ACP-2017-079

SHETLAND SPACECENTRE LIMITED/SAXAVORD SPACEPORT AIRSPACE CHANGE PROPOSAL

CAP1616 STAGE 2 DEVELOP & ASSESS SUBMISSION

(INCORPORATING STAGE 2A AND STAGE 2B)

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OVERVIEW

1. Introduction

1.1. Shetland Space Centre Limited (trading and hereinafter referred to as "SaxaVord Spaceport" and "SaxaVord") seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst. A suitable airspace reservation of defined dimensions is required to ensure the safety of other airspace users from SaxaVord launch activities and to ensure the safety of SaxaVord launch activities from other airspace users. The proposed airspace reservation would be activated for the minimum specified periods necessary to support nominated launch operations and would extend from surface (SFC) to unlimited (UNLTD).

1.2. Accordingly, SaxaVord initiated an airspace change proposal (ACP) (ACP-2017-079) through the UK Civil Aviation Authority's (CAA's) ACP portal on 18 October 2018. The ACP was "Paused" in August 2020, before recommencing in February 2022.

1.3. As part of the CAP1616 Stage 1 process, SaxaVord considered and engaged relevant aviation and airspace user stakeholders to discuss the outline of the proposal and establish and share the proposed airspace design principles (DPs), which are set out later in this document.

1.4. Additionally, SaxaVord has engaged aviation stakeholders relating to a temporary airspace design (ACP-2021-090); despite the similarities between the proposed launch operations, airspace and associated activities, engagement related to that application continues to be treated as a separate activity to stakeholder engagement associated with this application (ACP-2017-079). Furthermore, ACP-2017-079 is a separate application to ACP-2021-058.

2. CAP1616 Overarching Process Requirements

The CAP1616 Stage 2 process requires that airspace change sponsors develop options for their proposed airspace change.

2.1. *CAP1616 Step 2A - Develop & Assess.* CAP1616 Step 2A requires the change sponsor to develop a first comprehensive list of options - to the extent that a list is possible - that addresses the Statement of Need and aligns with the Design Principles (DPs) from Stage 1. CAP 1616 acknowledges that "[s]ometimes there will only be limited scope for multiple design options, with few realistic options available ... Where this is the case, change sponsors must explain to stakeholders and the CAA why this is the case, with appropriate evidence".[1]

2.2. *CAP1616 Step 2B - Options Appraisal.* CAP1616 Step 2B requires the change sponsor to carry out an 'Initial' appraisal of the impacts of each of the viable options identified in Step 2A using the design criteria against which the options are being assessed (the first of three iterative phases of options appraisal […]). The Initial appraisal should, as a minimum, contain qualitative assessments of the different options. This highlights to change sponsors, stakeholders and the CAA the relative differences between the impacts, both positive and negative, of each option. The change sponsor assesses each option against a 'do nothing' scenario (the 'counterfactual'), even where there is only a single change option, to understand these impacts.[2]

3. Aims

3.1. The aim of this submission, and the corresponding elements herein, is to demonstrate how SaxaVord has:

- Developed its airspace change design options that address the application's Statement of Need and align with the DPs from Stage 1.

1. CAP1616 (4th Ed, 2021), CAA (online), Para 127. Accessed online on 12 Jul 22.
2. *id*, Para 133. Accessed online on 25 Jul 22

- Engaged with stakeholders to test the design options against the Statement of Need and DPs.
- Received and analysed stakeholder feedback, where appropriate using the same to refine design options.
- Assessed the developed options against the Stage 1 DPs and produced a corresponding DP Evaluation (i.e. the Initial Options Appraisal).

It must also be noted that the airspace design options contained within this document might be subject to change as the ACP process continues and options are matured and refined in accordance with - *inter alia* - safety requirements, design principles and, most importantly, stakeholder engagement and consultation at Stage 3. Similarly, as the space industry and launch vehicle designs mature, further design evolution may occur, supported by robust empirical data.

BACKGROUND AND CONTEXT

4. UK Space Innovation and Growth Strategy

The UK Space Innovation and Growth Strategy (IGS)[3] sets out ambitious targets for the growth of the UK space sector, with 'Access to Space' a key IGS theme. The UK has clearly stated its ambition to become a launching state, with the long-term goal of being able to support sub-orbital operations and orbital delivery of small satellites. Accordingly, in 2017, the Centre for Earth Observation Instrumentation and Space Technology (CEOI-ST) and UK Space Agency (UKSA) commissioned the SCEPTRE Project, which investigated the challenges associated with the introduction and operation of commercially viable small-satellite launch services from the UK; in 2017, the Project delivered its final report.[4]

5. The SCEPTRE Project Final Report

The SCEPTRE (Project Final) Report offered that commercial space launch operations are driven by two questions: which orbits are accessible from a prospective launch site, and what payload mass can be delivered from those sites to desired orbits at a viable price?

The Report contended that commercially-desirable orbits can be achieved from a number of sites in the north of Scotland, both on the mainland and the islands. For many combinations of launch site and desired orbit, however, it may be necessary to perform manoeuvres (i.e. “dog-legs”) to ensure the safety of people, effectively flying around the populated area. Any such manoeuvre would reduce the payload that can be placed in a given orbit; consequently, launch sites that require significant manoeuvres would incur a payload penalty. The Report identified that, for any given launch site, the optimal trajectory is a 'direct launch', i.e. without manoeuvres to avoid overflying populated areas.[5]

The Report concluded that, considering only the payload mass deliverable to orbit, the site offering the maximum payload mass to orbit is SaxaVord in the Shetland Islands, from where direct launch is possible to both SSO and Polar orbits[6], avoiding the populations in the Faroe Islands and Iceland.[5]

Consequently, the SCEPTRE Report’s outputs and recommendations have determined the development of SaxaVord’s proposed airspace design options.

6. SaxaVord Location and Surrounding Airspace Context

The Shetland Islands is a sub-Arctic archipelago in the Northern Atlantic, between Great Britain, the Faroe Islands and Norway and is the northernmost part of the United Kingdom. SaxaVord Spaceport is located on

3. “*A UK Space Innovation and Growth Strategy 2010 to 2030*” (online). Accessed 25 Jul 22.
4. Sceptre Report (2017), Demios Space UK Ltd (online). Accessed 12 Jul 22.
5. *id*, Executive Summary (online). Accessed 12 Jul 22.
6. *id*, Page 12.

the Lamba Ness peninsula on Unst, the most northerly of the Shetland Islands. Situated in the north of the UK's airspace, SaxaVord Spaceport is 11nm south of the northern boundary of the Scottish Flight Information Region (FIR) and 22nm west of the FIR's eastern boundary.

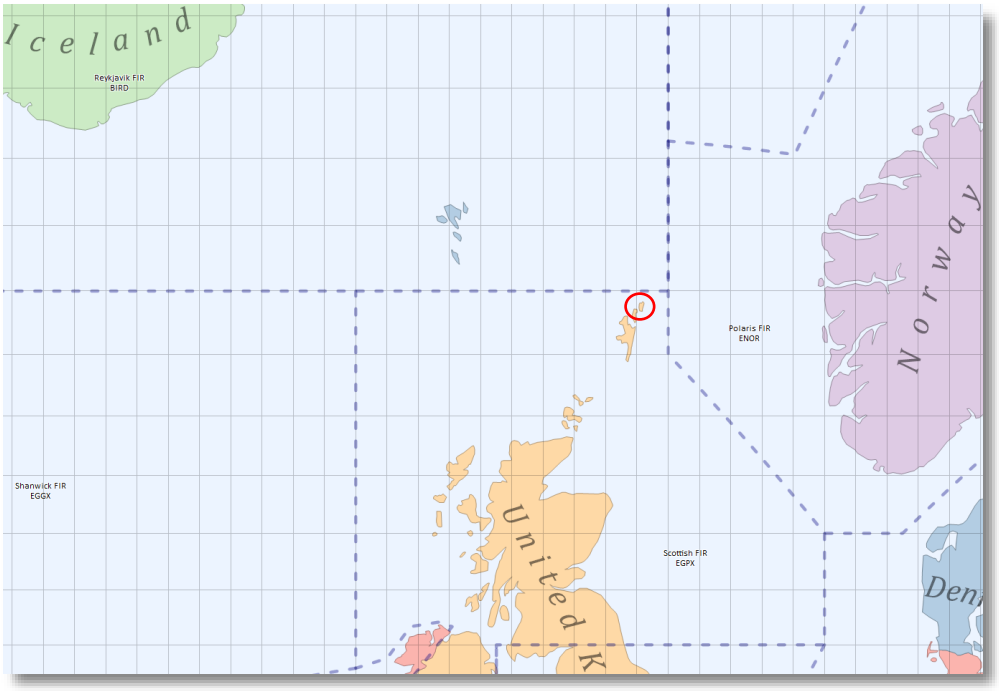

Figure 1 - SaxaVord Location

The SaxaVord site (and its immediate surroundings) resides wholly within UK Class G airspace, which in turn sits underneath Class C airspace. Proposed launch activities and airspace design would, therefore, extend from SFC to UNLTD, through Classes G and C airspace, for specific notified periods and beyond the lateral limits of the UK FIR and Upper Information Region (UIR). Above FL195 (i.e. 19,500ft AMSL), commercial air traffic operates under the principle of "Free Route Airspace", which allows flights to route direct, *vice* following prescribed routes (i.e. airways and upper air routes) along pre-determined navigation points.

Consequently, any proposed airspace design must consider the operating and operational requirements of local, national and international stakeholders and airspace users.

STAGE 2A - AIRSPACE CHANGE DESIGN OPTIONS DEVELOPMENT

Unlike an airspace change at a UK aerodrome, there is no extant operation to refer to as an operational baseline; thus, there is no operational *status quo* to maintain. In addition, SaxaVord recognises that entertaining any airspace design option that does not include a proportionate airspace reservation to protect airspace users from the proposed launch operations at SaxaVord (and *vice versa*) is untenable.

7. Overarching Principles on Airspace Design Options

The options have been developed around a recommended trajectory based on assessment criteria contained within the UKSA (*et al*)-sponsored SCEPTRE Project final report. The project assessed that, geographically, the UK is well situated for launches to Polar and Sun-synchronous Orbits (SSO), which are in high demand from the growing communications and Earth observation markets, respectively.[7]

7. Sceptre Report (2017), Demios Space UK Ltd, Page 2 (online). Accessed online on 12 Jul 22.

In considering launch trajectories and, therefore, airspace design options, an immutable safety principle of the SCEPTRE project was that launch vehicles cannot overfly populated areas.

The project considered an exemplar space launch operation: the vertical launch of an imported (US) launch vehicle carrying payloads of up to 500kg. The project then considered potential launch sites and operations with this model, concluding that, whilst many potential sites could be utilised, those that required a variation in azimuth during the launch (i.e. a "dog-leg") to avoid the overflight of populated areas would incur a corresponding payload weight trade-off.

The expansion of these arguments is outlined within Section 5 of the report, which sets out the criteria against which proposed locations were assessed.[8] The report opined that the North of Scotland is the only feasible launch region in the British Isles, proffering 3 of the most promising sites.[9]

The report concluded that, "[c]onsidering only the payload mass deliverable to orbit, a site in the Shetland Isles was determined as the best location in the UK to launch from as the trajectory avoids the populations in the Faroe Islands and Iceland".[10]

Accordingly, SaxaVord will present options that address the Statement of Need and align with the Stage 1 DPs, acting on the constraints identified by both the Change Sponsor and the SCEPTRE Report and the recommendations of the latter. This approach aligns with the requirements of CAP1616, Para 127.

8. Design Options Development

As a result of the foregoing, the following design options were taken forward to be tested with the application's identified stakeholders; each option has a description of what it seeks to achieve:

9.1. Design Option 1 - *Airspace Reservation (Non-segmented)*

Description.

An "Airspace Reservation (Non-segmented)" design option seeks to establish an airspace reservation of defined dimensions to encompass the fullest identified range of orbital and sub-orbital launch operations. The whole airspace volume would be activated by NOTAM for the minimum period necessary to facilitate spaceport launch operations.

9.2. Design Option 2 - *Airspace Reservation (Segmented)*

Description.

An "Airspace Reservation (Segmented)" design option seeks to establish an airspace reservation of defined and proportionate dimensions that could be tailored to the performance characteristics of the specific launch vehicle (LV) seeking to utilise the SaxaVord Spaceport for a specific launch. Such airspace would be activated by NOTAM for specified periods.

ACP-2017-079 STAKEHOLDERS

10. Identification of Application's Stakeholders.

Building on its earlier stakeholder engagement activity, SaxaVord established a list of local, national and international aviation stakeholders likely to be impacted by the airspace change application and its subsequent activation and operation. This stakeholder identification activity was augmented by data and information supplied by CAA.

8. *id*, Pages 20 & 21.
9. *ibid.*
10. *id*, Page 27.

Acknowledging the geographical location of the launch site relative to the mainland of the UK, no assumptions were made over the probability of direct impact on national UK stakeholder groups; all stakeholders were considered equally. For each stakeholder, a primary point of contact (POC) was established and, where possible, this has included a name and email address, as a minimum.

The list of the application's stakeholders is provided at Appendix 1.

11. Stakeholder Engagement Materials.

A common set of engagement materials was developed to inform all stakeholders and included:

- Introduction - Background, Context and Location.
- Stage 2 Engagement - Context & Purpose.
- Initial Airspace Design Options.
- Statement of Need and Design Principles (DPs).
- Request for Stakeholder Response.
- Conclusion.

The materials were lodged on the application's ACP portal with a corresponding stakeholder response proforma to facilitate stakeholder Stage 2 responses.

A copy of the engagement materials is at Appendix 2.

12. Stakeholder Response Proforma.

CAP1616 Stage 2 requires sponsor to test their proposed airspace design options against the agreed Stage 1 DPs. Accordingly, questions contained within the corresponding stakeholder response proforma were offered as "closed questions", specifically to elicit binary responses. SaxaVord was keen to highlight to stakeholders that the opportunity for more interrogative dialogue would be available in Stage 3.

SaxaVord remains acutely aware of the risk of stakeholders becoming "fatigued" by repeated requests for engagement and consultation - from HyImpulse, ACP-2021-090 and this application. Indeed, dialogue with some stakeholders reinforced this observation.

SaxaVord were keen to ensure that all parties were aware of the application to which the Stage 2 process applied and that discussions and engagement did not become confused with other ACP applications.

A copy of the Stage 2 response proforma is at Appendix 3.

13. Stakeholder Engagement.

All stakeholders (aviation and non-aviation) were sent an initial email, outlining - *inter alia* - the reason for SaxaVord's engagement and containing links to the engagement materials and response proforma. SaxaVord also highlighted in this email (and in the corresponding engagement materials) that all stakeholders would be afforded the opportunity of more detailed consultation in Stage 3 ("Consult") of the CAP1616 process.

A copy of this initial email is at Appendix 4.

"Priority" Stakeholders.

Drawing upon its engagement associated with a concurrent ACP application (ACP-2021-090), SaxaVord identified a sub-set of aviation stakeholders with whom SaxaVord sought to conduct more proactive engagement at Stage 2 of this application.

Whilst this "follow-on" engagement with this sub-set of stakeholders might be seen to be straying beyond CAP1616's Stage 2 engagement requirements, SaxaVord considered it prudent to engage this cohort

subsequently and proactively, identifying that many of them would seek to discuss related matters in more detail than that required - nominally - at Stage 2.

A copy of the follow-up email to this cohort of stakeholders is at Appendix 5.

14. Management of Stakeholder Responses.

All stakeholders were afforded the opportunity to refer questions pertinent to Stage 2 of the ACP to a dedicated email address, and stakeholder responses and completed proformas were requested by 1200 on Friday 23rd September 2022.

In managing stakeholder responses, SaxaVord:

- Employed MS Outlook tracking tools to monitor delivery and read notifications and recorded the same in MS Excel.
- Responded to non-delivery notifications, following-up with the relevant organisation and a subsequent point of contact sought with whom SaxaVord could engage.
- Logged the receipt of response proformas, sending an acknowledgement email to the respondent; responses without a corresponding proforma were actioned similarly.
- Stored response proformas within the AVISU file management system (secured by 2FA).
- Collated data from response proformas into a corresponding spreadsheet for subsequent analysis.

15. Analysis of Stakeholder Feedback.

From received responses, both proffered options were viewed as acceptable when tested with relevant stakeholders; however, some respondents were unsure about each design's ability to address the Statement of Need and align with the defined DPs.

Stakeholder response data is provided at Appendix 6 and copies of the received response proformas are contained at Appendix 7.

Following analysis of stakeholder feedback, the outcome of Stage 2A was that, at this stage, the proffered design options did not need further refinement and could progress to Stage 2B - Initial Options Appraisal.

Throughout the Stage 2 process, many stakeholders expressed frustration at not being able to discuss the detail of the activation, operation and notification and coordination processes and procedures, but looked forward to being able to embark on such discussions at Stage 3.

DESIGN PRINCIPLE EVALUATION

16. ACP-2017-079 Design Principles.

The ACP-2017-079 DPs were agreed following engagement with representative stakeholder groups as part of CAP1616 Stage 1. DPs and their relative priorities are shown in Table 1, below.

DP	Category	Design Principle	Priority
1	Safety	The safety of other airspace users and the public is the paramount DP to be used in this ACP.	A
2	Environment	The environmental and noise effects of rocket launch should be minimised by the design of the airspace change.	A
3	Airspace Management (ASM)	The airspace volume should be as small as possible to minimise the impact on and ensure the safety of other airspace users.	B
4	ASM	The duration of the airspace activation should be the minimum required to minimise the impact on and ensure the safety of other airspace users. The possible impact of concurrent operations of other airspace should be considered.	B
5	ASM	Airspace notification should be timely and accurate within an established method of rapid notification.	A
6	ASM	A process to allow some special airspace users to enter the airspace safely and halt operations should be established.	A
7	ASM	Other international airspace agencies should be included in the airspace design process.	B
8	Regulation	Airspace design should meet duties and requirements of other public agencies placed upon SSC.	B
9	ASM	Letters of agreement and memoranda of understanding will be developed, if required, between relevant parties.	A
10	ASM	The airspace change will take account of ongoing and continuing airspace management and policies.	B

Table 1 - ACP-2017-079 Design Principles

17. DP Evaluation Methodology.

Design Principle		How the DP is to Be Evaluated	Met	Partially Met	Not Met
			The text contained within the cells below corresponds to the summary qualitative assessment for the relevant DP in Tables 3 and 4, below.		
DP1	Safety	The airspace design is sufficient to protect launch operations from other airspace users and *vice versa*.	No safety concerns at this Stage.	Additional work might be required to generate acceptable safety argument(s), but this is believed to be achievable.	Acceptable safety assurances unlikely to be met and therefore option must be reconsidered.
DP2	Environment (Including Noise)	The airspace design minimises environmental and noise effects associated with launch and spaceport operations.	Minimal environmental and noise effects.	Additional evidence required to support assessment of environmental and noise effects associated with launch operations.	Unacceptable level(s) of environmental and noise effects.
DP3	Airspace Management (ASM) - Volume	The airspace design volume is the minimum possible, thereby reducing potential impact on other airspace users.	Airspace design volume is the minimum possible.	Airspace design could be further tailored to reduce impacts on other airspace users.	Unacceptable impact on other airspace users.
DP4	ASM - Duration	The airspace design is such that it enables the activation duration to be the minimum required to support launch and spaceport operations.	Airspace design minimises the duration of activation.	Airspace design could be further tailored to reduce the duration of activation.	The airspace design is such that it does not enable an acceptable minimum activation to support launch operations.
DP5	ASM - Notification	The airspace design is such that it enables the timely and accurate notification of activation (e.g. NOTAMs).	Airspace design is such that it enables timely and accurate.	Airspace design could be further tailored to support the timely and accurate notification of activation.	The airspace design is such that it does not enable the timely and accurate notification of activation.
DP6	ASM - Coordination of Access	The airspace design is such that it enables procedures to support access to agreed special users under appropriately managed and specified conditions (e.g. processes to permit halt/check-fire of launch operations for specific priority access to the airspace volume).	Airspace design is such that it supports managed access to agreed special users under prescribed and agreed circumstances.	Airspace design could be further tailored to support managed access to agreed special users under prescribed and agreed circumstances.	The airspace design is such that it does not enable managed access to agreed special users under prescribed and agreed circumstances.

Design Principle		How the DP is to Be Evaluated	Met	Partially Met	Not Met
DP7	ASM - International Coordination	The airspace design process includes relevant international aviation authorities and air navigation service provider (ANSP) organisations.	The airspace design process includes relevant international aviation authorities and ANSPs.	Airspace design process could be further tailored to include relevant international aviation authorities and ANSPs.	The airspace design process is such that it does not include relevant international aviation authorities and ANSPs.
DP8	Regulation - Process	The airspace design process enables SaxaVord to meet the relevant duties and requirements placed on them by other public agencies.	The airspace design process enables SaxaVord to meet the relevant duties and requirements placed on them by other public agencies.	Airspace design process could be further tailored to enable SaxaVord to meet the relevant duties and requirements placed on them by other public agencies.	The airspace design process is such that it does not enable SaxaVord to meet the relevant duties and requirements placed on them by other public agencies.
DP9	ASM - Operational Coordination	The airspace design process enables the development and signature of letters of agreement (LOAs) and memoranda of understanding (MOUs) between SaxaVord and the relevant parties.	The airspace design process enables the development and signature of LOAs and MOUs between SaxaVord and the relevant parties.	Airspace design process could be further tailored to enable the development and signature of LOAs and MOUs between SaxaVord and the relevant parties.	The airspace design process is such that it does not enable the development and signature of LOAs and MOUs between SaxaVord and the relevant parties.
DP10	ASM - National ASM Planning	The airspace design considers extant relevant airspace management policies and processes and the potential impact on concurrent airspace activities.	The airspace design considers extant relevant airspace management policies and processes and the potential impact on concurrent airspace activities.	Airspace design process could be further tailored to consider extant relevant airspace management policies and processes and the potential impact on concurrent airspace activities.	The airspace design process is such that it does not consider extant relevant airspace management policies and processes and the potential impact on concurrent airspace activities.

Table 2 - ACP-2017-079 DP Evaluation Methodology

18. Design Principle Evaluation

Design Option 1 - Airspace Reservation (Non-segmented)				
An "Airspace Reservation (Non-segmented)" design option seeks to establish an airspace reservation of defined dimensions to encompass the fullest identified range of orbital and sub-orbital launch operations. The whole airspace volume would be activated by NOTAM for the minimum period necessary to facilitate spaceport launch operations.				
		Met	Partially Met	Not Met
DP1	Safety	✓		
DP2	Environment (Including Noise)	✓		
DP3	Airspace Management (ASM) - Volume		✓	
DP4	ASM - Duration	✓		
DP5	ASM - Notification	✓		
DP6	ASM - Coordination of Access	✓		
DP7	ASM - International Coordination	✓		
DP8	Regulation - Process	✓		
DP9	ASM - Operational Coordination	✓		
DP10	ASM - National ASM Planning	✓		

Table 3 - ACP-2017-079 Design Option 1 DP Evaluation

Design Option 2 - Airspace Reservation (Segmented)				
An "Airspace Reservation (Segmented)" design option seeks to establish an airspace reservation of defined and proportionate dimensions that could be tailored to the performance characteristics of the specific launch vehicle (LV) seeking to utilise the SaxaVord Spaceport for a specific launch. Such airspace would be activated by NOTAM for specified periods.				
		Met	Partially Met	Not Met
DP1	Safety	✓		
DP2	Environment (Including Noise)	✓		
DP3	Airspace Management (ASM) - Volume	✓		
DP4	ASM - Duration	✓		
DP5	ASM - Notification	✓		
DP6	ASM - Coordination of Access	✓		
DP7	ASM - International Coordination	✓		
DP8	Regulation - Process	✓		
DP9	ASM - Operational Coordination	✓		
DP10	ASM - National ASM Planning	✓		

Table 4 - ACP-2017-079 Design Option 2 DP Evaluation

STAGE 2B - INITIAL OPTIONS APPRAISAL

19. Initial Options Appraisal Requirements

As defined in CAP1616[11], Step 2B requires the change sponsor to carry out an 'Initial' appraisal of the impacts of each of the viable options identified in Step 2A, using the design criteria (i.e. the DPs) against which the options are being assessed. The initial options appraisal should, as a minimum, contain qualitative assessments of the different options, which highlights to change sponsors, stakeholders and the CAA the relative differences between the impacts, both positive and negative, of each option. The change sponsor assesses each option against a 'do nothing' scenario (the 'counterfactual'), even where there is only a single change option, to understand these impacts.

19.0. Extant Baseline.

Unlike an airspace change at a UK aerodrome, there is no extant operation to refer to as an operational baseline; thus, there is no operational *status quo* to maintain.

SaxaVord recognises, however, that entertaining any airspace design option that does not include a proportionate airspace reservation to protect airspace users from the proposed launch operations at SaxaVord (and *vice versa*) is untenable.

19.0.1 "Do Nothing"

Description.

A "Do Nothing" option (i.e. maintain current *status quo*) would see no space launch operations undertaken at SaxaVord.

Table-top Analysis of Potential Impacts.

As there would be no space launch operations from SaxaVord, there would be no impacts to consider in a "Do Nothing" option.

Assessment.

CAP1616 requires that a change sponsor assess the impact (or otherwise) of a "Do Nothing" option. It must be noted that a "do nothing" option maintains the *status quo* and permits the continuation of existing operations. In such an instance an aerodrome airspace change sponsor, for example, would seek to demonstrate that a "do nothing" option could potentially constrain the extant operation and inhibit the proposed enhancement of operational capacity/capability.

The SaxaVord Spaceport operation is a new operation; as such, there is no SaxaVord operational *status quo* to maintain.

The assessment of a "Do Nothing" option, therefore, cannot be undertaken and is simply not a plausible option, as this would not progress in any way SaxaVord Spaceport's aspiration to conduct space launch operations at Unst.

Moreover, the "Do Nothing" option would be a significant impediment to the UK Space IGS targets for the growth of the UK space sector[… and the UK's…] ambition to become a launching state.[12]

19.0.2 "No Airspace Reservation"

SaxaVord recognises that entertaining any option that does not include a proportionate airspace reservation to protect airspace users from the proposed launch operations at SaxaVord (and *vice versa*) is simply

11 CAP1616, Page 41, Para 133.
12. *id*, Page 2.

untenable; accordingly, a "no airspace reservation" option has not been included. Moreover, such an option would completely ignore DP1 - Safety.

19.1. Design Option 1 - *Airspace Reservation (Non-segmented)*

Description.

An "Airspace Reservation (Non-segmented)" design option seeks to establish an airspace reservation of defined dimensions to encompass the fullest identified range of orbital and sub-orbital launch operations. The whole airspace volume would be activated by NOTAM for the minimum period necessary to facilitate spaceport launch operations.

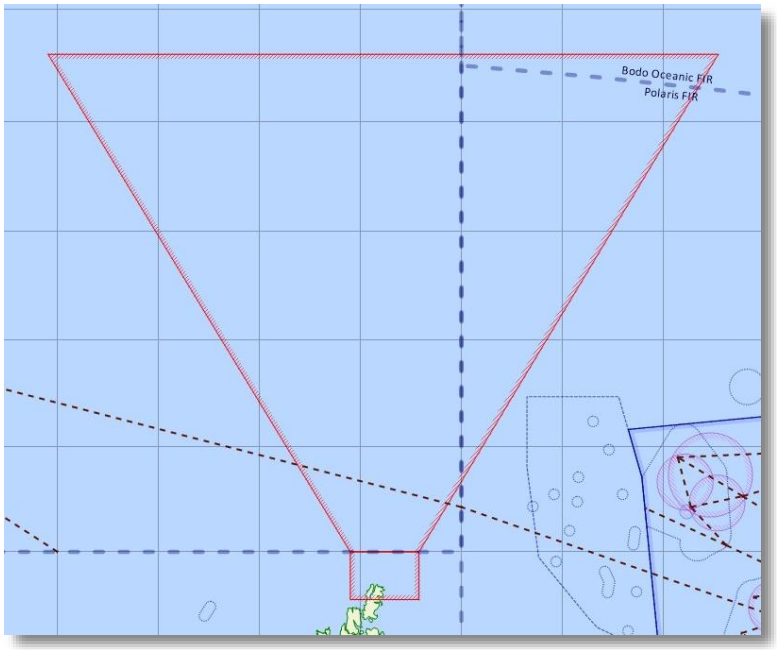

Figure 2 - Design Option 1 - Airspace Reservation (Non-segmented)

Table-top Analysis of Potential Impacts.

Design Option 1 offers a large volume of airspace for the conduct of vertical space launch operations at SaxaVord.

Design Option 1 would see the whole of the airspace closed to other airspace users, regardless of any reduced airspace requirement associated with a specific launch vehicle.

Operational management, notification and coordination procedures would be discussed with the relevant parties during Stage 3 and beyond and reviewed and, where necessary, revised post-implementation.

Initial Safety Analysis.

The initial safety assessment and corresponding arguments for ACP-2017-079 Design Option 1 have concluded that:

- All identified hazards could be mitigated to as low as reasonably practicable (ALARP).
- Given airspace analysis and proposed duration of launches, any impact to airspace users is minimal and manageable.

Detailed safety requirements continue to be developed, supported and informed by parallel activities associated with SaxaVord's temporary airspace reservation application (ACP-2021-090); once matured, these detailed safety requirements will be articulated more fully during Stages 3 and 4.

Initial Option Assessment.

Design Option 1:

- Addresses the Statement of Need.
- In principle, aligns with the defined DPs.

Notwithstanding the foregoing, Design Option 1 could be seen to have more impact on other airspace users by only partially meeting DP3.

19.2. Design Option 2 - Airspace Reservation (Segmented)

Description.

An "Airspace Reservation (Segmented)" design option seeks to establish an airspace reservation of defined and proportionate dimensions that can be tailored to the performance characteristics of the specific launch vehicle (LV) seeking to utilise the SaxaVord Spaceport for a specific launch. Such airspace would be activated by NOTAM for specified periods.

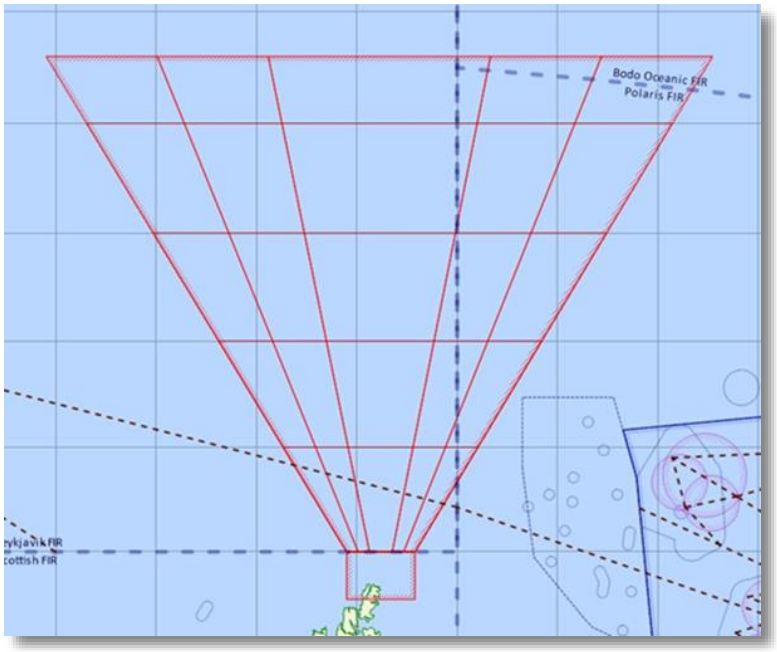

Figure 3 -Design Option 2 - Airspace Reservation (Segmented)

Table-top Analysis of Potential Impacts.

Design Option 2 offers the flexibility to tailor an airspace volume to a specific LV's operating characteristics, thereby reducing to as a low as reasonably practicable the airspace requirements for individual launch operations. In turn, Design Option 2 seeks to minimise impact on other airspace users.

Operational management, notification and coordination procedures would be discussed with the relevant parties during Stage 3 and beyond and reviewed and, where necessary, revised post-implementation.

Initial Safety Analysis.

The initial safety assessment and corresponding arguments for ACP-2017-079 Design Option 1 have concluded that:

- All identified hazards could be mitigated to as low as reasonably practicable (ALARP).

- Given airspace analysis and proposed duration of launches, any impact to airspace users is minimal and manageable.
- The design is modular and meets the representative launch profile concepts of both orbital and sub-orbital profiles; moreover, the design could be tailored to meet the differing operating characteristics of individual launch vehicles, thereby minimising further any potential impacts on airspace users.

Detailed safety requirements continue to be developed, supported and informed by parallel activities associated with SaxaVord's temporary airspace reservation application (ACP-2021-090); once matured, these detailed safety requirements will be articulated more fully during Stages 3 and 4.

Initial Option Assessment.

Design Option 2:

- Addresses the Statement of Need
- Aligning with the defined DPs

Moreover, compared with Design Option 1, Design Option 2 could be seen to have a reduced impact on other airspace users, meeting the requirement of DP3 more fully.

19.3. Preferred Option

The preferred design option to be taken forward to Stage 3 is Design Option 2 - Airspace Reservation (Segmented).

SUMMARY

20. The CAP1616 Stage 2 process requires that airspace change sponsors develop options for their proposed airspace change through a 2-stage approach. In line with this approach, at Stage 2A, SaxaVord developed 2 design options (Option 1 - Non-segmented and Option 2 - Segmented) and tested them with stakeholders to confirm that the options addressed the Statement of Need and aligned with the DPs from Stage 1.

21. At Stage 2B, SaxaVord carried out an initial option appraisal of the impacts of each of the viable options identified in Step 2A, using the design criteria (i.e. the DPs) against which the options were to be assessed. SaxaVord then undertook a table-top analysis of both options to understand the potential impacts of each.

22. As a result of the foregoing, the preferred design option to be taken forward to Stage 3 is Design Option 2 - Airspace Reservation (Segmented).

23. Finally, it must be noted that the airspace design options contained within this document might be subject to change as the ACP process continues and options are matured and refined in accordance with - *inter alia* - safety requirements, design principles and, most importantly, stakeholder engagement and consultation at Stage 3.

LIST OF APPENDICES

1. List of Stakeholders.
2. Stage 2 Engagement Materials.
3. Stage 2 Stakeholder Response Proforma.
4. Stage 2 Introductory Email to Stakeholders.
5. Stage 2 Follow-up Email to Priority Aviation Stakeholders.
6. Stage 2 Stakeholder Response Data.
7. Stage 2 Stakeholder Responses.

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Appendix 1 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

ACP-2017-079 LIST OF STAKEHOLDERS

Avn/ Non-Avn	Organisation	Role/Title	Name	Email Address
Aviation	Aircraft Owners and Pilots Association (AOPA)			
Aviation	Airport Operators Association (AOA)			
Aviation	Airspace Change Organising Group (ACOG)			
Aviation	Airspace4All (A4A)			
Aviation	Airtask (includes Direct Flight Ltd)	Head of Business Development and Safety		
Aviation	Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)			
Aviation	Aviation Environment Federation (AEF)			
Aviation	Babcock International	Head of Flight Operations		
Aviation	Bristows Helicopters - Sumburgh			
Aviation	British Airways (BA)			
Aviation	British Balloon and Airship Club (BBAC)			
Aviation	British Business and General Aviation Association (BBGA)			
Aviation	British Glider Assoc (BGA)			
Aviation	British Hang-glider & Paraglider Assoc. (BHPA)			
Aviation	British Helicopter Association (BHA)	CEO		
Aviation	British Microlight Association (BMAA)			
Aviation	British Model Flying Association (BMFA)			
Aviation	British Skydiving (BPA - Parachute Assoc)			
Aviation	CAA	Airspace Change Account Manager		
Aviation	Flylogix	Ops Director		

Avn/ Non-Avn	Organisation	Role/Title	Name	Email Address
Aviation	GAMA Aviation			
Aviation	General Aviation Alliance (GAA)			
Aviation	Helicopter Club of Great Britain (HCGB)			
Aviation	Highland & Islands Airports Limited (HIAL)			
Aviation	Honourable Company of Air Pilots (HCAP)	Generic Contact		
Aviation	Large Model Association (LMA)	LMA Secretary		
Aviation	Light Aircraft Association (LAA)			
Aviation	Loganair			
Aviation	MOD - Defence Airspace and Air Traffic Management (DAATM)	SO2 Airspace Plans, DAATM		
Aviation	NATS	Swanwick/Prestwick		
Aviation	PDG Aviation			
Aviation	Shetland Flyer			
Aviation	Tingwall Airfield	AFISO		
Aviation	UK Space Agency	Intl Space Flight Policy Advisor		
Non-Aviation	Compass Rose Charters			
Non-Aviation	Lamba Ness Common Grazings			
Non-Aviation	Lerwick Port Authority			
Non-Aviation	Maritime Coastguard Agency (MCA)	Station Cdr Shetland		
Non-Aviation	Met Office			
Non-Aviation	Natural Environment Research Council (NERC)	Generic Contact		
Non-Aviation	Northern Lighthouse Board	Generic Contact		
Non-Aviation	Ocean Kinetics			
Non-Aviation	Offshore Petroleum Regulator for Environment & Decommissioning (OPRED)	Generic Contact		
Non-Aviation	North Sea Transition Authority (previously the Oil & Gas Authority)	Generic Contact		

Avn/ Non-Avn	Organisation	Role/Title	Name	Email Address
Non-Aviation	Oil & Gas UK			
Non-Aviation	Police Scotland	Police Constable		
Non-Aviation	PURE Energy Centre			
Non-Aviation	RNLI	Generic Contact		
Non-Aviation	RSPB	Generic Contact		
Non-Aviation	NHS Scottish Ambulance Service	Lerwick Ambulance Service		
Non-Aviation	NHS Scottish Ambulance Service (Air Ambulance)	NHS Health Scotland (Service Head of Air Ambulance)		
Non-Aviation	Scottish Govt (MSP Highland & Islands)	Wider Local MSP		
Non-Aviation	Scottish Govt (MSP Shetland)	Local MSP		
Non-Aviation	Scottish Natural Heritage			
Non-Aviation	Scottish Ornithologists' Club (SOC)	President		
Non-Aviation	Scottish Wildlife Trust			
Non-Aviation	Scottish Environmental Protection Agency (SEPA)			
Non-Aviation	Shetland Amenity Trust			
Non-Aviation	Shetland College/NAFC			
Non-Aviation	Shetland Fishermen's Association			
Non-Aviation	Shetland Islands Council	Ferries, airports and port engineering		
Non-Aviation	Shetland Oil Terminal Environmental Advisory Group (SOTEAG)			
Non-Aviation	UK Govt (MP Orkney & Shetland)			
Non-Aviation	UK Research & Innovation (UKRI)			
Non-Aviation	Unst Community Council	Clerk		
Non-Aviation	Unst Partnership Ltd	Chairman		

Table 5 - ACP-2017-079 Stakeholders

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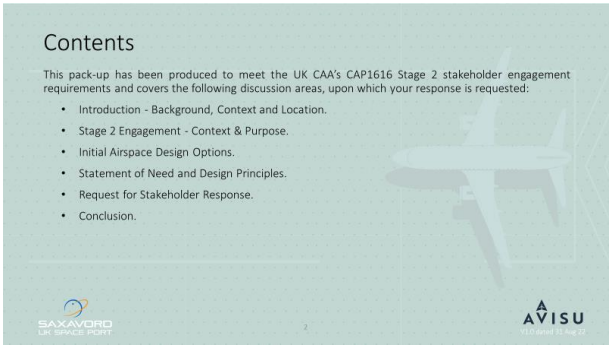
Appendix 2 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 STAKEHOLDER ENGAGEMENT MATERIALS

Slide 1

Slide 2



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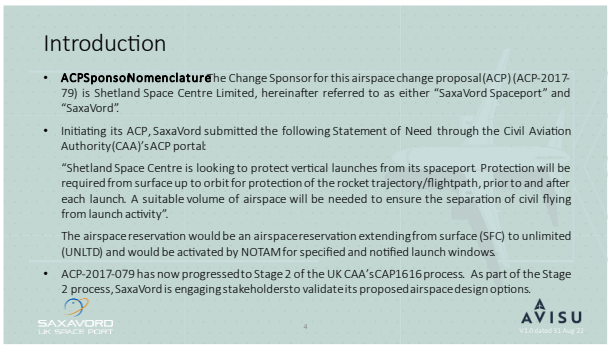

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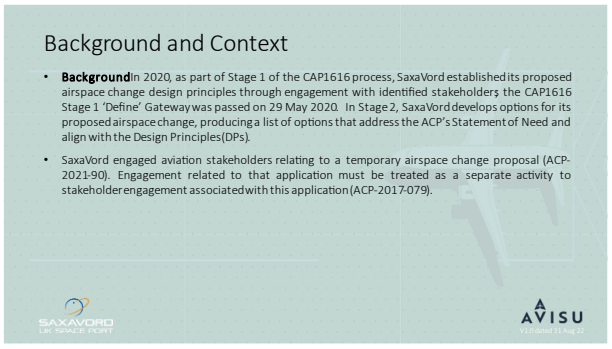

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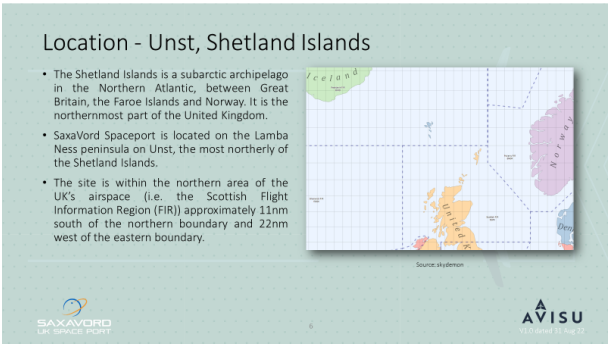

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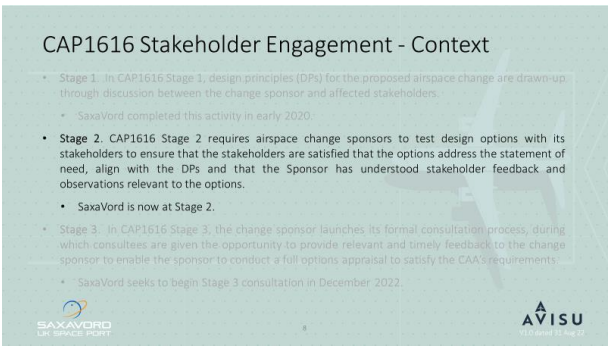

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Purpose of CAP1616 Stage 2 Engagement

- CAP1616 Stage 2 requires airspace change sponsors to test design options with its stakeholders.
- Accordingly, these engagement materials set out SaxaVord's initial airspace design options and seek to confirm that stakeholders are satisfied that the options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1.
- SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal.

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Initial Airspace Design Options - Overview

- SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress with the relevant national and international organisations:
  - Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
  - Identification of suitable launch windows of the minimum duration required (in the order of a few hours), ensuring that any impact on the wider airspace network is minimised.

  The notification, management and coordination of airspace-related activities will be the subjects of more detailed and considered discussion. These aspects of the design and its proposed operation will underpin Stage 3 stakeholder consultation, scheduled to begin in December 2022.
- SaxaVord's Stage 2 engagement, therefore, requests that stakeholders principally consider the geometric shape of the airspace design options when completing their respective responses, which SaxaVord will use to inform the subsequent Initial Options Appraisal.

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Current Airspace Scenario

Situated in the north of the UK's airspace, SaxaVord Spaceport is 11nm south of the northern boundary of the Scottish FIR and 22nm west of the FIR's eastern boundary.

The SaxaVord site (and its immediate surroundings) resides wholly within UK Class G airspace.

The proposed launch activities and airspace design would extend from SFC to UNLTD, through UK airspace Classes G and C, for the notified specified periods and beyond the lateral limits of the UK Flight and Upper Information Regions (FIR and UIR). Above FL195 (i.e. 19,500ft AMSL), commercial air traffic operates under the principle of "Free Route Airspace", which allows flights to route direct, *vice* following prescribed routes along pre-determined navigation points.

SaxaVord recognises that entertaining any airspace design option that does not include a proportionate airspace reservation to protect airspace users from the proposed launch operations at SaxaVord (and *vice versa*) is untenable.

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Design Option - 1 "Airspace Reservation (Most Limiting)"

- **Description**. An "Airspace Reservation (Most Limiting)" design option seeks to establish an airspace reservation of defined dimensions to encompass the fullest identified range of orbital and sub-orbital launch operations.
- The whole airspace volume would be activated by NOTAM for the minimum period necessary to facilitate spaceport launch operations.
- Operational management, notification and coordination procedures will be discussed with the relevant parties during Stage 3 and beyond.

Source: skydemon

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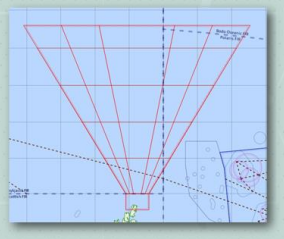
Design Option - 2 "Airspace Reservation (Segmented)"

- **Description**. An "Airspace Reservation (Segmented)" design option seeks to establish an airspace reservation of defined and proportionate dimensions that could be tailored to the performance characteristics of the specific launch vehicle (LV) seeking to utilise the SaxaVord Spaceport for a specific launch.
- The tailored airspace volume would be activated by NOTAM for the minimum period necessary to facilitate spaceport launch operations.
- Operational management, notification and coordination procedures will be discussed with the relevant parties during Stage 3 and beyond.



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ACP-2017-079 Statement of Need

- Stakeholders are requested to consider each proposed design option and offer their respective assessment of each option's alignment to following statement of need, using the response proforma:

  "[SaxaVord] is looking to protect vertical launches from its spaceport. Protection will be required from surface up to orbit for protection of the rocket trajectory/flight path, prior to and after each launch. A suitable volume of airspace will be needed to ensure the separation of civil flying from launch activity"

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ACP-2017-079 Design Principles

- The table below contains the DPs agreed following Stage 1 engagement. Stakeholders are requested to consider each proposed design option and offer their respective assessment of each option's alignment to the individual DPs, using the response proforma.

DP	Category	Design Principle	Priority
1	Safety	The safety of other airspace users and the public is the paramount DP to be used in this ACP.	A
2	Environment	The environmental and noise effects of rocket launch should be minimised by the design of the airspace change.	A
3	Airspace Management (ASM)	The airspace volume should be as small as possible to minimise the impact on and ensure the safety of other airspace users.	B
4	ASM	The duration of the airspace activation should be the minimum required to minimise the impact on and ensure the safety of other airspace users. The possible impact of concurrent operations of other airspace should be considered.	B
5	ASM	Airspace notification should be timely and accurate within an established method of rapid notification.	A
6	ASM	A process to allow some special airspace users to enter the airspace safely and halt operations should be established.	A
7	ASM	Other international airspace agencies should be included in the airspace design process.	B
8	Regulation	Airspace design should meet duties and requirements of other public agencies placed upon SSC.	B
9	ASM	Letters of agreement and memoranda of understanding will be developed, if required, between relevant parties.	A
10	ASM	The airspace change will take account of ongoing and continuing airspace management and policies.	B

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Request for Stakeholder Response

- In line with CAP1616's Stage 2 requirements, SaxaVord seeks to engage its stakeholders on the two proposed design options.
- An engagement response proforma for your attention is available on the Shetland Spacecentre/SaxaVord Spaceport ACP portal on the CAA's website at the following link.
- For each of the proposed design options, SaxaVord requests that stakeholders respond to the statements set out in the accompanying response proforma.
- Once completed, your organisation's response proforma should be submitted by email to saxavordpacp@avisu.co.uk. "Nil Return" responses are also requested.
- Stakeholder responses are requested by 1200BST on Friday 23rd September 2022.
- In the interim, questions related to this stage of the ACP-2017-079 process may also be directed to saxavordpacp@avisu.co.uk.

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Slide 21

Conclusion

This pack-up has been produced to meet the UK CAA's CAP1616 Stage 2 stakeholder engagement requirements and covered the following discussion areas:

- Introduction - Background, Context and Location.
- Stage 2 Engagement - Context & Purpose.
- Initial Airspace Design Options.
- Statement of Need and Design Principles.
- Request for Stakeholder Response.
- Conclusion.

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Appendix 3 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 STAKEHOLDER RESPONSE PROFORMA

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation:

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Stage 2 Stakeholder Engagement Materials

SaxaVord's Stage 2 stakeholder engagement materials are provided on the CAA's ACP portal for ACP-2017-079.

Responding to the Survey

SaxaVord's Stage 2 engagement requests that stakeholders principally consider the geometric shape of the airspace design options when completing their respective responses. Stakeholders are requested to consider and respond to the statements within the proforma.

To enable SaxaVord to collate as many stakeholder responses as possible, responses are requested by no later than 1200BST Friday 23rd September 2022. Completed proformas should be returned to the following email address: saxavordpacp@avisu.co.uk.

Stakeholders are reminded that there will be the opportunity for more detailed and interactive consultation on this matter in the application's CAP1616 Stage 3 ("Consult"), which is anticipated to begin in December 2022.

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	Agree *	Disagree *	Unsure *
2. The proposed airspace design option satisfies DP1.			
Your Response:	Agree *	Disagree *	Unsure *
3. The proposed airspace design option satisfies DP2.			
Your Response:	Agree *	Disagree *	Unsure *
4. The proposed airspace design option satisfies DP3.			
Your Response:	Agree *	Disagree *	Unsure *
5. The proposed airspace design option satisfies DP4.			
Your Response:	Agree *	Disagree *	Unsure *
6. The proposed airspace design option satisfies DP5.			
Your Response:	Agree *	Disagree *	Unsure *
7. The proposed airspace design option satisfies DP6.			
Your Response:	Agree *	Disagree *	Unsure *
8. The proposed airspace design option satisfies DP7.			
Your Response:	Agree *	Disagree *	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	Agree *	Disagree *	Unsure *
10. The proposed airspace design option satisfies DP9.			
Your Response:	Agree *	Disagree *	Unsure *
11. The proposed airspace design option satisfies DP10.			
Your Response:	Agree *	Disagree *	Unsure *

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	Agree *	Disagree *	Unsure *
2. The proposed airspace design option satisfies DP1.			
Your Response:	Agree *	Disagree *	Unsure *
3. The proposed airspace design option satisfies DP2.			
Your Response:	Agree *	Disagree *	Unsure *
4. The proposed airspace design option satisfies DP3.			
Your Response:	Agree *	Disagree *	Unsure *
5. The proposed airspace design option satisfies DP4.			
Your Response:	Agree *	Disagree *	Unsure *
6. The proposed airspace design option satisfies DP5.			
Your Response:	Agree *	Disagree *	Unsure *
7. The proposed airspace design option satisfies DP6.			
Your Response:	Agree *	Disagree *	Unsure *
8. The proposed airspace design option satisfies DP7.			
Your Response:	Agree *	Disagree *	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	Agree *	Disagree *	Unsure *
10. The proposed airspace design option satisfies DP9.			
Your Response:	Agree *	Disagree *	Unsure *
11. The proposed airspace design option satisfies DP10.			
Your Response:	Agree *	Disagree *	Unsure *

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

UK CAA requires that all completed forms must be retained as evidence of the Applicant's engagement with stakeholders and other interested parties. Personal Data supplied by respondents will be retained confidentially and managed under the principles of the UK Data Protection Act (DPA) (2018) and the UK General Data Protection Regulation.

Signed	.....
INITIALS AND SURNAME	.....
Role/Position	.....
Organisation	.....
Email Address	.....
Telephone No	.....
Date	.....

* Delete as appropriate

Appendix 4 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 INTRODUCTORY EMAIL TO STAKEHOLDERS

SAXAVORD SPACEPORT AIRSPACE RESERVATION APPLICATION (ACP-2017-079) - REQUEST FOR STAKEHOLDER ENGAGEMENT ...

Reply | Reply All | Forward | ...

SP SaxaVord Permanent ACP
To SaxaVord Permanent ACP
Thu 01/09/2022 15:44
Bcc [redacted]

You replied to this message on 14/09/2022 11:50.

Good afternoon,

Introduction. Shetland Spacecentre Limited (hereinafter referred to as "SaxaVord Spaceport" or "SaxaVord") seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands. A corresponding airspace change proposal (ACP) was initiated (ACP-2017-079) with the UK's Civil Aviation Authority (CAA) under the UK CAA's CAP1616 process. The Application has now progressed to the "Develop and Assess" stage (i.e. Stage 2), prompting our engagement with you as an identified stakeholder.

Airspace Reservation. To enable scheduled launch operations at SaxaVord, a suitable airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from launch activities and to ensure the safety of launch activities from other airspace users. The airspace reservation would be activated by routine aeronautical notification process (i.e. NOTAM) for the minimum duration required to support spaceport launch activities and would extend from surface to unlimited.

CAP1616 Stage 2 – Develop and Assess. In Stage 2 of the CAP1616 process, the airspace change sponsor (SaxaVord) develops one or more options that address the application's Statement of Need and align with the defined airspace design principles; the latter were developed following feedback from SaxaVord's earlier engagement with stakeholders at Stage 1 of the process. Your organisation has been identified as one of the aviation stakeholders with whom SaxaVord seeks to engage as part of the Stage 2 Stakeholder Engagement.

CAP1616 Stage 2 Stakeholder Engagement. CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options. Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

Application information, stakeholder engagement materials and a corresponding response proforma can be found on the Shetland Spacecentre (SaxaVord Spaceport)'s ACP-2017-079 page of the UK CAA's Portal at the following links:

ACP-2017-079 Stage 2 Stakeholder Materials.

ACP-2017-079 Stage 2 Stakeholder Response Proforma.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Timeline. To enable SaxaVord to collate as many stakeholder responses as possible, request that your completed proforma is returned to the following email address: saxavordpacp@avisu.co.uk; responses are requested by **1200BST on Friday 23rd September 2022**. The short suspense date reflects both the stage in the CAP1616 process and that the response proforma is designed for ease of completion.

Stakeholders should note that their completed responses will pave the way for more detailed and considered stakeholder consultation at Stage 3 of the CAP1616 process, which is anticipated to begin in December 2022.

In anticipation, thank you for your engagement. Your response will provide valuable input to aid the subsequent development of the application and will be held and managed in the strictest confidence and in accordance with extant UK Data Protection guidance.

In the interim, please feel free to contact us if you have any further questions relating to this stage of ACP-2017-079's CAP1616 process.

On behalf of the Shetland Spacecentre Ltd (SaxaVord Spaceport), for the purposes of ACP-2017-079's CAP1616 application and engagement processes.

http://www.avisu.co.uk/ https://saxavord.com/

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Appendix 5 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 FOLLOW-UP EMAIL TO PRIORITY AVIATION STAKEHOLDERS

FW: SAXAVORD SPACEPORT AIRSPACE RESERVATION APPLICATION (ACP-2017-079) - REQUEST FOR STAKEHOLDER ENGAGEM...

Reply | Reply All | Forward | ...

SP SaxaVord Permanent ACP
To [redacted]
Cc

Fri 02/09/2022 16:45

Follow up.
Recipients received: Follow up by 22 September 2022 12:00.

Good afternoon, [redacted]

Shetland Spacecentre Limited (SaxaVord Spaceport) recently sent an email to your organisation outlining the UK CAA's CAP1616 Stage 2 stakeholder engagement requirements, with a request for your organisation's participation in the requisite stakeholder engagement process. That email was a generic request distributed to all identified stakeholders associated with the application (ACP-2017-079). SaxaVord Spaceport recognises that [redacted] may have more than a generic interest in the application and associated activities therein and, as such, is acknowledged as a priority stakeholder in the Stage 2 engagement process.

We would understand if you wished to discuss this matter in more detail; two of our team members, [redacted] are very happy to meet with you (virtually) at your convenience. Such a meeting could also be a useful opportunity for us to update you on the progress of our temporary airspace reservation application (ACP-2021-090), which we discussed with you earlier this year.

We look forward to hearing from [redacted] in due course and to discussing these and related matters further.

In anticipation, very many thanks.

On behalf of the Shetland Spacecentre Ltd (SaxaVord Spaceport), for the purposes of ACP-2017-079's CAP1616 application and engagement processes.

http://www.avisu.co.uk/ https://saxavord.com/

From: SaxaVord Permanent ACP
Sent: 01 September 2022 15:44
To: SaxaVord Permanent ACP <saxavordpacp@avisu.co.uk>
Subject: SAXAVORD SPACEPORT AIRSPACE RESERVATION APPLICATION (ACP-2017-079) - REQUEST FOR STAKEHOLDER ENGAGEMENT RESPONSE

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Appendix 6 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 STAKEHOLDER RESPONSE DATA

Figures 4 and 5, below, summarise the stakeholder responses received during the Stage 2 engagement.

Design Option 1 - Airspace Reservation (Non-segmented)

Respondent	SoN	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10
Danish Ministry of Transport	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure
Loganair	Agree	Agree	Unsure	Agree	Unsure	Agree	Agree	Agree	Agree	Agree	Agree
MOD - Defence Airspace and Air Traffic	Agree	Agree	Disagree	Agree	Agree	Agree	Agree	Unsure	Agree	Agree	Unsure
NATS	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure
NHS Scottish Ambulance Service	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*
Unst Partnership Ltd	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree

Figure 4 - Design Option 1 Responses

Design Option 1 - Airspace Reservation (Segmented)

Respondent	SoN	DP1	DP2	DP3	DP4	DP5	DP6	DP7	DP8	DP9	DP10
Danish Ministry of Transport	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure
	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Unsure	Unsure
MOD - Defence Airspace and Air Traffic	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Unsure	Agree	Agree	Agree
NATS	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure	Unsure
NHS Scottish Ambulance Service	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*	*Nil Response*
Unst Partnership Ltd	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree

Figure 5 - Design Option 2 Responses

Intentionally Blank

Appendix 7 to
ACP-2017-079 Stage 2 Submission
Dated 14 October 2022

STAGE 2 STAKEHOLDER RESPONSES

MOD (DAATM)

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: DAATM, on behalf of MOD

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Stage 2 Stakeholder Engagement Materials

SaxaVord's Stage 2 stakeholder engagement materials are provided on the CAA's ACP portal for ACP-2017-079.

Responding to the Survey

SaxaVord's Stage 2 engagement requests that stakeholders principally consider the geometric shape of the airspace design options when completing their respective responses. Stakeholders are requested to consider and respond to the statements within the proforma.

To enable SaxaVord to collate as many stakeholder responses as possible, responses are requested by no later than 1200BST Friday 23rd September 2022. Completed proformas should be returned to the following email address: saxavordpacp@avisu.co.uk.

Stakeholders are reminded that there will be the opportunity for more detailed and interactive consultation on this matter in the application's CAP1616 Stage 3 ("Consult"), which is anticipated to begin in December 2022.

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
2. The proposed airspace design option satisfies DP1.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
3. The proposed airspace design option satisfies DP2.			
Your Response:	~~Agree *~~	Disagree *	~~Unsure *~~
4. The proposed airspace design option satisfies DP3.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
5. The proposed airspace design option satisfies DP4.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
6. The proposed airspace design option satisfies DP5.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
7. The proposed airspace design option satisfies DP6.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
8. The proposed airspace design option satisfies DP7.			
Your Response:	~~Agree *~~	~~Disagree *~~	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
10. The proposed airspace design option satisfies DP9.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
11. The proposed airspace design option satisfies DP10.			
Your Response:	~~Agree *~~	~~Disagree *~~	Unsure *

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
2. The proposed airspace design option satisfies DP1.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
3. The proposed airspace design option satisfies DP2.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
4. The proposed airspace design option satisfies DP3.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
5. The proposed airspace design option satisfies DP4.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
6. The proposed airspace design option satisfies DP5.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
7. The proposed airspace design option satisfies DP6.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
8. The proposed airspace design option satisfies DP7.			
Your Response:	~~Agree *~~	~~Disagree *~~	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
10. The proposed airspace design option satisfies DP9.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~
11. The proposed airspace design option satisfies DP10.			
Your Response:	Agree *	~~Disagree *~~	~~Unsure *~~

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

UK CAA requires that all completed forms must be retained as evidence of the Applicant's engagement with stakeholders and other interested parties. Personal Data supplied by respondents will be retained confidentially and managed under the principles of the UK Data Protection Act (DPA) (2018) and the UK General Data Protection Regulation.

Signed	
INITIALS AND SURNAME	
Role/Position	SO2 Airspace Ops & Plans 2
Organisation	DAATM (MOD)
Email Address	
Telephone No	
Date	22 Sep 22

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: CAA Denmark

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

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Stage 2 Stakeholder Engagement Materials

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Responding to the Survey

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Stakeholders are reminded that there will be the opportunity for more detailed and interactive consultation on this matter in the application's CAP1616 Stage 3 ("Consult"), which is anticipated to begin in December 2022.

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	Agree *	Disagree *	Unsure *
2. The proposed airspace design option satisfies DP1.			
Your Response:	Agree *	Disagree *	Unsure *
3. The proposed airspace design option satisfies DP2.			
Your Response:	Agree *	Disagree *	Unsure *
4. The proposed airspace design option satisfies DP3.			
Your Response:	Agree *	Disagree *	Unsure *
5. The proposed airspace design option satisfies DP4.			
Your Response:	Agree *	Disagree *	Unsure *
6. The proposed airspace design option satisfies DP5.			
Your Response:	Agree *	Disagree *	Unsure *
7. The proposed airspace design option satisfies DP6.			
Your Response:	Agree *	Disagree *	Unsure *
8. The proposed airspace design option satisfies DP7.			
Your Response:	Agree *	Disagree *	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	Agree *	Disagree *	Unsure *
10. The proposed airspace design option satisfies DP9.			
Your Response:	Agree *	Disagree *	Unsure *
11. The proposed airspace design option satisfies DP10.			
Your Response:	Agree *	Disagree *	Unsure *

* Delete as appropriate

V1.0 FINAL 31 Aug 22

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Page | 2 of 4

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	X Agree *	X Disagree *	Unsure *
2. The proposed airspace design option satisfies DP1.			
Your Response:	X Agree *	X Disagree *	Unsure *
3. The proposed airspace design option satisfies DP2.			
Your Response:	X Agree *	X Disagree *	Unsure *
4. The proposed airspace design option satisfies DP3.			
Your Response:	X Agree *	X Disagree *	Unsure *
5. The proposed airspace design option satisfies DP4.			
Your Response:	X Agree *	X Disagree *	Unsure *
6. The proposed airspace design option satisfies DP5.			
Your Response:	X Agree *	X Disagree *	Unsure *
7. The proposed airspace design option satisfies DP6.			
Your Response:	X Agree *	X Disagree *	Unsure *
8. The proposed airspace design option satisfies DP7.			
Your Response:	X Agree *	X Disagree *	Unsure *
9. The proposed airspace design option satisfies DP8.			
Your Response:	X Agree *	X Disagree *	Unsure *
10. The proposed airspace design option satisfies DP9.			
Your Response:	X Agree *	X Disagree *	Unsure *
11. The proposed airspace design option satisfies DP10.			
Your Response:	X Agree *	X Disagree *	Unsure *

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

UK CAA requires that all completed forms must be retained as evidence of the Applicant's engagement with stakeholders and other interested parties. Personal Data supplied by respondents will be retained confidentially and managed under the principles of the UK Data Protection Act (DPA) (2018) and the UK General Data Protection Regulation.

Signed	[redacted]
INITIALS AND SURNAME	
Role/Position	ATM expert
Organisation	CAA Denmark
Email Address	[redacted]
Telephone No	
Date	23. september 2022

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: **Loganair, Ltd**

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Stage 2 Stakeholder Engagement Materials

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Responding to the Survey

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PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree** *	*	*
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree** *	*	*
3. The proposed airspace design option satisfies DP2.			
Your Response:	*	*	**Unsure** *
4. The proposed airspace design option satisfies DP3.			
Your Response:	*	**Disagree** *	*
5. The proposed airspace design option satisfies DP4.			
Your Response:	*	*	**Unsure** *
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree** *	*	*
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree** *	*	*
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree** *	*	*
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree** *	*	*
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree** *	*	*
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree** *	*	*

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree** *	*	*
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree** *	*	*
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree** *	*	*
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree** *	*	*
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree** *	*	*
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree** *	*	*
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree** *	*	*
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree** *	*	*
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree** *	*	*
10. The proposed airspace design option satisfies DP9.			
Your Response:	*	*	**Unsure** *
11. The proposed airspace design option satisfies DP10.			
Your Response:	*	*	**Unsure** *

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

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Signed	[redacted]
INITIALS AND SURNAME	
Role/Position	Manager, Flight Support
Organisation	Loganair
Email Address	[redacted]
Telephone No	
Date	06/09/2022

* Delete as appropriate

NATS

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: NATS

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Stage 2 Stakeholder Engagement Materials

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Responding to the Survey

SaxaVord's Stage 2 engagement requests that stakeholders principally consider the geometric shape of the airspace design options when completing their respective responses. Stakeholders are requested to consider and respond to the statements within the proforma.

To enable SaxaVord to collate as many stakeholder responses as possible, responses are requested by no later than **1200BST Friday 23rd September 2022**. Completed proformas should be returned to the following email address: saxavordpacp@avisu.co.uk.

Stakeholders are reminded that there will be the opportunity for more detailed and interactive consultation on this matter in the application's CAP1616 Stage 3 ("Consult"), which is anticipated to begin in December 2022.

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree**	**Disagree**	**Unsure ***

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree ***	**Disagree**	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree ***	**Disagree**	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree ***	**Disagree**	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree ***	**Disagree**	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree**	**Disagree**	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree**	**Disagree**	**Unsure ***

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

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Signed	
INITIALS AND SURNAME	
Role/Position	NATS Policy Team
Organisation	NATS
Email Address	
Telephone No	
Date	22/09/2022

* Delete as appropriate

Scottish Ambulance Service

PROTECT
(When Either Wholly or Partly Completed)

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: Scottish Ambulance Service

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

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Purpose

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Responding to the Survey

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PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

UK CAA requires that all completed forms must be retained as evidence of the Applicant's engagement with stakeholders and other interested parties. Personal Data supplied by respondents will be retained confidentially and managed under the principles of the UK Data Protection Act (DPA) (2018) and the UK General Data Protection Regulation.

Signed	
INITIALS AND SURNAME	
Role/Position	Head of Service, North Region (Islands)
Organisation	Scottish Ambulance Service
Email Address	
Telephone No	
Date	15/09/2022

I have had a look at the survey and don't feel we are qualified to answer if they meet the needs of design options one or two, however the design principles seem to cover most things I could think of when reading the paper especially DP1,2 and 6, when thinking about the SAS strategies around staff welfare, Air Ambulance movements and our environmental contribution.
I am sure we can get onto more detail around land Ambulance access and RVPs etc in stage 3

* Delete as appropriate

CAP1616 STAGE 2 STAKEHOLDER ENGAGEMENT RESPONSE PROFORMA

Shetland Space Centre Limited (SaxaVord Spaceport) Airspace Change Proposal

Airspace change ID: ACP-2017-079

Responding Organisation: _____

Introduction

Shetland Space Centre Limited (SaxaVord Spaceport) seeks to conduct vertical launch operations for orbital and sub-orbital activities from SaxaVord Spaceport on Lamba Ness, Unst, Shetland Islands.

An airspace reservation of defined and proportionate dimensions will be required to ensure the safety of other airspace users from SaxaVord Spaceport launch activities and to ensure the safety of SaxaVord Spaceport launch activities from other airspace users. The airspace reservation would be activated for specified periods before, during and after nominated launch activities and would extend from surface to unlimited.

SaxaVord remains cognisant of stakeholder feedback from Stage 1. Since Stage 1, SaxaVord continues to discuss and progress the following with the relevant national and international organisations:

- Letters of agreement/memoranda of understanding, including airspace notification and coordination and emergency and airborne security-related short-notice access procedures.
- Identification of suitable launch windows of the minimum duration required, ensuring that any impact on the wider airspace network is minimised.

Purpose

CAP1616 Stage 2 requires SaxaVord to test design options with identified stakeholders to ensure that the stakeholders are satisfied that the options address the statement of need, align with the Design Principles (DPs) and that the Sponsor has understood stakeholder feedback and observations relevant to the options.

Accordingly, SaxaVord seeks to confirm that its stakeholders are satisfied that the proposed options address the statement of need, align with the agreed DPs and that SaxaVord has understood stakeholder feedback and observations from Stage 1 of the CAP1616 process.

SaxaVord will use stakeholders' Stage 2 responses to inform the subsequent Initial Options Appraisal prior to Stage 3, where the notification, management and coordination of airspace-related activities will underpin the associated formal stakeholder consultation.

Stage 2 Stakeholder Engagement Materials

SaxaVord's Stage 2 stakeholder engagement materials are provided on the CAA's ACP portal for ACP-2017-079.

Responding to the Survey

SaxaVord's Stage 2 engagement requests that stakeholders principally consider the geometric shape of the airspace design options when completing their respective responses. Stakeholders are requested to consider and respond to the statements within the proforma.

To enable SaxaVord to collate as many stakeholder responses as possible, responses are requested by no later than **1200BST Friday 23rd September 2022**. Completed proformas should be returned to the following email address: saxavordpacp@avisu.co.uk.

Stakeholders are reminded that there will be the opportunity for more detailed and interactive consultation on this matter in the application's CAP1616 Stage 3 ("Consult"), which is anticipated to begin in December 2022.

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Response Proforma

ACP-2017-079 Stage 2 Design Option 1 - "Airspace Reservation (Most Limiting)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***

* Delete as appropriate

PROTECT
(When Either Wholly or Partly Completed)

Response Proforma

ACP-2017-079 Stage 2 Design Option 2 - "Airspace Reservation (Segmented)"

1. The proposed airspace design option satisfies the ACP statement of need.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
2. The proposed airspace design option satisfies DP1.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
3. The proposed airspace design option satisfies DP2.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
4. The proposed airspace design option satisfies DP3.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
5. The proposed airspace design option satisfies DP4.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
6. The proposed airspace design option satisfies DP5.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
7. The proposed airspace design option satisfies DP6.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
8. The proposed airspace design option satisfies DP7.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
9. The proposed airspace design option satisfies DP8.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
10. The proposed airspace design option satisfies DP9.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***
11. The proposed airspace design option satisfies DP10.			
Your Response:	**Agree ***	**Disagree ***	**Unsure ***

* Delete as appropriate

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Thank you for your engagement. Your response will provide valuable input to aid the development of the Application.

UK CAA requires that all completed forms must be retained as evidence of the Applicant's engagement with stakeholders and other interested parties. Personal Data supplied by respondents will be retained confidentially and managed under the principles of the UK Data Protection Act (DPA) (2018) and the UK General Data Protection Regulation.

Signed	[redacted]
INITIALS AND SURNAME	
Role/Position	Chair
Organisation	Unst Partnership Ltd.
Email Address	[redacted]
Telephone No	
Date	13th Sept 2022

* Delete as appropriate

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