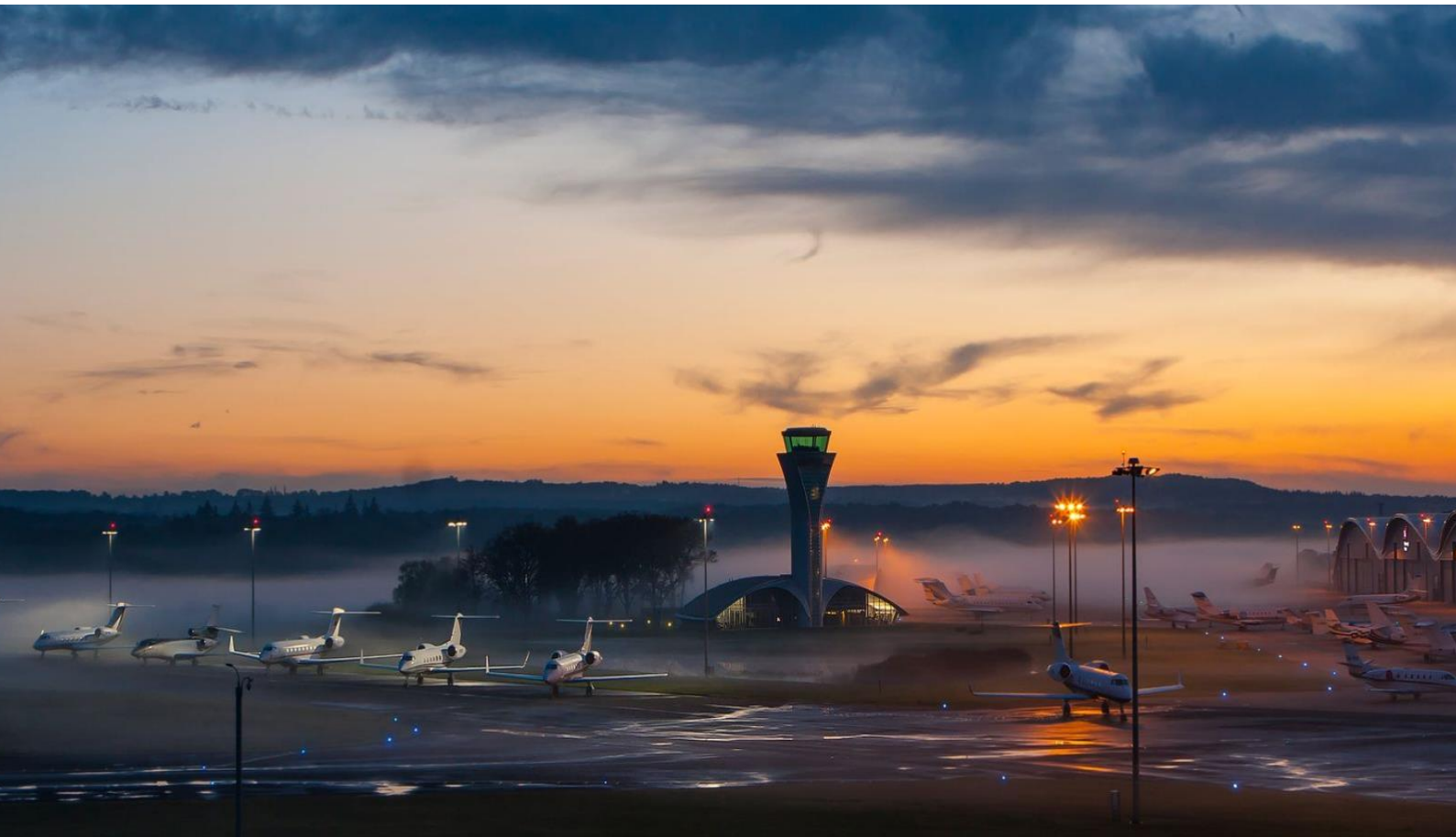


# FARNBOROUGH AIRPORT FASI-S AIRSPACE CHANGE PROPOSAL

**ACP-2022-038**



## Stage 1

### Design Principles Submission Document

#### VERSION 2.0

Version 1.0	Original	April 2023
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# 1. INTRODUCTION

## 1.1 The UK's Airspace Modernisation Strategy

- 1.1.1 In 2017 the Secretary of State tasked the Civil Aviation Authority (CAA) with preparing and maintaining a coordinated strategy and plan for the use of UK airspace up to 2040.
- 1.1.2 The first Airspace Modernisation Strategy (AMS) was published in 2018 and set out the 'ends, ways, and means', of modernising airspace through a series of 'delivery elements' that will modernise the design, technology, and operations of the airspace.
- 1.1.3 The AMS was updated in 2023 and is split into 3 parts, published separately. Part 1 ([Strategic objectives and enablers](#)) explains the strategy's objectives, a high-level overview of what will enable those objectives to be fulfilled, and governance for overseeing delivery. Part 2 ([Delivery elements](#)) and Part 3<sup>1</sup> (Deployment) describe the short-term ambition and explain how the strategy is being delivered.
- 1.1.4 The AMS vision is to deliver quicker, quieter, and cleaner journeys and more capacity for the benefit of those who use and are affected by UK airspace. The AMS does not propose specific airspace changes, but a key deliverable is a masterplan of airspace changes that will be necessary for modernisation.

## 1.2 Airspace Change Organising Group & the Masterplan

- 1.2.1 Following the publication of the AMS, the aviation industry is working together to deliver airspace modernisation through a coordinated programme. More than 20 UK airports and NATS are involved in the delivery of this national programme of airspace change, which is being coordinated by the [Airspace Change Organising Group](#) (ACOG).
- 1.2.2 Airports are responsible for designing the arrival and departure routes that support their operations from the ground to approximately 7000ft. They also take responsibility for the way the airspace is used and developed in this lower portion of airspace.
- 1.2.3 NATS is responsible for re-designing the airspace above 7000ft. They take responsibility for the route network, and for the way the airspace is used and developed above 7000ft.
- 1.2.4 ACOG are responsible for developing the Masterplan, a single coordinated implementation plan for airspace changes in the UK up to 2040. The Masterplan is being produced by ACOG in stages, with more detail added with each iteration. Across all iterations, the masterplan will:
- Identify where and when airspace change proposals are needed, with proposed timelines for implementation,

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<sup>1</sup> Part 3 is still under development.

- Describe how these proposals relate to each other, and highlight potential conflicts between their designs,
- Explain how trade-off decisions to resolve these conflicts have been made,
- Demonstrate the anticipated cumulative impact of all the airspace change proposals.

1.2.5 Iteration 1 was published in 2020 and Iteration 2 was published in January 2022, with an Addendum in October 2022, which advised that Farnborough Airport had joined the programme and would be integrated into all future iterations of the Masterplan.

### 1.3 The Airspace Change Process

1.3.1 In December 2017, the CAA reformed the airspace change process and introduced [CAP1616](#), guidance on the regulatory process for changing notified airspace design and planned and permanent redistribution of air traffic.

1.3.2 The updated fourth edition was published in March 2021. The CAA held a consultation on proposed changes/updates to CAP1616 between January and March 2023 and the updated version is expected to be published later this year.

1.3.3 CAP1616 lays out the regulatory process for changing flight paths, including the community engagement requirements. Proposals for changes to flight paths are submitted to, assessed, and approved by the CAA following the guidance set out in CAP1616.

1.3.4 There are seven-stages which provide a framework for changing airspace and CAP1616 places significant importance on engaging a wide range of stakeholders, including potentially affected communities.

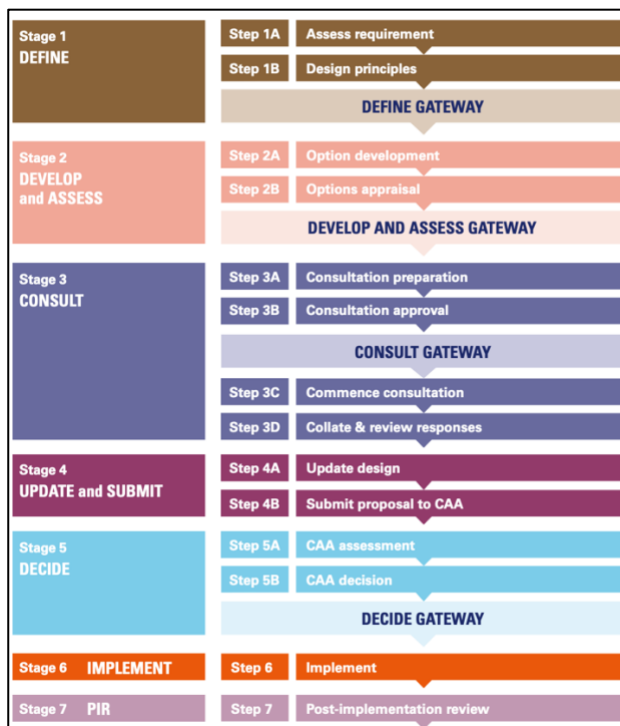


Figure 1: CAP1616 Stages

## 1.4 **Airspace Modernisation at Farnborough Airport**

- 1.4.1 Farnborough Airport began this airspace change proposal (ACP) in June 2022, with Step 1A “Assess Requirement”, this is where the change sponsor, in this case, Farnborough Airport, submit a Statement of Need to the CAA and attend an assessment meeting with them.
- 1.4.2 The assessment meeting allows the change sponsor to discuss with the CAA the issues giving rise to the proposed change, how the change will address those issues, and how the change sponsor intends to proceed.

### *Farnborough Airport’s Statement of Need*

*The Government and Civil Aviation Authority (CAA) co-sponsor the modernisation of UK airspace to deliver quicker, quieter, and cleaner journeys and more capacity for the benefit of those who use and are affected by aviation. The CAA’s Airspace Modernisation Strategy (AMS) outlines the initiative needed to deliver modernisation. One of the most important initiatives is known as FASI South (Future Airspace Strategy Implementation – South), which aims to upgrade the airspace structure and route network that serves London and the Southeast of the UK. The industry is working together to deliver FASI South through a coordinated programme of Airspace Change Proposals (ACPs).*

*The airports participating in the FASI South programme are responsible for upgrading the arrival and departure routes that support their operations from the ground to 7000ft. NATS En Route Limited (NERL) is responsible for upgrading the airspace structure and route network above 7000ft in a coordinated manner. The Airspace Change Organising Group (ACOG) was established to manage the programme as part of an overall Masterplan, recognising the scale of the proposed upgrades, the number of organisations involved and the complex interdependencies between the constituent ACPs.*

*In 2018, NERL produced a feasibility report on behalf of the Government that identified Farnborough Airport as one of the nine airports in the London Terminal Manoeuvring Area (LTMA) with significant route interactions. The report concluded that these airports should form part of the minimum group of coordinated ACPs included in the Masterplan to deliver the benefits of modernisation. The existing Masterplan (Iteration 2) does not currently include Farnborough because the airport was not developing a live ACP when ACOG produced the content for the plan in Q3/Q4 2021.*

*Farnborough Airport recently implemented an ACP that pre-dates the Masterplan Iteration 2, which saw the implementation of Controlled Airspace and Performance-based Navigation (PBN) routes. Whilst this ACP has met its objectives (subject to the Post Implementation Review), constraints associated with the surrounding airspace within the LTMA continue to limit the environmental performance of inbound and outbound traffic flows to/from the airport, especially the ability for the new routes to deliver Continuous Climb Operations (CCO) or Continuous Descent Operations (CDO). The majority of these limitations arise from the interdependencies between Farnborough’s routes and Heathrow and Gatwick operations. As a result, the volume of Controlled Airspace required to safely contain the routes into and out of Farnborough is relatively large and extends for some miles from the airport.*

*All the major airports surrounding Farnborough (including Heathrow, Gatwick, and Southampton Airports) are participating in the FASI South programme and proactively coordinating their ACPs with NERL to modernise the airspace and improve vertical and lateral profiles of their routes. To integrate the outputs of these proposals, NERL will be required to make significant changes to the overall LTMA route network that will result in changes to the way arrivals are delivered to Farnborough and the way that the network received Farnborough's departures.*

*The widescale airspace upgrades planned for the LTMA through the FASI South programme present an opportunity to potentially improve CCO/CDO performance for Farnborough operations, reduce the volume of Controlled Airspace, create the capacity for efficient growth, appropriately manage the adverse effects of aircraft noise and to reduce CO<sub>2</sub> emissions. To capitalise on the opportunity, Farnborough airport has decided to start a new ACP that is intended to align with the FASI South programme and help to deliver the airspace modernisation objectives. As a result, Farnborough believes it will be necessary for this proposal to be co-ordinated with the other constituent ACPs in the LTMA Cluster, as described in Masterplan Iteration 2.*

- 1.4.3 Farnborough Airport were accepted by the CAA as part of the Airspace Change Masterplan in September 2022. Further information can be found [here](#).
- 1.4.4 Details on the assessment meeting held in November 2022 with the CAA, including the presentation provided by Farnborough Airport and the meeting minutes can be found on the CAA Portal, [here](#).
- 1.4.5 This Stage 1 submission document forms Farnborough Airport's submission to the CAA for Step 1B of the CAP1616 process, "Design Principles" and the CAA will decide whether Farnborough Airport has satisfied Step 1B of the CAP1616 process at the Define Gateway, scheduled for 26 May 2023.

## **2. DESIGN PRINCIPLES**

### **2.1 What are design principles?**

- 2.1.1 CAP1616 describes design principles as encompassing “the safety, environmental and operational criteria and the strategic policy objectives that the change sponsor seeks to achieve in developing the airspace change proposal”.<sup>2</sup>
- 2.1.2 Design principles are the objectives that the change sponsor seeks to achieve through the airspace change and help the airspace change designers to create and compare different flight paths and design options.
- 2.1.3 Design principles must meet Government policy (e.g., Air Navigation Guidance 2017, the AMS) and consider the local context for airspace change to take account of priorities within the area affected.
- 2.1.4 As the context of each proposed airspace change is different, it is important for each ACP to have design principles that are specific to that proposal. They will naturally be based around some fundamentals such as safety, throughput of traffic and environmental impacts, but they must also be developed in a local context.
- 2.1.5 Design principles must be set through a two-way process and involve effective engagement and should be drawn up through discussion between the change sponsor and affected stakeholders.
- 2.1.6 Where possible, discussions should identify any local trade-offs that need to be made, such as avoiding flying over specific local areas or populations and seek to identify common priorities.
- 2.1.7 Local stakeholders will normally include local authorities, elected representatives, local community groups, the airport consultative committee, and representatives of local General Aviation organisations or clubs. A list of the Farnborough Airport stakeholders identified at this stage is available at Appendix A and in Section 3 of this document.

### **2.2 How are design principles used?**

- 2.2.1 Design principles are used in two ways:
- To inform the development of the airspace design options; and,
  - To form a framework against which design options can be evaluated.
- 2.2.2 The CAA recognises that unanimous agreement on the principles may be unlikely and that some principles may contradict one another, and some may be prioritised over others<sup>3</sup>.

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<sup>2</sup> CAP1616 page 34, paragraph 112

<sup>3</sup> CAP1616 page 35, paragraph 115

- 2.2.3 Design principles will help ensure that a wide range of options are developed and assessed at the start of the process. However, design options are only evaluated against the design principles in Stage 2A of the CAP1616 process<sup>4</sup>. The Initial, Full and Final Options Appraisals which are required as parts of Stage 2B, Stage 3A and Stage 4 are assessed against existing policy and the requirements detailed in Appendix E of CAP1616<sup>5</sup>.

### *Prioritisation of design principles*

- 2.2.4 As previously stated, CAP1616 recognises that some of the principles may contradict one another, and some may be prioritised over others.
- 2.2.5 Farnborough Airport have decided to prioritise their design principles as shown in Table 1.

## **2.3 Farnborough Airport's design principles**

- 2.3.1 Following the stakeholder engagement which took place between December 2022 and February 2023, Farnborough Airport's Design Principles for this airspace change proposal are as follows:

<b>Final Design Principles</b>	
1	Must be as safe or safer than today for all stakeholders that are affected by the airspace change*  <i>(*We will set out our methodology for assessing this in Stage 2 with a view to using data e.g., flight density plots outside CAS/volume nm<sup>3</sup> of CAS, to support other qualitative assessments.)</i>
2	Accord with: a) the CAA's published airspace modernisation strategy (CAP1711) and any current or future plans associated with it, b) Air Navigation Guidance 2017 & other relevant policy and legislations
3	Shall not constrain the ability to meet forecast demand for Farnborough Airport
4	Improve vertical profiles compared to the baseline published SID/STAR levels, to enable: a) a reduction in population numbers affected by noise, b) a reduction in CO <sub>2</sub> emissions per flight from Farnborough aircraft, c) a reduction in the volume and where possible, complexity of Farnborough Airport's CAS, d) a reduction in the reliance on tactical intervention
5	Aim to remove dependencies with adjacent ATC units and minimise impacts on other airspace users
6	Where lateral changes to existing tracks are required to achieve improved environmental and operational performance, options should: a) deliver an overall reduction in flight plannable track miles, b) minimise population numbers newly overflown, c) avoid overflying the same communities with multiple routes to & from Farnborough Airport, d) avoid overflying the same communities with Farnborough's routes and those routes to & from other airports below 7000ft
7	Make best use of Farnborough's modern aircraft fleet capabilities
8	Ensure that Farnborough Clutch airways traffic can still be accommodated, as a result of the changes

Table 1: Final Prioritised Design Principles

<sup>4</sup> Based on the existing format of CAP1616, which may change with the updated version to be published later in 2023.

<sup>5</sup> The design principles are not criteria that will determine whether the final option proposed by the change sponsor to the CAA (Stage 4) is acceptable or not. The design principles will, however, influence the CAA's assessment of the change sponsor's Initial options appraisal (Stage 2) and Full options appraisal (Stage 3) as well as being part of the information available to us when [the CAA] make our decision (Stage 5) – CAP1616 page 36, paragraph 120.



### 3. STAKEHOLDER IDENTIFICATION

#### 3.1 Potentially affected area

- 3.1.1 Identifying stakeholders is a process which needs to be carried out at the outset of an ACP and will continually be assessed as the proposal develops.
- 3.1.2 As part of this ACP, Farnborough Airport is responsible for the design of its flight paths up to 7000ft, beyond that, NATS is responsible for the airspace design.
- 3.1.3 Farnborough Airport has established a potentially affected area (Figure 2) with the airport at its centre point and based on the area that could be overflowed by arrivals or departures up to 7000ft in the future. This map can also be seen on the CAA Portal [here](#).
- 3.1.4 This potentially affected area may change during the ACP, particularly as the proposal progresses into the options development stage and as affected areas can be identified more precisely.

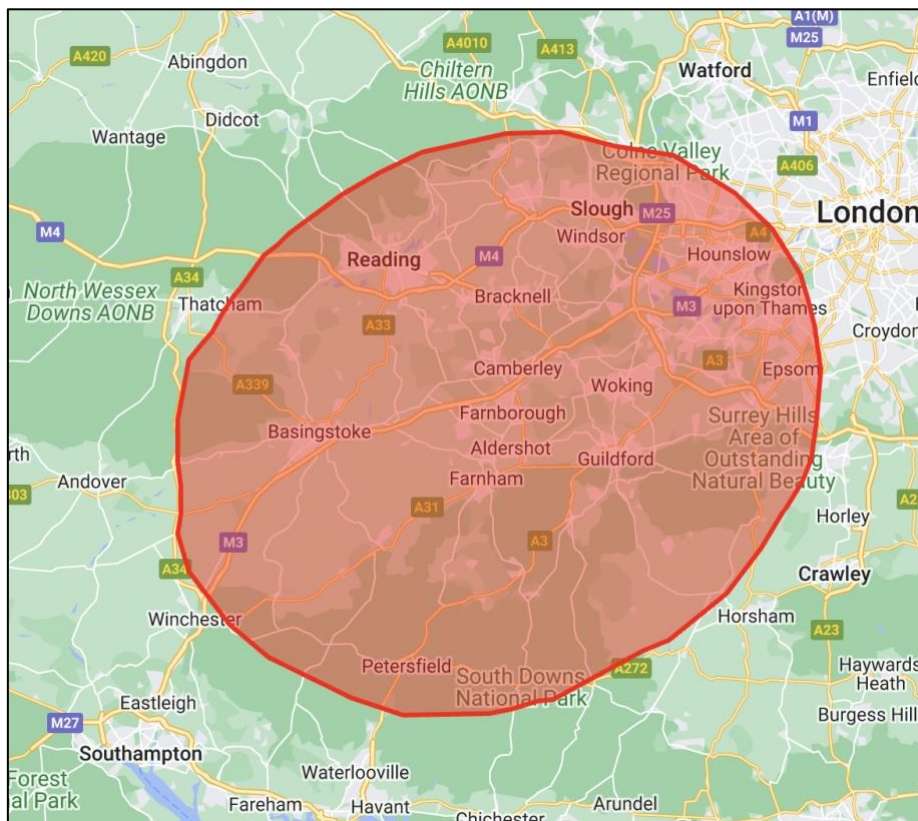


Figure 2: Potentially Affected Area

#### 3.2 Stakeholder Identification

- 3.2.1 CAP1616 requires the design principles to be drawn up through discussions between the change sponsor (Farnborough Airport) and affected local stakeholders, as previously mentioned in paragraph 2.1.6-2.1.7.

3.2.2 Farnborough Airport engages frequently with representatives in its local communities via its local forum the FACC (Farnborough Airport Consultative Committee) and also a number of stakeholders were identified from the previous airspace change proposal which was implemented in February 2020.

3.2.3 Farnborough Airport also used the potentially affected area map in Figure 2 to identify the local authorities, Areas of Outstanding Natural Beauty (AONB) and look for any other organisations, such as General Aviation (GA) groups that should be engaged with for this proposal.

### **3.3 Stakeholder Groups**

3.3.1 Farnborough Airport separated the stakeholders into the following categories:

- Members of Parliament
- Councils/Authorities
- Industry Stakeholders
- Community Stakeholders
- Environmental Organisations/Groups

#### *Members of Parliament*

3.3.2 Farnborough Airport identified 47 constituencies within the potentially affected area and made the decision to inform them of the airspace change proposal from the outset, providing them with contact details at the airport.

3.3.3 The list of the constituencies is at Appendix A.

#### *Councils/Authorities*

3.3.4 Farnborough Airport identified 38 Borough Councils, Authorities and County Councils within the potentially affected area, some of these organisations are already represented on the Farnborough Airport Consultative Committee (FACC), however all those listed in Table 2 were invited to participate in the design principle engagement.

3.3.5 The following table shows the councils and authorities who were contacted:

<b>Borough/County Councils &amp; Authorities</b>	
Adur & Worthing	Arun
Basingstoke & Deane	Bournemouth
Bracknell Forest	Chichester District Council
City of Portsmouth	City of Southampton
East Dorset & Christchurch Borough Council	East Hampshire & Havant Council
Eastleigh Borough Council	Elmbridge Borough Council
Fareham Borough Council	Gosport Borough Council
Guildford Borough Council	Hart District Council

Horsham District Council	Mid Sussex
Mole Valley	New Forest
Reading	Runnymede
Rushmoor	Surrey Heath
Test Valley	The City of Brighton & Hove
Waverley District	West Berkshire
Winchester District	Woking District
Wokingham	Slough Borough Council
Royal Borough of Windsor & Maidenhead	Buckinghamshire County Council
Dorset County Council	Hampshire County Council
Surrey County Council	West Sussex County Council

Table 2: List of Councils/Authority Stakeholders

### Industry Stakeholders

- 3.3.6 This is a wide range of groups which include, local airports and airfields, aviation operators from Farnborough Airport, the National Air Traffic Management Committee (NATMAC), the military and GA organisations.
- 3.3.7 NATMAC is a non-statutory advisory board sponsored by the Safety and Airspace Regulation Group (SARG) of the CAA. The committee is consulted for advice and views on any major matter concerned with airspace management. NATMAC is to assist SARG in the development of airspace policies, configuration, and procedures in order that due attention is given to the various requirements of all users of the United Kingdom airspace, civil and military.
- 3.3.8 Table 3 lists the organisations which are members of NATMAC.

<b>NATMAC Members<sup>6</sup></b>	
Airlines UK	Airspace4All
Airport Operators Association (AOA)	Airfield Operators Group (AOG)
Aircraft Owners & Pilots Association (AOPA)	Airspace Change Organising Group (ACOG)
Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)	Aviation Environment Federation (AEF)
British Airways (BA)	BAe Systems
British Airline Pilots Association (BALPA)	British Balloon & Airship Club
British Business & General Aviation Association (BBGA)	British Gliding Association (BGA)
British Helicopter Association (BHA)	British Hang Gliding & Paragliding Association (BHPA)
British Microlight Aircraft Association (BMAA)	British Model Flying Association
British Skydiving	Drone Major
General Aviation Alliance (GAA)	Guild of Air Traffic Control Officers (GATCO)

<sup>6</sup> Based on the list provided by the CAA in November 2022

Honourable Company of Air Pilots (HCAP)	Helicopter Club of Great Britain (HCGB)
Heavy Airlines	Iprosurv
Isle of Man CAA	Light Aircraft Association (LAA)
Low Fare Airlines	Military Aviation Authority (MAA)
Ministry of Defence – Defence Airspace & Air Traffic Management (MOD DAATM)	NATS
Navy Command HQ	PPL/IR (Europe)
UK Airprox Board (UKAB)	UK Flight Safety Committee (UKFSC)
United States Visiting Forces (USVF)	HQ United States Country Rep – UK (HQ USCR-UK)

Table 3: List of NATMAC Members

3.3.9 Table 4 shows the local airfields and airports who were identified as stakeholders, this includes other major airports participating in the FASI-S programme and local airfields. The airports who are part of the FASI programme are highlighted with an Asterix.

3.3.10 Additional local airfields and airstrips are also listed on the FAL stakeholder list at Table 7.

Local Airports/Airfields	
Blackbushe Airport	Brimpton Airfield
Denham Airfield	Dunsfold Aerodrome
Fairoaks Airport	Goodwood Aerodrome
Homestead Farm	Popham Airfield
Scotland Farm	Tongham Airfield
Valentine Farm	White Waltham Airfield
Wishanger	Wycombe Air Park
AACen Middle Wallop	Solent Airport
Bembridge Airport	Biggin Hill Airport*
Bournemouth Airport*	Heathrow Airport*
Gatwick Airport*	London City Airport*
London Luton Airport*	Manston Airport*
RAF Northolt*	Southampton Airport*
Southend Airport*	Stansted Airport*

Table 4: List of Airfield/Airport Stakeholders

3.3.11 Table 5 is a list of the aviation operators who operate out of Farnborough Airport.

Farnborough Operators	
AC Shares	Acropolis Aviation
Aero Flight Ops	Arpex BHM
AV8 Jet	Bookajet
Catreus	Crans Aviation
Dubai Airwing	Execujet
Executive Jet Charter	Falcon Air
Flexjet Operations	Gamma Aviation

GF Management	Graff Global
Grantax	Greyscale
GX Holdings	Ineos Aviation
Jet Concierge	LEA
Liberty Global	Mawarid Trading Company
NetJets	TAG
Vistajet	Voluxis
Avidus	European Flight Service (EFS)
Synergy Aviation	

Table 5: List of Farnborough Operators

- 3.3.12 Table 6 is a list of additional aviation related stakeholders identified by Farnborough Airport. These are operators who use Farnborough Airport on a less routine basis than those in Table 5.

Additional Aviation Stakeholders	
ASP	Eastern Airways
Execujet	Gexair
Global Jet	Premiair Aviation
Titan Airways	Thunder Airlines
Qatar Exec	

Table 6: List of Additional Aviation Stakeholders

- 3.3.13 The following table (Table 7) is the list of FAL (Farnborough Airport Limited) stakeholders, some of whom were identified during the previous airspace change proposal. Farnborough Airport felt that organisations and groups who had expressed an interest in the previous airspace change should be included as stakeholders for this proposal.
- 3.3.14 Following local investigation and searches, additions were made, and the result is a stakeholder list which includes a wide range of industry related groups/organisations including small local airfields, local gliding clubs and other airspace users.

FAL Stakeholders	
ACOG	Embraer
Air Ambulance (Hants & IOW)	Air Ambulance (Surrey)
BAE Corporate Travel	BAE Systems Marine
Bogner Regis Gliding Centre	Parham Gliding Site (Southdown Gliding Club)
Bookajet	Farnborough Aero Club
Cessna	Corporate Jet Management
Direct Aviation	EasyJet
Excellence Aviation	International Jet Club/Gamma International
Farnborough International Ltd	Frimley Park Hospital
Flying TV	ZC Aviation

Harrods Aviation	Head Start Aviation
IACA	Oxford Flight School
Lasham ATC	Lasham Gliding Club
Liberty Global	Avijet
LOWA	Microlight Sport Aviation
National Police Air Service	Special Aviation Services (HEMS/Air Ambulance)
Pitlands Farm Airstrip	Thorney Island Artillery Station
RAF Odiham	Royal Aero Club
Satcom Direct	TAK Aviation
Shoreham Airport	Colemore Common Airfield
Skysurf	Hampshire Microlight Flying Club
Solent School of Flying/Bournemouth Helicopters	London TC
TGC Aviation	Twesledown Racecourse
Thorney Island Flying Club	Hadfold Farm Airfield

Table 7: FAB Stakeholders

- 3.3.15 Farnborough also identified the following balloon operators as stakeholders as shown in Table 8.

<b>Balloon Operators</b>	
Adventure Balloons	British School of Ballooning
Virgin Balloon	

Table 8: List of Balloon Operator Stakeholders

### Community Stakeholders

- 3.3.16 This group includes the FACC, which was established to develop an understanding between Farnborough Airport and the neighbouring community, local authorities and special interest groups on the operation and use of Farnborough Airport. It operates in an independent advisory capacity and its members are representatives from the following:

<b>Farnborough Airport Consultative Committee (FACC)</b>	
Farnborough Airport Representatives	Rushmoor Borough Council
Dassault Aviation Group Ltd	Guildford Borough Council
GAMA Aviation Ltd	Hampshire County Council
Farnborough International Ltd	Surrey County Council
NATS	Surrey Heath Borough Council
TAG Aviation Ltd	Waverley Borough Council
WJE Associates	Woking Borough Council
Ash Parish Council	Church Crookham Parish Council
Crandall Parish Council	Ewshot Parish Council
Farnborough Airport Residents Association	Farnham Town Council

Fleet & Church Crookham Society	Mytchett, Frimley Green & Deepcut
Farnborough College of Technology	Blackwater Valley Friends of Earth
Hart District Council	

Table 9: FACC members/representatives

*Environmental Organisations/Groups*

3.3.17 Farnborough Airport identified the following environmental organisations/representatives as stakeholders for this airspace change proposal:

<b>Environmental Organisations/Representatives</b>	
Campaign to Protect Rural England (CPRE)	Colemore Common
Cranborne Chase & West Wiltshire Downs AONB	Dorset AONB
English Heritage	Environment Agency
National Trust	Natural England
New Forest National Park	South Downs National Park
Surrey Hills AONB	Chichester Harbour AONB
Farnborough Noise Group	

Table 10: List of Environmental Organisations/Representatives

## 4. STAKEHOLDER ENGAGEMENT

### 4.1 Method of Engagement

4.1.1 Following the identification of the stakeholders described in Section 3, Farnborough Airport chose an appropriate method of engagement for each stakeholder group and had the following timeline for the Stage 1 engagement process.

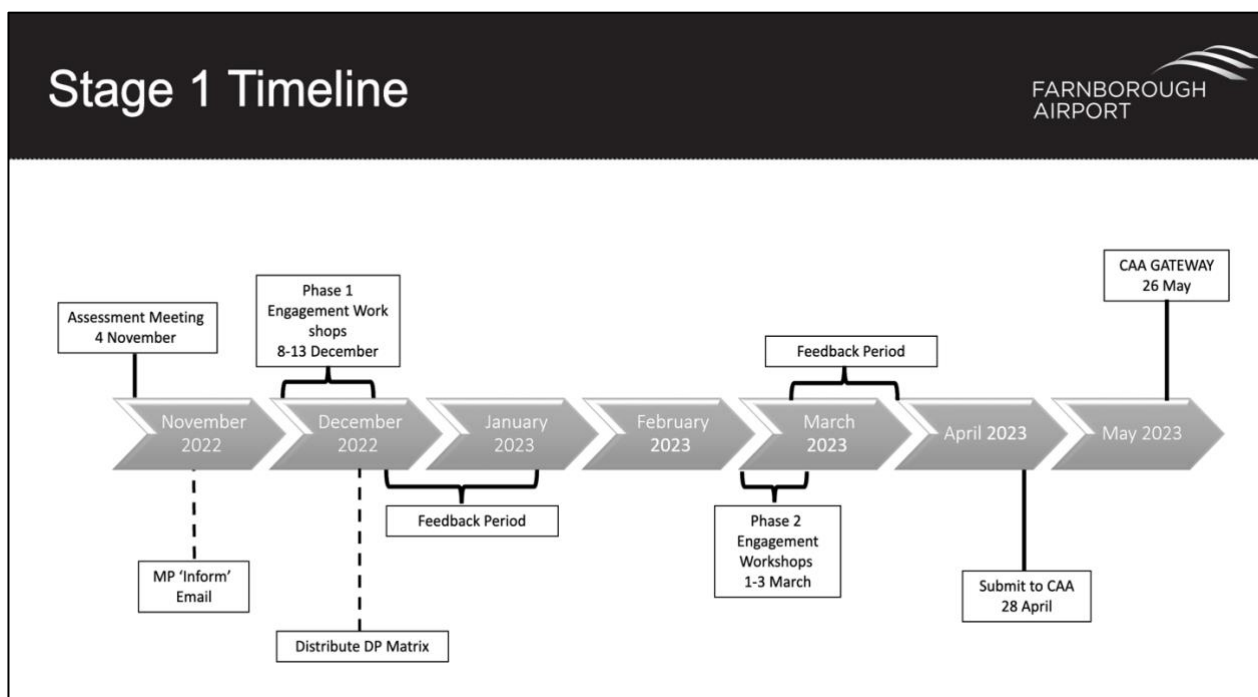


Figure 3: Engagement Timeline

#### Members of Parliament – Inform

4.1.2 The MP's/Constituencies identified in the stakeholder mapping and listed in Appendix A were contacted as information only. Farnborough Airport felt that engaging with this group at this stage of the process would be disproportionate.

4.1.3 However, Farnborough Airport decided that it was important to inform them of the new airspace change proposal and provide them with background information and contact details.

4.1.4 This group was invited to contact Farnborough Airport if they required more information. A copy of the email is available at Appendix B, page 13.

#### Councils/Authorities – Engage

4.1.5 The local authorities and councils identified in Section 3 were invited to engage on the design principles from the outset and were invited to attend the planned workshops.

4.1.6 Copies of the emails sent to these stakeholders are available at Appendix B, pages 22-23.



### *Industry – Engage*

- 4.1.7 Many of the industry stakeholders have been or are currently involved with a number of airspace change proposals, therefore Farnborough Airport decided on different approach to engagement for the industry stakeholders.
- 4.1.8 The FASI-S Airports highlighted in Table 4 with an Asterix were provided with background details on the ACP, and informed that the intention would be to engage with them via email only, in this first phase of design principle engagement.
- 4.1.9 The other industry stakeholders identified in Tables 3-8 were emailed informing of them of the ACP and providing them with background details. They were informed that Farnborough's plan would be to engage with them via email for the first phase of engagement. However, they were given the opportunity to contact Farnborough Airport if they wished to attend an engagement workshop.
- 4.1.10 Copies of the emails sent to industry stakeholders are available at Appendix B, pages 14-21, and page 27.

### *Community & Environmental Stakeholders – Engage*

- 4.1.11 The community stakeholders and the Environmental Organisations/Groups identified in Section 3 were invited to engage on the design principles from the outset and were invited to attend the planned workshops.
- 4.1.12 Copies of the emails sent to these stakeholders are available at Appendix B, pages 24-26.

## **4.2 Phase 1 Engagement**

- 4.2.1 Farnborough Airport decided on a phased approach to the design principles engagement, aiming to ensure two-way conversations took place and that the CAP1616 process was adhered to.
- 4.2.2 Phase 1 engagement was to inform the stakeholders of the background of this airspace change proposal and to have key discussions about which areas/topics they would like to see design principles cover.
- 4.2.3 Farnborough Airport planned both online and in-person events and provided stakeholders with the opportunity to attend whichever event they preferred. An evening session was also scheduled for those stakeholders who may be unable to attend a workshop during the day.
- 4.2.4 As stated in Section 4.1, local authorities/councils, community, and environmental stakeholders were invited to attend these workshops, with industry stakeholders given the option to engage via email or attend a workshop, if they wished. Some industry stakeholders did choose to attend a workshop.
- 4.2.5 Farnborough Airport held 4 workshops between 8-13 December 2022. The list of attendees at each workshop is at Table 11.

<b>Workshop 1</b> <b>F2F</b> <b>8 December 2022</b> <b>Rushmoor Borough</b> <b>Council Offices</b>	<b>Workshop 2</b> <b>Online</b> <b>9 December</b>	<b>Workshop 3</b> <b>F2F</b> <b>12 December 2022</b> <b>The Aviator Hotel</b>	<b>Workshop 4</b> <b>Online</b> <b>13 December 2022 (PM)</b>
Blackwater Valley Friends of Earth (FACC Member)	New Forest National Park	Farnborough Airport Residents Association (FACC Member)	Surrey County Council
Fleet & Church Crookham Society (FACC Member)	Solent Airport	Waverley Borough Council	Mole Valley Council
Farnborough Noise	West Sussex County Council	Ewshot Parish Council (FACC Member)	National Trust
Lasham Gliding Club	City Of Southampton	Hampshire Microlight Flying Club	Dubai Airwing
Grantex	Basingstoke & Dean	Colemore Common	Blackwater Valley Friends of Earth (FACC Member)
	Hart District Council	Church Crookham Parish Council (FACC Member)	Woking Borough Council
	Woking Borough Council	Lasham Gliding Club	Lasham Gliding Club
	Surrey Hills AONB	Southdown Gliding Club	Farnborough College of Technology (FACC Member)
	British Gliding Association	FACC Committee Chairman	Bracknell Forest Council
	South Downs National Park	FACC Committee Secretary	European Flight Services
	British Helicopter Association	Skysurf (hanglider/paragliding club)	
	Southdown Gliding Club		

Table 11: List of attendees at Phase 1 workshops

- 4.2.6 The presentation provided by Farnborough Airport covered; an introduction to the UK Airspace Modernisation Strategy, background information on ACOG and the CAP1616 process, what are design principles and how are they used, and information on this airspace change proposal, including the Statement of Need. Farnborough Airport also provided some slides showing the existing airspace arrangements.
- 4.2.7 As part of the presentation Farnborough highlighted a range of themes which may assist stakeholders formulate their suggestions:
- Safety
  - Policy
  - Noise
  - Environment
  - Airspace & Aircraft Capabilities
- 4.2.8 Stakeholders were then invited to discuss and suggest potential design principles for this proposal. Stakeholders were free to make suggestions under each of these themes, but other topics could be added and discussed as they wished.
- 4.2.9 A copy of the presentation provided to Stakeholders during and after the workshops is available at Appendix C, pages 2-25. The same format took place at each of the workshops, whether online or face-to-face.

- 4.2.10 At the end of the Phase 1 workshops, Farnborough Airport had a long list of stakeholder suggested design principles. These were combined into a matrix format. This matrix and the presentation were distributed to all the stakeholders invited to engage at this stage, whether they had attended a workshop or not. A blank copy of the matrix is available at Appendix C, pages 26-31.
- 4.2.11 The matrix and presentation were also distributed to the industry stakeholders, including the FASI-S airports and any industry stakeholders who had chosen not to attend the workshops, as described in paragraphs 4.1.7- 4.1.9.
- 4.2.12 The matrix of potential design principles did have some very similar suggestions, due to the nature of the discussions that took place, however Farnborough Airport felt it was important for the stakeholders to be able to see all the suggestions that had been made.
- 4.2.13 The matrix asked stakeholders to state which of the potential design principles they strongly agreed, agreed, neither agreed nor disagreed, disagreed, or strongly disagreed with. They could also comment if they believed that a design principle should not be considered.
- 4.2.14 This method enabled Farnborough Airport to understand the strength of feeling that stakeholder groups and organisation had towards certain suggestions.
- 4.2.15 Stakeholders were also provided with space to provide any further feedback and any additional principles that they may wish to propose.
- 4.2.16 Stakeholders were given from 15 December 2022 – 27 January 2023 to provide feedback.
- 4.2.17 During the phase 1 engagement, it became apparent that stakeholders were keen to understand more about the process and this airspace change proposal. To assist stakeholders with this, Farnborough Airport developed a 'Frequently Asked Questions' (FAQ) document. This was distributed alongside the presentation and matrix to all stakeholders after the workshop. Version 1 of the FAQs, distributed in December 2022 is available at Appendix F.
- 4.2.18 This document will continue to be updated and distributed through this process.
- 4.2.19 Some additional comments were also made by stakeholders during the workshops which Farnborough felt could not be considered as design principles for the reasons laid out in Table 12 below. However, they were included in the information distributed, to give other stakeholders the opportunity to see Farnborough's response, and to provide further comment.

Workshop	Comment	Farnborough Response
Workshop 3	Introduce periods where no flying takes place	This is not a design principle as it is not relevant to airspace design
Workshop 3	Compensation for newly overflown	This is not a design principle as it is not relevant to airspace design
Workshop 3	Farnborough Airport should cease operations	This is not a design principle as it is not relevant to airspace design
Workshop 3	Reference to electronic conspicuity	This is not an airspace design, but an operating procedure which can be investigated at a later stage
Workshop 3	Should have a higher Transition Altitude (TA) to maximise use of airspace	This is not within Farnborough's control. NATS & the CAA have decided not to pursue a higher TA.

Table 12: Additional comments from stakeholder workshops

- 4.2.20 Some further comments were made by stakeholders to the statements in Table 12, these are available as part of the stakeholder feedback forms at Appendix D, pages 3-175.
- 4.2.21 Where appropriate, Farnborough Airport also added the comments to the FAQ list and provided a response. A copy of the FAQ documents is available at Appendix F.

### **4.3 Outcome of Phase 1 Engagement**

- 4.3.1 Farnborough Airport received 25 completed matrices from stakeholders. All the completed matrices, alongside any additional written feedback received are available at Appendix D. The numerical results of the completed matrices are at Table 13.

	Proposed by	Proposed Principle	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Should not be considered
<b>Safety</b>								
S1	Workshop 1	<p><b>Must</b> be as safe or safer than today for all airspace users*</p> <p><i>*Potentially with additional supporting information, for example</i></p> <ul style="list-style-type: none"> <li>a. <i>Ensure doesn't degrade below a baseline metric</i></li> <li>b. <i>Ensure no expected increase in controlled airspace infringements</i></li> <li>c. <i>Ensure no increase in traffic density patterns outside CAS</i></li> <li>d. <i>Ensure no increased overflight of aerodrome outside CAS below x000ft</i></li> </ul>	15	7	1	1	1	
S2	Workshop 2	<b>Must</b> remain as safe as it is today, accounting for changing traffic numbers in the future	11	9	1	2	1	1
S3	Workshop 3	<b>Must</b> enhance safety performance by reducing risks from the operation	8	7	3	2	2	1
S4	Workshop 3	Must be as safe or safer than today for all airspace users that are affected by the airspace change	10	9	1	2	1	1
S5	Workshop 3	<b>Must</b> be safe for all airspace users	11	7	3	1		1
S6	Workshop 3	Maintain or enhance safety performance for all airspace users	9	11	3	1		
S7	Workshop 4	Be as safe or safer than today for both commercial air transport and general aviation users that are affected by the airspace change	11	8	2	2		1
	Proposed by	Proposed Principle	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Should not be considered
<b>Policy</b>								
P1	CAA	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it accords with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.	11	8	3	2		1
P2	Workshop 2	Make reference to Section 62 duty in the Environment Act 1995: Duty of certain bodies and persons to have regard to the purposes for which National Parks are designated	4	7	8	4	1	1
P3	Workshop 3	The amount of controlled airspace is the minimum required to maintain a high standard of air safety	9	11	3	2		
	Proposed by	Proposed Principle	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Should not be considered
<b>Noise</b>								
N1	Workshop 1	<b>Must</b> enable improved vertical profiles compared to the baseline published SID/STAR levels	7	5	9	2		

N2	Workshop 1	Should reduce the frequency of overflight for the same populations where possible by: a. Departure routes which diverge as early as possible and stay apart as long as possible b. Arrival routes which converge as late as possible c. Farnborough's arrival & departure flight paths avoiding overflight of the same populations d. Avoiding routes to/from Heathrow, Gatwick and Farnborough overflying the same communities.	4	12	5	1	1	1
N3	Workshop 1	Should minimise the impact of change on communities by minimising the number of people newly overflown by Farnborough's flight paths.	2	10	9	4		
N4	Workshop 2	Avoid overflight of AONBs and National Parks	4	8	13			
N5	Workshop 2	Avoid overflight of rural areas with low ambient noise	3	6	13	1		1
N6	Workshop 3	Avoid populations being newly overflown	2	7	9	5	1	
N7	Workshop 3	Should be an overall noise benefit	5	14	6			
N8	Workshop 3	Disperse/share the noise	4	12	8			
N9	Workshop 3	Should provide predictable respite	2	13	9	1		
N10	Workshop 3	Should offer routes with enhanced profiles for days when weather increases noise impacts (e.g., Temperature Inversions)	1	11	7	3	1	1
N11	Workshop 3	Steeper approaches and steeper climbs	5	7	11			1
N12	Workshop 3	Reduce the number of people affected by noise	1	12	10	1		
N13	Workshop 3	Share the noise but minimise the impacts	3	9	12	1		
N14	Workshop 3	Reduce the area of overflight of AONBs/National Parks	3	9	12			1
N15	Workshop 3	Overfly parks/open spaces when it's dark	2	4	13	2	2	2
N16	Workshop 4	Should avoid overflying the same communities with multiple routes, including from other airports, below 7000ft.	4	9	11	1		
	<b>Proposed by</b>	<b>Proposed Principle</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neither Agree nor Disagree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Should not be considered</b>
<b>Environment</b>								
E1	Workshop 1	<b>Must</b> reduce CO <sub>2</sub> emissions through flight path design which: a. improves vertical profiles (see Must Noise DP on improved profiles) and/or b. delivers an overall reduction in flight plannable track miles for Farnborough' arrivals and departure flight paths.	7	11	5	1		1
E2	Workshop 1,2,3,4	The airspace design must enable improved Continuous Climb/Continuous Descent	8	11	3	1		

E3	Workshop 2,3	Optimised routes should be made available for use by less polluting aircraft e.g., best equipped = best served	4	10	6	1	1	2
E4	Workshop 3	<b>Must</b> reduce the contribution to climate change from Farnborough’s aircraft activities	6	11	7	1		
E5	Workshop 3	Reduce CO <sub>2</sub> emissions as a result of the airspace change	6	8	9	1		1
	<b>Proposed by</b>	<b>Proposed Principle</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neither Agree nor Disagree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Should not be considered</b>
<b>Airspace and Aircraft Capabilities/Technology</b>								
AA1	Farnborough Airport	<b>Must</b> meet forecast demand for Farnborough Airport	7	10	3	3		
AA2	Workshop 1,2	<b>Must</b> enable a reduction in the total volume of CAS	5	5	9	3		
AA3	Workshop 1,3,4	Should reduce complexity of airspace, simplicity in boundaries (but a reduction in CAS is the priority oversimplification)	4	8	9			1
AA4	Workshop 1	<b>Must</b> enable a reduction in workload per flight	1	9	7	2		2
AA5	Workshop 2	The airspace design should increase systemisation and reduce tactical intervention by ATC	4	12	7			
AA6	Workshop 4	The PBN specification should maximise benefit, not cater for the lowest common denominator.	7	6	8	1		
AA7	Workshop 2,3,4	Designs should be based on RNP1 + RF as a minimum.	1	6	12	2		1
AA8	Workshop 2	Designs should investigate use of Advanced RNP (0.3) and RNP-AR as these may help to enable a reduction in the volume of CAS	3	8	8	1		2
AA9	Workshop 3,4	Reduce the amount of CAS, particularly in the vertical (higher bases of CAS)	4	7	9	1		1
AA10	Workshop 3	Consider use of different airspace classifications	2	6	12			1
AA11	Workshop 3	Consider flexible use of airspace	5	9	7			1
AA12	Workshop 3,4	Should capitalise on Farnborough airport’s aircraft performance capabilities	4	11	5			3
AA13	Workshop 4	The PBN specification should maximise benefit, not cater for the lowest common denominator.	4	5	9	1		2
AA14	Workshop 4	Should result in an overall benefit to the airways traffic into and out of Farnborough ‘clutch’ airfields	1	8	10	1		3

Table 13: Numerical results of design principle matrix

- 4.3.2 Stakeholders also provided some comments alongside their completed responses, the following paragraphs are a summary of those comments, split by stakeholder category.
- 4.3.3 All the completed matrices, along with the comments received are available at Appendix D, pages 3-175.
- 4.3.4 Where some stakeholder comments did not directly apply to the potential design principles, Farnborough Airport re-phrased them into questions, where possible, and added them to the FAQ list. The updated version of this document was distributed to all stakeholders alongside the Phase 2 engagement material.

### *Summary of Industry Written Feedback*

- 4.3.5 Farnborough received 16 responses from industry stakeholders, including, NATS NERL, British Microlight Aircraft Association/Hampshire Microlight Flying Club, Dubai Airwing, British Gliding Association, Grantex, Harrods Aviation, Heathrow Airport, Lasham Gliding Club, Luton Airport, the MOD, RAF Northolt, Skysurfing Club, Southampton Airport, Southdown Gliding Club, Stansted Airport, and the UK Airprox Board.
- 4.3.6 Overall, their feedback regarding safety focussed on ensuring baseline/supporting information was also included within the design principle and that safety for other airspace users be included.
- 4.3.7 Regarding policy, the GA feedback felt that the CAA mandatory principle does not include aspects of general aviation, and the AMS assumes that all GA have transponders. Further comments stated that it will be difficult to plan for future technology changes beyond 10 years and so more airspace changes will be needed in the future.
- 4.3.8 There was a wide range of written feedback regarding the suggested noise design principles, with airports keen to highlight that a solution needs to be appropriate for adjacent airports and the whole LTMA and that CAP1616 should be adhered to when it comes to policy, trade-offs, and metrics.
- 4.3.9 GA feedback showed support for improvements to vertical profiles and felt the term 'where possible' should be utilised regarding any final design principles that considered respite or overflying of new or rural populations.
- 4.3.10 Feedback on the suggested environmental principles from airports continued to raise concerns regarding how achievable objectives may be in the busy airspace and NATS advised against offering solutions with a proposed design principle.
- 4.3.11 In the final category, Airspace and Aircraft Capabilities/Technology, Farnborough's operators provided thoughts on where design principles should be a 'must' or a 'should'. Airports highlighted the trade-offs that may be required regarding the volume of controlled airspace (CAS) and how safety needs to be considered with any changes to dimensions/classifications of the airspace. General Aviation stakeholders felt that a reduction in the volume of CAS would be beneficial and noted that the benefits are generated for all



the airspace users and that changes did not negatively impact existing operations and organisations.

4.3.12 All the written comments provided by stakeholders as part of their feedback matrices are available at Appendix D, pages 3-175.

4.3.13 Additional design principles were also suggested by some stakeholders for Farnborough Airport to consider. The full list of additional suggested design principles and the outcomes are available at Appendix E, page 13.

#### *Summary of Local Authority/Council Written Feedback*

4.3.14 Farnborough received feedback from 4 local authority stakeholders, including, Mole Valley District Council, Chichester District Council, Woking Borough Council and West Sussex County Council.

4.3.15 Regarding the safety and policy design principles, stakeholders felt that safety should be a standard priority and that modernisation schemes should endeavour to improve and not reduce safety standards.

4.3.16 Feedback on the suggested noise design principles stated that a balanced approach should be taken, to seek to minimise and manage the adverse impacts of noise and that frequency of overflight also needs to be a consideration. Mole Valley District Council stated that the future airspace change should result in a larger number of people being slightly annoyed by noise, rather than a smaller number significantly annoyed. Stakeholders felt that conditions for currently overflown should not be made worse and that respite should be provided for all overflown populations.

4.3.17 The feedback for the suggested environmental design principles agreed that opportunities should be sought to reduce CO<sub>2</sub> emissions where possible.

4.3.18 In the final category of proposed design principles, Woking Borough Council highlighted that Farnborough Airport is an asset to the local area.

4.3.19 Additional design principles were also suggested by some stakeholders for Farnborough Airport to consider. The full list of additional suggested design principles and the outcomes are available at Appendix E, page 13.

#### *Summary of Environmental Groups/Organisations Written Feedback*

4.3.20 Farnborough Airport received feedback from 3 Environmental groups/organisations, including, Blackwater Valley Friends of Earth, Cranborne Chase & West Wiltshire Downs AONB, and South Downs National Park.

4.3.21 For the proposed safety design principle, South Downs National Park felt that near miss reporting should be incorporated, as a measurable figure that could be reduced.

- 4.3.22 For the proposed policy design principle, these stakeholders felt that some additional policies should be included, and that any reference to environmental policies (Environment Act 1995) should be a 'must' design principle.
- 4.3.23 Regarding the suggested noise design principles, this stakeholder group felt that areas of tranquillity should not be newly impacted and that a balance needs to be found between overflight of populated areas and areas of tranquillity. It was suggested that existing corridors of noise be used, such as busy 'A' roads and that key areas of parks should not be overflowed by default at night.

### *Summary of Local Community Groups Written Feedback*

- 4.3.24 Farnborough received feedback from 2 local community groups, Farnborough Airports Residents Association (FARA), and Mytchett, Frimley Green & Deepcut Society, who are both members of the FACC.
- 4.3.25 For the proposed safety design principle, FARA felt a baseline would be beneficial against which to measure improvements and stated that safety is not solely dependent on airspace design, but how it is utilised.
- 4.3.26 Regarding the mandatory CAA policy design principle, FARA stated that if there are further changes to CAP1711 (the Airspace Modernisation Strategy), then an agreed process should be established before the ACPs are allowed to progress into the next stage.
- 4.3.27 Feedback from FARA on the suggested noise design principles stated that the aim should be to maximise the noise benefits of the ACP and felt that several of the proposed design principles would be impracticable.
- 4.3.28 The suggestions for environmental design principles received feedback that the altitude-based priorities (Air Navigation 2017) should be adhered to.
- 4.3.29 Additional design principles were also suggested by some stakeholders for Farnborough Airport to consider. The full list of additional suggested design principles and the outcomes are available at Appendix E, page 13.

## **4.4 Phase 2 Engagement**

- 4.4.1 Following the end of the 6-week feedback period, Farnborough Airport analysed all the feedback received from stakeholders, the numerical responses, and the written feedback.
- 4.4.2 Farnborough used the feedback to develop an initial list of design principles. The proposed principles were worded to try and capture as many of the themes and desires as possible from the Phase 1 feedback and were formed into a concise list (Table 15).
- 4.4.3 The evolution of the design principles from the original stakeholder suggestions, summary of numerical feedback and Farnborough Airports initial analysis are available at Appendix E, the Development of the Design Principles.

- 4.4.4 Farnborough Airport then initiated Phase 2 of engagement, where all the stakeholders identified as ‘engage’ stakeholders in section 4.1 were invited to attend a second phase of workshops. This included the industry stakeholders who previously were engaged with via email.
- 4.4.5 Copies of the emails inviting stakeholders to attend the Phase 2 workshops are available at Appendix B, pages 151-164.
- 4.4.6 This second phase of workshops with stakeholders aimed to share a summary of the feedback received during Phase 1 and present the initial list of prioritised design principles.
- 4.4.7 Farnborough Airport held 3 workshops, between 1-3 March 2023 and invited all stakeholders to attend, aside from MPs. Stakeholders were invited even if they had not responded to a Phase 1 invitation, attended a Phase 1 workshop, or provided Phase 1 feedback.
- 4.4.8 Farnborough Airport held one face to face workshop and 2 online, with one taking place in the evening.
- 4.4.9 Table 14 lists the attendees of the Phase 2 workshops.

<b>Workshop 1 Online 1 March 2023 (PM)</b>	<b>Workshop 2 Online 2 March 2023</b>	<b>Workshop 3 F2F 3 March 2023 Rushmoor Borough Council Offices</b>
Blackwater Valley Friends of Earth (FACC Member)	Church Crookham Parish Council (FACC Member)	Farnborough Airport Residents Association (FACC Member)
Southdown Gliding Club	NATS	FACC Committee Chairman
British Helicopter Association	Southdown Gliding Club	Waverley Borough Council
Lasham Gliding Club	Dubai Airwing	Skysurf (hanglider/paragliding club)
Waverley District	Heathrow Airport	Hampshire Microlight Flying Club
Guildford Borough Council	Chichester District Council	Blackwater Valley Friends of Earth (FACC Member)
	London Luton Airport	Lasham Gliding Club
	Blackbushe Airport	RAF Odiham
	National Trust	Fleet & Church Crookham Society (FACC Member)
	Gatwick Airport	Private Jet Operator

*Table 14: List of Phase 2 workshop attendees*

- 4.4.10 Attendees were invited to provide feedback during the workshops, to enable Farnborough Airport to quickly take on board any suggestions. Stakeholders were also given the opportunity to ask questions and clarify any misunderstandings.
- 4.4.11 Due to the nature of some of the feedback received during the workshops, Farnborough made immediate amendments to some of the design principles. As a result, the presentation distributed following the workshops had the amended design principles (alongside the original).

- 4.4.12 It was this list (Table 15) which Farnborough Airport distributed to all stakeholders (aside from MPs), regardless of whether they had attended a workshop, and requested feedback on.
- 4.4.13 A copy of the presentation provided at the workshops, including how the initial DPs were updated because of the workshops, is available at Appendix C, pages 32-55.
- 4.4.14 Stakeholders were also informed that Farnborough Airport had decided to prioritise the design principles.
- 4.4.15 This presentation, along with an updated FAQ was distributed to all stakeholders following the end of the Phase 2 engagement and stakeholders were given from 7-31 March 2023 to provide any additional feedback.
- 4.4.16 Version 2 of the FAQ document is available at Appendix F.

## 4.5 Outcomes of Phase 2 Engagement

- 4.5.1 Stakeholders were informed that the prioritised list presented to them in the workshops was not necessarily the final set and that changes could be made based on the feedback provided in the sessions and following their subsequent feedback.
- 4.5.2 Table 15 shows the original list (black font) shown to stakeholders during the workshops held between 1-3 March 2023, alongside the changes (red font) which were the changes made from feedback during the workshops.
- 4.5.3 This version was distributed to the stakeholders after the workshops.

Proposed Design Principles (updated following Workshops 1-3 March 2023)	
1	Must be as safe or safer than today for all <del>airspace users</del> stakeholders that are affected by the airspace change*  (*We will set out our methodology for assessing this in Stage 2 with a view to using data e.g., flight density plots <del>outside CAS</del> /volume nm <sup>3</sup> of CAS, to support other qualitative assessments.)
2	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it accords with the CAA's published airspace modernisation strategy (CAP1711) and any current or future plans associated with it.
3	<del>Accommodate</del> Shall not constrain the ability to meet forecast demand for Farnborough Airport
4	Improve vertical profiles compared to the baseline published SID/STAR levels <del>below 7000ft</del> , to enable: a) a reduction in total population affected by noise below 7000ft b) a reduction in CO <sub>2</sub> emissions per flight from Farnborough aircraft, c) a reduction in the volume and where possible, complexity of Farnborough Airport's CAS d) a reduction in the reliance on tactical intervention
5	Aim to remove dependencies with <del>Southampton ATC-adjacent ATC units</del>
6	Where lateral changes are required to achieve improved environmental and operational performance, options should:

	<ul style="list-style-type: none"> <li>a) deliver an overall reduction in flight plannable track miles</li> <li>b) minimise populations newly overflowed</li> <li>c) avoid overflying the same communities with multiple routes to &amp; from Farnborough Airport</li> <li>d) avoid overflying the same communities with Farnborough's routes and those routes to &amp; from other airports below 7000ft</li> </ul>
7	Make best use of Farnborough's modern aircraft fleet capabilities
8	<b>Ensure that Farnborough Clutch airways traffic can still be accommodated, as a result of the changes</b>

Table 15: Initial design principles list distributed, following Phase 2 workshops

**Written Feedback**

- 4.5.4 Following the distribution of the initial design principle list, Farnborough Airport received written feedback from 16 stakeholders.
- 4.5.5 The feedback received has been summarised in the table below and has a Farnborough Airport response to the feedback provided.
- 4.5.6 Full copies of the feedback provided is available at Appendix D, pages 177-201.

Stakeholder	Summary of Feedback	Farnborough Response
Blackbushe Airport	<ul style="list-style-type: none"> <li>• Raised the importance of 'clutch' airfields.</li> <li>• Would like to see clutch airfields invited to participate in providing data.</li> </ul>	The discussion regarding 'clutch' airfields also took place during the workshops and as a result, a design principle (DP8) was added to the final list. Farnborough Airport welcome any additional data that surrounding airfields can provide and will reach out during Stage 2.
British Gliding Association	<ul style="list-style-type: none"> <li>• BGA aligned with the response from Lasham Gliding Society.</li> </ul>	Noted.
Cranborne Chase AONB	<ul style="list-style-type: none"> <li>• Would like to see section 85 of the Countryside and Rights of Way Act 2000 added to the policy design principle.</li> <li>• Would also like to see the specific mention of AONB's in a design principle.</li> <li>• How does not overflying rural areas with low ambient noise contradict Government policy?</li> </ul>	<p>Farnborough Airport have decided to amend the wording of DP2, so it now specifically refers to Air Navigation Guidance 2017, (which specifically mentions how AONBs, and National Parks should be considered), and other policies and legislations. ANG2017 also makes reference to the Countryside and Rights of Way Act 2000.</p> <p>One of the government's key environmental objectives is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise. Consequently, this is likely to mean that one of the key principles involved in airspace design will require avoiding over-flight of more densely populated areas below 7000ft (ANG 2017). We felt that having a specific design principle to 'avoid overflying rural areas with low ambient noise' would be a contradiction of this policy owing to rural areas having lower population numbers living within them.</p> <p>This does not mean that rural areas will therefore be preferred for route placement all the way</p>

		to/from 7000ft as ANG2017 states “where practicable, it is desirable that airspace routes below 7000ft should seek to avoid flying over AONB and National Parks” and it also requires sponsors to take account of local circumstances.
Dubai Airwing	<ul style="list-style-type: none"> <li>No further feedback.</li> </ul>	Noted.
Farnborough Noise Group	<ul style="list-style-type: none"> <li>Criticism of CAP1616 and the lack of public involvement at the design principles stage.</li> <li>Concerns over the process, with more people responding in towns/cities.                             <ul style="list-style-type: none"> <li>Safety/Populations overflow should be benchmarked from prior to the earlier Farnborough ACP.</li> </ul> </li> <li>The intention will be to reduce the number of routes, which will lead to greater concentration rather than dispersal.                             <ul style="list-style-type: none"> <li>Aircraft are still noisy to 7000ft.</li> </ul> </li> <li>PBN routes with respite will result in more airspace but AMS is expecting to reduce CAS.</li> <li>Farnborough cannot increase volumes of traffic.</li> </ul>	<p>We are required to follow the extant airspace change process which requires design principles to be drawn up with local stakeholders which will normally include local authorities, elected representatives, local community groups, the airport consultative committee and representatives of local General Aviation organisations or clubs. Stage 1 does not require public consultation as this takes place in Stage 3.</p> <p>We have stated that our baseline will be set on the existing airspace arrangement (following the Post Implementation Review) and not from a date preceding February 2020.</p> <p>The number/nature of routes and any potential benefits and impacts to noise will be investigated as part of Stage 2 of this ACP.</p> <p>The number of permitted movements at Farnborough is a matter for planning conditions, not airspace change.</p>
FARA (FACC member)	<ul style="list-style-type: none"> <li>Compliance with the AMS is not ‘subject to’ high standard of safety.</li> <li>Safety is addressed by the CAA’s licensing, auditing &amp; incident reporting procedures.</li> <li>DP3 should say ‘shall not constrain movements to a level below the permitted level of annual movements.</li> <li>Does DP4a comply with altitude-based priorities?                             <ul style="list-style-type: none"> <li>DP6 should avoid, not just minimise newly overflowed populations.</li> </ul> </li> <li>Existing populations overflow should benefit from ‘higher quicker’ flight profiles.</li> </ul>	<p>The reference to ‘subject’ to ‘high standard of safety’ in the CAA policy principle, means in terms of where this principle should sit in a prioritised list, i.e., safety should be the top priority and according with the AMS as second.</p> <p>Farnborough Airport have decided to re-word DP2 to remove the unnecessary language and refer to Air Navigation Guidance 2017, which lays out the altitude-based priorities which the proposal will need to have consideration for.</p> <p>The number of permitted movements at Farnborough is a matter for planning conditions, not airspace change. We feel that the wording to “not constrain the ability to meet forecast demand for Farnborough Airport” helps to deal with hourly demand which is how airspace capacity is usually measured.</p> <p>We accept your comment about DP4a potentially not complying with all aspects of ANG2017 and have removed reference to 7000ft.</p> <p>If we had a principle to “avoid” overflying new populations, that would constrain the ability to make any lateral changes at all below 7000ft</p>

		which may, in turn render principles 5 and 6 obsolete, reduce benefits for this ACP and potentially constrain the ACPs of the wider FASI programme.
Grantex	<ul style="list-style-type: none"> <li>• Agree with the direction of the proposal.</li> <li>• Important to have continued liaisons with NATS to tie in changes made to all London airspace.</li> </ul>	Farnborough are working alongside NATS and the other LTMA airports with ACOG.
Heathrow Airport	<ul style="list-style-type: none"> <li>• No further feedback.</li> </ul>	Noted
Lasham Gliding Club	<ul style="list-style-type: none"> <li>• Believe the other policy suggestions from the stakeholder long list should be explicit in the design principles.</li> <li>• An interpretation of the AMS should not be used to exclude or limit a local priority.</li> <li>• Airspace design should not be based on the principle that it must accommodate all aircraft performance.</li> <li>• Airspace design should permit reasonable expectations of aircraft movements &amp; not based on future traffic forecasts that cannot be properly validated.</li> <li>• The design should assume no more than 40,000 movements over the next 10+ years.</li> <li>• Minimising the impact on GA &amp; other airspace users is not suitably covered by DP1, 2 or 4 at this stage.</li> <li>• DP5 – dependencies should not be removed if there is a detrimental effect to any stakeholder group.</li> <li>• Request clarification ‘of creating capacity for efficient growth’, is this a requirement of the CAA or Farnborough’s ACP.</li> </ul>	<p>Farnborough Airport have decided to amend the wording of DP2, so it now specifically refers to Air Navigation Guidance 2017, (which specifically mentions how AONBs, and National Parks should be considered), and other policies and legislations.</p> <p>We agree that airspace design does not need to be based on accommodating all aircraft performance (i.e., the lowest common denominator) and this is reflected in DP 7.</p> <p>We feel that the wording to “<i>not constrain the ability to meet forecast demand for Farnborough Airport</i>” helps to deal with hourly demand which is how airspace capacity is usually measured rather than in numbers of annual movements.</p> <p>Farnborough Airport have decided to amend DP5 to include reference to minimising impact on other airspace users.</p> <p>Version 2.0 of our SoN was created following the feedback from the CAA that ACOG’s advice to CAA on the inclusion of Farnborough into the Masterplan stated that a Farnborough ACP (as part of the wider LTMA re-design) could help create capacity for efficient growth whereas V1.0 of Farnborough’s SoN did not make this reference. The CAA stated that Farnborough will need to be clear about its objectives and therefore we decided to add these words to an updated SoN. This is now part of our Statement of Need for this ACP and is an objective Farnborough Airport will be looking to achieve.</p>
MOD (DAATM)	<ul style="list-style-type: none"> <li>• Supports the list of design principles.</li> <li>• Would like to see an addition to minimise impact on other airspace users.</li> </ul>	Farnborough Airport have decided to amend DP5 to include reference to minimising impact on other airspace users.
NATS	<ul style="list-style-type: none"> <li>• Are the DPs in priority order?</li> <li>• Suggest that the DPs should be formatted as ‘should/shall to the greatest/smallest possible extent’.</li> </ul>	<p>The design principles are in priority order.</p> <p>Noted the suggestions on phrasing of design principles and how they will need to be evaluated in Stage 2.</p>

	<ul style="list-style-type: none"> <li>DP4 has a number of sub-DPs which will need to be evaluated separately.</li> <li>DP5 suggest re-worded to “The airspace design should minimise dependencies on adjacent units”.</li> <li>Suggest rewording of DP6d – “minimise the overflight of communities by air traffic using more than one airport below 7000ft, where one of those airports is Farnborough”.</li> <li>DP7 – unclear and may be difficult to evaluate. Could be incorporated to DP4.</li> <li>DP8 could be a sub principle of DP5, suggested rewording – “The airspace design should accommodate Farnborough Clutch airways traffic to the greatest possible extent”</li> </ul>	<p>DP5 had already been amended to reflect reference to “adjacent units”.</p> <p>The suggestion for wording DP6d feels confusing and we have left as is.</p> <p>The intent of DP7 is to not design the airspace for aircraft with the lowest capabilities (not the lowest common denominator).</p> <p>Clutch representatives at the workshops were happy with the wording of DP8.</p>
Skysurfers	<ul style="list-style-type: none"> <li>Shared heatmaps &amp; exchanged information to assist with Stage 2.</li> </ul>	Noted and thank you.
Southdown Gliding Club	<ul style="list-style-type: none"> <li>Supports application of CDO, but notes that no metrics associated where they intend to start/finish.</li> <li>7000ft is an arbitrary level and CCO/CDO should be looked at through the whole continuum.</li> <li>Supports the principle to remove dependencies with as many units as possible, not just Southampton.</li> <li>Would like to remove the need for a LoA between Southdown Gliding Club &amp; Farnborough Airport.</li> </ul>	Reference to 7000ft was removed from DP4 as a result of your suggestions, to make clear the intent to not limit ambitions to only to/from that level (though we note Farnborough is not responsible for airspace changes above 7000ft).
Surrey County Council	<ul style="list-style-type: none"> <li>Would like to see reference to the protection of the tranquillity of AONBs.</li> <li>Flightpaths will need to consider the proposed extensions to Surrey Hills AONB.</li> <li>The importance of respite from noise as mitigation for local communities who experience greater concentration of flight paths.</li> <li>Clarification on if the sub-categories of DPs 4 and 6 are prioritised.</li> </ul>	<p>Farnborough Airport have decided to amend the wording of DP2, so it now specifically refers to Air Navigation Guidance 2017, (which specifically mentions how AONBs, and National Parks should be considered), and other policies and legislations.</p> <p>We have asked for information on the proposed extensions to Surrey Hills AONB.</p> <p>Our design principles are in priority order, including the sub-principles.</p>
Surrey Hill AONB	<ul style="list-style-type: none"> <li>Concerned about the omission of reference to avoid disrupting the tranquillity of an AONB.</li> <li>Suggest re-wording a principle to add “avoid disturbing the tranquillity of an AONB”.</li> </ul>	Farnborough Airport have decided to amend the wording of DP2, so it now specifically refers to Air Navigation Guidance 2017, (which specifically mentions how AONBs, and National Parks should be considered), and other policies and legislations.
Waverley Council/ Individual	<ul style="list-style-type: none"> <li>Feels that avoiding overflight of areas with low ambient noise should be reconsidered.</li> </ul>	One of the government’s key environmental objectives is to limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise.

<sup>7</sup> Response from the Waverley Borough Council representative on the FACC, but views are personal, not that of the council.



	<ul style="list-style-type: none"> <li>Concerns over the use of 'communities' when you take into account the impacts of PBN routes &amp; their linear band.</li> <li>ACP should stick rigidly to the existing cap of movements at Farnborough airport and its existing sub-limits.</li> </ul>	<p>Consequently, this is likely to mean that one of the key principles involved in airspace design will require avoiding over-flight of more densely populated areas below 7000 feet (ANG2017). We felt that having a specific design principle to 'avoid overflying rural areas with low ambient noise' would be a contradiction of this policy owing to rural areas having lower population numbers living within them.</p> <p>This does not mean that rural areas will therefore be preferred for route placement all the way to/from 7000ft as ANG2017 states "<i>where practicable, it is desirable that airspace routes below 7,000 feet should seek to avoid flying over AONB and National Parks</i>" and it also requires sponsors to take account of local circumstances.</p> <p>The number of permitted movements at Farnborough is a matter for planning conditions, not airspace change. We feel that the wording to "<i>not constrain the ability to meet forecast demand for Farnborough Airport</i>" helps to deal with hourly demand which is how airspace capacity is usually measured.</p>
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Table 16: Summary of Phase 2 feedback & Farnborough Airports responses

- 4.5.7 Appendix E shows how the design principles have been developed from the initial list of stakeholders suggested design principles during the Phase 1 workshops, along with a summary of Farnborough Airport's analysis of the feedback received.
- 4.5.8 The final columns of the table in Appendix E summarises the Phase 2 feedback and how the design principles have developed following the final round of feedback.
- 4.5.9 Following analysis of the stakeholder feedback received, Farnborough Airport have made amendments to DP2, DP4 and DP 5, with the reasons for these changes outlined in Table 16.
- 4.5.10 Farnborough Airport also decided to make minor amendments to DP4a and DP6b, to add 'numbers' alongside the reference to population, this was to add clarification as to how assessments would take place in Stage 2. Also, a change was made to DP6 adding the term 'to existing tracks', to avoid confusion as the proposal develops.

## 5. FINAL DESIGN PRINCIPLES

5.1.1 Table 17 contains Farnborough Airport's design principles for this airspace change proposal.

<b>Final Design Principles</b>	
1	Must be as safe or safer than today for all stakeholders that are affected by the airspace change*  <i>(*We will set out our methodology for assessing this in Stage 2 with a view to using data e.g., flight density plots outside CAS/volume nm<sup>3</sup> of CAS, to support other qualitative assessments.)</i>
2	Accord with: <ul style="list-style-type: none"> <li>a) the CAA's published airspace modernisation strategy (CAP1711) and any current or future plans associated with it,</li> <li>b) Air Navigation Guidance 2017 &amp; other relevant policy and legislations</li> </ul>
3	Shall not constrain the ability to meet forecast demand for Farnborough Airport
4	Improve vertical profiles compared to the baseline published SID/STAR levels, to enable: <ul style="list-style-type: none"> <li>a) a reduction in population numbers affected by noise,</li> <li>b) a reduction in CO<sub>2</sub> emissions per flight from Farnborough aircraft,</li> <li>c) a reduction in the volume and where possible, complexity of Farnborough Airport's CAS,</li> <li>d) a reduction in the reliance on tactical intervention</li> </ul>
5	Aim to remove dependencies with adjacent ATC units and minimise impacts on other airspace users
6	Where lateral changes to existing tracks are required to achieve improved environmental and operational performance, options should: <ul style="list-style-type: none"> <li>a) deliver an overall reduction in flight plannable track miles,</li> <li>b) minimise population numbers newly overflown,</li> <li>c) avoid overflying the same communities with multiple routes to &amp; from Farnborough Airport,</li> <li>d) avoid overflying the same communities with Farnborough's routes and those routes to &amp; from other airports below 7000ft</li> </ul>
7	Make best use of Farnborough's modern aircraft fleet capabilities
8	Ensure that Farnborough Clutch airways traffic can still be accommodated, as a result of the changes

Table 17: Final Prioritised Design Principles