APPENDIX D – EVOLUTION OF DESIGN PRINCIPLES

Version 1.0

Origin	Proposed Principles following Phase 1 Engagement	Suggestions made during Phase 2 Engagement	Final Design Principle
Safety	• Must be as safe or safer than today for both commercial air transport and General Aviation operations.	Proposed DP strongly endorsed by stakeholders to be the overriding priority when developing and evaluating airspace design options. Re-worded to remove 'must'.	**DP1:** Be as safe or safer than today for both commercial air transport and General Aviation (GA) operations.
UK Airspace Modernisation Strategy	Non. Although there was a general discussion with all stakeholders about the UK Policy goals and strategic initiatives set out in the governments Aviation Strategy and CAA's AMS that are drivers for the SOU ACP.	Letter received from the CAA on July 29th 2019 (included in Appendix F), sets out the regulator's expectation that a DP related to the implementation of the AMS is included in the Stage 1 B submission.	**DP2:** The SOU ACP accords with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it.
Complexity and workload	• Should avoid introducing additional complexity and bottlenecks in both the network and Class G airspace.	Re-worded to remove 'should'; added 'reduce' and 'contribution to a reduction in infringement' added	**DP3:** Avoid introducing additional complexity and reduce bottlenecks into controlled and uncontrolled airspace and contribute to a reduction in infringements.
		New design principle proposed following technical considerations made following engagement with the FASI South Technical	**DP4:** Minimise tactical intervention by Air Traffic Control (ATC) below 7000ft.
Airspace capacity	• Should ensure ATC capacity is sufficient to accommodate SOU's master plan traffic forecasts whilst providing integration for GA traffic	The phrase 'ATC capacity' has been replaced by 'airspace capacity' which is within the scope of this ACP to deliver. Re-worded to remove 'should' and to add 'of'	**DP5:** Ensure sufficient airspace capacity to accommodate SOU's master plan traffic forecasts while providing for the integration of GA traffic.

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Flight efficiency and environmental performance.	• Should ensure the Airspace Change minimises environmental impacts. • Should ensure no degradation in existing local Air Quality limits. • Should minimise total adverse ecological impacts.	Three DP proposals combined into one principle statement concentrating on external environmental impacts. Removed the word 'should'.	**DP6:** Minimise, and where possible, reduce aircraft emissions, the degradation in air quality and adverse ecological impacts.
Noise	• Should minimise the total adverse impact of aircraft noise on communities	Re-worded to remove 'should' and the phrase 'on communities'. Added reference to health and quality of life following review with environmental specialists in order to align with CAP 1616 definitions.	**DP7:** Minimise and where possible reduce, the total adverse effects on health and quality of life from aircraft noise.
Noise	• Should offer a predictable, fair and equitable share of traffic across the arrival and departure routes	Re-worded to remove 'should' and 'arrival and departure routes'. Added 'multiple routes and respite routes' following technical considerations with environmental specialists.	**DP8:** Ensure a predictable, fair and equitable share of traffic across all routes, through multiple route options and respite routes.
Noise	• Should avoid overflying densely populated residential areas, national parks, AONBs and other noise sensitive areas, wherever possible	Re-worded to remove 'should'. Added reference to areas prized for tranquillity following technical considerations with environmental specialists.	**DP9:** Avoid overflying densely populated residential areas, national parks, noise sensitive buildings, AONBs and other areas prized for tranquillity.
Night flights	• Should not change current airport operating hours in the night period	Discounted following feedback to the second phase of engagement because changes to airport operating hours in the night period are a planning condition	

		rather than an airspace design issue.	
Airspace Integration	• Should consider the impact of efficiency and environmental performance of both GA and commercial operations.	Moved from Airspace Integration and re-worded following technical considerations with airspace specialists at the end of the phase 1 engagement to focus the principle on operational efficiency specifically.	**DP10:** Maximise operational efficiency for commercial air transport and general aviation users affected by the airspace change.
Technology	• Should enable aircraft to climb higher sooner on departure and stay higher for longer on approach.	Re-worded to remove 'should'. Added 'to/from at least 7000ft' and the focus on continuous climb and descent specifically following technical considerations with airspace specialists.	**DP11:** Ensure that aircraft operating at SOU climb and descend continuously to/from at least 7000ft.
Airspace Integration	• Should ensure the airspace structure, route network and remaining navigation infrastructure minimises the likelihood of infringements	Stakeholders considered that this proposed principle is adequately addressed in DP3 and enabled by DP14.	N/A
Technology	Non. Although there was a general discussion with all stakeholders about the transition to satellite-based PBN procedures and the issues and opportunities that the technology creates for airspace design.	New design principle added following technical considerations with airspace specialists.	**DP12:** Adopt the most beneficial form of enhanced navigation standards for arrival and departure routes
Airspace Integration	• Should not increase the overall volume of CAS. Where an increase is required it should be accompanied by measures that offer greater access and not increase segregation	Re-worded to be more specific following technical considerations with airspace specialists.	**DP13:** Avoid increasing the overall volume of CAS and where deemed necessary, mitigate the impact by including measure that improve access to GA and do not increase airspace segregation.

Airspace Integration	• Should consider use of ADS-B to improve airspace integration where possible	Re-worded to remove 'should'. Specific reference to ADS-B expanded to incorporate all forms of electronic conspicuity	**DP14:** Consider the use of electronic conspicuity to improve airspace integration where possible.
New DP suggested by stakeholders.		New DP suggested by Lasham Gliding Society and adopted.	**DP15:** Airspace design options should take into account the combination of effects on the operations at neighbouring airports.
Resilience	• Should offer flexibility in the route structure to strengthen resilience against adverse weather and network issues that may affect operations	Re-worded to remove 'should'.	**DP16:** Offer flexibility in the route structure to strengthen resilience against adverse weather and network issues that may affect operations

Stakeholder Proposed Design Principles

Proposed By	• Suggested Design Principle	Outcome	Final Design Principle
Autism Hampshire	• Should provide increased opportunities to disadvantaged and neurodiverse groups in training, apprenticeship and securing employment.	SOU do not propose to take this suggested principle forward because it is not related to the development and evaluation of airspace design options within the scope of this ACP.	N/A
New Forest District Council	• The 'in-combination' effects of the airspace change proposals on areas where the airspace is also affected by other airports. For example, airspace over the New Forest will be affected by a number of airports in southern England and effects of each airport's airspace use should not be considered in isolation.	Incorporated into new DP15.	**DP15:** Airspace design options should take into account the combination of effects on the operations at neighbouring airports.

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New Forest District Council	• Proposal should consider potential to 'off-set' environmental impacts. Consideration should be given to how the objectives and principles of the Government's 25 year Environment Plan will be incorporated and influence proposals.	SOU considers that this suggestion is adequately addressed by the refined environmental design principles (DPs 6,7,8 and 9) and the requirement on SOU to comply with the ANG 2017 and Airports NPSe.	Refer to DPs 6, 7, 8 and 9, ANG 2017 and the Airports NPSe
Lasham Gliding Society	• A Lower Airspace Strategy is required before a design can be undertaken	As the ACP progresses to Stage 2 of CAP1616 to develop and assess airspace design options SOU will work closely with ACOG (the Airspace Change Organising Group) that are expected to be tasked with developing the Lower Airspace Strategy as part of their coordination of AMS implementation.	N/A
Lasham Gliding Society	• Individual FASI-S ACP designs must be co-ordinated eg. SOU with BOU, MoD and nearby airfields	Taken forward as new DP15.	**DP15:** Airspace design options should take into account the combination of effects on the operations at neighbouring airports.
Lasham Gliding Society	• Design shall be evidenced-based and rigorous analysis methodologies shall be used to demonstrate compliance with all design principles. All data and methodologies used shall be published.	SOU considers that this suggestion is adequately addressed by the requirements set out for airspace change sponsors in CAP1616 to demonstrate the evidence base for their decision making, conduct a rigorous impact appraisal and ensure transparency.	N/A
Lasham Gliding Society	• The regulations and other factors requiring the ACP shall be clearly identified.	SOU considers that this suggestion is adequately addressed in the new DP2	**DP2:** The SOU ACP accords with the CAA's published Airspace Modernisation Strategy (CAP

		regarding the regulatory drivers for the ACP set out in the AMS (CAP1711).	1711) and any current or future plans associated with it.
Lasham Gliding Society	• Safety for all airspace users must be improved not reduced. This must be demonstrated by evidence based analysis.	SOU considers that this suggestion is adequately addressed in the refined DP1, covering both commercial air transport and GA airspace users.	**DP1:** Be as safe or safer than today for both commercial air transport and general aviation (GA) users that are affected by the airspace change.
Lasham Gliding Society	• Must avoid introducing additional or exacerbating bottlenecks in both the network and Class G airspace and demonstrate by evidence based analysis	SOU considers that this suggestion is adequately addressed in the refined DP3.	**DP3:** Avoid introducing additional complexity and bottlenecks into controlled and uncontrolled airspace and contribute to a reduction in airspace infringements.
Lasham Gliding Society	• Cost of additional measures required by GA/gliding to mitigate any safety/operational issues (eg. transponders) and financial impacts on aviation organisations must be borne by SOU	SOU do not propose to adopt this suggestion as part of the design principles.	N/A
Lasham Gliding Society	• Must reduce environmental impacts by commercial and GA traffic.	SOU considers that this suggestion is adequately addressed by the refined environmental design principles (DPs 6,7,8 and 9) and the requirement on SOU to comply with the ANG 2017 and Airports NPSe.	Refer to DPs 6, 7, 8 and 9, ANG 2017 and the Airports NPSe
Lasham Gliding Society	• Must reduce the total adverse impact of aircraft noise on communities	SOU considers that this suggestion is adequately addressed by the refined DP7.	**DP7:** Minimise and where possible reduce, the total adverse effects on health and quality of life from aircraft noise.
Lasham Gliding Society	• Noise impact analysis shall include all traffic, including GA diverting	SOU considers that this suggestion is adequately addressed by the refined DP7.	**DP7:** Minimise and where possible reduce, the total adverse effects on

	around/under new controlled airspace		health and quality of life from aircraft noise.
Lasham Gliding Society	• Must use ADS-B or other Electronic Conspicuity (EC) technologies to improve airspace integration and allow lowest classification of airspace to be used (ie. Class G+EC, Class E+EC in preference to Class D)	SOU considers that this suggestion is adequately addressed by the refined DP14.	**DP14:** Consider the use of electronic conspicuity to improve airspace integration where possible.
Lasham Gliding Society	• EC solutions required as part of the design shall be commercially available prior to implementation	SOU considers that this suggestion is adequately addressed by the refined DP14.	**DP14:** Consider the use of electronic conspicuity to improve airspace integration where possible.
Lasham Gliding Society	• Must mitigate any negative impacts of the design on the efficiency, environmental, operational and economic performance of both GA and commercial operations.	SOU considers that this suggestion is adequately addressed by the refined DP10.	**DP10:** Maximise operational efficiency for commercial air transport and general aviation users affected by the airspace change.
Lasham Gliding Society	• GA/gliding operational requirements to be explicitly taken into account and not restricted, with explanations	As the ACP progresses to Stage 2 of CAP1616 to develop and assess airspace design options SOU will gather operational requirements from all affected airspace user groups.	N/A
Lasham Gliding Society	• Design must employ the minimum controlled airspace	SOU considers that this suggestion is adequately addressed by the refined DP13.	**DP13:** Avoid increasing the overall volume of CAS and where deemed necessary, mitigate the impact by including measure that improve access to GA and do not increase airspace segregation.
Lasham Gliding Society	• Default airspace classification shall be Class G	SOU considers that this suggestion is adequately addressed by the refined DP13.	**DP13:** Avoid increasing the overall volume of CAS and where deemed necessary, mitigate the impact by

			including measure that improve access to GA and do not increase airspace segregation.
Lasham Gliding Society	• Design must meet current CAP1616 efficiency criteria for all users	SOU recognise that all applicable criteria relating to a Level 1 ACP set out in CAP1616 must be met.	N/A
Lasham Gliding Society	• Resilience against weather and network issues shall be accommodated without additional controlled airspace	SOU considers that this suggestion is adequately addressed by the refined DP13 and DP16.	**DP13:** Avoid increasing the overall volume of CAS and where deemed necessary, mitigate the impact by including measure that improve access to GA and do not increase airspace segregation. **DP16:** Offer flexibility in the route structure to strengthen resilience against adverse weather and network issues that may affect operations.
Lasham Gliding Society	• Capacity requirements shall be based on evidence-based and independently validated ATM forecasts.	SOU will take this suggestion into account when evaluating airspace design options against DP5.	**DP5:** Ensure sufficient airspace capacity to accommodate SOU's master plan traffic forecasts while providing for the integration of GA traffic.