ACP-2017-079

SHETLAND SPACE CENTRE LIMITED (SAXAVORD SPACEPORT) AIRSPACE CHANGE PROPOSAL

CAP1616 STAGE 4B SUBMISSION

AIRSPACE DESIGN UPDATE

(Design Option 3.2)

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DOCUMENT CONTROLS

Document Reference

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CONTENTS

List of Figures

1. INTRODUCTION

As part of its Stage 5 ("Decide") activities, CAA (Space Team) regulators suggested that SaxaVord's ACP-2017-079 proposed airspace design be revised to ensure that it was suitable to contain the potential hazards presented by off-nominal launch events. CAA offered that it would consider the extent of any proffered amendments against the criteria in CAP1616 (Para 200) and that any such amendments would within CAP 1616, Para 243.

Accordingly, and at CAA's direction, SaxaVord re-assessed the design against the latest evolving launch vehicle (LV) data available and elected to make minor amendments to the proposed airspace design; a corresponding addendum to the ACP-2017-079 Stage 4 was submitted to CAA on 22 Sep 23.[1]

Following initial discussion and feedback from CAA on the amended design, a small number of aeronautical data anomalies were highlighted in the submitted aeronautical data spreadsheet, which needed to be resolved.

This update to the ACP-2017-079 proposed airspace design represents a further refinement of the amended design option submitted to CAA on 22 Sep 23.[2]

2. UPDATE TO THE ACP-2017-079 PROPOSED AIRSPACE DESIGN

2.1. Update to the Airspace Proposed Design - Design Option 3.2.

Overview.

The updated airspace design ("Design Option 3.2") has not changed materially since the Stage 4 Addendum submitted to CAA on 22 Sep 23. The need to refine and ensure the alignment of the external boundary coordinates allowed SaxaVord to reassess and refine the internal segmentation of the amended Design Option 3.

This latter refinement not only ensures that the nomenclature assigned previously to the internal segments of the design align fully with CAA's requirements[3], but also offers greater operational flexibility for the spaceport and wider airspace network users, alike.

2.1.1. Refinement of Aeronautical Data.

The aeronautical data submitted at the Stage 4 Addendum required further refinement (in most instances of <30m) to remove minor anomalies. The ACP-2017-079 Aeronautical Data Template (Version 2.0) incorporating these amendments is at Attachment 1.

2.1.2. Internal Structure - Segmentation.

The internal structure (i.e. segmentation) of the proposed design has been further rationalised and the individual elements therein renamed to meet the CAA's "identification convention".[4] Consequently:

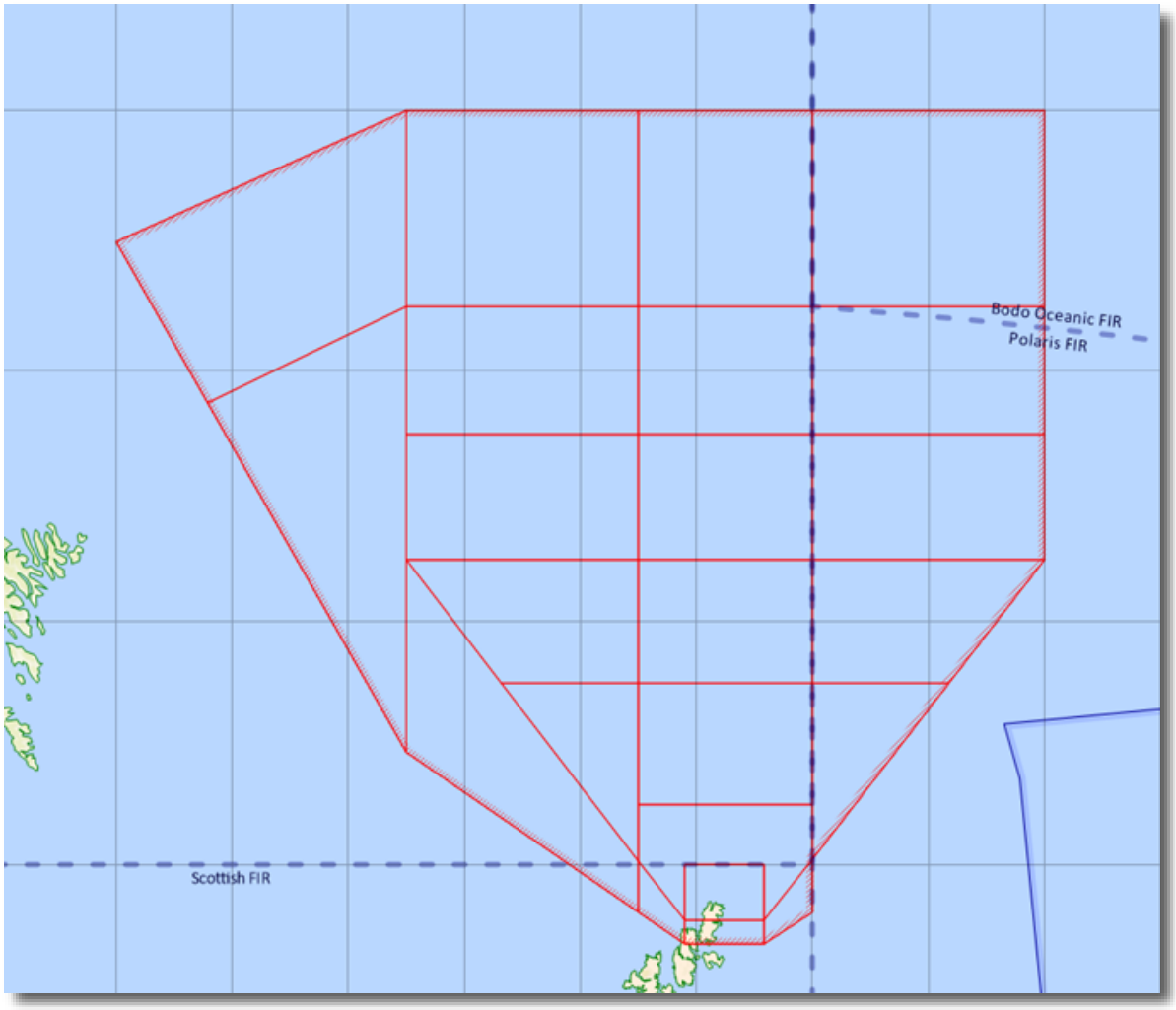
- The number of internal segments ("sub-parts") has been reduced, thereby offering an internal structuring that is simpler to interpret while maintaining sufficient operational flexibility.
- The updated structure does not change any of the impacts on stakeholders and no update beyond that contained in the Stage 4 Addendum is considered necessary.

Additionally, the previous "box" and "wedge" descriptors have been replaced by the requisite (and more familiar) lettering convention.

1. ACP-2017-079 portal "*ACP_2017_079_Stage_4_Addendum_V1.0_FINAL*" (online).
2. *ibid*.
3. CAA (2020), Para 12 (online), accessed on 31 Oct 23.
4. *ibid*.

2.2. Updated Design - "Design Option 3.2".

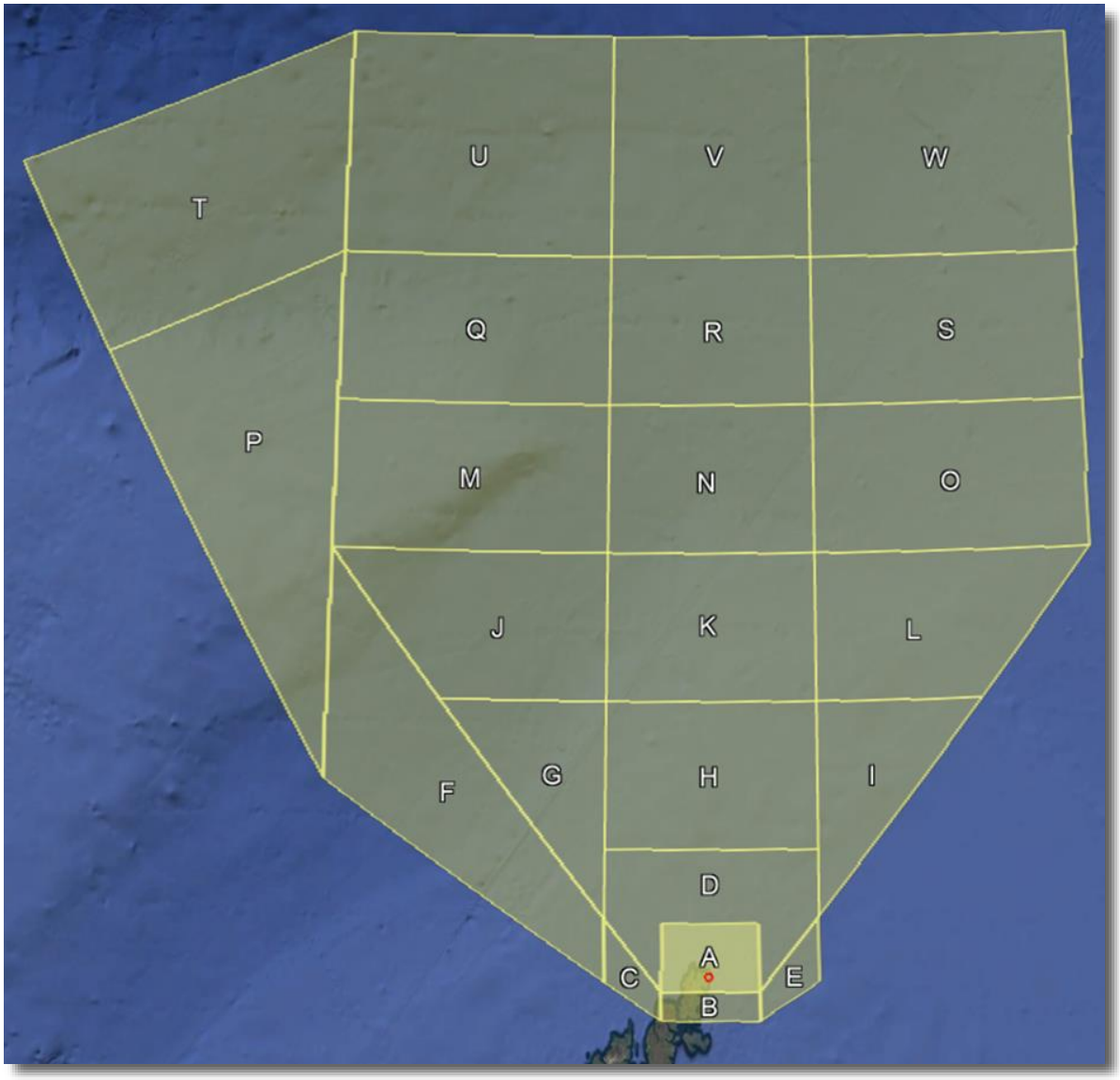
Figure 1, below, indicates the proposed updated design option, Design Option 3.2, incorporating the updated internal segmentation.



Source: skydemon

Figure 1 - ACP-2017-079 Design Option 3.2 (With Updated Internal Segmentation)

Figure 2, below, indicates the proposed updated design option, Design Option 3.2, with internal segmentation nomenclature.



Source: Google Earth

Figure 2 - ACP-2017-079 Design Option 3.2 (With Updated Segmentation Nomenclature)

3. QUALITATIVE ANALYSIS OF UPDATED DESIGN OPTION

SaxaVord believes that the updated internal segmentation simplifies the overall airspace design, offering greater flexibility of airspace utilisation for the spaceport and other airspace users.

Equally, the updated airspace design does not alter materially the qualitative assessments offered previously at Stage 4 and Stage 4 Addendum.

The updated airspace design continues to have no impact on the re-routing of traffic patterns below 7,000ft AMSL.

The updated airspace design can, therefore, be seen to have no significant additional impact on the stakeholders already consulted at Stage 3; additionally, there are no new stakeholders impacted as a result of the proposed amendments to the airspace design.

Accordingly, the stakeholders identified and consulted at Stage 3 need not, therefore, be re-consulted on the amended ACP-2017-079 proposed airspace design.

3.1. Qualitative Re-assessment of Stage 4 Analyses.

The update to the proposed design does not alter the previous qualitative assessments and analyses proffered in Tables 2-9 of the ACP-2017-079 Stage 4 Submission document.

4. POTENTIAL IMPACTS

As cited in Section 3, above, there are no new potential impacts associated with the update to the proposed airspace design and the existing impacts cited in the ACP-2017-079 Stage 4 Submission document remain unchanged.

Design Option 3.2 does not alter the intended use of the proposed airspace, such that any stakeholders not previously consulted could now be impacted. Similarly, the updated proposed airspace design does not alter the use of the proposed airspace, to the extent that the impact on one or more stakeholders already consulted has changed substantially and negatively.

SaxaVord asserts that there is no requirement to re-consult the application's stakeholders.

5. CONCLUSION

Following initial discussion and feedback from CAA on the amended design contained within the ACP-2017-079 Stage 4 Addendum, a small number of aeronautical data anomalies were highlighted in the submitted aeronautical data spreadsheet, which needed to be resolved.

The need to amend the submitted aeronautical data allowed SaxaVord to reassess and refine the internal segmentation of the amended Design Option 3. This latter refinement not only ensures that the nomenclature assigned previously to the internal segments of the design align fully with CAA's requirements[5], but also offers greater operational flexibility for the spaceport and wider airspace network users, alike.

The updated proposed airspace design represents a further refinement of the amended design option submitted to CAA on 22 Sep 23. Design Option 3.2 does not alter the intended use of the proposed airspace, such that any stakeholders not previously consulted could now be impacted. Similarly, the updated proposed airspace design does not alter the use of the proposed airspace, to the extent that the impact on one or more stakeholders already consulted has changed substantially and negatively.

Accordingly, the updated ACP-2017-079 proposed airspace design, Design option 3.2, is submitted to CAA.

Reference:

CAA (2020), "*Policy for Permanently Established Danger Areas and Temporary Danger Areas*" (online).

Attachment:

1. ACP-2017-079 Aeronautical Data Template (Version 2.0).

5. CAA (2020), Para 12 (online), accessed on 31 Oct 23.

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