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<b>Project Title</b>	Space Hub Sutherland Airspace Change Proposal
<b>Client</b>	HIE/G&T
<b>Purpose of Meeting</b>	Design Principles Focus Group – Aviation Stakeholders
<b>Date of Meeting</b>	11 October 2019
<b>Held at</b>	An Lochran, Inverness
<b>Present</b>	 Transcend Change Limited , Chairman  Project Director Space Hub Sutherland, HIE  Senior Project Manager, Space Hub Sutherland HIE  DAATM MOD  Police Scotland  HIAL  Osprey CSL  Osprey CSL, Secretary
<b>Osprey Reference</b>	71270/012
<b>Issue</b>	Draft A

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## Glossary

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Acronym	Meaning
ACP	Airspace Change Proposal
ANO	Air Navigation Order
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAT	Commercial Air Transport
FAA AST	(US) Federal Aviation Administration Office of Commercial Space Transportation
FL	Flight Level
ft	feet
FUA	Flexible Use of Airspace
GA	General Aviation
HIAL	Highlands and Islands Airports Limited
LOA	Letter of Agreement
MOU	Memorandum of Understanding
NOTAM	Notice to Airmen
PMP	Provost Marshal Prohibited Area
PMR	Provost Marshal Restricted Area
ScACC	Scottish Area Control Centre, Prestwick

Acronym	Meaning
SHS	Space Hub Sutherland
SI	Statutory Instrument
SUA	Special Use Airspace

## Meeting Summary

Item	Action
<p><b>Opening introductions</b></p> <p>██████████ welcomed the Focus Group participants, who then introduced themselves outlining their role and backgrounds. ██████████ gave a brief outline of the current plans for, and anticipated benefits of, the Space Hub Sutherland (SHS).</p> <p>██████████ then described the requirement for a Civil Aviation Authority (CAA) Airspace Change Proposal (ACP), in compliance with the regulatory guidance in Civil Aviation Publication (CAP) 1616 “<i>Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements</i>”. He explained that the Aviation Focus Group was a component of Stage 1 ‘DEFINE’ and this engagement would help the development of the Stage 1 Design Principles submission to the CAA.</p> <p>██████████ mentioned that in the event that a launch from SHS was required before the ACP process was complete, there is a possibility that an application for temporary airspace could be made, which would run in parallel with the permanent application.</p> <p>It was stressed that the Focus Group was concerned solely with the airspace aspects of the SHS programme and not, for example, with the planning application process, that was running concurrently, or with future applications for a Spaceport or Range Licence. Nevertheless, each of these elements is recognised as having a potential impact on the ACP and will be monitored accordingly. Furthermore, where assessments have already been made, on environmental considerations for example, there is potential to reuse this information to avoid duplication. This principle has been promoted by the UK government at their ‘Launch UK’ Regulation &amp; Legislation Plenary events.</p> <p><b>Design Principle: The ACP will take into account other regulatory requirements associated with SHS and, where appropriate, reuse existing assessments.</b></p>	
<p><b>Appropriateness of Level</b></p> <p>As part of his presentation, ██████████ described the CAA requirement to ‘scale’ the process by assigning a level to the ACP. Although a final decision would not be taken until step 2B, the CAA considered that this ACP would be a Level 1 change. He then gave attendees the chance to express their opinion on the appropriateness of the level allocated.</p> <p>There was no disagreement to the consideration made by the CAA that this ACP would be a Level 1.</p>	



Item	Action
<p><b>Open Forum Discussion</b></p> <p><b>Safety</b></p> <p>Focus Group participants accepted that, as vertical rocket launch was a potentially hazardous activity, the safety of other airspace users is the paramount consideration of the ACP.</p> <p><b>Design Principle: The safety of other airspace users is the paramount consideration of the ACP.</b></p> <p><b>SHS Concept of Operations</b></p> <p>There was discussion around a generic concept of operations for vertical launch from SHS, including the planned initial and steady-state frequency of launches. [REDACTED] briefed that the first 'Pathfinder' launch, planned for 2021-22, would be an historic event; the first commercial launch of an orbital satellite from the UK. [REDACTED] added that the first launch would not confirm the viability of the spaceport but, if successful commercially, there would likely be up to 12 launches per year by 2026-27.</p> <p><b>Airspace Dimensions, Boundaries and Classifications</b></p> <p>Accepting that no decisions had yet been taken, stakeholders made the assumption that the proposal would result in a large volume of segregated, Special Use Airspace (SUA), in line with the guidance in CAP 1189<sup>1</sup>. As rockets launched from SHS would fly on a northerly trajectory to either polar or sun-synchronous orbit, and likely be multi-stage, stakeholders were interested to learn what arrangements would be made for rocket overflight of other states' airspace? [REDACTED] mentioned that the UK government was in discussion with Iceland, the Faroe Islands, Denmark and Norway, with potential for Memoranda of Understanding (MOUs) to be signed between participating states. As yet, discussion with individual spaceports had yet to begin.</p> <p><b>Action: [REDACTED] to contact DfT for an update on international cooperation that might affect the SHS ACP.</b></p> <p>There was discussion about the various types of restricted airspace and SUA, including Provost Marshal Prohibited and Restricted (PMP/PMR) Areas, both of which only apply to the MOD.</p> <p>[REDACTED] asked what dimensions of airspace would be required for the security of the launch site, taking into consideration non-compliant actors, eg drones and their counter technologies. [REDACTED] confirmed that a site security plan was being developed that would include an airspace</p>	<p>[REDACTED]</p>

<sup>1</sup> CAP 1189 "UK Government Review of commercial spaceplane certification and operations technical report", Chapter 8, Airspace  
([http://publicapps.caa.co.uk/docs/33/CAP1189\\_UK\\_Government\\_Review\\_of\\_commercial\\_spaceplane\\_certification\\_and\\_operations\\_technical\\_report.pdf](http://publicapps.caa.co.uk/docs/33/CAP1189_UK_Government_Review_of_commercial_spaceplane_certification_and_operations_technical_report.pdf))

Item	Action
<p>requirement and that security requirements may differ between launch service providers.</p> <p>█ confirmed that Police Scotland were responsible for criminal justice and that he had experience drafting Statutory Instruments (SIs) under Air Navigation Order (ANO) article 239, which provide the ‘power to prohibit or restrict flying’.</p> <p><b>Design Principle: The ACP may seek to legally prohibit overflight of some areas associated with the SHS operation.</b></p> <p>█ mentioned that following the introduction of CAP 1711 <i>Airspace Modernisation Strategy</i>, the MOD are currently in detailed discussions with NATS regarding the introduction of ‘Free Route Airspace’, and its implications for the notification, promulgation and activation of SUA and the concept of the Flexible Use of Airspace (FUA). While broadly supportive, the MOD would need to work with the spaceport operator and NATS on the potentially conflicting airspace priorities of defence versus commercial aviation and commercial space operations. To be successful, effective interagency planning would therefore be essential.</p> <p><b>Design Principle: In accordance with FUA principles, segregated SUA for rocket launch will be of the minimum dimensions and duration required to ensure the safety of third parties.</b></p> <p><b>Design Principle: The SHS ACP will need to take into account the implications for SUA of ‘Free Route Airspace’ and CAP 1711.</b></p> <p>The only previous analogous launch from the UK was during At Sea Demonstration 15 (ASD15), a military launch from MOD Benbecula, managed by QinetiQ. The Focus Group felt that information related to that launch, such as notification procedures and dimensions of airspace allocated and likely to be in the public domain, might be useful in the development of the SHS ACP.</p> <p>█ thought that previously issued NOTAMs were archived and agreed to investigate and report back to █ with his findings.</p> <p><b>Action: █ agreed to investigate whether NOTAMs were archived and report back to █.</b></p> <p>█ of HIAL, the Scottish-based Air Navigation Service Provider (ANSP) that provided Air Traffic Services (ATS) mainly in Northern Scotland and below Flight Level (FL) 195, commented that while broadly supportive of the proposal, HIAL would need to know the lateral and vertical dimensions and emergency response plans for any SUA for SHS. HIAL wished to be involved in further discussions on the proposal, in particular with the development of the Safety Case. He also said that there was potential that HIAL could provide low altitude surveillance in the area of the spaceport. █ also asked why NATS had not attended the meeting. █ explained that NATS had been engaged separately.</p> <p><b>Action: HIE/Osprey to ensure that HIAL are fully involved in the development of the SHS ACP.</b></p>	<p>█</p> <p>█</p> <p>█</p>



Item	Action
<p>Accepting that it was probably outside the scope of the ACP, [redacted] stated that Police Scotland would need to be heavily involved in spaceport emergency planning, including the establishment of restricted areas around incident sites where only SAR and Air Ambulance flights would be permitted to operate. He added that emergency planning arrangements including the development of MOUs and Letters of Agreement (LOAs) would be required, where effective communications are essential. Commenting, [redacted] thought it likely that the launch site operator would hold both the spaceport and range licences.</p> <p><b>Action:</b> [redacted] to ensure Police Scotland is involved in the development of SHS emergency plans.</p> <p>[redacted] asked whether there were international standards for space operations. [redacted] answered that whilst space operations were subject to international law, each launching state was responsible for its own regulations and common international standards did not yet exist. With the passing of the Space Industry Act (2018), the UK is currently developing a regulatory framework for space that will include legislation for launch but, in addition, a launch from the UK of a US-owned system would possibly also require a US license, issued by the Federal Aviation Administration Office of Commercial Space Transportation (FAA AST).</p> <p><b>Conclusion</b></p> <p>[redacted] and [redacted] thanked all attendees for their time and for their engagement in the process. [redacted] reminded participants that questionnaire responses were due by 20<sup>th</sup> October 2019 and that minutes of this FG meeting would be published, with names redacted, on the CAA website (<a href="https://airspacechange.caa.co.uk/PublicProposalArea?pID=125">https://airspacechange.caa.co.uk/PublicProposalArea?pID=125</a>).</p>	<p>[redacted]</p>

## Summary of Potential Design Principles arising from the meeting

No	Design Principle
1	The ACP will take into account other regulatory requirements associated with SHS and, where appropriate, reuse existing assessments
2	The safety of other airspace users is the paramount consideration of the ACP
3	The ACP may seek to legally prohibit overflight of some areas associated with the SHS operation
4	In accordance with FUA principles, segregated SUA for rocket launch will be of the minimum dimensions and duration required to ensure the safety of third parties
5	The SHS ACP will need to take into account the implications for SUA of 'Free Route Airspace' and CAP 1711

## Summary of Actions

Action	Description	Status	Owner(s)	Due Date
1.1	█ to contact DfT for an update on international cooperation that might affect the SHS ACP	Open	█	04/11/19
1.2	HIE/Osprey to ensure that HIAL are fully involved in the development of the SHS ACP	Open	█	Ongoing
1.3	█ to ensure Police Scotland is involved in the development of SHS emergency plans	Open	█	Ongoing
1.4	█ agreed to investigate whether NOTAMs were archived and report back to █	Open	█	04/11/19