QINETIQ

SPACE PORT 1

ACP-2021-12

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REVISED

STEP 1B DESIGN PRINCIPLES & STAKEHOLDER ENGAGEMENT REPORT

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4	29th September 2021	Updated Minor Corrections

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Executive Summary

Spaceport 1 (SP-1) vertical rocket launch site is being developed, subject to planning consent, at Scolpaig, North Uist on the Outer Hebrides. The purpose of the site is to enable the safe operation of both sub-orbital and orbital rocket launches. Such rocket launches pose a hazard to other airspace users and, therefore, in the interests of safety, it is considered necessary to segregate this activity accordingly. Segregation is achieved in a number of ways. However, due to the site sitting beneath Class G airspace, all methods of segregation necessitate a change in airspace in the immediate vicinity.

As described in Annex D to Civil Aviation Publication (CAP) 1616, the airspace change Sponsor is required to conduct a detailed stakeholder analysis to ensure they engage with all potential stakeholders over the airspace design principles. Given the location of the site, a remote part of the Outer Hebrides that is extremely sparsely populated, there is little or no General Aviation (GA) activity and only limited other aviation activity below 7000ft; therefore, the number of interested stakeholders was restricted. Notwithstanding, the Sponsor reached out to all National Air Traffic Management Advisory Committee (NATMAC) members, local council; Nature Scotland; local helicopter operators; airports; regional airlines; national and international Air Navigation Service providers (ANSPs) and the Ministry of Defence (MOD). Following the CAA DEFINE Gateway a second engagement round was conducted where additional non-aviation stakeholders, specifically environmental interests groups, were added. It was further decided to expand the environmental Design Principle 7 (DP7) and slightly modify the detailed description of other DPs to account for airspace outside the existing D701 Danger Areas. However, as only one DP was modified and other changes were only made to the expanded descriptions, it was considered that full re-engagement with all stakeholders was not necessary.

Due to COVID-19 restrictions, the change Sponsor conducted all engagement by email, WebEx and telephone. Only a few stakeholders provided feedback and this was probably due, in part, to the lack of aviation activity below 7000ft in this area of the UK but also as a result of the parallel engagement with many of the stakeholders on the proposal for a Temporary Danger Area (TDA) for the same site; ACP-2021-37 refers. In some cases, comprehensive feedback was received on the TDA proposal, the content of which is used in refining the DPs detailed descriptions and will help inform the final airspace solution and corresponding operating procedures. This is of particular relevance to the use of the adjacent D701 Hebrides Range Danger Areas and airspace beyond, where it has been identified (through the TDA feedback) that any additional activity, beyond that of normal MOD use, is likely to impact on the Air Traffic Management (ATM) network. Furthermore, such impact could have a consequential effect on airline operators, ANSPs and the MOD. It is here where the airspace usage protocols will need to be carefully designed and agreed at governmental level.

Despite only 20% of stakeholders responding, the vast majority of those that did were satisfied with the proposed DPs. Two of the respondents provided detailed feedback although only one of these was relevant to the DPs, the other was a generic response to airspace change and was more focused towards an increase in controlled airspace. Despite one respondent providing extensive feedback, upon examination it was determined that this had been influenced by recent correspondence and a WebEx meeting relating to the TDA proposal for the same site. Although many of the points raised were valid and worthy of future investigation, they were not all relevant to the DPs, those that were have been incorporated into the refined DP detail description where appropriate. The refined DPs are forwarded to the CAA for consideration.

1 Introduction

The revised report is compiled as part of the Airspace Change Proposal (ACP) process prescribed in Civil Aviation Publication (CAP) 1616 [A] for permanent airspace changes. ACP-2021-12 has been commenced in order to establish segregated airspace around and beyond the Spaceport 1 (SP-1) launch site on the Outer Hebrides. QinetiQ is the Sponsor for the airspace change process.

The SP-1 consortium led by the local council, Comhairle nan Eilean Siar, comprising Highlands & Islands Enterprises (HIE), private investors and QinetiQ, is developing, subject to planning consent, a vertical launch spaceport located at Scolpaig, North Uist for the launch of sub-orbital (sounding rockets) and orbital, small satellite carrying rockets. This site is being developed as an opportunity in support of the UK government's spaceflight programme, 'LaunchUK', which aspires to grow the UK's global market share of the space sector to 10% by 2030 and be at the forefront of small satellite launch.

A temporary airspace change for SP-1 in the form of a Temporary Danger Area (TDA) is in progress (ACP-2021-37 refers) [B], as a parallel work strand, to enable sub-orbital sounding rocket launch ahead of the permanent airspace solution being in place.

The SP-1 site at Scolpaig currently lies beneath Class G unregulated airspace but is only a few miles from the D701 complex. As rocket launches will pose a risk to other airspace users, there is a requirement to safely segregate such activity to minimise risk. Segregation can be achieved by establishing segregated airspace around the launch site such that it provides connectivity to the existing D701 segregated airspace complex. Figure 1 shows the position of the launch site in relation to the D701 complex.

For orbital rocket launch the trajectory will need to be on a Northerly orientation in order to access both Polar and Sun-synchronous orbits. During the first submission of the Design Principles (DP) report it was considered that any orbital rocket launched from SP-1 would be at an altitude above 300,000ft (over 90kms) when exiting D701, and would be ballistic; see Figure 2. Therefore, even in the event of a major malfunction, the rocket would not pose a risk to other aircraft in the immediate vicinity (within the UK FIR). It was considered that segregated airspace beyond D701 would not be required other than for rocket stage re-entry profiles. As these profiles vary significantly between the different rocket types, no one generic area of segregated airspace would be deemed appropriate to cover all eventualities. It was considered that for rocket stage re-entry, probably the most efficient use of airspace would be to NOTAM specific areas as is current practice in the North Atlantic (NAT) for rocket launches from French Guiana. DP9 was intended to capture this requirement with a view to opening the debate on this topic with the necessary ANSPs during Stage 2 of the ACP process, especially as such re-entry drop zones are likely to be outside the UK FIR and CAA jurisdiction; see Figure 3.

It was recognised however, that a number of DPs focused entirely on use of D701 and, although valid, consideration was not made in the DPs for a bespoke airspace design excluding use of D701 complex. It was decided that although the DPs remain valid, the detailed descriptions of some of the DPs (namely DP2, 3, 4 & 7) should be modified to reflect the potential use of a bespoke modular system of airspace that does not use D701. However, the argument remains that using the same or similar Airspace Management (ASM) procedures to those used for D701 (even for a bespoke airspace design) should be considered in the DPs as the provenance of these procedures has proven best practice over a number of years. Furthermore, the DP regarding deconfliction with MOD activity and use of/disruption to the D701 areas must also remain a DP consideration.

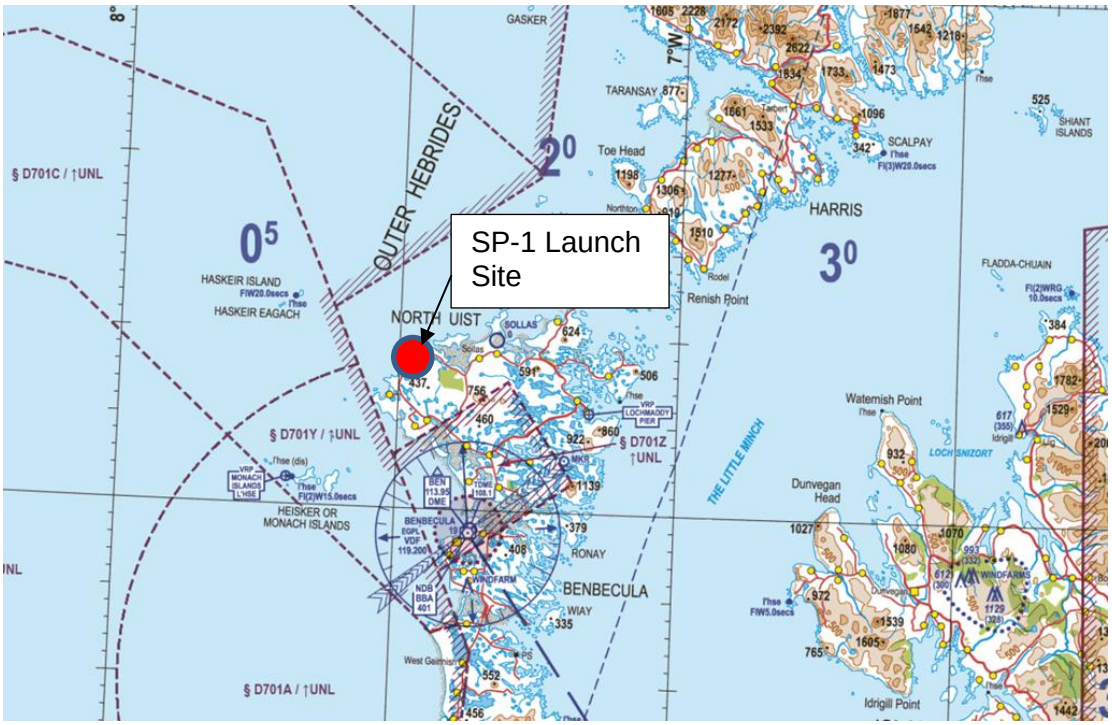


Figure 1: Diagram Depicting the Position of the SP-1 Launch Site in Relation to D701 Complex

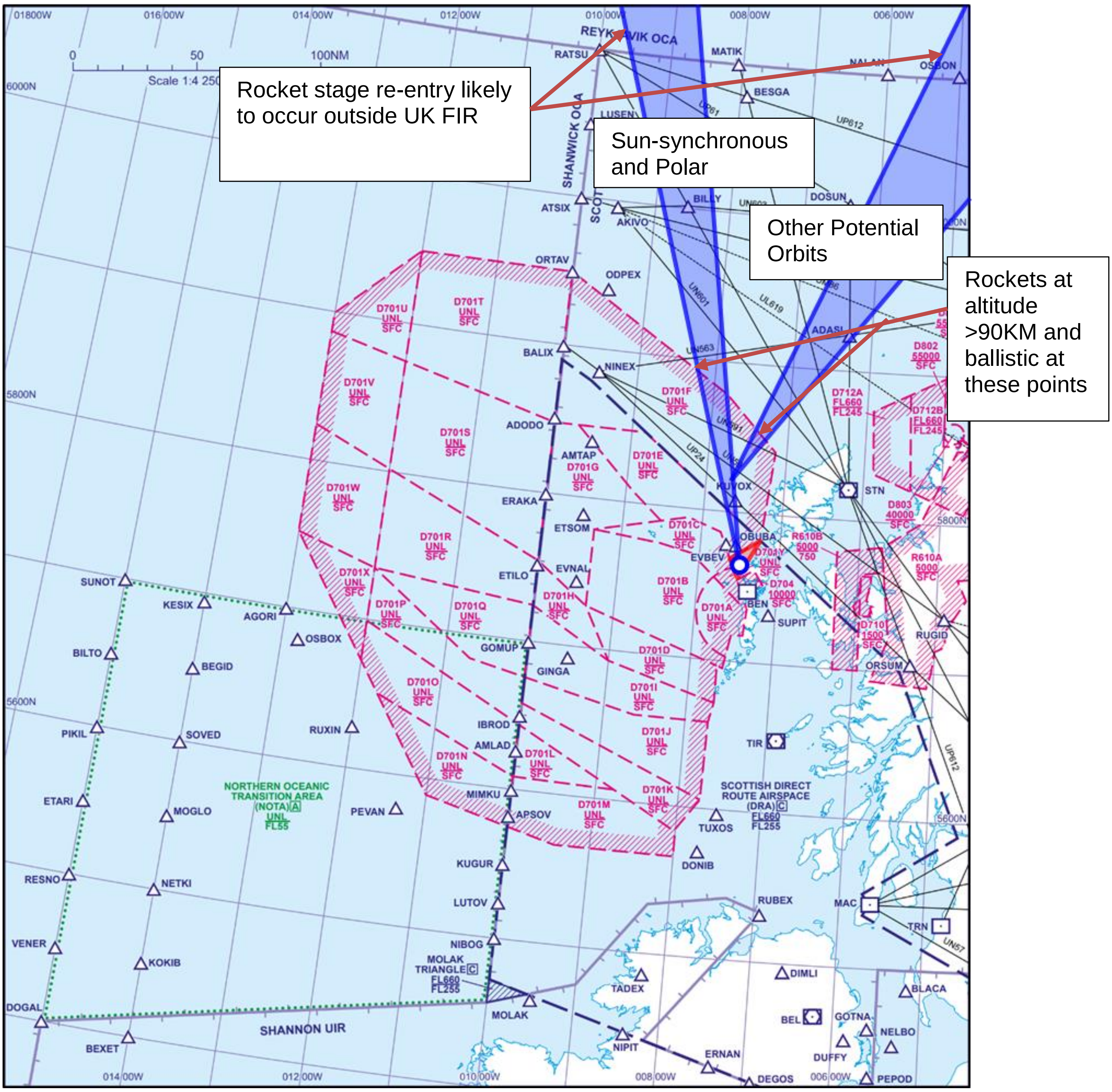


Figure 2: Diagram Depicting Polar, Sun-synchronous and Other Potential Launch Profiles

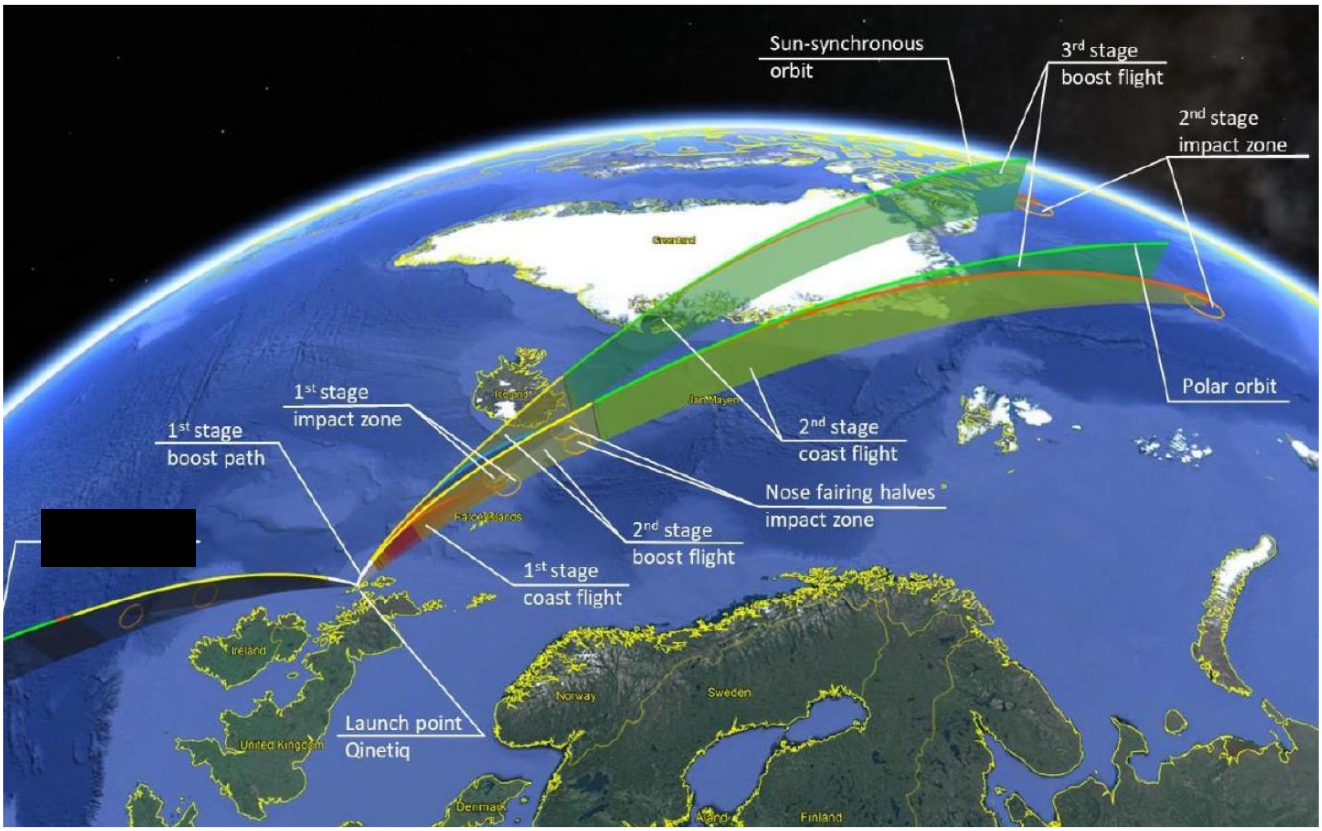


Figure 3: Diagram Depicting Potential Orbital Launch Profiles from SP-1 and Corresponding Likely Stage Drop Impact Zones – Note: The Southwest Trajectory is no Longer Considered an Option

1.1 Purpose

The purpose of this report is to demonstrate that the Sponsor has followed due process as defined in CAP 1616 [A], Stage 1, Step 1B for a permanent airspace change; demonstrating that the appropriate level of stakeholder engagement has been undertaken in developing the airspace design principles.

1.2 Report Structure

The report is split into the following sections

- Section 1 – Introduction:
  - Purpose
  - Structure
- Section 2 – Stakeholder Engagement:
  - Stakeholder Identification
  - Engagement Methods
  - Engagement Chronology
- Section 3 – Design
  - Initial Design Principles
  - Stakeholder Feedback
  - Modified Design Principles
  - Design Principles Feedback Summary

- Section 4 – Next Steps
- Section 5 – Glossary
- Section 6 - References
- Appendices
    - A – List of Stakeholders
    - B – Stakeholder Feedback Evidence

2 Stakeholder Engagement

2.1 Stakeholder Identification

Following CAP1616 Stage 1 Step 1B of the ACP process, it is necessary to develop a set of DPs that provide a framework that is used in drawing up the airspace design. In developing the DPs, the Sponsor is required to engage with affected local aviation stakeholders, including airspace users; Air Navigation Service Providers (ANSPs); airports; relevant members of the National Air Traffic Management Advisory Committee (NATMAC); relevant aviation and non-aviation national organisations including those which represent areas likely to be affected by potential impacts; and, elected representatives of environmental interest groups likely to be affected by potential impacts. Following this engagement process ensures a fair and transparent flow of information between the change Sponsor and any affected stakeholders.

The Sponsor elected to use the same stakeholder engagement list as that used for the TDA ACP (ACP-2021-37) as this had captured all the main aviation stakeholders in the local area as well as the relevant ANSPs and airports. Additionally, the Sponsor invited all members of the NATMAC to comment as well as the local council whom, although being part of the SP-1 consortium, were able to suggest the main Scottish environmental group whom should be engaged, namely Nature Scotland. It was initially decided not to engage with any other local environmental or resident groups as these were already actively involved in the launch site planning process. Furthermore, the land and sea environmental issues are captured in the Environmental Impact Assessment (EIA) that is inextricably linked to the planning consent. However, it was highlighted that these other engagement processes did not necessarily align with CAP1616 requirements, nor were they visible within the ACP process. It was therefore decided to widen the non-aviation stakeholder engagement to include the environmental and local resident groups. A second round of engagement with a number of additional stakeholders was therefore considered appropriate. Beyond this extensive stakeholder list, it was also decided to include Reykjavik ANSP as they are potentially affected by SP-1 rocket launch, and the UK Airspace Management Cell (AMC) because of their function within the D701 ASM processes. A full list of stakeholders is contained at Appendix 6A.

2.2 Engagement Methods

Written Communication - Due to COVID restrictions, the main engagement method was by written communication (letter) sent to stakeholders through email. The letter provided the necessary background to SP-1 detailing the purpose and operation of the site as well as describing the draft DPs and the need for engagement. Details of how to provide feedback and when this was due along with a link to the CAA airspace portal were also provided.

WebEx – It was decided, in the interests of expediency with non-aviation stakeholders, to hold a WebEx for those that had been contacted in the second round of engagement namely, the

environmental interest groups. The WebEx went ahead as planned despite only one recipient accepting the meeting request. In the event this stakeholder was unable to join and a separate WebEx was arranged for two days later; the outcome from this meeting is captured in paragraph 3.2 and Appendix 6B.

Telephone – Two stakeholders were contacted by telephone (a summary of discussion is contained at Appendix 6B); only one group were interested in the airspace aspect, the other focused entirely on sea space issues.

Surveys - The use of a survey was considered as an engagement method. However, review of other surveys relating to spaceports, identified that stakeholders tend to overlook the design principles per se and focus more on issues better associated with the environmental and planning consultation process. It was therefore decided that a survey would probably not add value and as such, was discounted.

Members of Parliament – It was decided not to engage directly with members of the Scottish Parliament at this stage as dialogue had already been conducted through the council who is the lead on the SP-1 consortium. It is considered that such engagement may be appropriate during the consultation stage of the process.

2.3 Engagement chronology

The list of stakeholders at Appendix 6A were contacted in relation to the design principles with evidence provided at Appendix 6B. Table 1 provides a chronological summary of this engagement process.

Stakeholder	Engagement Method	Date Sent	Remarks
NATS	F-2-F Meeting PPP	Apr 2019	SP-1 Operations Director presented to NATS explaining use of D701 and potential airspace requirements
	Email	27 Apr 21	Initial contact
	Letter via email	20 May 21	Detailed Response
MOD DAATM	Email exchange PPP	12/16 Nov 20	SP-1 Airspace Requirements
	Email exchange	27 Nov 20	Discussing MOD position
	Various emails	8 Dec 20 – 23 Mar 21	Discussions centred on commercial use of MOD Danger Areas for SP-1
	Letter via email	20 May 21	Email response
Benbecula & Barra Airport - SATCO	Email & PPP sent detailing basic airspace requirements	9/11 Mar 21	Email exchange various
	Letter via email	20 May 21	Email response

Stakeholder	Engagement Method	Date Sent	Remarks
Northern Lighthouse Board (NLB)	Letter via email	20 May 21	Email response
Comhairle nan Eilean Siar	Letter via email	20 May 21	No response
PDG Aviation	Letter via email	20 May 21	No response
Babcock Aviation	Letter via email	20 may 21	Email response (captured Police and air ambulance)
Friends of Scolpaig	Letter via email Telephone discussion	7 Sep 21 8 Sep 21	Stakeholder interest forwarded by North Uist C.Council Email response
Gamma Aviation	Letter via email	20 May 21	No response
2Excel Aviation	Letter via email	20 May 21	Email response
Highlands and Islands Airports Ltd (HIAL) Head Office	Letter via email	20 May 21	No response
Maritime Coastguard Agency (MCA)	Letter via email	20 May 21	Email response (also responded on behalf of Bristow SAR)
NATMAC members as detailed at Appendix A	Letter via email	20 May 21	One response, British Microlight Aircraft Association (BMAA) letter
Helicopter operators supporting MCA, police and other emergency services	Letter via email	20 May 21	Email response
Irish Aviation Authority (IAA)	Letter via email	20 May 21	No response
Nature Scotland	Letter via email	24 May 21	No response
Reykjavik ANSP	Letter via email	25 May 21	No response
Comhairle nan Eilean Siar (CnES) Planning	Letter via email WebEx	19 Aug 21 31 Aug 21	No response Declined

Stakeholder	Engagement Method	Date Sent	Remarks
Historic Environment Scotland	Letter via email WebEx	19 Aug 21 31 Aug 21	No response Declined
Marine Scotland Compliance (local fisheries office)	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
Marine Fisheries & Seal Licensing Scotland	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
Meteorological Office	Letter via email WebEx	19 Aug 21 31 Aug 21	Auto response No response
North Uist Community Council	Letter via email WebEx WebEx Email exchange	19 Aug 21 31 Aug 21 02 Sep 21 05 Sep 21	Comments received Unable to join Alternative WebEx Email response following clarification
Outer Hebrides IFG	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
Outer Hebrides Natural History Society	Letter via email	7 Sep 21	Stakeholder interest forwarded by North Uist C.Council No response
Royal Society for the Protection of Birds (RSPB)	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
Royal Yachting Association (RYA) Scotland	Letter via email WebEx Telcon	19 Aug 21 31 Aug 21 01 Sep 21	No comment Declined Not Airspace related
Scottish Creel Fishermen's Federation	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
Scottish Fisherman's Federation	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response

Stakeholder	Engagement Method	Date Sent	Remarks
Scottish Water	Letter via email	19 Aug 21	Standard planning response, not airspace related
Scottish Environment Protection Agency (SEPA)	Letter via email WebEx	19 Aug 21 31 Aug 21	No comment No response
UK Hydrographic Office (UKHO)	Letter via email WebEx	19 Aug 21 31 Aug 21	No response Declined
Western Isles Fisherman's Association	Letter via email WebEx	19 Aug 21 31 Aug 21	No response No response
UK AMC	Letter via email	19 Aug 21	Detailed response received

Table 1: Chronological Summary of Stakeholder Engagement

It should be noted that during an email exchange on 5th September with the North Uist Community Council, it was suggested that two further community groups would like to be engaged namely; 'Friends of Scolpaig' and the 'Outer Hebrides Natural History Society'. However both email addresses provided were not functional and despite the Sponsor using alternate personal email accounts, only Friends of Scolpaig responded. A telephone discussion was subsequently conducted with a representative of this group.

3 Design Principles

3.1 Initial Draft Design Principles (DPs)

The DPs detailed in Table 2 below are the initial DPs sent out for comment on 19 May 2021. Following stakeholder engagement and the CAA Define Gateway, these were modified and expanded, and are contained at Table 3

DP Ref	Category	Design Principle
DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport activities from other airspace users thereby minimising the impact on other airspace users
DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace

		Management (ASM) procedures operated within the EG D701 complex
DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
DP7	Environmental	The airspace design and associated activation of EG D701 need to consider the environmental impact of aircraft being re-routed around the Danger Areas due to SP-1 activities
DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the Space Industry Act 2018
DP9	Operational	Rocket stage drop zones may be required outside EG D701 and will need to be considered

Table 2: Initial Design Principles 19 May 2021

3.2 Summary and Evaluation of Stakeholder Feedback

Summary

From the 58 stakeholders contacted 12 responses were received, and from these, the majority were largely satisfied with the draft DPs. Although satisfied with the DPs, a number of respondents wanted reassurance that access to any new airspace would be accorded to the emergency services and scheduled local flights in the same manner which access to the D701 complex is currently achieved. Furthermore, there were other points highlighted relating to airspace procedures and protocols. One organisation provided a standard letter that it is assumed is sent to every sponsor of an airspace change, and one professional body provided comprehensive comments against the majority of the DPs; few other comments were received and all are addressed in the evaluation of feedback paragraphs below. Evidence of responses is contained at Appendix 6B.

Evaluation of Feedback – BMAA

The response from the BMAA appeared to be a standard letter to anyone proposing an airspace change and as such did not refer to any of the specific draft design principles for SP-1. Furthermore, the majority of points raised are clearly aimed at ACPs relating to controlled airspace. The Sponsor therefore would argue that this response does not alter any of the DPs for SP-1 as they adequately cover the main points highlighted regarding FUA and using the minimum airspace necessary.

Evaluation of Feedback – NATS

This response featured many of the points and concerns raised in their formal response to ACP-2021-37 regarding the TDA for SP-1, and follow on WebEx's held 15 Jun 21 and 7 July 2021; evidenced at Appendix 6B. These concerns, as articulated against each DP, do not necessarily disagree with the DP but merely call for extra clarification and detail as well as offering a view on

potential airspace solutions. For example DP2: 'The airspace design will be of the smallest volume to safely segregate Spaceport rocket launches from other airspace users thereby minimising the impact on other airspace users'. NATS response is: *"the airspace should be of a modular design, to accommodate variations in desired trajectories, and down range length, so as to efficiently accommodate launch with no excess airspace delivering Safe and Sustainable use of the airspace"*. The Sponsor agrees that this may well prove to be part of the solution but would argue the DP meets this requirement in full – therefore, the DP remains valid with additional text added to the detailed description.

DP3 recognises that part of the airspace solution may be the use of D701 areas and where this is the case their activation should be cognisant of other airspace users. NATS is suggesting that D701 should not be part of the solution as they perceive a risk more airspace may be activated than is actually needed because of the existing shape and size of the D701 areas. The Sponsor would argue that the DP is still valid and, where D701 is considered as part of the solution, then selection of specific D701 areas must be made cognisant of other airspace stakeholders – therefore DP remains valid (detailed description amended slightly to account for a bespoke solution).

DP4 is aimed at integration of extant D701 ASM procedures to cover spaceport activity. The Sponsor recognises that this may not be straightforward especially as current LoAs are MOD specific. However, in the interest of minimising the need for new multifaceted, standalone procedures and exploiting current 'best practice' the Sponsor considers that this still should be considered as a viable DP. Moreover, there does not appear to be a substantive counter argument by NATS to suggest otherwise – therefore DP remains valid.

Similarly for DP5; the Sponsor recognises the need to integrate and deconflict with MOD activities; the response, although not disagreeing with this principle, highlights areas for consideration in the later stages of the ACP process. The response also highlights the need for airspace protocols to be developed in conjunction with the final airspace solution; such protocols should involve all activity, not just MOD D701 operations. The Sponsor considered expanding the DP to include all MOD activity and other spaceports rather than just focusing on MOD activity in D701. However, upon reflection this DP is specific to the use of D701 and the need to deconflict SP-1 activity with MOD operations. It is considered that the airspace operational protocols, although a critical part of the ACP process, will be better addressed later in the process and will be a key element of the consultation process – therefore DP remains valid.

The comments associated with DP6 are noted and are areas for consideration as the airspace design is developed. However, the Sponsor would contend that the DP as written, captures these areas – therefore DP remains valid.

Despite the length of the NATS comments associated with DP7 it would appear that they accepted the DP but are concerned how SP-1 activities will impact the ATM network by causing delays to Commercial Air Transport (CAT) and having a detrimental impact on their Key Performance Indicators (KPIs) and metrics. Although these points appear valid to the overall strategic modus operandi, the Sponsor considers these points to be outside the scope of the DPs – therefore DP remains valid with additional text capturing the wider environmental interests.

DP8 provides recognition that emerging secondary legislation to the Space Industry Act (SIA) 2018 may affect or shape DPs as the ACP process advances. The Sponsor accepts that these criteria are yet unknown and there is no proven methodology associated with airspace design for spaceport Ranges. However, it is considered that this DP remains valid as evolving regulation will have to be considered - therefore DP remains valid.

DP9 recognises the need that there may potentially be a requirement for additional segregated airspace outside the boundaries of the current D701 complex for stage drop zones and is presented as a requirement that needs to be factored into the airspace design considerations. The Sponsor accepts that we do not yet have the full criteria to determine what shape or size this airspace might be but this does not remove the need for this DP - therefore DP remains valid.

Evaluation of Feedback - UK AMC

Although the UK AMC provided feedback on a number of the DPs, there was not any suggestion that they should be reworded, removed or any additional DPs considered. Most salient comments are summarised.

DP3 suggests consideration is given to the MOD Fast Jet (FJ) areas and EG D712 activities as coincident activity may have a significant impact on GAT. Furthermore, consideration should be made regarding whether the use of D701 represents an appropriate volume of airspace for SP-1 operations. The Sponsor acknowledges that the MOD are currently sponsoring an ACP for the FJ areas and these will need to be considered in airspace protocols along with other adjacent Danger Areas. The Sponsor also acknowledges that the final airspace solution might be a standalone bespoke solution that does not use the D701 areas; it is considered that this is captured in a number of the revised detailed descriptions of the DPs.

DP4 recognises that using D701 and existing ASM procedures might be a short term solution but the AMC suggests this may not work for a bespoke solution. The Sponsor acknowledges this fact although would contest that mapping across many of the current ASM procedures to any bespoke solution should remain a consideration.

DP6 identifies the need to be cognisant of FRA and FBZs and the AMC recognise how this may affect oceanic airspace for operations west of 10^0 west. The Sponsor is familiar with additional requirements for oceanic airspace and will ensure all such requirements are considered during the next stage of the ACP process.

Evaluation of Feedback - North Uist Community Council WebEx

DP2 does not specify consideration for local flights to/from Benbecula and the concern is that SP-1 operations could impact on *'lifeline flight frequency or reliability'*. The Sponsor suggested that DP2 does include all airspace users with a view to minimising impact and the operational details for the airspace will be developed in the subsequent stages of the ACP process. It is here where the specific protocols and procedures for the airspace will be developed and agreed – a key element of this will be Benbecula airport procedures and associated local flights.

DP5 appears to focus entirely on MOD operations and no other airspace users and *'why DPs dealing with local flights, which also use the same airspace, are not similarly focussed.'* The Sponsor notes this concern and believes it is covered by DP3 where all other aviation stakeholders are considered. DP5 is specifically written with reference to using the MOD sponsored D701 Danger Areas that are exclusively used for MOD purposes. It is the interaction/deconfliction of commercial activities (SP-1 operations) against MOD activities that this DP is intended to address.

Other concerns raised included the reduction in ATC services at Benbecula airport and the fact the DP engagement was the first exposure the local community had been given to the airspace process.

Although neither concerns were relevant to the airspace DPs, the Sponsor offered a detailed response to these queries.

3.3 Modified Design principles

The following DPs are a slightly modified version of those first sent out during the initial engagement process and are based on the analysis of feedback detailed at paragraph [3.2]. Modifications include a minor textural change to DP2 (word *'activities'* removed and replaced with *'rocket launches'*) and an extra line added to DP7 *('Danger Areas due to SP-1 activities'* removed and replaced with; *'airspace in addition to considering the noise, emissions and light pollution in the local area'*). All other modifications are contained within the expanded description beneath the DPs in DP2, 3, 4, & 7. These modifications are made to remove any misunderstanding regarding the DPs only focussing on D701 and not taking into account a standalone bespoke airspace solution. For ease of understanding, modifications are highlighted in Bold Text.

DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
Safety is the single most important factor and DP1 establishes the need to design airspace that provides adequate protection from any hazards associated with rocket launch from SP-1 to other airspace users. Note: safety of third parties on the ground or seaspace is detailed in separate but parallel work packages associated with the planning consent regulations.		
DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport **rocket launches** from other airspace users thereby minimising the impact on other airspace users
In ensuring safety of other airspace users the airspace design should consider the potential failure of the spacecraft both at the launch site, immediately after launch and when in flight. The airspace design must be of sufficient volume to contain all credible risks associated with rocket malfunction **for both orbital and sub-orbital sounding rockets. The former have trajectories predominantly to the North of the launch site and despite EG D701 complex containing a significant portion of the hazard, the airspace design may need to consider airspace outside the EG D701 boundaries. This may, in the interests of minimising the volume of airspace required, call for a bespoke modular airspace design within EG D701 complex as well as beyond.**		
DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
When considering the impact on other airspace users the new airspace should not be considered in isolation but must also take into account the consequential impact of activating numerous EG D701 areas for SP-1 operations (**if this is deemed appropriate**) at times when the Danger Areas may not normally be activated. This design principle includes consideration of which EG D701 areas need to be activated and their impact on other stakeholders in particular where these necessitate the closure of Oceanic Entry Points (OEPs) for the North Atlantic (NAT) tracks. **It may prove beneficial to utilise D701 for sub-orbital sounding rocket activities where these can be contained wholly within the D701 complex. This DP may not be relevant if a bespoke modular design is preferred for orbital launches**.		
DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex

This design principles should include integration of the new airspace into the ASM processes of the existing EG D701 complex thereby minimising the need for new multifaceted standalone procedures and exploiting current Standard Operating Procedures (SOPs). This will enable timely notification of operations and swift cancellation of NOTAMs thereby freeing up airspace efficiently. Furthermore, expanding extant EG D701 procedures to include the new SP-1 airspace (**both around the launch site, beyond D701 boundary or, for a bespoke solution**), will enable safe access for other airspace users when deemed necessary, in particular emergency services.		
DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
It is recognised that use of the EG D701 areas will be subject to MOD activities and priorities therefore an important design principle will be the operational integration of SP-1 activities in and around MOD use. By managing both programmes, QinetiQ expects to be able to facilitate the most efficient use of airspace especially where it is proven safe to conduct simultaneous operations.		
DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
It is recognised that any new Danger Area airspace will have to comply with the CAA Buffer policy and ANSPs may be required to apply FBZs. The design principles will have to take into consideration both these requirements. Furthermore, the advent of FRA in the Scottish Flight Information Region (FIR) will need to be considered.		
DP7	Environmental	The airspace design and associated activation of EG D701 need to consider the environmental impact of aircraft being re-routed around the airspace **in addition to considering the noise, emissions and light pollution in the local area**
It is likely that the new airspace around the launch site **and beyond the boundaries of EG D701** will be relatively small in volume (**due to rocket launch profiles**), and therefore current traffic patterns should be unaffected. **However**, a holistic approach is required to consider the wider impact that subsequent activation of the EG D701 **Danger Areas, (and any additional airspace requirements beyond EG D701, including a bespoke modular design)** will have, in particular on the NAT tracks. Any deviation caused by unavailability of OEPs will have to be carefully considered in the airspace design to understand the environmental impact of additional miles flown by aircraft forced to **deviate from route**. It is further acknowledged that rocket launch from the site at Scolpaig will create noise and light pollution; and these elements **will need to be considered in the airspace design especially where they are traded off against minimising disruption to Commercial Air Transport (CAT). Many of these environmental issues are being considered within the planning application and associated** EIA; the latter will help inform part of the ACP process.		
DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the Space Industry Act 2018
It is recognised that the airspace design might be influenced by the secondary legislation to the Space Industry Act (SIA) 2018. The design principles will take account for any additional legislative requirements, in particular where these are linked to the Spaceport operator licence and Range operator licence.		

DP9	Operational	Rocket stage drop zones may be required outside the EG D701 Areas and will need to be considered
For orbital rocket launch, it is expected that one or more rocket stages may be required that will separate after launch. Where separation and return to earth occurs outside the EG D701 complex, additional segregated airspace will be required – The design principle should include the most efficient use of airspace to accommodate this requirement.		

Table 3: Modified Airspace Design Principles

3.4 Design Principles Feedback - Summary

Evaluation of the feedback received as detailed in paragraph [3.2] above does not suggest any new DP should be added to the list proposed by the Sponsor. Furthermore, after careful consideration of the responses, in particular the very comprehensive response from NATS, the Sponsor believes the DPs as written with minor amendment to the detailed descriptions, address the concerns, (where relevant) of the stakeholders engaged. It is, therefore, proposed that the DPs as prescribed at paragraph [3.3] remain unchanged and are forwarded to the CAA for consideration.

4 Next Steps

4.1 DEFINE Gateway

This document will be submitted to the CAA as evidence to support Stage 1, Step 1B of the CAP 1616 airspace change process. This documentary evidence is provided to inform the CAA's decision to sign off the DEFINE Gateway at the gateway assessment meeting planned for Friday 24th September 2021. Sign off will enable ACP-2021-12 to proceed to Stage 2 of the process.

5 Glossary

Acronym	Meaning
ACP	Airspace Change Proposal
AIP	Aeronautical Information Publication
AMC	Airspace Management Cell
ANO	Air Navigation Order
ANSP	Air Navigation Service Provider
AOs	Airline Operators
ASD/FS 21	At Sea Demonstration/Formidable Shield 2021
ASM	Airspace Management
BMAA	British Microlight Aircraft Association
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAT	Commercial Air Transport
DA	Danger Area
DAAIS	Danger Area Activity Information Service
DAAM	Danger Area Airspace Manager
DAATM	Defence Airspace & Airspace Traffic Management
DACS	Danger Area Crossing Service
DP	Design Principle
EG D	UK Segregated Airspace Designator and Danger Area
EIA	Environmental Impact Assessment
FBZ	Flight planning Buffer Zone
FIR	Flight Information Region
FJ	Fast Jet
FRA	Free Route Airspace
FUA	Flexible Use of Airspace
GAT	General Air Traffic
HIAL	Highlands & Islands Airports Ltd
HIE	Highlands & Islands Enterprises
IAA	Irish Aviation Authority
ICAO	International Civil Aviation Organisation
KPI	Key Performance Indicators
LoA	Letter of Agreement
MCA	Maritime Coastguard Agency
MOD	Ministry of Defence
NAT	North Atlantic
NATMAC	National Air Traffic Management Advisory Committee
NLB	Northern Lighthouse Board
NOTA	North Atlantic Transit Area
NOTAM	Notice To Airmen
OEPs	Oceanic Entry Points
PPP	Power Point Presentation
SAR	Search And Rescue
SIA	Space Industry Act
SOPs	Standard Operating Procedures
SP-1	Spaceport 1

6 References

A. CAP 1616 Fourth Edition published March 2021; online, available at: http://publicapps.caa.co.uk/modalapplication.aspx?catid=1&pagetype=65&appid=11&mode=detail&id=8127
B. ACP-2021-37; online, available at: https://airspacechange.caa.co.uk/PublicProposalArea?pID=368

A List of Stakeholders

2Excel Aviation
Aircraft Owners and Pilots Association (AOPA)
Airfield Operators Group (AOG)
Airspace Change Organising Group (ACOG)
Airspace4all
Babcock Aviation
Benbecula & Barra ATC
Bristow helicopters
British Airline Pilots Association (BALPA)
British Airline Pilots Association (BALPA)
British Airways (BA)
British Business and General Aviation Association (BBGA)
British Helicopter Association (BHA)
Comhairle nan Eilean Siar
Friends of Scolpaig
Gamma Aviation
General Aviation Alliance (GAA)
Comhairle nan Eilean Siar (CnES) Planning
Guild of Air Traffic Control Officers (GATCO)
Heavy Airlines
Helicopter Club of Great Britain (HCGB)
Highlands and Islands Airports Ltd (HIAL)
Historic Environment Scotland
HM Coastguard Maritime & Coastguard Agency (MCA)
Irish Aviation Authority (IAA)
Light Aircraft Association (LAA)
Loganair
Marine Scotland Compliance (local fisheries office)
Marine Fisheries & Seal Licensing Scotland
Meteorological Office
Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM)
Ministry of Defence Danger Area Airspace Manager (DAAM)
National Air Traffic Management Advisory Committee (NATMAC) Members
NATS
Nature Scotland
Northern Lighthouse Board (NLB)
North Uist Community Council
Outer Hebrides IFG
Outer Hebrides Natural History Society
PDG Aviation
PDG Helicopters
Reykjavik ANSP
Royal Society for the Protection of Birds (RSPB)
Royal Yachting Association (RYA) Scotland
Scottish Creel Fishermen’s Federation
Scottish Fisherman’s Federation
Scottish Water

Scottish Environment Protection Agency (SEPA)
Stornoway ATC
UK Airspace Management Cell (AMC)
UK Hydrographic Office (UKHO)
Western Isles Fisherman's Association

B Stakeholder Response – Evidence

[redacted]PP Delivered by [redacted]SP-1) to NATS Apr 2019

[redacted]

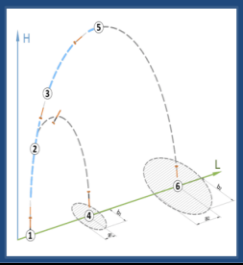
Spaceport 1

- Brief/Update
  - Site
  - Plans
- Sounding Rockets
- Orbital Launch
- CONOPS Development
- Getting it Right First Time

[redacted]

Activities for Discussion – Sounding Rockets

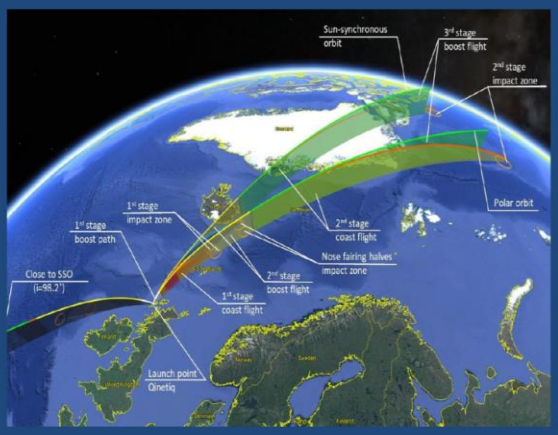
[redacted]



[redacted]

[redacted]

Activities for Discussion – Orbital Launch



[redacted]

CONOPS Development

- We need to find windows to launch, but recognise we need to make it work for others too.
- Sounding Rocket activity urgent, but need to be planning Orbital too.
- Basic requirements similar:
  - Airspace needs to be closed.
  - Primary, secondary and perhaps tertiary backup days.
  - Airspace can be rapidly opened after the launch.
- How do we find an approach that works for all?


Airspace and the ‘fillet’ TDA
OBUBA
R6
D701Y
UNL
SFC
EVBEV
D701Z
10000
SFC
D701A
BEN
SPACE PORT 1

Thu 12/11/2020 15:49

[redacted]

RE: FS21 Update and Spaceport 1 discussion

To [redacted]

You forwarded this message on 20/05/2021 16:41.

DAATM_SP1_Briefing_V1.0.pptx
4 MB

[redacted]

PSA PPP that I will run through with you on Monday.

Kind Regards

[redacted]

QINETIQ

[redacted]

6

QINETIQ

Way Forward

- Meeting involving key stakeholders with aim to understanding the path to enable SP1 to operate in EG D701
- Suggested attendees:
  - MOD
    - DAATM
    - [redacted]
  - CAA
    - SARG
    - Space Team
  - QinetiQ (may include SP1 [redacted]
  - UK AMC (?)
- Outcome of meeting will drive ACP for SP1

QINETIQ

27/07/2021 QinetiQ Proprietary 5

[redacted]

Considerations

- Airspace is a National asset and in spirit of FUA should be utilised accordingly
- Precedent has been set at [redacted] where commercial operations are facilitated in MOD sponsored Ranges
- CAA responsible for safety oversight and assurance activity for spaceports
- QQ will continue to meet exactly same safety criteria as for MOD weapon/rocket firings i.a.w HSE Regs and observance of DSA OME Pt3 (Ranges)
- SP1 could commence ACP that reflects part of EG D701
- MOD position/strategy on utilising commercial spaceport for Military satellite launch needs to be understood and lead/possible airspace sponsor

[redacted]

QINETIQ

Spaceport 1 Airspace Requirements

Briefing Prepared for DAATM 16 Nov 2020

QINETIQ

[redacted]

Sent: 27 November 2020 09:14

T [redacted]

Subject: Space Ranging Airspace

[redacted]

Following on from our meeting last week I am pleased to inform that the Western Isles Island Council (WIIC) are proposing to commence an Airspace Change Proposal (ACP) request for the Spaceport1 (SP1) vertical launch facility to be located on North Uist on the Outer Hebrides. This does mean the urgency to establish a methodology/processes for access to MOD sponsored Danger Areas such as the Hebrides Range, has now become more pressing and I was wondering if you had made any progress in pulling together the necessary parties for discussion? I believe we agreed the following:

- that airspace was a National asset and not owned by a single entity;
- the CAA would have to regulate and assure any commercial spaceport activity that occurred in the UK FIR including activities in Danger Areas regardless of the airspace sponsor for that airspace;
- the DAATM had a role to play in unblocking the current impasse and would consider:
  - [redacted]
- the me[redacted]

Happy to chat regarding any of the above

[redacted]

[redacted]

Sent: 27 November 2020 11:50

[redacted]

Subject: RE: Space Ranging Airspace

[redacted]

I hope that you keeping well amidst the current covid pandemic. Just by means of a quick virtual introduction, [redacted] (if required) for any UK space related activity.

With regards to the email below, I am in liaison with both the QinetiQ and DIO DAAM Teams to ascertain if there is an already existing process by which a commercial provider can staff access request to a Military Danger Area. I will let you know once I receive responses.

In the meantime if you have any further questions/queries etc please send them my way.

Regards,

[redacted]

[redacted]

Sent: 27 November 2020 10:52

[redacted]

Subject: FW: Space Ranging Airspace

[redacted]

Thanks for your input yesterday at our internal Spaceport scoping meeting. Please see below from [redacted] we discussed yesterday, ie the spaceport companies are starting to accelerate their applications, and so starting their ACPs.

Below is a specific request from QQ to understand if and how a civilian spaceport company can have assured access to existing mil danger areas for the purpose of commercial space launch. Can you liaise [redacted] initially about how spaceports start the danger area access discussions? Highlight through [redacted] was that mil has primacy of use of danger areas and so access to non-mil will be based around that.

Key here is to ensure we delineate the request from QQ who have a request to commercial access to the Danger Area from any ACP CAP1616 advice which the Spaceport company is doing to work through the CAP1616 process and then to us for comment etc.

At this stage, DAATM don't need to have a view on any aspects of the launch, safety assessments, safety traces etc – this is merely a request from QQ on how a spaceport can use the danger area airspace.

As discussed yesterday, I don't think this is, in process terms, complicated as this is 'merely' a request from a commercial company to undertake activity in a mil range (ie vertical rocket launch as has happened elsewhere I think, but clearly of a bigger scale….) but access sits with Nopey initially I suggest and is not in itself new.

[redacted]

SPACE PORT 1

Send

From [redacted]

To...

Cc...

Bcc...

Subject RE: Space Ranging Airspace

[redacted]

Thank you for your introduction and help in this matter, as [redacted] probably explained things are starting to move forward at pace and we are keen to unblock the current 'apparent' impasse regarding access for commercial spaceport operators to utilise existing MOD Danger Areas, in particular where there is spare capacity.

In sum I am trying to obtain the following:

- written agreement (possibly verbal in the first instance) for commercial spaceport operators to gain access to MOD sponsored Danger Areas, in particular those where QinetiQ manage the Range airspace; and,
- demonstration to the CAA that access to MOD Danger Areas is possible thereby assisting them in the decision making process regarding ACPs made by spaceport operators where such ACPs connect the spaceport to the Danger Areas.

You should be aware that QinetiQ has had discussions [redacted] or such activities and although part of the discussion focused on the [redacted] supporting such activities and how this was resolved through the [redacted], the sticking point was one of access to the airspace and liabilities. [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted] the year.

Points of discussion have already centred around the following:

- airspace being a national asset neither civil or military but one entity that should be operated in the spirit of FUA concepts;
- the CAA will regulate spaceport activity (along with UKSA and HSE) and therefore will hold the liability for safe operations regardless of airspace type the operation is being conducted in;
- precedent has already been set regarding civil commercial use of MOD sponsored Danger Areas [redacted]
- [redacted]
- [redacted]

Hopefully this brings you up to speed where we are at the moment and some of the past discussions and considerations; I look forward to engaging soon on developing a way forward that is acceptable to all parties.

Kind Regards

[redacted]

QINETIQ

[redacted]

SPACE PORT 1

Reply Reply All Forward IM

Fri 08/01/2021 15:22

[redacted]

UC Use and booking of QQ operated MDAs - Memo

To [redacted]

Cc

You replied to this message on 11/01/2021 10:33.

20201208-Use_and_booking_of_QQ_Operated_MDAs_QQ_Comments.docx
64 KB

[redacted] hope you had a good Christmas break despite the

Again, many thanks for sharing the above titled Memo prior to leave and a [redacted] facilitating the MOD stakeholder meeting and getting something down on paper in short order; I now believe this memo provides a way forward and should be adequate to satisfy the CAA regarding commencement of an ACP (for Spaceport 1) that is underpinned by access to MOD DAs.

Recognising that this is only a first step and draft note, I have taken the liberty of adding my comments to the note that I forward (attached) for your consideration. I recognise that [redacted] I wonder if there would be any value in me participating in any future discussions on the subject in particular in light of my comments attached. As always, happy to discuss and provide support for this work as you see fit.

Kind Regards

[redacted]

QINETIQ

Connect with us:

[redacted]
Sent: 11 January 2021 11:27
[redacted]
Subject: RE: UC Use and booking of QQ operated MDAs - Memo
Importance: High

[redacted]
Thanks for your timely response; something else commercial probably need to consider is the existing procedures/processes t[redacted]

Kind Regards

[redacted]

Sent: 11 January 2021 11:06
[redacted]
Subject: RE: UC Use and booking of QQ operated MDAs - Memo

[redacted]
Many thanks – we are chatting with[redacted] of your observations.

[redacted]

SPACE PORT 1

08 December 2020

USE AND BOOKING OF QINETIQ OPERATED MILITARY RANGES AND DANGER AREA COMPLEXES

Introduction

1. Military Ranges and Danger Area (DA) Complexes provide extensive airspace ~~for the~~ primarily for weapons, systems and platform Test, Evaluation and Training purposes, operated [redacted] f Defence Equipment and Support (DE&S) by QinetiQ. Many users [redacted] have current and future intent for the use of the airspace and this note [redacted] sets out prioritisation of use and general booking processes noting that each DA has its own site-specific restrictions [redacted]

Prioritisation for Use

1. DE&S Ranges are to be utilised, in the first instance for MOD Test and Trials and as such, MOD use will always have priority [redacted] High priority trials or essential operational tasks may result in short notice changes for other users.

2. Beyond MOD use, in order to enhance FUA principles, the airspace is, where practicable, available to other users.

3. Where several requests are received for the same slots out with MOD use, they will be prioritised by the Danger Area Authority (DAA)[1] [redacted]

Booking

4. All airspace must be booked through the Military Airspace Booking Co-ordination Cell (MABCC). All non-MOD booking requests should be forwarded to the appropriate DE&S contracted booking agent [redacted] and copied to the DAA and Danger Area Airspace Manager (DAAM).

5. Booking requests can be made in advance [redacted] best effort will be made to organise MOD trials and operations around the bookings noting that MOD will retain priority for use.

6. Booking requests for civil/commercial use [BPR3] should include information detailing that the user will accept responsibility and full liability for the airspace [redacted] and include confirmation of the relevant CAA approval or authorisation for any air systems that will operate in the airspace.

7. Any request for regular or routine use of the DE&S Ranges and DA's outside of the [redacted] should be subject to an agreed Letter of Agreement (LOA) with the MOD/ Airspace Manager (AM) [redacted] o agree use and booking. The LOA will also confirm that the non-MOD user holds the risk for all operations within the airspace [redacted] The DAAM will instigate when a LOA is required on behalf of the DAA.

8. On request the DAA/DAAM will provide longer term booked MOD activity windows to allow other users to identify likely availability whilst maintaining MOD priority including short notice operational requirements. The MOD holds no liability for delayed or

[1] In the absence of the DAA, SO1 DAAM & HD BM Assurance/SO3 DAAM hold authority.

cancelled bookings due to MOD requirements. The likely activity is published monthly by the AM through SO1 DAAM.

[redacted]

SPACE PORT 1

Tue 09/03/2021 12:33
[redacted]
UC Spaceport 1 Scolpaig ACP
To [redacted]
Follow up. Start by 16 March 2021. Due by 16 March 2021.

HIAL_Msg_20210309.pptx
2 MB

[redacted]
Hi again, a different subject from ASD/FS21, Spaceport 1 at Scolpaig. I am unsure what if any visibility you have had regarding this matter and I have only recently been brought into the project to commence the ACP process for a small fillet of airspace over the future launch site in order that it can connect to the existing D701 Danger Areas.

We are only just commencing the process and at this stage are not asking for any formal responses as we have not yet had the initial CAA assessment meeting to establish if an ACP is appropriate or not. That said, I believe early exposure of the plans would be beneficial if shared with you now given your knowledge and understanding of aviation operations in the local area. To this end could I ask you to consider the attached and let me have your thoughts on the following:

- Would the new fillet of airspace affect any flights/approach or departure procedures at Benbecula airport?
- What level of GA or recreational flying occurs in this airspace, if any?
- What other flights could potentially be affected, e.g. Northern lighthouse board, SAR, Helo flights to/from hotels & businesses as well as fisheries flights?
- Anything else we should consider?

As stated, this is informal at this stage as I just need to have a feel for the level of stakeholder engagement we are likely to need and any potential impact on local aviation activities. Please bear in mind the small fillet of airspace is only likely to be activated infrequently and for relatively short periods probably in the order of 30 mins or so (and probably no more than a few times per month). Formal consultation will follow and only if the CAA decide an ACP is appropriate for this infrequent type of activity.

BTW, I did email Logan air regarding ASD/FS21 but have not had a response, I wonder if you would be kind enough to check it was received. Please pass on my details if Logan Air would like more information on ASD/FS21 or Spaceport 1.

Kind Regards

[redacted]

QINETIQ

Connect with us:

[redacted]

Background – SP1

- Consortium led by Highlands & Islands Enterprises, local council, private investors and QinetiQ
- Location – Scolpaig North Uist, Outer Hebrides
- Site sits beneath Class G, adjacent to EG D701 and EG D704
- ACP required to protect launch site and connect to existing Danger Areas
- 2 Phases:
  - Phase 1 - 'Sounding rocket' launches to West
  - Phase 2 - Lower earth orbit small satellite launches to North

QINETIQ

9/3/2021 Commercial In Confidence 2

SPACE PORT 1

Thu 11/03/2021 12:03

[redacted]

RE: UC Spaceport 1 Scolpaig ACP

To [redacted]

Follow up. Start by 12 March 2021. Due by 12 March 2021.
You replied to this message on 11/03/2021 12:15.
This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.

Benbecula AIP Entry.htm
.htm File

[redacted]

Please see below for initial comments in red, embedded in your original email.

I will ask our local Loganair staff if they are able to contact Nev.

Best regards,

[redacted]

[redacted]

Sent: 09 March 2021 12:33

[redacted]

Subject: UC Spaceport 1 Scolpaig ACP

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

[redacted]

Hi again, a different subject from ASD/FS21, Spaceport 1 at Scolpaig. I am unsure what if any visibility you have had regarding this matter and I have only recently been brought into the project to commence the ACP process for a small fillet of airspace over the future launch site in order that it can connect to the existing D701 Danger Areas.

We are only just commencing the process and at this stage are not asking for any formal responses as we have not yet had the initial CAA assessment meeting to establish if an ACP is appropriate or not. That said, I believe early exposure of the plans would be beneficial if shared with you now given your knowledge and understanding of aviation operations in the local area. To this end could I ask you to consider the attached and let me have your thoughts on the following:

- Would the new fillet of airspace affect any flights/approach or departure procedures at Benbecula airport? Please see attached for Benbecula's AIP entry which includes IAPs. It appears that none would be affected by the new fillet of Danger Area. We do not have formal departure procedures. Our missed approach procedures are contained wholly within D704.
- What level of GA or recreational flying occurs in this airspace, if any? Annual Sollas fly-in during July with multiple light aircraft. Sporadic GA, primarily in the summer months.
- What other flights could potentially be affected, e.g. Northern lighthouse board, SAR, Helo flights to/from hotels & businesses as well as fisheries flights? St Kilda resupply helicopter routeing may be affected. NLB. SAR/Ambulance. Fisheries. QinetiQ range clearance aircraft.
- Anything else we should consider? Would shipping have to be cleared in the same manner as QinetiQ range clearance?

As stated, this is informal at this stage as I just need to have a feel for the level of stakeholder engagement we are likely to need and any potential impact on local aviation activities. Please bear in mind the small fillet of airspace is only likely to be activated infrequently and for relatively short periods probably in the order of 30 mins or so (and probably no more than a few times per month). Formal consultation will follow and only if the CAA decide an ACP is appropriate for this infrequent type of activity.

BTW, I did email Logan air regarding ASD/FS21 but have not had a response, I wonder if you would be kind enough to check it was received. Please pass on my details if Logan Air would like more information on ASD/FS21 or Spaceport 1.

Kind Regards

[redacted]

QINETIQ

Connect with us:

Tue 25/05/2021 14:55

[redacted]

FW: UC 'Space' enquiry

To SP1 ACP

20210329_Formal_Assessment_Meeting_Presentation_REDACTEDv1.4).pdf
3 MB

[redacted]

Sent: 27 April 2021 17:07

[redacted]

Subject: RE: UC 'Space' enquiry

[redacted]

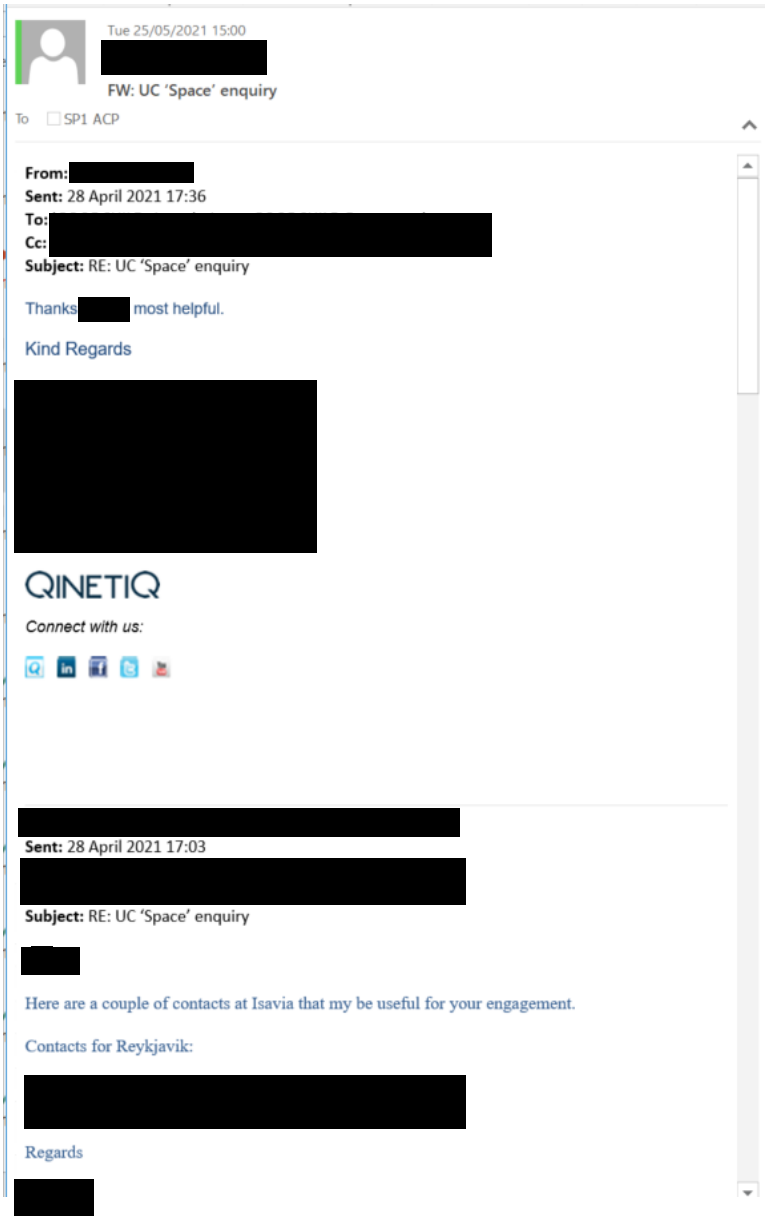
Thanks for your response; I will forward a proposed date for the stakeholder engagement meeting in due course. In the meantime PSA the airspace that is being considered under the ACP. Clearly one of the exam questions for the orbital launches is, 'what happens beyond the boundary of D701?' This will be a key discussion point going forward as part of the design principles and I recognise we will need to include Reykjavik in the discussions due to the northerly trajectory; do you have a POC at Reykjavik that I can include?

Kind Regards

[redacted]

Connect with us:

[redacted]



Tue 25/05/2021 15:00

[redacted]

FW: UC 'Space' enquiry

To SP1 ACP

From: [redacted]
Sent: 28 April 2021 17:36
To: [redacted]
Cc: [redacted]
Subject: RE: UC 'Space' enquiry

Thanks [redacted] most helpful.

Kind Regards

[redacted]

QINETIQ

Connect with us:

[redacted]
Sent: 28 April 2021 17:03
[redacted]
Subject: RE: UC 'Space' enquiry

[redacted]

Here are a couple of contacts at Isavia that my be useful for your engagement.

Contacts for Reykjavik:

[redacted]

Regards

[redacted]

SPACE PORT 1

Tue 25/05/2021 17:13

SP1 ACP

UC Spaceport 1 Scolpaig North Uist Outer Hebrides Scotland UK

To [redacted]

20210520_Step_1B_Airspace_Design_Principles_ENGAGEMENT_V1.4.pdf
566 KB

20210525_SP1_Presentation_REDACTEDv1.5).pdf
3 MB

Good Afternoon,

In addition to dealing with the coordination and negotiation of the large NOTAM areas supporting the multinational military ASD/FS exercise, I am also the lead for a UK Airspace Change Proposal (ACP) in support of the UK Spaceport 1 (SP-1) consortium. SP-1 is developing a vertical launch small satellite site on the island of North Uist on the Outer Hebrides, Scotland; adjacent to the UK MOD Hebrides Range.

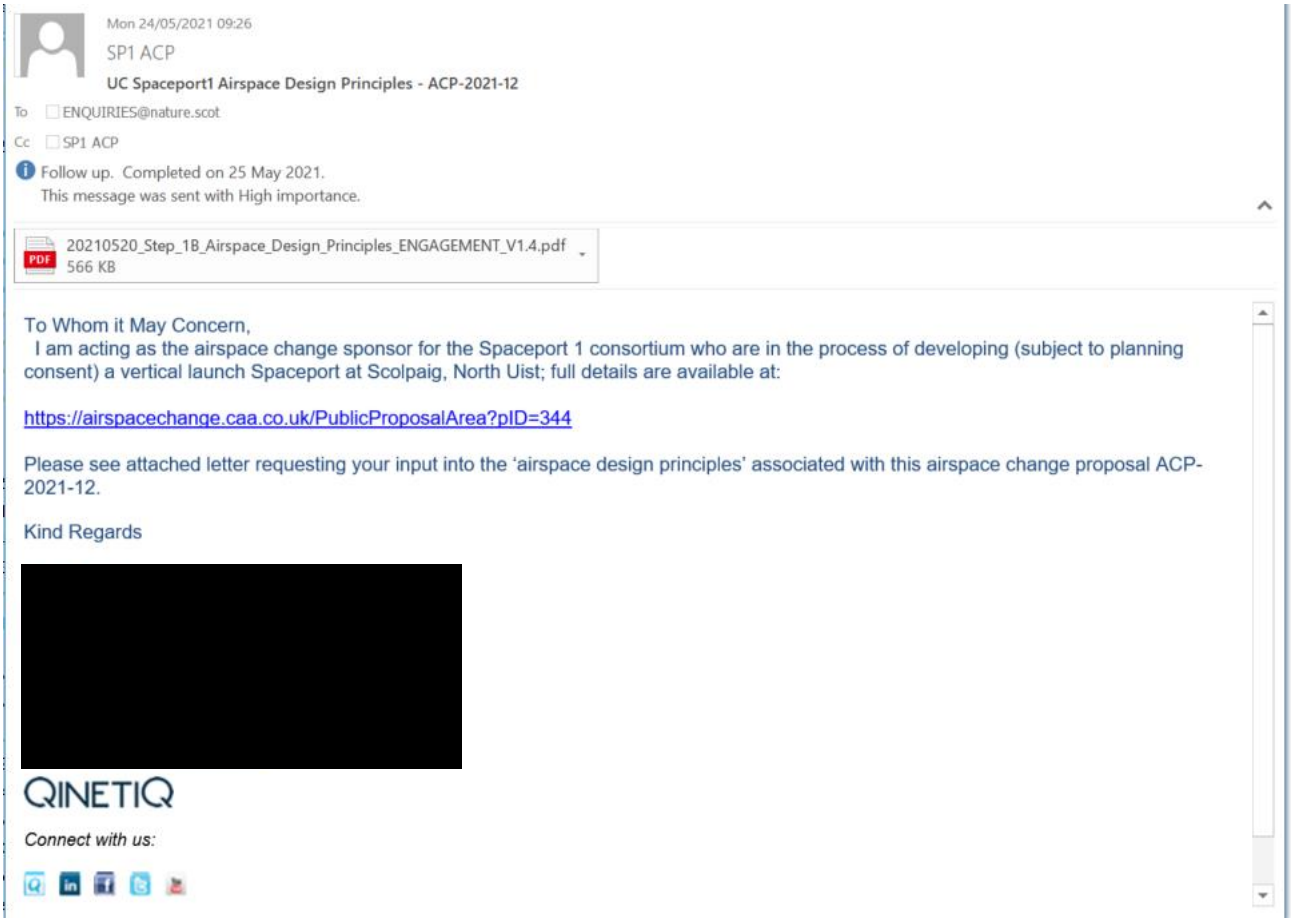
For your information please see attached presentation regarding the ACP and also a letter inviting you to comment on the airspace principles to be adopted in the design of the airspace and subsequent use of the EG D701 Areas. Of interest to yourselves will be what happens beyond the UK FIR boundary and as such your opinion will be of value to us as we move forward with any airspace development and associated ASM procedures.

Kind Regards

[redacted]

QINETIQ

Connect with us:



Mon 24/05/2021 09:26

SP1 ACP

UC Spaceport1 Airspace Design Principles - ACP-2021-12

To ENQUIRIES@nature.scot

Cc SP1 ACP

Follow up. Completed on 25 May 2021.
This message was sent with High importance.

20210520_Step_1B_Airspace_Design_Principles_ENGAGEMENT_V1.4.pdf
566 KB

To Whom it May Concern,
I am acting as the airspace change sponsor for the Spaceport 1 consortium who are in the process of developing (subject to planning consent) a vertical launch Spaceport at Scolpaig, North Uist; full details are available at:

https://airspacechange.caa.co.uk/PublicProposalArea?pID=344

Please see attached letter requesting your input into the 'airspace design principles' associated with this airspace change proposal ACP-2021-12.

Kind Regards

[redacted]

QINETIQ

Connect with us:

Sponsor Letter to Stakeholders Requesting Feedback on Design Principles:

QINETIQ

SPACE PORT 1

SP-1 Airspace Change Manager
Room 113 AT Building
QinetiQ Malvern technology Centre
St Andrews Road
Malvern
Worcestershire
WR14 3PS

19 May 2021

AIRSPACE CHANGE PROPOSAL – ACP-2021-12

1 Introduction

The Spaceport 1 (SP-1) consortium led by the local council, Comhairle nan Eilean Siar, comprising Highlands & Islands Enterprises (HIE), private investors and QinetiQ, are developing a vertical launch spaceport located at Scolpaig, North Uist. In addition to the requirement to gain planning consent and conducting associated Environmental Impact Assessments (EIA), there is a regulatory requirement to ensure any activity that may be hazardous to other airspace users is segregated accordingly. Such segregation is normally achieved through the establishment of airspace restrictions in the form of a notified Danger Area. Danger Areas are then activated when required though existing airspace Notice to Airman (NOTAM) processes and procedures.

To enable SP-1 to operate, the method of establishing segregated airspace around the launch site is enabled through the Civil Aviation Authority (CAA) Airspace Change Proposal (ACP) process as defined in Civil Aviation Publication (CAP) 1616. QinetiQ Ltd is acting as the airspace sponsor for the ACP in support of SP-1. CAP1616 process comprises 7 stages each of which are considered by the CAA separately and sequentially. Each stage informs the next and is not solution driven. In this particular instance, the requirement to launch sub-orbital and orbital small satellite rockets from Scolpaig has been presented to the CAA at Step 1A of Stage 1 of the ACP process and the CAA has agreed that an airspace change is an appropriate means by which to achieve the SP-1 requirement.

Details of this step can be found on the CAA's online airspace change portal at:
https://airspacechange.caa.co.uk/search?Page=1&SponsorOrganisation=QinetiQ%20Ltd

This ACP is just one part of the full regulatory process to enable SP-1 to operate. Other processes underway include planning consent, spaceport licence, launch operator licence and Range control licence. By necessity, several of these processes overlap in particular where stakeholder engagement and consultation is necessary. It should be noted that this part of the ACP process (Stage 1 Step 1B) is 'engagement' to inform the airspace design; further engagement on the actual airspace design occurs during Stage 2 (later this year) with formal consultation on the establishment of the airspace occurring in Stage 3. This is likely to occur early 2022; addressees will be notified accordingly.

Note: This is a separate engagement package to that some addressees may have received with regard to a Temporary Danger Area (TDA) for the same site; ACP-2021-37 refers. Please delineate clearly between the two if you have been requested to respond to both.

2 Stage 1 Step 1B – Design Principles

QinetiQ will follow the next steps of CAP1616 to develop options which will help to deliver the most appropriate solution and address the requirements for a spaceport. Under the ACP process it is necessary to develop a set of design principles that provide a framework that is used in drawing up the airspace design. In developing the design principles the sponsor is required to engage with affected local aviation stakeholders, including airspace users; Air Navigation Service Providers (ANSPs); airports; relevant members of the National Air Traffic Management Advisory Committee (NATMAC); relevant aviation and non-aviation national organisations including those which represent areas likely to be affected by potential impacts; and, elected representatives of environmental interest groups likely to be affected by potential impacts. Following this engagement process ensures a fair and transparent flow of information between the change sponsor and any affected stakeholders. QinetiQ is keen to engage with stakeholders and is asking for your feedback when considering the airspace design principles. QinetiQ has compiled a set of draft design principles detailed at Table 1. You as a stakeholder are invited to comment on these principles while also contemplating any omissions that you believe should be accounted for. You may wish to ask for more information on these principles. Any additional detail and reasoning behind your feedback is encouraged. For this stage of the ACP

'engagement' process, we are only asking for your view on the airspace design principles; further engagement and consultation takes place in later stages of the process as described above.

Table 1: List of Draft Design Principles for Consideration

DP Ref	Category	Design Principle
DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport activities from other airspace users thereby minimising the impact on other airspace users
DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex
DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
DP7	Environmental	The airspace design and associated activation of EG D701 need to consider the environmental impact of aircraft being re-routed around the Danger Areas due to SP-1 activities
DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018
DP9	Operational	Rocket stage drop zones may be required outside EG D701 and will need to be considered

2.1 Design Principles Expanded

DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
Safety is the single most important factor and DP1 establishes the need to design airspace that provides adequate protection from any hazards associated with rocket launch from SP-1 to other airspace users. Note: safety of third parties on the ground or seaspace is detailed in separate but parallel work packages associated with the planning consent regulations.		

DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport activities from other airspace users thereby minimising the impact on other airspace users
In ensuring safety of other airspace users the airspace design should consider the potential failure of the spacecraft both at the launch site, immediately after launch and when in flight. The airspace design must be of sufficient volume to contain all credible risks associated with rocket malfunction. For this purpose the new airspace design is only needed in the vicinity of the spaceport in order that the rocket can safely transition to the existing segregated airspace provided by the EG D701 complex.		

DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
When considering the impact on other airspace users the new airspace should not be considered in isolation but must also take into account the consequential impact of activating numerous EG D701 areas for SP-1 operations at times when the Danger Areas may not normally be activated. This design principle includes consideration of which EG D701 areas need to be activated and their impact on other stakeholders in particular where these necessitate the closure of Oceanic Entry Points (OEPs) for the North Atlantic (NAT) tracks.		

DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex
This design principles should include integration of the new airspace into the Airspace Management (ASM) processes of the existing EG D701 complex thereby minimising the need for new multifaceted standalone procedures and exploiting current Standard Operating Procedures (SOPs). This will enable timely notification of operations and swift cancellation of NOTAMs thereby freeing up airspace efficiently. Furthermore, expanding extant EG D701 procedures to include the new SP-1 airspace will enable safe access for other airspace users when deemed necessary, in particular emergency services.		

DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
It is recognised that use of the EG D701 areas will be subject to MOD activities and priorities therefore an important design principle will be the operational integration of SP-1 activities in and around MOD use. By managing both programmes, QinetiQ expect to be able to facilitate the most efficient use of airspace especially where it is proven safe to conduct simultaneous operations.		

DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
It is recognised that any new Danger Area airspace will have to comply with the CAA Buffer policy and ANSPs may be required to apply FBZs. The design principles will have to take into consideration both these requirements. Furthermore, the advent of FRA in the Scottish Flight Information Region (FIR) will need to be considered.		

DP7	Environmental	The airspace design and associated activation of EG D701 need to consider the environmental impact of aircraft being re-routed around the Danger Areas due to SP-1 activities
Despite the likelihood that the new airspace will be relatively small in volume and therefore current traffic patterns should be unaffected, a holistic approach is required to consider the wider impact subsequent activation of the EG D701 Danger Areas will have in particular on the NAT tracks. Any deviation caused by unavailability of OEPs will have to be carefully considered in the airspace design to understand the environmental impact of additional miles flown by aircraft forced to route around EG D701 Danger Areas. It is further acknowledged that rocket launch from the site at Scolpaig will create noise and light pollution and these elements are being considered within the planning application and further captured in the EIA; the latter will help inform part of the ACP process.		

DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018
It is recognised that the airspace design might be influenced by the emerging secondary legislation to the Spaceport Act 2018 expected in July 2021 – The design principles will have to account for any additional requirements the legislation may prescribe in particular where these may be linked to the spaceport operator licence and Range operator licence.		

DP9	Operational	Rocket stage drop zones may be required outside the EG D701 Areas and will need to be considered
For orbital rocket launch it is expected that these may have one or more rocket stages that will separate after launch. Where separation and return to earth occurs outside the EG D701 complex additional segregated airspace will be required – The design principle should include the most efficient use of airspace to accommodate this requirement.		

3 How to Provide Feedback

Feedback can be provided by email to the airspace change manager at: SP1ACP@QinetiQ.com

You are politely requested to provide any response regarding the Draft Airspace Design Principles by Wednesday 23rd June 2021.

4 Distribution:

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Bristow Helicopters
Gamma Aviation
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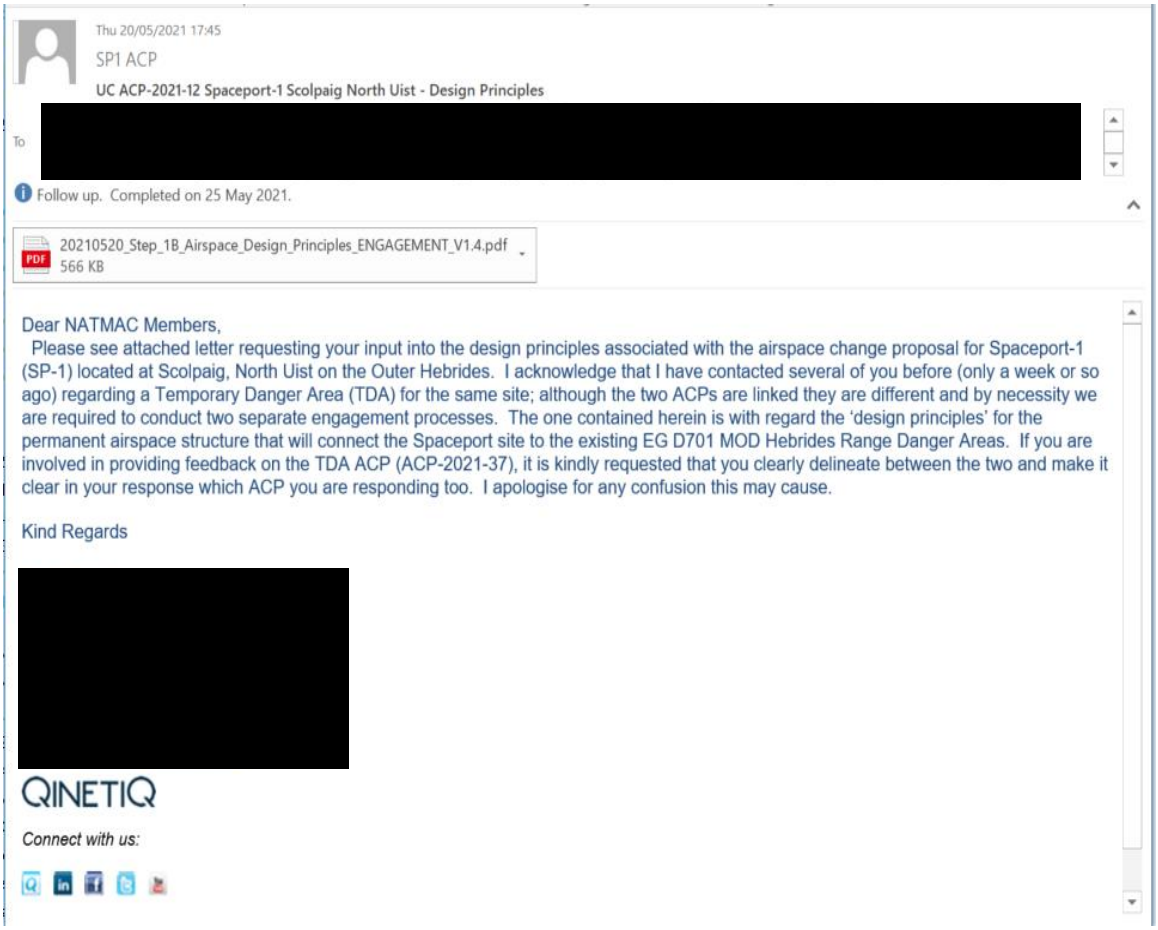


Thu 20/05/2021 17:45

SP1 ACP

UC ACP-2021-12 Spaceport-1 Scolpaig North Uist - Design Principles

To [redacted]

Follow up. Completed on 25 May 2021.

20210520_Step_1B_Airspace_Design_Principles_ENGAGEMENT_V1.4.pdf
566 KB

Dear NATMAC Members,

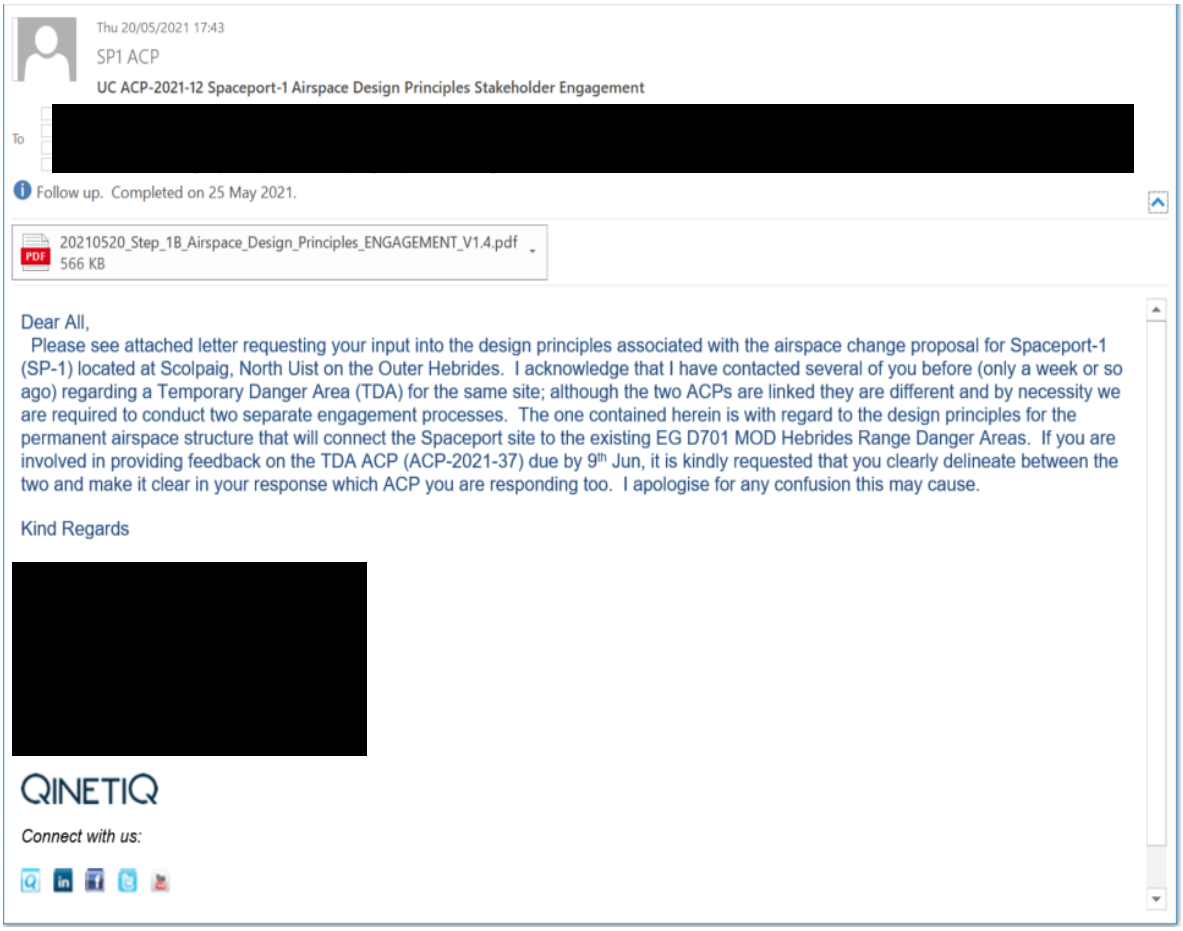
Please see attached letter requesting your input into the design principles associated with the airspace change proposal for Spaceport-1 (SP-1) located at Scolpaig, North Uist on the Outer Hebrides. I acknowledge that I have contacted several of you before (only a week or so ago) regarding a Temporary Danger Area (TDA) for the same site; although the two ACPs are linked they are different and by necessity we are required to conduct two separate engagement processes. The one contained herein is with regard the 'design principles' for the permanent airspace structure that will connect the Spaceport site to the existing EG D701 MOD Hebrides Range Danger Areas. If you are involved in providing feedback on the TDA ACP (ACP-2021-37), it is kindly requested that you clearly delineate between the two and make it clear in your response which ACP you are responding too. I apologise for any confusion this may cause.

Kind Regards

[redacted]

QINETIQ

Connect with us:



Thu 20/05/2021 17:43

SP1 ACP

UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

To [redacted]

Follow up. Completed on 25 May 2021.

20210520_Step_1B_Airspace_Design_Principles_ENGAGEMENT_V1.4.pdf
566 KB

Dear All,

Please see attached letter requesting your input into the design principles associated with the airspace change proposal for Spaceport-1 (SP-1) located at Scolpaig, North Uist on the Outer Hebrides. I acknowledge that I have contacted several of you before (only a week or so ago) regarding a Temporary Danger Area (TDA) for the same site; although the two ACPs are linked they are different and by necessity we are required to conduct two separate engagement processes. The one contained herein is with regard to the design principles for the permanent airspace structure that will connect the Spaceport site to the existing EG D701 MOD Hebrides Range Danger Areas. If you are involved in providing feedback on the TDA ACP (ACP-2021-37) due by 9th Jun, it is kindly requested that you clearly delineate between the two and make it clear in your response which ACP you are responding too. I apologise for any confusion this may cause.

Kind Regards

[redacted]

QINETIQ

Connect with us:

SPACE PORT 1

Thu 24/06/2021 14:03

SP1 ACP

RE: UC 20210616_WebEx_QQ_NATS_Response_Discussion_Points

To [redacted]

Cc

This message was sent with High importance.

[redacted]

Regret the 8th is no good for [redacted]. Can we stick with the 7th Jul 0930-1100 and could I ask you to facilitate the meeting through 'Microsoft Teams' again given our IT issues and preferred use of WebEx. Please could you also invite those CC'd. Might I suggest two parts to the meeting with a rough agenda as follows:

- TDA (ACP-2021-37) Discussion covering:
  - Expected sounding rocket profiles
  - Use of D701 for any launches (circa max of 4) this year – ASM considerations
  - Subsequent TDA requirements 2022 and potential design options for a bespoke area within D701
  - Activation processes, notification periods
  - Orientation of launch to minimise impact on ATM network
- ACP-2021-12 Design principles:
  - Discussion covering NATS response

Kind Regards

[redacted]

QINETIQ

Connect with us:

[redacted]

Sent: 24 June 2021 10:51
To: SP1 ACP <SP1ACP@qinetiq.com>
Subject: RE: UC 20210616_WebEx_QQ_NATS_Response_Discussion_Points

[redacted]

Unfortunately, the other dates don't suit. There is availability on the 8th July between 1400 and 1600. Would this work?

Regards

[redacted]

NATS-QinetiQ WebEx Discussion SP-1 TDA Response – 16 June 2021

In Attendance:

QinetiQ:

[redacted]

NATS:

[redacted]

Apologies:

[redacted]

Introductions:

Aim of meeting to run through NATS response and for Sponsor to gain an understanding of concerns and issues as highlighted:

Funding:

Discussion on how will NATS activities associated with TDA be funded. Wider aspects of funding discussed (i.e. NATS gain revenue from charges to airlines for their investment and operating expenses) – TDA development costs, plus corresponding use of D701 for additional activities may cause delays and/or increased costs for airlines with no corresponding benefit to them. Justification for increased costs are expected to be difficult for NATS to pursue. NATS RP3 settlement is based on a planned programme of airspace change, and SP-1 activity for 2021/22 was not identified or included, was confirmed to be not MOD activity as per extant D701 LOA, and funding to support implementation would need to be resolved. Sponsor agreed that funding for these changes should be captured in the submission and they would discuss with the CAA accordingly.

LOA

Sponsor explained that process and procedures will be in accord with extant LoA for all D701 areas, TDA will be managed as an extension of D701 and the numbers of OEP closures were not considered an issue as sounding rockets will be launched post 1400UTC. NATS view is that the LoA and use of D701 was previously agreed for MOD activity and planned MOD use, and not for use as proposed here. Therefore, it is anticipated that new agreements/arrangements would have to be negotiated regarding SP-1 use as in effect this was an unforeseen increase in use that is currently not agreed.

Buffer Zones

It was recognised that the TDA requested for Sep and Nov 21 would not be managed by the UK AMC given the time needed to achieve the system updates and associated management processes required to be introduced with the Network Manager. As a consequence, the Sponsor acknowledged that specific D701 areas would need to be activated in conjunction with the TDA; as a minimum these would be: D701Y, D701C and D701E in order that appropriate flight planning restrictions

[redacted]

would be put in place. Sponsor confirmed that the actual volume of airspace expected to be activated is not yet known, is subject to confirmation and further analysis by consortia partners, but would be known no later than D-21.

This led to NATS primary concern - that more airspace would be activated for 'convenience' than will be needed, especially given the limited range of the sounding rockets operating under an ANO approval (circa 50 km), leading to greater airspace access being frequently denied to GAT (in particular NAT operators), and in addition to the extant disruption created by additional military activation of the D701 complex (e.g. FS 21, GPS jamming et al). The Sponsor reiterated the fact the Range would only activate the minimum number of corresponding D701 areas that were absolutely necessary to contain the hazard and as yet this information was not available. Orientation of rocket launch would also factor in the best use of D701 areas to minimise impact on the ATM network – Range staff are very familiar with these requirements. Full safety analysis regarding the safety trace/Maximum Energy Boundary (MEB) of the subject sounding rockets would have to be undertaken before the number of D701 areas could be declared. NATS expressed concerns that this information might not be known until D-21 and therefore the subsequent impact on the network not understood until after D-21. The increased cost to the airline operators could not be evaluated neither could the environmental impact through increased fuel burn and CO_2 emissions.

NATS suggested further sub-division in D701 once safety trace/MEB detail known may offer a more suitable, safe and sustainable approach, as this could lead to a more efficient use of airspace and would demonstrate compliance with CAA policy and Sponsor requirements to only use the minimum airspace necessary to contain hazards/activity. It was recognised this could not be done in time for Sep launch but NATS would like to see this approach, or similar, implemented for 2022 launches and beyond to achieve a more sustainable operation for SP-1 and GAT alike. This requirement is especially pertinent following the introduction of FRA in Dec 21 given each area is required to be managed by the UK AMC in this environment and have an appropriate Flight Plan Buffer Zone associated to it. Sponsor agreed this should be considered and made a priority. NATS requested early engagement once full airspace requirements were known for first and corresponding launches.

It was also recognised that the UK AMC would need to add the TDA into LARA for it to be managed through the AUP process, noting that this would not be possible for Sep activations; however, QinetiQ were encouraged to start reusing LARA at the Hebrides Range for them to be in position to manage this activity.

NATS highlighted the issue regarding descriptors associated with Danger Area activities as prescribed in the AIPs and the fact 'rocket launch' did not feature therefore there was no safety assurance against such activity[redacted]. The Sponsor explained that as the first sounding rocket launches would most likely be under the ANO their performance/capability would be limited accordingly and as such they would have significantly less impact or capability of the ballistic missile targets flown during the At Sea Demonstration/Formidable Shield (ASD/FS) MOD exercises; it was therefore considered that the appropriate assurance against this activity was in place and could be fielded under one of the existing descriptors. However, it was recognised that sounding rockets were not a MOD activity and as such the Sponsor agreed that this should be a subject of discussion with the CAA. The Sponsor recognised that for orbital rocket launches this issue would need ratifying by the regulator and this would most likely fall out of the secondary legislation associated with the Space Industry (SIA) Act 2018.

[redacted]

The Sponsor explained that the TDA and associated airspace requirements was only one of many requirements to enable the first sounding rocket launch; others including planning consent, launcher and rocket licences and potentially a space range licence. All were parallel work strands inextricably linked but each carrying its own risk to the project. The Environmental Impact Assessment (EIA) was also part of this work and it was recognised by the Sponsor that the ACP for the permanent solution would also need to consider the impact on GAT being re-routed as a result of D701 being active.

Total impact on UK network:

NATS is keen to understand how coincident airspace restrictions such as MOD activities and other spaceports would be coordinated in order to minimise impact on ATM network. Of particular concern to NATS is when the MOD are conducting GPS jamming and the associated volume or airspace needed to contain this activity. Discussion included the UK AMC involvement and their role in pre-planning. It was identified that new protocols would be required and it was unclear how priorities or future arbitration would be conducted as no priority for access to airspace has been laid out with regard to space industry activity under CAA UK ASM policy. PMN: SP-1 are engaging with Sutherland Spaceport with a view to deconflict future launch activities and how this may be accomplishe[redacted]

The Sponsor shared the expected sounding rocket activity with first proposed launch Sep this year, a second launch in October and two further launches in November. Launches would recommence in March 2022 with a rate of approximately two launches every other month until November (a potential for circa 9-10 launches). It was acknowledged that the TDA duration is nominally 90 days and the Sponsor had already engaged with the CAA to establish how this could be extended or, the TDA reactivated for 2022 without the need to expend resource on applying for additional TDAs.

NERL expressed the concern that the activation of components of the D701 Danger Area and the Temporary Danger Area proposed in ACP 2021-037 to support commercial activity, such Sounding Rockets and Spaceflight would create delays and increased track mileage to commercial aircraft. It is expected that the activation of the volumes of airspace necessary to ensure safety of life will have a detrimental impact on the KPIs and environmental metrics that NATS is measured on. D701 is a Defence sponsored complex under the authority of DE&S and designated for defence activity. The effects of direct military activity is accounted for in the setting of the targets for the KPI's and metrics. Additional utilisation for commercial activity of D701 and associated TDA will create a detrimental impact on the KPI's and metrics, and NATS needs to understand how this will be accounted for in the KPI's and Metrics, to ensure that it is not unreasonably penalised as a result of these activities. Therefore, NERL cannot support activity where it leads to a NERL-attributable degradation in the performance metrics assigned by customers and/or our regulator (e.g. airline delays, degraded environmental or 3Di performance etc.). In this regard, and consistent with how these are handled in different circumstances (e.g. airports), NERL expects attribution of such degradations to be assigned/designated as non-NERL attributable.

General Queries Requiring Sponsor Clarification – Sponsor Response

1. The first sounding rockets will be regulated under the ANO and as such their Range and altitude are restricted accordingly as per details provided in the PPP. However given the altitude will still be above 29000ft it is expected the TDA and D701 areas will be promulgated as SFC to UNL. Timings are not yet known but it has been accepted [redacted] aunches will be post 1400 UTC and not after 2359 UTC thus the statement avoiding 'peak periods' -

[redacted]

recognising the Westerly NAT tracks occur predominately 0900- 1600 UTC with 'peak' traffic occurring 1000-1300 UTC based on NATS heat Maps from 2018 and 2019.

2. QQ will use the same ASM protocols and procedures that are established in the existing LoA with MOD, NATS and IAA; QQ will therefore provide the necessary pre-planning accordingly at D-21, D-5 and D-1 – recognising that the formal LoA may not be applicable as this is with MOD DE&S however, the Range would still adopt exactly the same processes and procedures for the TDA and activation of the associated D701 areas; it is considered that this is the safest and most easily managed process for airspace management. It is noted however, NATS concern regarding inefficient use of airspace by using the D701 areas without any sub-divisions. The Sponsor considered on balance, until the extent of D701 usage was known, the safest option was to utilise the existing D701 areas and corresponding ASM procedures as this is understood by all airspace users.
3. Contingency arrangements for the TDA will be that same as for D701 procedures.
4. ADQ checks – ~~No requirement~~ [redacted] the TDA coordinates are derived from existing ADQ checked D701/4 coordinates. The Sponsor Acknowledged the TDA briefing pack did not contain the coordinates however, the single line depicting the boundary of the TDA is drawn between two existing ADQ geographical points associated with the existing D701 and D704 Danger Areas. These coordinates are:

   574923N 0071500W

   574128N 0073703W

   573305N 0073017W

   In addition, the Sponsor will need to provide ADQ compliant coordinates for the Flight Plan Buffer Zone that will need to be established around the area, upon introduction of FRA (Dimensions and Design guidance can be provided by NATS [redacted]

5. As per SoPs at the Range once the Max Energy Boundary (MEB) of the rocket system is known (as evidenced in the CAA approvals process), the Range will determine which D701 areas will need to be activated - QQ will work with NATS PC to establish which areas may have the least impact if we can alter the launch orientation of the rocket. Only the minimum areas require will be activated as per current FUA processes at the Range.
6. Flight planning buffer zones – previously covered.
7. IAA engaged pre 1400UTC launches their only concern.
8. Duration of activity expected to be between 2 – 3 hours per launch
9. Impact on oceanic airspace will not be known until MEB fully understood.

It is recognised the timelines are tight but the CAA have advised the TDA change if approved, will be promulgated via an AIP SUPP that the Sponsor will draft; the Sponsor is aware of the associated submission dates to meet a Sep launch and associated risks to the project.

Discussion points prepared by:

[redacted] – Sponsor for ACP-2021-37 TDA Scolpaig.
16 Jun 21

[redacted]

SPACE PORT 1

Thu 15/07/2021 16:29

[redacted]

RE: UC SP-1 WebEx (2) 7 Jul 21 - QinetiQ Readout

To SP1 ACP

[redacted]

[redacted]

Thanks for your brief summarisation below. Following internal review, and whilst also acknowledging your reflection that we were in danger of going round the wheel again on detail when we met last, we would suggest that your notes of the meeting have some inaccuracies with those we took.

Given all sides want to move forward on this matter, we would offer the following summary of our position as this may assist the sponsor in formulating next steps:

1. We advised that, to assure the safety of the network and our operation, we have commenced work to implement use of any approved TDA/airspace needed for a September launch, should that be granted UK CAA approval. This work, regardless of the nature of any approval issued by CAA in this regard, does not constitute NERL's endorsement of this airspace design as either suitable or sustainable beyond the initial September launch, and should be viewed simply as a pragmatic approach by NERL to ensure our customers' safe operations within this airspace.

   In our meeting, both NATS and CAA were consistently clear that the accommodation was for one single launch, and had followed senior level discussions between both organisations. QinetiQ noted that this fell short of what they had indicated to be a possible requirement in their statement of need, with CAA/NATS consensus being that more than one launch had not been agreed and would require further discussion. QinetiQ advised the potential for the September launch, originally planned for September 15th, to move to end of September or potentially further into very early October. NATS did not expect this to prove problematic in itself, but that typical prioritisation processes would be used to ensure the Network isn't already reserved by other sponsors and/or wouldn't become compromised (i.e. business as usually processes) before confirming any date would be suitable.
2. NATS indicated that they would categorise any consequential delays or 3Di penalties following the use of this airspace (for this purpose, and for the September launch) as "other" (i.e. not NATS-attributable).
3. Consistent with our previously stated position, these arrangements apply only to the single September launch as there was insufficient time to bring forward a more transparent, justifiable and sustainable airspace design to accommodate this launch, but NERL expects that launches after September be subject to full and timely coordination to achieve a safe and sustainable use of the airspace that aligns more closely with CAA policy on airspace use.

   In this regard, NATS advised that airspace requested by the sponsor should expect to satisfy DfT policy guidance to the CAA, recently published, that requires them (the CAA) "to ensure that spaceflight activities do not unduly impact on the efficient use of airspace which could result in an increase in the emissions contributing to climate change produced by air traffic. All reasonable steps should be taken to ensure that these impacts are minimised."
4. NATS commented that SP1 had not yet provided any indication of anticipated launch trajectories and/or of the airspace impact this may have, nor any indication of when this information may become available and this was hampering their ability to impact assess this against the network. NATS noted this contrasts with other Spaceports who have responded to NERL requests to share this information. SP1 indicated that some basic data could be provided, that NATS expected to find helpful, that they may be available to share, and SP1 agreed to progress this.
5. NERL and SP1 remain unclear of the airspace that will be necessary. For pragmatic reasons, and to accommodate only the single September launch, NATS indicated it would seek to be prepared for this single event, using an airspace design that reflects:
   a. The airspace described in the TDA application, plus
   b. A defined volume of airspace, recognised and bounded by ADQ-compliant and published coordinates. By proxy, this defined volume of airspace is recognisable as one or more sub-divisions of the D701 complex.
   c. Consensus existed that ASM processes recorded within the D701 LOA provide an adequate template for this single September launch, and SP1 indicated their intent to follow them.
   d. NATS notes that this complex has not been notified for this purpose, nor has it been consulted or agreed by LOA signatories that it be used for this purpose. [post-meeting note: For the avoidance of doubt, NATS requests that the accommodation of the single September launch does not indicate support for a change of use of any part of D701 for this purpose. Should this be the outcome desired, we would advise that LoA signatories should schedule a separate meeting to discuss, something NATS are willing to commence or facilitate if considered necessary].

      NATS reiterated its lack of understanding around documented CAA policy on the re-purposing of Danger Areas for activities, durations and utilisation that haven't previously been consulted or approved. Further, NATS referenced the description by QinetiQ that "precedent had been set" in this regard with activities around D201/Cardigan Bay by sponsors who were not signatories to the LoA for that airspace structure. NATS indicated that they intended to follow this up with CAA to ensure that there was a commonly held view on what sponsors and impacted stakeholders can expect as CAA policy and suggested the sponsor may also wish to consider an approach on this matter.
6. CAA indicated that their Manager Airspace Regulation had granted a form of approval for one or more space launch sponsors to "re-use" TDAs on a limited number of occasions. Where re-use of TDAs has been agreed with other spaceports the CAA indicated that a maximum of three utilisations had been agreed in principle, which was understood to mean that, subject to satisfying other steps in their TDA approval review and approval processes, there could be a maximum 3 x 90-day windows of use – a total of 270 days – coverage from the three "approvals". [post-meeting request of QinetiQ - please confirm this to be your understanding and clarify if it is not (?)]. CAA described that the timing of those 3 "approvals" were down to the sponsor, with contextual discussion indicating that some ACPs take longer to approve than others, thus implying that sponsors needed to time the use of each use wisely.

We discussed a possibility that, after the initial September launch, a separate "interim" TDA be established to bridge the gap between this year's activity and the projected approval of a permanent ACP solution/outcome. CAA provided guidance around how to progress such an idea and there was consensus that this approach may offer an opportunity to co-develop an airspace design that offers a more sustainable solution for all airspace users and the regulator alike. The CAA indicated that they would require a separate ACP for this interim TDA. SP1 agreed to consider this suggestion.

NATS indicated that space launches currently were not assigned a priority by CAA and that an action was agreed by CAA in April for this to be considered, the risk for space launch sponsors being that low priority activity could potentially put at risk launches which cannot be assigned any priority. NATS considered it would be helpful for CAA to issue policy or guidance in this respect to prevent any undue delay to sponsors, and so that expectations are set fairly and transparently for all airspace users.

QinetiQ commented on the prolonged timescales for airspace change processes, hence their need to manage the risks created and their proposal to use D701 as a simple and efficient solution. NATS indicated their mutual understanding of CAA processes, that they recognised that these processes applied to all airspace users, equally, and that their experience was in working closely across industry to navigate the process as fairly and efficiently as possible for all stakeholders. Specifically, NATS indicated that sponsor-risk cannot conveniently be crystallised to other airspace users to work around, and that Industry must work together to create the best, and a fair, solution for all.

Finally, whilst our readout from the meeting doesn't appear to align with you in all places, we trust these points will assist as we fully recognise there can be some discrepancies in small meetings of complex discussion and detail. Whilst it wasn't our intent to invite CAA to this meeting, your decision to do so may with hindsight proved beneficial within the meeting and may be helpful again; should you consider our account to be significantly different to that stated in the meeting-incomplete or unrecognisable. I haven't shared this with them, but I'm happy to do so – please advise ?

As always, I would be more than happy to follow up on any of the above as I believe we all recognise how important it is to progress both the Interim and permanent solutions in order to ensure the safe and efficient operation of Airspace in the future.

Regards

[redacted]

NERL plc Response to Spaceport 1 Stage 1 Step 1B
Design Principles (ACP-2021-21)

Thank you for allowing NATS to respond to Spaceport 1, Stage 1, Step 1B, Design Principles (ACP-2021-21)

At the time of writing, NATS cannot currently support this ACP until NATS has clarity on how any work associated with the development of this ACP will be funded. Therefore, this response is provided on a no commitment basis.

Design Principle	DP	NATS Comment
DP1	The safety of all airspace users is the paramount factor in the airspace design	No Comment
DP2	The airspace design will be of the smallest volume to safely segregate Spaceport activities from other airspace users thereby minimising the impact on other airspace users	Clarity is required on the difference between Spaceport activities and Spaceport launches. Does the same area need to be activated for both activities? The documentation implies that the area is required for the transition to the D701 complex. This would suggest that the area is required for Spaceport launches. Therefore, if activation is also required for Spaceport activities, should the sponsor consider the need to establish 2 separate activation areas to optimise Airspace use. Additionally, activation of large areas of the D701 complex will not achieve this design principle. **The airspace should be of a modular design, to accommodate variations in desired trajectories, and down range length, so as to Efficiently accommodate launch with no excess airspace delivering Safe and Sustainable use of the airspace.**
DP3	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations	Following discussions on the Spaceport 1 TDA ACP (ACP-2021-37), it became apparent that if the safety trace were to penetrate even a small sub part of the D701 complex, that entire area would need to be activated for the duration of the launch. Therefore, this is not an efficient use of airspace and does not minimise impact to

[redacted]

21/6/21

		other airspace users. The activation of these areas has a significant (both financial and environmental) impact on Oceanic Entry Points. Therefore, this DP can never be achieved within the current design of the D701 complex. If the D701 complex is to be used, further subdivision of areas must be completed to not segregate more airspace than required. In addition, the use of D701 was previously agreed for MOD activity and planned MOD use, and not for use as proposed here. Therefore, it is anticipated that new agreements/arrangements would have to be negotiated regarding SP-1 use, as in effect, this was an unforeseen increase in use that is currently not agreed.
DP4	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex	Complying with current ASM procedures and policy will require integration with current collaborative decision-making (CDM) processes on prioritisation of airspace activities. Primarily this is to ensure that the cumulative effect of segregated activities across the whole of the UK FIR and wider network and ocean is minimised which must be a key consideration within this principle. If the area is extended beyond the boundaries of D701 the same FUA principles must apply. The maximum number of permitted activations of D701 shall also be taken into consideration. This maximum number of activations is both time dependent, as well as dependant on the overall volume of D701 segments that are required to be active and the number of Oceanic Entry/Exit points that it affects. The Sponsor is fully aware of this international agreement and should demonstrate how it intends to manage such constraints.
DP5	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design	D 701 complex is Danger Area under MOD authority for which QinetiQ provide management services. Within this design principle QinetiQ recognises the priority of MOD activity and then to commercial and finally to general aviation. Protocols will need to be established to reconcile how Spaceport 1 fits into this priority list and then reflected in ASM Policy.

		The DP also articulates 'QinetiQ expect to be able to facilitate the most efficient use of airspace'. Within the Stage 3 consultation for this ACP, NATS would expect greater detail on how the priorities of the MOD and those of the commercially driven SP1requirements are to be managed effectively; within the overriding requirement to minimise impact to other airspace users and in particular maintaining the current constraint associated to the number of permissible activations of D701.
DP6	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy	The establishment of FBZ within Free Route Airspace is not purely an ANSP requirement. The CAA's SPECIAL USE AIRSPACE - SAFETY BUFFER POLICY FOR AIRSPACE DESIGN PURPOSES does not consider Space launch activity. The EG D701 complex Danger Area Authority is DE&S. The CAA Policy states, *4.1 Promulgation of DA Limits* *The MOD is responsible – in accordance with Defence Instruction 2013DIN03-002 which sets out the responsibilities for Danger Area Authorities – for ensuring that the promulgated vertical and lateral dimensions of the DA are the minimum required to meet the task for which the DA has been established.* FBZ are published within the AIP (ENR 5.1) and used by the EU Network Manager to block flight plan acceptance during periods of activation. It is a requirement of the sponsor of an airspace change to introduce this as part of their proposal. Furthermore, within FRA, the addition of reporting points around danger areas may also be required to facilitate safe circumnavigation. This factor needs to be taken into consideration by the sponsor.
DP7	The airspace design and associated activation of EG D701 need to consider the environmental impact of aircraft being re-routed around the Danger	NATS agrees that the overall environmental impact needs to be considered and this will require stakeholder engagement. The increased activation of components of the D701 Danger Area to support commercial activity, such Sounding Rockets and Spaceflight

	Areas due to SP-1 activities	would create delays and increased track mileage to commercial aircraft. It is expected that the activation of the volumes of airspace necessary to ensure safety of life will have a detrimental impact on the KPIs and environmental metrics that NATS is measured on. D701 is a Defence sponsored complex under the authority of DE&S and designated for defence activity. The effects of direct military activity is accounted for in the setting of the targets for the KPI's and metrics. Additional utilisation for commercial activity of D701 will create a detrimental impact on the KPI's and metrics, and NATS needs to understand how this will be accounted for , to ensure that it is not unreasonably penalised as a result of these activities. Therefore, NERL cannot support activity where it leads to a NERL-attributable degradation in the performance metrics assigned by customers and/or our regulator (e.g. airline delays, degraded environmental or 3Di performance etc.). In this regard, and consistent with how these are handled in different circumstances (e.g. airports), NERL expects attribution of such degradations to be assigned/designated as non-NERL attributable.
DP8	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018	If regulation isn't available currently, what are the criteria for the DP? There is at present no overarching regulatory spaceport range requirements i.e., a proven methodology associated to airspace design. It is therefore the sponsors responsibility to provide such evidence as required to ensure that the overall airspace design is safe for the operation of such technology.
DP9	Rocket stage drop zones may be required outside EG D701 and will need to be considered	This DP implies that additional segregated airspace requirements are needed to accommodate a down range area for the separation of rocket stages. Further detail on the potential size and location of such areas is required as it is not provided in section 2 of this

NERL plc Response to Spaceport 1 Stage 1 Step 1B
Design Principles (ACP-2021-21)

		document. Therefore, whilst this DP may be valid it is not possible to determine what criteria are being used in relation to this ACP and whether the principles associated to this inclusion are valid. Furthermore, given the current size of D701 it can only be assumed that such areas would be at a significant distance from the launch position on North Uist and may require international agreements to be reached that are beyond the scope of the UK CAA's ACP process. Greater clarity is needed on this issue.

Wed 26/05/2021 16:10

[redacted]

RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

To SP1 ACP

[redacted]

Follow up. Start by 27 May 2021. Due by 27 May 2021.
You replied to this message on 27/05/2021 07:38.

Good Afternoon,

Noting the difference and responding to UC ACP 2021-21, only one comment:

Provision for Danger Area/Airspace crossing in event of live SAR Ops should be considered.

No other comments, thank-you.

Best Regards

[redacted]

Head of Surveillance

[redacted]

Registered Office: The Tiger House | Sywell Aerodrome | Sywell |
Northampton | NN6 0BN | Company No: 05391365

[redacted]

Sent: 26 May 2021 15:44

[redacted]

Subject: FW: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

Note this is slightly different to the last TDA only notice.

[redacted]

Reply Reply All Forward IM

Fri 28/05/2021 11:36

[redacted]

RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

To SP1 ACP

You replied to this message on 01/06/2021 07:30.

GEN_04_096.docx
88 KB

[redacted]

Please see the attached response from the Northern Lighthouse Board ref : ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement.

If you need further assistance from us please come back to me.

Best wishes,

[redacted]

Official - Northern Lighthouse Board Email

[redacted]

www.nlb.org.uk

Our mission: To deliver in the most sustainable way practicable, a reliable, efficient and cost-effective Aids to Navigation service for the benefit and safety of all Mariners.

Our values: Safety, Pride, Integrity, Teamwork, Fairness, Innovation, Respect, Environment

Follow NLB on:

Northern Lighthouse Board

84 George Street
Edinburgh EH2 3DA

Tel: [redacted]
Fax:

Website: www.nlb.org.uk
Email: enquiries@nlb.org.uk

Your Ref:	Airspace Change Proposal ACP-2021-12
Our Ref:	GB/ML/GEN_04_096
[redacted]	
QinetiQ	27 May 2021

ACP-2021-12 SPACEPORT-1 AIRSPACE DESIGN PRINCIPLES STAKEHOLDER ENGAGEMENT

Thank you for your e-mail correspondence dated 20th May 2021 relating to the draft design principles associated with the Airspace Change Proposal (ACP) application by **QinetiQ** for the permanent airspace structure of EG D701 MOD Hebrides Range Danger Areas to include the Spaceport 1 launch site at Scolpaig, North Uist.

Northern Lighthouse Board have no objections to the draft design principles associated with the ACP application and welcome further engagement and consultation as the application progresses.

Yours sincerely

[redacted]

Navigation Manager

SPACE PORT 1

Thu 27/05/2021 08:19

[redacted]

RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

To SP1 ACP

Cc [redacted]

Follow up. Completed on 27 May 2021.
You replied to this message on 27/05/2021 16:27.

[redacted]

I can confirm that provided all associated Spaceport facility activity is covered under NOTAMs, we have no issues with the airspace design principles.

For your information, I have clarified this position with our aviation team and Bristow SAR.

Cheers

[redacted]

HM Coastguard, Maritime & Coastguard Agency
Marine House, Blaikies Quay, Aberdeen, AB11 5EZ

[redacted]

Maritime & Coastguard Agency | HM Coastguard

Safer Lives, Safer Ships, Cleaner Seas

From: SP1 ACP <SP1ACP@qinetiq.com>
Sent: 20 May 2021 17:43

[redacted]

SPACE PORT 1

Tue 22/06/2021 09:08

SP1 ACP <SP1ACP@qinetiq.r.mil.uk>

RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagem

To [redacted]

[redacted]

Thank you for the MOD response to the airspace design principles for ACP-2021-12 SP-1 Scolpaig. Your comment is noted and appreciated.

Kind Regards

[redacted]

QINETIQ

Connect with us:

From: [redacted]
Sent: 21 June 2021 09:56
To: Qinetiq-SP1 ACP <sp1acp@qinetiq.r.mil.uk>
Subject: RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

[redacted]

Please accept this as the formal MOD response for Stage 1 Design Principles for **ACP-2021-012.**

The MOD have no further comment on the design principles and are content that they sufficiently cover interactions between the proposed airspace and MOD activity.

We look forward to working with you on this ACP. If you have any further questions please do not hesitate to contact me.

Regards

[redacted]

From: SP1 ACP <SP1ACP@qinetiq[redacted]

SPACE PORT 1

Fri 04/06/2021 15:00

[redacted]

RE: UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement

To SP1 ACP

Cc [redacted]

Good afternoon [redacted]

Thank you for giving me the opportunity to comment on the design principles associated with the subject ACP.

The impact on other airspace users is clearly a priority in your considerations regarding safety, operational, and environmental considerations.

From an Air Traffic Control perspective, it is difficult to answer as HIAL are currently working to downgrade Benbecula's level of service from an ATC Unit to an AFIS Unit. Consequently, the Letter of Agreement we currently have with QinetiQ is in the [redacted] there is an ongoing [redacted] engaging with the process. I expect that the new airspace will become part of the revised Letter of Agreement.

The CAA have requested that Benbecula carry out their 5-yearly Instrument Flight Procedures Review prior to any decision on the proposed downgrade of service. I suggest that this ACP be included in that review.

Best regards,

[redacted]

Please consider the environment - think before you print!

Mon 24/05/2021 10:59

[redacted]

RE: UC ACP-2021-12 Spaceport-1 Scolpaig North Uist - Design Principles

To SP1 ACP

Follow up. Completed on 25 May 2021.

BMAA Principles during ACP engagement.pdf
250 KB

Good morning
Thank you for details of your proposed ACP.
Lease find attached a response to your request for input to the Design Principles stage.
Regards

[redacted]

British Microlighting
www.bmaa.org

[redacted]

SPACE PORT 1

British Microlighting www.bmaa.org

British Microlight Aircraft Association
Policy for Design Principles during ACP engagement

Introduction

The following text describes the underlying principles that the British Microlight Aircraft Association (BMAA) believes must be followed by applicants for airspace change proposals.

Consultation

1. The BMAA welcomes the opportunity to engage in consultation at an early stage within the ACP CAP 1616 process.
2. Sponsors are encouraged to engage with the BMAA and its members as early as possible during the development of the ACP. Previous ACPs have missed the opportunity for early engagement and dialogue resulting in significant and costly delays.

Airspace classification

1. The BMAA considers that the UK airspace's default classification is G and that sponsors must establish a safety case for proposing to change this class or add any further restrictions or requirements by their ACP.
2. All sponsors must demonstrate that alternatives have been considered such as RMZ and TMZ before considering controlled airspace.
3. Where Class E is proposed, without a TMZ or RMZ should be considered as the default option.

Access by GA

1. Sponsors must accept the assumption that GA including sporting and recreational aviation is entitled to continued safe use of airspace and that commercial aviation does not have a right to limit airspace access.
2. Sponsors should ensure that there will be measures to allow flexible use of airspace and prepare for the wider use of electronic conspicuity devices and interoperability with existing e-conspicuity, e.g. FLARM and Pilot Aware etc...

Airspace volume

1. In line with the principles of the Airspace Modernisation (was FAS) principles the ACP must respect the requirement for minimum airspace volumes designed for efficiency and reduced environmental impact. These principles will include:

- Minimum size of controlled airspace
- Minimum number of departure/arrival routes
- Steeper and continuous climbs and descents for cost and environmental benefits as well as minimisation of CAS footprint.

Justification

1. Sponsors must conduct and present proper analysis of overall airspace safety changes i.e. based on modelling and evidence rather than purely subjective opinion.
2. Sponsors must provide proper validation of forecast traffic levels. There is an expectation that data used, particularly forecasts, will be verifiable including details of any and all assumptions.

Airspace integration

1. Sponsors must show how they are integrating their proposal within the overall UK airspace modernisation context, for example proposals which do not connect efficiently between upper and lower airspace (potentially under different airspace "management") would only inhibit overall airspace efficiency and therefore not receive our support)
2. Optimisation of the development work above and below the 7,000ft NATS en-route split.

SPACE PORT 1

Fri 21/05/2021 11:51

ceo <ceo@britishhelicopterassociation.org>

RE: UC ACP-2021-12 Spaceport-1 Scolpaig North Uist - Design Principles

To SP1 ACP

Follow up. Completed on 25 May 2021.
You replied to this message on 27/05/2021 16:37.

[redacted]

Thank you for both consultations. I have passed them on to PDG helicopters as they were the only BHA members who were not on your distribution and might be affected by these ACPs. I know [redacted]eir Chief Pilot is contacting you separately.

I have read both this ACP and ACP-2021-37 and they appear to be logical and reasonable. In the very remote chance that SAR or HEMS need to access the active TDA at short notice I take it the normal range control frequency or telephone number will be manned during any times of activation of the TDA.

Yours

[redacted]

From: SP1 ACP
Sent: 20 May 2021 17:45

[redacted]

Subject: UC ACP-2021-12 Spaceport-1 Scolpaig North Uist - Design Principles

Reply Reply All Forward IM

Fri 21/05/2021 08:42

[redacted]

RE: CAUTION: External email - UC ACP-2021-12 Spaceport-1 Airspace Design Principles Stakeholder Engagement (UNCLASSIFIED)

To SP1 ACP

Follow up. Completed on 25 May 2021.
You replied to this message on 21/05/2021 09:19.

Classification:UNCLASSIFIED

[redacted]

Having perused your Airspace Design Principles and also now having discussed this with both our Senior Pilot Scotland (Air Ambulance Aberdeen and Perth based) and also our Senior Police Pilot Scotland (Glasgow based) we feel that the impact of your proposals on our operations will be minimal.

Therefore, we have no objections or comments on the proposals at this time.

[redacted]

babcock™

Please consider the environment before printing this email

SP-1 Airspace Change Manager
Room 113 AT Building
QinetiQ Malvern technology Centre
St Andrews Road
Malvern
Worcestershire
WR14 3PS

19 August 2021

ACP-2021-12 – Airspace Design Principles

1 Introduction

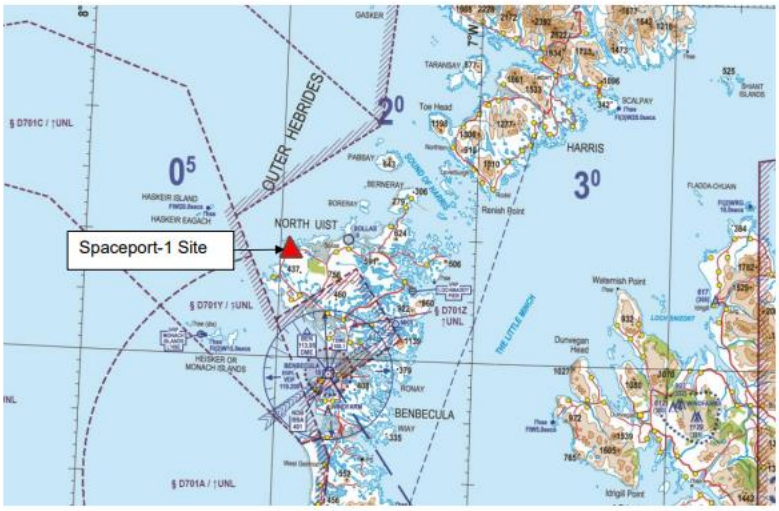
The Spaceport 1 (SP-1) consortium led by the local council, Comhairle nan Eilean Siar, comprising Highlands & Islands Enterprises (HIE), private investors and QinetiQ, are developing a vertical launch spaceport located at Scolpaig, North Uist. In addition to the requirement to gain planning consent and conducting associated Environmental Impact Assessments (EIA), there is a regulatory requirement to ensure any activity that may be hazardous to other airspace users is segregated accordingly. Such segregation is normally achieved through the establishment of airspace restrictions in the form of a notified Danger Area. Danger Areas are then activated when required though existing airspace Notice to Airman (NOTAM) processes and procedures.

To enable SP-1 to operate, the method of establishing segregated airspace around the launch site is enabled through the Civil Aviation Authority (CAA) Airspace Change Proposal (ACP) process as defined in Civil Aviation Publication (CAP) 1616. QinetiQ Ltd is acting as the airspace sponsor for the ACP in support of SP-1. CAP1616 process comprises 7 stages each of which are considered by the CAA separately and sequentially. Each stage informs the next and is not solution driven. In this particular instance, the requirement to launch sub-orbital and orbital small satellite rockets from Scolpaig has been presented to the CAA at Step 1A of Stage 1 of the ACP process and the CAA has agreed that an airspace change is an appropriate means by which to achieve the SP-1 requirement.

Details of this step can be found on the CAA's online airspace change portal at:
https://airspacechange.caa.co.uk/search?Page=1&SponsorOrganisation=QinetiQ%20Ltd

This ACP is just one part of the full regulatory process to enable SP-1 to operate. Other processes underway include planning consent, spaceport licence, launch operator licence and Range control licence. By necessity, several of these processes overlap in particular where stakeholder engagement and consultation is necessary. It should be noted that this part of the ACP process (Stage 1 Step 1B) is 'engagement' to inform the airspace design; further engagement on the actual airspace design occurs during Stage 2 (later this year) with formal consultation on the establishment of the airspace occurring in Stage 3. This is likely to occur early 2022; addressees will be notified accordingly.

2 Stage 1 Step 1B – Design Principles



QinetiQ will follow the next steps of CAP1616 to develop options which will help to deliver the most appropriate solution and address the requirements for a spaceport. Under the ACP process it is necessary to develop a set of design principles that provide a framework that is used in drawing up the airspace design. In developing the design principles the sponsor is required to engage with affected local aviation stakeholders, including airspace users; Air Navigation Service Providers (ANSPs); airports; relevant members of the National Air Traffic Management Advisory Committee (NATMAC); relevant aviation and non-aviation national organisations including those which represent areas likely to be affected by potential impacts; and, elected representatives of environmental interest groups likely to be affected by potential impacts. Following this engagement process ensures a fair and transparent flow of information between the change sponsor and any affected stakeholders. QinetiQ is keen to engage with stakeholders and is asking for your feedback when considering the airspace design principles. QinetiQ has compiled a set of draft design principles detailed at Table 1. You as a stakeholder are invited to comment on these principles while also contemplating any omissions that you believe should be accounted for. You may wish to ask for more information on these principles. Any additional detail and reasoning behind your feedback is encouraged. For this stage of the ACP 'engagement' process, we are only asking for your view on the airspace design principles; further engagement and consultation takes place in later stages of the process as described above.

Table 1: List of Draft Design Principles for Consideration

DP Ref	Category	Design Principle
DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport rocket launches from other airspace users thereby minimising the impact on other airspace users
DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex
DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
DP7	Environmental	The airspace design and any associated activation of EG D701, need to consider the environmental impact of aircraft being re-routed around the airspace in addition to the noise, emissions and light pollution in the local area.
DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018
DP9	Operational	Rocket stage drop zones may be required outside EG D701 and will need to be considered

2.1 Design Principles Expanded

DP1	Safety	The safety of all airspace users is the paramount factor in the airspace design
Safety is the single most important factor and DP1 establishes the need to design airspace that provides adequate protection from any hazards associated with rocket launch from SP-1 to other airspace users. Note: safety of third parties on the ground or seaspace is detailed in separate but parallel work packages associated with the planning consent regulations.		

DP2	Safety	The airspace design will be of the smallest volume to safely segregate Spaceport rocket launches from other airspace users thereby minimising the impact on other airspace users
In ensuring safety of other airspace users the airspace design should consider the potential failure of the spacecraft both at the launch site, immediately after launch and when in flight. The airspace design must be of sufficient volume to contain all credible risks associated with rocket malfunction for both orbital and sub-orbital sounding rockets. The former will have trajectories predominantly to the North of the launch site and despite the EG D701 complex containing a significant portion of the hazard, the airspace design may need to consider airspace outside the EG D701 boundaries. This may, in the interests of minimising the volume of airspace required, call for a bespoke modular airspace design within EG D701 complex as well as beyond.		

DP3	Operational	Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations
When considering the impact on other airspace users the new airspace should not be considered in isolation but must also take into account the consequential impact of activating numerous EG D701 areas for SP-1 operations (if this is deemed appropriate) at times when the Danger Areas may not normally be activated. This design principle includes consideration of which EG D701 areas need to be activated and their impact on other stakeholders in particular where these necessitate the closure of Oceanic Entry Points (OEPs) for the North Atlantic (NAT) tracks. It may prove beneficial to utilise EG D701 for sub-orbital sounding rocket activities where these can be contained mainly within the EG D701 complex. This DP may not be relevant if a bespoke modular design is preferred for orbital launches.		

DP4	Operational	Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex
This design principle should include integration of the new airspace into the Airspace Management (ASM) processes of the existing EG D701 complex thereby minimising the need for new multifaceted standalone procedures and exploiting current Standard Operating Procedures (SOPs). This will enable timely notification of operations and swift cancellation of NOTAMs thereby freeing up airspace efficiently. Furthermore, expanding		

extant EG D701 procedures to include the new SP-1 airspace (both around the launch site, beyond EG D701 boundary or, for a bespoke solution), will enable safe access for other airspace users when deemed necessary, in particular emergency services.

DP5	Operational	Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design
It is recognised that use of the EG D701 areas will be subject to MOD activities and priorities therefore an important design principle will be the operational integration of SP-1 activities in and around MOD use. By managing both programmes, QinetiQ expect to be able to facilitate the most efficient use of airspace especially where it is proven safe to conduct simultaneous operations.		

DP6	Operational	The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy
It is recognised that any new Danger Area airspace will have to comply with the CAA Buffer policy and ANSPs may be required to apply FBZs. The design principles will have to take into consideration both these requirements. Furthermore, the advent of FRA in the Scottish Flight Information Region (FIR) will need to be considered.		

DP7	Environmental	The airspace design and any associated activation of EG D701, need to consider the environmental impact of aircraft being re-routed around the airspace in addition to considering the noise, emissions and light pollution in the local area.
It is likely that the new airspace around the launch site and beyond the boundaries of EG D701 will be relatively small in volume (due to rocket launch profiles), and therefore current traffic patterns should be unaffected. However, a holistic approach is required to consider the wider impact that subsequent activation of the EG D701 Danger Areas, (and any additional airspace requirements beyond EG D701, including a bespoke modular design) will have, in particular on the NAT tracks. Any deviation caused by unavailability of OEPs will have to be carefully considered in the airspace design to understand the environmental impact of additional miles flown by aircraft forced to deviate from route. It is further acknowledged that rocket launch from the site at Scolpaig will create noise, emissions and light pollution; and these elements will need to be considered in the airspace design especially where they are traded off against minimising disruption to Commercial Air Transport (CAT). Many of these environmental issues are being considered within the planning application and associated EIA; the latter will help inform part of the ACP process.		

DP8	Regulatory	The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018
It is recognised that the airspace design might be influenced by the secondary legislation to the Space Industry Act 2018. The design principles will take account of any additional legislative requirements, in particular where these are linked to the Spaceport operator licence and Range operator licence.		

DP9	Operational	Rocket stage drop zones may be required outside the EG D701 Areas and will need to be considered
For orbital rocket launch it is expected that these may have one or more rocket stages that will separate after launch. Where separation and return to earth occurs outside the EG D701 complex additional segregated airspace will be required – The design principle should include the most efficient use of airspace to accommodate this requirement.		

3 How to Provide Feedback

Feedback can be provided by email to the airspace change manager at: SP1ACP@QinetiQ.com. Additionally, you will be invited to participate in a WebEx event week commencing 30th August where more background information will be provided on the airspace design and any concerns or issues can be voiced.

You are politely requested to provide any response regarding the Draft Airspace Design Principles by Monday 6th September 2021.

4 Distribution:

UK AMC
Fisheries Management Scotland
Historic Environment Scotland
Marine Scotland Compliance (local fisheries office)
Marine Scotland MSLOT
Met Office
North Uist Community Council
Outer Hebrides IFG
RSPB
RYA
Scottish Creel Fishermen's Federation
Scottish Fishermen's Federation
Scottish Water
SEPA

SPACE PORT 1

SPACE PORT 1

UK Chamber of Shipping
UKHO
Western Isles Fishermen's Association
CnES Planning

7

Thu 19/08/2021 08:45
SP1 ACP
UC Spaceport-1 Scolpaig - Airspace Design Principles Engagement

[redacted]

20210819_Design_Principles_Letter_2.pdf
586 KB

To Whom it may Concern,
Please see attached letter requesting feedback on the airspace design principles associated with the proposed Spaceport-1 launch site at Scolpaig North Uist. I will be emailing again shortly with a WebEx invite for those who might like to engage virtually.

Kind Regards

[redacted]

QINETIQ

Connect with us:

SPACE PORT 1

Accept ▾ ? Tentative ▾ ✕ Decline ▾ Propose New Time ▾ Calendar...

Thu 26/08/2021 10:27

[redacted]

UC Spaceport 1 Airspace Design Principles

Required [redacted]

Optional [redacted]

When 31 August 2021 15:30-16:30 Location WebEx

Following our letter dated 19 Aug 21 you are invited to join a WebEx event where we will describe and discuss the airspace principles for Spaceport 1.

[redacted]

-- Do not delete or change any of the following text. --

When it's time, join your Webex meeting here.

Join meeting

More ways to join:

Join from the meeting link

[redacted]

Join by meeting number

[redacted]

PDF

Scottish_Water_DP_Response_20-08-2021

Friday, 20 August 2021

[redacted]
SP-1 Airspace Change Manager
Room 113 AT Building QinetiQ Malvern technology Centre St Andrews Road Malvern
Worcestershire
WR14 3PS

Development Operations
The Bridge
Buchanan Gate Business Park
Cumbernauld Road
Stepps
Glasgow
G33 6FB

Development Operations
Freephone Number [redacted]
E-Mail - DevelopmentOperations@scottishwater.co.uk
www.scottishwater.co.uk
Follow Us

Dear Customer,

UC Spaceport-1, Scolpaig, Isle of North Uist, HS6 5DH
Our Ref: DSCAS-0046865-RH9
Proposal: Vertical launch spaceport

Please quote our reference in all future correspondence

Audit of Proposal

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced and would advise the following:

Water Assessment

- Unfortunately, according to our records there is no public Scottish Water, Water infrastructure within the vicinity of this proposed development therefore we would advise applicant to investigate private options.

Foul Assessment

- Unfortunately, according to our records there is no public Scottish Water, Waste Water infrastructure within the vicinity of this proposed development therefore we would advise applicant to investigate private treatment options.

Please Note

- The applicant should be aware that we are unable to reserve capacity at our water and/or waste water treatment works for their proposed development. Once a formal connection application is submitted to Scottish Water after full planning permission has

SW Public
Published

been granted, we will review the availability of capacity at that time and advise the applicant accordingly.

Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical, and technical challenges.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

General notes:

- Scottish Water asset plans can be obtained from our appointed asset plan providers:
  - Site Investigation Services (UK) Ltd
  - Tel: 0333 123 1223
  - Email: sw@sisplan.co.uk
  - www.sisplan.co.uk
- Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area, then they should write to the Customer Connections department at the above address.
- If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.
- Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.

SW Public
Published

- The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.
- Please find information on how to submit application to Scottish Water at our Customer Portal.

Next Steps:

- **All Proposed Developments**

  All proposed developments require to submit a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water via our Customer Portal prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

  Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

- **Non Domestic/Commercial Property:**

  Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider to act on their behalf for new water and waste water connections. Further details can be obtained at www.scotlandontap.gov.uk

- **Trade Effluent Discharge from Non Dom Property:**

  - Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and launderettes. Activities not covered include hotels, caravan sites or restaurants.
  - If you are in any doubt as to whether the discharge from your premises is likely to be trade effluent, please contact us on 0800 778 0778 or email TEQ@scottishwater.co.uk using the subject "Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found here.
  - Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.

SW Public
Published

- For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas, so the development complies with Standard 3.7 a) of the Building Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.
- The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at www.resourceefficientscotland.com

I trust the above is acceptable however if you require any further information regarding this matter please contact me on [redacted] or via the e-mail address below or at planningconsultations@scottishwater.co.uk.

Yours sincerely,

[redacted]
Development Operations Analyst
[redacted]
developmentoperations@scottishwater.co.uk

Scottish Water Disclaimer:

"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."

SW Public
Published

Fri 20/08/2021 12:24
Planning.North <Planning.North@sepa.org.uk>
RE: UC Spaceport-1 Scolpaig - Airspace Design Principles Engagement
To SP1 ACP
Follow up. Start by 24 August 2021. Due by 24 August 2021.

OFFICIAL – BUSINESS

[redacted]

Thank you for your email below and related attachment. Based on the information provided I don't there are any issues within SEPA's remit and therefore we have no comments to provide at this stage and don't think there will be need to engage with us on the proposal in the future. However if you have any specific questions relating to issue on which you think we may be able to help then feel free to email again.

Kind regards

[redacted]
Senior Planning Officer - Planning Service North
Graesser House, Dingwall Business Park, Dingwall
Email: planning.north@sepa.org.uk
[redacted]
[redacted]

Disclaimer
The information contained in this email and any attachments may be confidential and is intended solely for the use of the intended recipients. Access, copying or re-use of the information in it by any other is not authorised. If you are not the intended recipient please notify us immediately by return email to postmaster@sepa.org.uk. Registered office: Strathallan House, Castle Business Park, Stirling FK9 4TZ. Under the Regulation of Investigatory Powers Act 2000, the email system at SEPA may be subject to monitoring from time to time.

OFFICIAL – BUSINESS

SPACE PORT 1

Wed 01/09/2021 10:42
[redacted]
Re: UC Spaceport-1 Scolpaig - Airspace Design Principles Engagement
To SP1 ACP

[redacted]
Planning and Environment Officer
RYA Scotland

From: SP1 ACP <SP1ACP@qinetiq.com>
Sent: 01 September 2021 10:15
To: [redacted]
Subject: RE: UC Spaceport-1 Scolpaig - Airspace Design Principles Engagement

[redacted]

Thank you for taking the time to talk on the phone this morning regarding the Airspace Change Proposal (ACP) supporting Spaceport-1 (SP-1) at Scolpaig, North Uist (ACP-2021-12). As I explained, the engagement process that we invited you to comment on is with regard to the airspace design principles as set out in our letter dated 19 August 2021. Thank you for acknowledging that you have no comments or objections regarding the proposed airspace design principles as your concerns and that of your members, is with regard to the sea space. It is here that you asked for information on how this would be managed. Although outside the scope of the ACP process, I can offer the following as we discussed:

- QinetiQ will manage the air and sea space around the SP-1 launch site and beyond using the same processes and procedures as we do for MOD activity within the Hebrides Range
- It is expected that several of the existing Hebrides Range Danger Areas will be activated and used for SP-1 operations and where this is not the case, any bespoke airspace design will be promulgated and managed in the same way as the Hebrides Range Danger Areas
- The sea space will also be managed in the same fashion as that for MOD activities on the Hebrides Range; QinetiQ will employ the same stringent safety process to ensure 'clear range' prior to any rocket launch.
- Safety standards will conform to UK Health & Safety Executive (HSE) guidance and regulation as well as military safety regulations.
- Notification procedures will be in accordance with current practices including the appropriate Notice to mariners and airmen, and any other locally agreed notification to local stakeholders.
- It is difficult to determine the frequency of launches at this time however, a rough estimation would be in the order of one or two launches per month but this cannot be confirmed.
- QinetiQ have many years' experience managing the air and sea space in and around the Hebrides Range and are very familiar with recreational maritime activities.

I hope this meets your understanding of our discussion today, if you have any further questions please do not hesitate to contact me.

[redacted]
QINETIQ

SPACE PORT 1

Tue 07/09/2021 07:31
[redacted]
FW: UC Spaceport-1 Airspace Design Principles WebEx Discussion Points

To SP1 ACP

This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.

[redacted] and thanks again for taking the time to meet with us.

Thanks also for your useful response. I've made some short additions to the 4 points you've drafted for us (see below, highlighted in yellow).

All the best,

[redacted]

1. Impact on local flights in particular to/from Benbecula airport and if DP2 sufficiently captured this concern, particularly we are most concerned about whether lifeline flight frequency or reliability will be impacted, not flight paths.
2. How the change/reduction in Air Traffic Control (ATC) cover at Benbecula airport may affect future coordination with the Spaceport-1 (SP-1) operations, with a particular view on ensuring safety.
3. Why DP5 only focused on deconflicting SP-1 operations with MOD activity as a 'vital element of the operational use of the airspace design', and not with other airspace users such as local flights and why DPs dealing with local flights, which also use the same airspace, are not similarly focussed.
4. This DP engagement stage was the only opportunity for local community stakeholders to provide feedback on the airspace change and associated SP-1 procedures.

[redacted]

On Thu, Sep 2, 2021 at 12:16 [redacted]

[redacted]

Thank you both for your time today to discuss the Airspace Change Proposal (ACP) Design Principles (DPs) as promulgated in our letter dated 19 Aug 21. I have captured the main discussion points below, I would be obliged if you would review and pass any comments/omissions back to me as soon as possible.

The ACP process was explained and the purpose of the current Stage 1, Step 1B airspace DPs discussed. Main Concerns Raised:

1. Impact on local flights in particular to/from Benbecula airport and if DP2 sufficiently captured this concern.
2. How the change/reduction in Air Traffic Control (ATC) cover at Benbecula airport may affect future coordination with the Spaceport-1 (SP-1) operations, with a particular view on ensuring safety.
3. Why DP5 only focused on deconflicting SP-1 operations with MOD activity as a 'vital element of the operational use of the airspace design', and not with other airspace users such as local flights.
4. This DP engagement stage was the only opportunity for local community stakeholders to provide feedback on the airspace change and associated SP-1 procedures.

Point 1: DP2 is designed to account for all airspace users including scheduled flights to/from Benbecular airport. Any future airspace design will take into account these flights and preferred routes. The airspace Sponsor will, during the next stage of the ACP process, be engaging with stakeholders in developing the airspace design options, Loganair and Highlands & Islands Airports Ltd (HIAL) will provide vital input into these discussions in order to develop the most efficient airspace design. Operational processes and procedures will also be developed in conjunction with the airspace design and it is expected many of these will be mapped across from the existing airspace management procedures employed at the MOD Hebrides Range managed by QinetiQ.

Point 2: QinetiQ and the SP-1 consortium are aware of the plan to reduce ATC cover at Benbecula airport and have agreed to work with HIAL on identifying any additional hazards introduce by SP-1, conduct appropriate hazard analysis and develop mitigations, processes and procedures as necessary to ensure current levels of safety are not compromised. Current Letters of Agreement (LoAs) between HIAL and QinetiQ/MOD are currently being updated and it is expected that these agreements and procedures will be mapped across to include SP-1 operations.

Point 3: It was explained that DP5 is only specific to the MOD because it relates directly to the use of the existing MOD sponsored D701 Danger Areas (also referred to as the Hebrides Range). The Danger Areas are primarily for MOD trials, test & evaluation and weapon firings and as such any commercial use of these areas will be expected to fit in and around MOD use with MOD retaining primacy – it is expected that will form part of the formal agreement for commercial use of MOD sponsored Danger Areas. Both DP2 and DP4 make reference to other airspace users to ensure all stakeholders are considered in the airspace design.

Point 4: The ACP process following Step 1B was explained in more detail including the formal consultation phase during Stage 3 Step 3C. Here the airspace sponsor will have to send out detailed consultation material and facilitate meetings in order for stakeholders to provide verbal feedback and ask questions. The intention, subject to COVID restrictions, will be to have such meetings on the Outer Hebrides; the offer and use of a local hall near the proposed launch site is welcomed and will be investigated in due course. The current ACP timeline would indicate the consultation period is likely to commence early April next year. This will enable all interested parties to raise any concerns or questions they may have regarding the airspace change furthermore, the Sponsor would ensure stakeholders are kept informed as the ACP moves into Stage 2 of the process.

Kind Regards

Tue 07/09/2021 08:18
[redacted]
FW: UC NUCC response to design principles letter

To SP1 ACP

From: SP1 ACP
Sent: 07 September 2021 07:55
[redacted]
Subject: RE: UC NUCC response to design principles letter

[redacted]

I have addressed the comments below inline in red, I hope this helps. Please do not hesitate to contact me if you need more information. I will be contacting the two local environmental groups you highlighted separately.

Kind Regards

[redacted]

[redacted]

[redacted]

We've had a couple of late queries about the design principles letter that I don't think we covered when we spoke (covered by comments listed below). I can confirm that the two organisations mentioned in comment 3 are local environmental interest groups. Contact email addresses for them both:
friendsofscolpaig@gmail.com
secretary@curracag.org.uk

There have also been two queries about the Temporary Danger Area application. Is there a way for members of the community to provide feedback about that application?

All the best,

[redacted]

1. **Comment** - This is the first time that I am aware of in this process of QinetiQ progressing an Airspace Change Proposal through the Civil Aviation Authority that feedback has been sought from stakeholders/consultees. There are, however, significant issues raised in the earlier **Statement of Need** document on which no consultation process, that I am aware of, was progressed. **Question: What will be done to address this lack of consultation on the Statement of Need? CAP1616 does not require the airspace sponsor to conduct external engagement while developing the Statement of Need (SoN) however as this is primarily for the CAA to assess if an airspace change is appropriate. However, all interested stakeholders will have the opportunity to provide comment on the airspace design (which is aimed to meet the SoN) as this is developed during the next stages of the airspace change process.**
2. **Comment** - NatureScot (formerly Scottish Natural Heritage) is a statutory consultee under the planning process so should be included in the schedule of stakeholders/consultees. This appears to be in error. **Question: Why is NatureScot not included in the schedule of stakeholders/consultees? Nature Scotland were included in the first round of engagement on the design principles in late May; the second letter was sent out to additional addressees only once it had been identified that they had been missed from the original circulation.**
3. **Comment -** Page 2 notes, *"In developing the design principles the sponsor is required to engage with affected local aviation stakeholders, ... and, elected representatives of environmental interest groups likely to be affected by potential impacts."* Neither **Friends of Scolpaig**, a local interest group whose interest in Scolpaig significantly includes environmental interest, nor the **Outer Hebrides Natural History Society (Curracag)** are included in the schedule of stakeholders/consultees. **Question: Why have two local environmental interest groups not been included in the schedule of stakeholders/consultees as is stated as a requirement in the letter? We apologise for this oversight and will be contacting both groups immediately; they have been added to the stakeholder group for all future engagement and consultation activities.**
4. **Comment -** Emergency flights (ambulance, Coastguard, etc.) should be given priority over rocket launches at all times. **This is standard practice for Range operations and emergency services/national security air vehicles will take priority.**

[redacted]
North Uist Community Council
Visit our facebook page for updates

UK Airspace Management Cell response to:

ACP-2021-12 – Airspace Design Principles.

The UK AMC response is separate to the NATS and MOD response and only considers matters relating to pre-tactical airspace management

DP1: The safety of all airspace users is the paramount factor in the airspace design

No comment.

DP2: The airspace design will be of the smallest volume to safely segregate Spaceport rocket launches from other airspace users thereby minimising the impact on other airspace users.

The UK AMC encourages the use of the smallest appropriate volume of airspace in line with FUA principles detailed in CAA CAP 740.

DP3: Minimise the impact (on other aviation stakeholders) of activating specific EG D701 Danger Areas in support of SP-1 operations.

Consideration should also be given to any concurrent activation of Fast Jet Area North, Fast Jet Area South and EG D712 activities. If these airspace volumes are activated during a Spaceport 1 activation, the overall impact on GAT operations would be unacceptably restrictive. This relationship between juxtaposed SUA is described in the Hebrides (D701) LOA with NATS. Stakeholder for the activity will be responsible for this engagement, not the AMC.

It should be carefully considered whether the use of existing areas of the EG D701 complex represent an appropriate volume of airspace for SP-1 operations.

DP4: Use Flexible Use of Airspace (FUA) principles by integrating the airspace design into the extant Airspace Management (ASM) procedures operated within the EG D701 complex

Integrating the SP 1 airspace design into the extant D701 design is a short-term solution that may enable SP 1 operations. This will allow the UK AMC to apply extant ASM procedures for D701 to SP 1 operations - that occur within the D701 complex. This may not apply to the bespoke TDA that is established outside of the D 701 complex. However, FUA also requires that an appropriate airspace volume is used, that fits the Maximum Energy Boundary (MEB).

DP5: Integrating/deconflicting SP-1 activity safely with MOD activity in EG D701 is a vital element of the operational use of the airspace design

De-conflicting SP-1 and MOD activity within EG D701 is important and should be accomplished through strategic planning, incorporating the AMC at the earliest opportunity. DP3 should also be taken into consideration.

DP6: The airspace design shall take into account Free Route Airspace (FRA) and Flight Planning Buffer Zones (FBZs) remaining cognisant of CAA Buffer Policy

FBZ may also need to be considered in Oceanic airspace if the planned airspace volume reaches west of longitude 010W.

DP7: The airspace design and any associated activation of EG D701, need to consider the environmental impact of aircraft being re-routed around the airspace in addition to considering the noise, emissions and light pollution in the local area

No comment.

DP8: The airspace design will need to consider any emerging regulations pertaining to spaceports and Ranges under the spaceport act 2018.

No comment.

DP9: Rocket stage drop zones may be required outside the EG D701 Areas and will need to be considered.

Outside SUA, Rocket Drop Zones will be NOTAM'ed inside the UK FIR.

[redacted]

Tue 07/09/2021 08:08

SP1 ACP

UC Spaceport-1 Scolpaig - Airspace Design Principles

To 'comsecretary@curracag.org.uk'

This message was sent with High importance.

20210819_Design_Principles_Letter_2.pdf
586 KB

To Whom it May Concern,

It has come to my attention (from the North Uist community council) that you have not been included in the recent engagement process regarding the above titled. I apologise for this oversight and hereby attach the letter that was recently sent out to other interested parties. Recognising that you may have questions surrounding the airspace design principles and explaining these via email and letter may not be the most efficient method, I would welcome the opportunity to discuss any points directly with you regarding this matter. Ideally, if we could do this as soon as possible that would be helpful. I can set up a WebEx or telephone call whichever is preferred.

Kind Regards

[redacted]

QINETIQ

SPACE PORT 1

Tue 07/09/2021 13:17

SP1 ACP

UC FW: UC SP-1 Airspace Design Principles

To [redacted]

This message was sent with High importance.

20210819_Design_Principles_Letter_2.pdf
586 KB

[redacted] North Uist Community Council kindly forwarded your email address to me so I could send you a copy of the airspace design principles letter for your attention (your business email keeps sending me a none deliverable error). I apologise that the Outer Hebrides Natural History Society (Curracag) were left off the initial circulation. I wonder, once you have had time to ponder the attached, if we may catch up for a chat (along with any other representatives from the group). I am keen that I address any potential issues or concerns as soon as possible recognising that, through no fault of your own, the date for responses has passed.

Kind Regards

[redacted]

QINETIQ

Tue 07/09/2021 12:32

[redacted]

UC SP-1 Airspace Design Principles

To [redacted]

You forwarded this message on 07/09/2021 13:17.
This message was sent with High importance.

20210819_Design_Principles_Letter_2.pdf
586 KB

[redacted] from the North Uist Community Council kindly forwarded your email address to me so I could send you a copy of the airspace design principles letter for your attention. I apologise that the Friends of Scolpaig were left off the initial circulation. I wonder, once you have had time to ponder the attached, if we may catch up for a chat (along with any other representatives from the group). I am keen that I address any potential issues or concerns as soon as possible recognising that, through no fault of your own, the date for responses has passed.

Kind Regards

[redacted]

QINETIQ

Wed 08/09/2021 12:28

SP1 ACP

RE: UC SP-1 Airspace Design Principles

To [redacted]

This message was sent with High importance.

[redacted]

Really good chatting with you earlier, I hope you found our engagement useful. I made a few notes detailed below; if you would be so kind as to check for accuracy and correct accordingly that would be most helpful:

Your Concerns:

- **Planning application, current status, COI concerns, EIA, lack of consultation** - I was unable to comment on this process as it was outside my area of expertise but noted concerns and will pass on accordingly
- **TDA - why is there no consultation/engagement** - I explained that the CAA process for a TDA and a permanent airspace change are different. The former does not call for public consultation/engagement as they are generally short lead in times (three to four months) and are only used as a short term (90 days or less) temporary measure – a permanent airspace change follows a 7 stage process and takes about two years. TDAs are often used for what are loosely termed 'one off events' albeit there can be several within a 90 day period. These events require airspace restrictions for short temporary period to protect other airspace users. The CAA still have to be satisfied safety criteria are met for that airspace. A shortened ACP process has to be followed to gain a TDA and this includes engagement with aviation stakeholders (including local airports, airlines and other local operators/police/SAR etc.
- **Who is responsible for the safety of rocket launches** – The rocket provider will need to meet specific CAA criteria (including safety) and be issued with approval to operate as will the launch site operator. QinetiQ, as the Range operator, will apply the same stringent safety processes and procedures as are conducted for MOD activities using a combination of HSE and MOD/US DOD regulations to ensure risk to 3rd parties is reduced to tolerable/As Low As Reasonably Practicable (ALARP) or better.
- **Concern that the UK's risk based approach to safety will not be as transparent as the US FAA approach which is made very public for all launches** – In my opinion I consider a risk based approach is often safer and more efficient but cannot comment on transparency. I believe the CAA are required to provide transparency so it would be surprising if this was less so than the US.
- **Is there going to be an EIA and will it include impact on the environment following catastrophic failure either at launch site or immediately after launch?** – Confirmed that there would be an EIA as this is a legal requirement but I could not comment further as not suitably qualified.
- **Discrepancy regarding number of launches in planning application v number of launches in the ACP-2021-12 statement of Need (SoN), why not joined up and which is correct** – The planning application was with regard to sounding sub-orbital rockets and the SoN was with regard to the permanent airspace solution; the two would therefore be different. It was further explained that the SoN had to present a 'worst case' as this is what the Air Navigation Service Providers (ANSPs) like NATS and the airlines needed to understand. Where the SoN might say up to 3 to 4 launches per month, this should be considered worst case for any month, not that there would consistently be 3 to 4 every month.

You confirmed that you had no objection to the airspace Design Principles (DPs) as proposed in the latter dated 19 Aug 21, and considered them clear, concise and [redacted]

I further confirmed that this was only the start of the engagement process for the ACP and the next stage, where the airspace options were to be developed and assessed, would again need input from a variety of stakeholders.

Kind Regards

[redacted]