of each ACP and the nature of the dependencies between them. For example, if traffic fails to return to pre-COVID-19 levels over the long-term, there is a risk that some airport ACPs may need to revert to earlier stages in the change process, to align their revised design options to a lower capacity requirement.
- uncertainty about future runway developments - linked to the traffic forecasts, uncertainty of scope and timeframes of plans to introduce additional runway infrastructure in the South East of England makes it difficult for the airports and NERL to determine the required scope of each ACP and the nature of the dependencies between them.
- changes to the policy and regulatory framework that underpins airspace change, both domestic and international have the potential to impact progress in developing airspace changes and the policy objectives they should meet. For example, possible updates to the scope of the Airspace Modernisation Strategy, the timelines for compliance with EU Implementing Rules that will be adopted into UK law at the end of the UK-EU transition period and the application of Single European Sky legislation each have the potential to affect the Programme.

Dependencies

One of the key functions of the ACOG team is to coordinate the identification of interdependencies emerging between co-dependent ACPs and support the participants to integrate their airspace designs effectively.

During 2020, ACOG worked with the participants to collate baseline information about the potential number and location of the interdependencies by creating a detailed inventory of the connecting points between the airport-led and NERL ACPs.

In 2021, ACOG plans to continue this work with the Programme participants to define the nature of the dependencies in each area at a level of detail and examine potential solutions.

Benefits

The Programme is expected to generate a range of benefits for a broad mix of stakeholder groups. Due to the complexity of the Programme, it is possible that creating benefits that fall to one stakeholder group may at times lead to disbenefits for others. The trade-offs between benefits and disbenefits must be carefully managed and informed by widespread stakeholder engagement.

In 2019, the Secretary of State for Transport provided a set of strategic aims that the Programme should deliver, including creating additional capacity, reducing controlled airspace and removing constraints in the lower altitude airspace to facilitate General Aviation (GS) and Remotely Piloted Aircraft Systems (RPAS) operations, mitigating the impact of aircraft noise and reducing aviation emissions.

During 2020, ACOG has produced an inclusive framework for quantifying and tracking the impacts and benefits of the component ACPs and the overall system level design.

During 2021, the Benefits Framework will be expanded and refined, drawing together information about the range of impacts associated with the ACPs and gathering feedback from external stakeholders about the wider costs and benefits of the system level design.

Stakeholder Engagement

As a relatively new body, ACOG's engagement in the first part of the year was focused on raising awareness of ACOG and its role in coordinating the national programme of airspace change. This included engagement with a broad range of stakeholders. ACOG's engagement approach aims to ensure that stakeholder's feedback is valued and that they can influence important features of the final airspace design.

The engagement plans developed by ACOG in 2020 have provided the Programme participants with greater insight into the size, nature and diversity of the stakeholder groups and how to encourage active participation. The engagement activities conducted during 2020 aimed to ensure all stakeholder groups are aware of what is planned as part of the Programme, why the changes are being taken forward, how they will be consulted, how their views will be taken into account and timescales for this. The focus of ACOG's stakeholder engagement during 2020 and evidence of engagement activities has been set out below:

Airports

- Multiple dedicated engagements with all FASI-S and FASI-N airports to define the requirements to redesign arrival and departure procedures at lower altitudes and integrate their routes with the NERL-led network level changes;
- General briefings to the UK airport community at the 2020 Airport Operators Association (AOA) Conference and engagement with the European airport community at the EUROCONTORL Digitally Connected Airports Conference;
- Dedicated engagement with the AOA Airspace and Air Traffic Services Working Group;
- Engagement with a broad base of UK airports, airlines and ANSPs at the Industry Coordination forum for the AMS (ICAMS);

- Regular engagement with airport communications teams.

Airlines

- High-level briefings on the role of ACOG and the drivers, scope and timelines of the UK Airspace Change Programme delivered to UK airline executives and senior trade association representatives (Airlines UK and IATA);
- Two dedicated airspace concept and technical integration workshops with airline operations, technical pilots and avionics experts;
- General briefings to the airline community delivered at the Airlines 2050 Conference and the UK Board of Airline Representatives.

General Aviation and Unmanned Aerial Systems

- Briefings to the General and Business Aviation Strategic Forum (GBASF) and the National Air Traffic Management Advisory Committee (NATMAC) on the proposed approach to enhancing airspace access and integration;
- Engagement with Airspace4All (forum encouraging the GA community to adopt a unified approach to airspace modernisation) on tracking the rationalisation of controlled airspace;
- Engagement with the Aircraft Owners and Pilots Association (AOPA), Light Aircraft Association (LAA) and the British Business and General Aviation Association (BBGA) on ACOG's role and objectives regarding airspace access and integration;
- Engagement with UK Research and Innovation on the safe and efficient integration of RPAS operations as part of the Programme.

Community Representatives, Interest Groups and Local Government

- Support to airport participants in their engagement with local communities to agree airspace design principles for the ACPs;
- Engagement on the approach to improving aviation's environmental performance with Sustainable Aviation, the Aviation Environment Federation and DfT's Airspace and Noise Engagement Group;
- Engagement with the Independent Commission on Civil Aviation Noise on the proposed approach to joining up airspace consultations across co-dependent ACPs with impacts in the same geographical areas.

Central Government

- Briefings for the Transport Select Committee secretariat, Secretary of State for Transport and Aviation Ministers;
- Support for the NERL-led Parliamentary Drop-in sessions;
- Dedicated briefings for Members of Parliament.

Passengers, Businesses and the Wider Economy

- ACOG is the lead coordinator of the '*Our Future Skies*' media campaign that represents a coalition of airlines, airports, NERL and trade associations, describing how and why the airspace is being modernised and the process for engaging with stakeholders;
- Engagement with business groups including the CEOs of the Institute of Directors and Confederation of British Industry.

European stakeholders

- Engagement with the Network Manager at EUROCONTROL to ensure that the UK Airspace Change Programme maintains technical alignment as the Single European Sky initiative evolves.

	A list of the potential ACOG stakeholder engagement related milestones for 2021 is set out below: • Conduct comprehensive engagement on the development of the Masterplan, concentrating on the potential impact of interdependencies and possible solutions; • Conduct dedicated engagement with General Aviation and RPAS operators to ensure their needs and requirements are collectively coordinated with the ACPs; • Publish guidance on the approach to coordinated consultations for co-dependent ACPs with the potential to create cumulative impacts; • Implement mechanisms to track the reclassification and release of controlled airspace and the realisation of benefits for GA operators and Military airspace users; • Publish guidance for Programme participants on the features of effective engagement, including work with ICCAN to further develop its toolkit for consulting on the noise aspects of airspace change.		
	<table> <tr> <td data-bbox="303 801 1061 1180"> Risks to benefit realisation That the large number of co-dependent airspace changes required to modernise terminal airspace in the south of England are not co-ordinated effectively, leading to sub-optimal airspace designs, poor engagement with affected stakeholders, inefficient network integration and implementation delays. Inability of sponsors to undertake the work, due to financial and resource pressure, brought about by COVID-19's impact to sponsors' revenue. </td><td data-bbox="1061 801 1402 1180"> Score: 20 (Likelihood:4) * (Severity:5) </td></tr> </table>	Risks to benefit realisation That the large number of co-dependent airspace changes required to modernise terminal airspace in the south of England are not co-ordinated effectively, leading to sub-optimal airspace designs, poor engagement with affected stakeholders, inefficient network integration and implementation delays. Inability of sponsors to undertake the work, due to financial and resource pressure, brought about by COVID-19's impact to sponsors' revenue.	Score: 20 (Likelihood:4) * (Severity:5)
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FAS implementation North		5	ACOG		
TERMINAL AIRSPACE	Description: redesign of the terminal network in Northern England and Scotland		2019	↓	2020
	5.1 Terminal airspace redesign	5.2 New procedures	5.3 Not applicable		
	Timescale: 2026	Driver: EU ATM Masterplan			
	Stage: Delivery	Mechanism: Airspace Change Organising Group			
	<u>Progress Update</u>				
Future Airspace Implementation North (FASI-N) is a similar to FASI-S redesign of the airspace in Northern England and Scotland, to be coordinated by ACOG and with participation from NERL and seven airports: Aberdeen, East Midlands, Edinburgh, Glasgow, Manchester, Leeds-Bradford and Liverpool. The CAA conducted stage 1 assessments of both Glasgow and Edinburgh ACPs in February 2020, with the work subsequently paused, following impact of COVID-19.					