

**MINUTES OF INTEGRATED BVLOS OPERATIONS TRIAL (ACP-2024-041) AT KIRKWALL AIRPORT
ASSESSMENT MEETING
HELD VIA MS TEAMS ON 22ND OCTOBER 2024**

24 October 2024

Present	Appointment	Representing
[REDACTED]	Airspace Change Account Manager	CAA
[REDACTED]	Airspace Regulator (Technical)	CAA
[REDACTED]	Airspace Regulator (Environmental)	CAA
[REDACTED]	Airspace Regulator (Engagement & Consultation)	CAA
[REDACTED]	Airspace Regulator (Economic)	CAA
[REDACTED]	Airspace Regulator (Economic)	CAA
[REDACTED]	Airspace Change Account Manager	CAA
[REDACTED]	Airspace Change Portal Specialist	CAA
[REDACTED]	Airspace Regulator (Technical)	CAA
[REDACTED]	SATE 2 Work Package 5 Lead	HIAL
[REDACTED]	ACP Lead	Egis
[REDACTED]	Project Director	Egis
[REDACTED]	PMO Lead	Egis
		Windracers
		Windracers
Apologies	Organisation	
[REDACTED]	CAA	
[REDACTED]	CAA	

CAA Assessment Meeting (Airspace Trial) Opening Statement

[REDACTED] noted that the presentation, statement of need, and agenda were received in advance of the Assessment Meeting and confirmed that the documents must be published by the sponsor, together with minutes of the meeting, on the Airspace Change Portal. CAA explained the purpose of the meeting and confirmed that the meeting was an Assessment Meeting and not a Gateway. The CAA reinforced that the sponsor was required to provide a broad description of their proposed approach to meeting the CAA’s CAP 1616 Airspace Trial requirements, but the CAA was not deciding whether the proposed approach met the detailed requirements of the CAA’s process at this stage. The purpose of the Assessment Meeting (as set out in detail in CAP 1616) was broadly:

- for the Sponsor to present and discuss their Statement of Need,
- to enable the CAA to consider whether the proposal concerned falls within the scope of the formal airspace change process.

Additionally, the sponsor was required to provide information on how it intended to proceed to fulfil the requirements of the airspace change process and to provide information on timescales. Lastly, the sponsor was required to provide information on how it intended to meet the engagement requirements of the airspace change process.

	ACTION
<p>Item 1 – Introduction</p> <p>████ welcomed all attendees and read the CAA’s opening statement above. Following individual introductions, █████ invited the change sponsor to present the slide pack. █████ explained that the purpose of the assessment meeting was to inform the CAA of Highland and Islands Airports Limited’s (HIAL’s) intent to conduct an airspace change proposal in relation to an integrated Beyond Visual Line of Sight (BVLOS) operations trial at Kirkwall Airport.</p> <p>HIAL provided the background and context for the SATE Project, which is a fully funded Future Flight Challenge and UKRI project. SATE aspires to create the UK’s first low carbon Aviation Test Centre to be located at a commercial airport. The SATE project consists of seven separate but interrelated work packages. HIAL in partnership with Windracers, and with the support of Egis, will deliver Work Package five (WP5). WP5 is tasked with the creation of a trial airspace test environment, which will be established in the Orkney Isles. The SATE consortium consists of 15 partners from across industry, the public sector and academia, including HITRANS, HIAL, Windracers, Loganair and Orkney Islands Council (OIC) all of which are key stakeholders in WP5. Windracers then provided an overview of their operations within the Orkneys and the Windracers ULTRA autonomous vehicle, highlighting their experience to date in middle mile airfield to airfield operations, including numerous BVLOS trials in diverse environments.</p>	<p>None</p>
<p>Item 2 – Statement of Need (discussion and review)</p> <p>Egis presented the Statement of Need (slide 7 of the presentation) that was submitted to the CAA on 23 August 2024 prior to the Stage 1A Assessment Meeting. The presentation highlighted that HIAL is the change sponsor and proposes an airspace change aimed at exploring, developing, and implementing a trial airspace test environment in unsegregated airspace in the Orkney Islands. This will be known as the Trial Orkney Test Zone (TOTZ) and will be overlaid on the existing Class G airspace to facilitate a range of uncrewed operations by Windracers Ltd, particularly BVLOS operations, in unsegregated airspace based on safe integrated operations from a commercial airport, Kirkwall Airport.</p> <p>The airspace will take the form of a Temporary Reserved Airspace (TRA) specifically designed for Uncrewed Air Systems (UAS) operations and will incorporate a Transponder Mandatory Zone (TMZ) and an associated Radio Mandatory Zone (RMZ). It was noted that HIAL is participating in the BVLOS Integration Sandbox, which is operated from a commercial airport (Kirkwall Airport) and its objective is to inform policy development. It was confirmed that there are no changes to the Statement of Need at this stage.</p> <p>The Technical Airspace Regulator from the CAA commented that the TRA, TMZ and RMZ can be applied for on the same ACP. During Stage 2 Design, the sponsor should design the TRA using a TMZ as an overlay.</p> <p>Note that a TMZ is not considered airspace but instead an overlay and is established when the establishment of a more restrictive classification of airspace is not warranted but additional measures to enhance flight safety are required.</p> <p>As was confirmed in the chat, “RMZ probably not required as the TRA can cover the rule set. A TMZ required if EC carriage is to be mandated legally.”</p> <p>A TRA with a TMZ overlay can be applied on the same ACP application.</p> <p>ACTION – To provide documentation on the requirement of separate applications for the TRA, TMZ and RMZ.</p> <p>Egis outlined the key trial objectives as follows:</p>	<p>Airspace Regulator (Technical)</p> <p>(Note that the requested information was shared during the meeting using the Teams Chat function.)</p>

<ul style="list-style-type: none"> • Demonstrate safe and efficient operations of BVLOS during integrated operations from a Commercial Airport in unsegregated airspace. • Test UAS Detect and Avoid (DAA) capability. • Demonstrate the suitability of an ADS-B based FID to provide improved situational awareness in support of the provision of a FIS within a TRA. • Obtain real-time data to assess the operational performance of UAS during BVLOS. <p>Egis provided an overview of the TOTZ operational area, which outlines the characteristics of the airspace design. It was noted that the proposal is limited to an airspace volume that is consistent with the objectives of the trial only, in line with the Flexible Use of Airspace policy. The design of airspace consists of subzones, which prevents the need to activate the whole of the TOTZ unless necessitated by the trial. The green zone is the operational zone, and the red outline is the buffer zone which provides clearance as a safety measure. The airspace design will be integrated with Kirkwall’s ATZ. The rally and loiter points are to provide recognised holding points for the UAS if required in the event of an operational issue and to ensure that crewed aircraft have priority.</p> <p>The TOTZ is situated within Class G airspace. This will not change when the TOTZ is activated. Therefore, the provisions regarding Class G airspace operations within the Standard Rules of the Air (SERA) are unaffected. It has a perimeter of 124 miles and an area of 989 square miles, from Sea Level (SL) to a maximum altitude of 3500’ Above Mean Sea Level (AMSL).</p> <p>The Technical Airspace Regulator from the CAA commented that the ACP application should provide rationale for the TMZ being incorporated into the TRA. It was advised that the design is streamlined in advance of stakeholder engagement. In relation to the subzones, it is recommended that the change sponsor considers the information required to go into Aeronautical Information Circulars (AICs) to minimise the risk of infringements.</p>	
<p>Item 3 – Issues or opportunities arising from proposed change</p> <p>Egis presented the opportunities and issues identified by the Sponsor. The opportunities offered by the TOTZ are:</p> <ul style="list-style-type: none"> • Achieving operational efficiency • Technological innovation • Environmental impact • Economic opportunities • Regulatory alignment - following CAP1616. <p>The main issue identified was that the airspace change proposal reflects innovation in an established and licenced operating environment. The challenges identified included:</p> <ul style="list-style-type: none"> • Alignment with emerging and evolving CAA Airspace, ATS and RPAS policies • Stakeholder engagement – there is a diverse group of stakeholders in the Orkneys, including a local community that is reliant on aviation services. • Environmental (Noise, HRA) • Risks (i.e. weather, dependencies) 	
<p>Item 4 – Process requirements</p> <p>Egis provided an overview of the process requirements adhered to throughout the ACP application process. These are in line with CAP1616G and participation in the CAA innovation sandbox has contributed to the development of various documentations such as the CONOPS, Safety Case, Stakeholder Engagement and Environmental data.</p> <p>In relation to stakeholder engagement, this task is being completed using the existing stakeholder register from the feasibility study conducted in the previous year. One-to-one meetings will be conducted with key stakeholders. An engagement summary and comms plan will also be compiled.</p>	

<p>█ requested a review of the stakeholder register to highlight any potential missing stakeholders.</p> <p>The E & C Regulator advised that a CAA Flight Operations colleague would be able to review the operators on the list. Other than that, it will be for the change sponsor to ensure that they have identified all relevant stakeholders.</p> <p>Action: E & C Regulator to provide contact details for CAA Flight Operations colleague.</p> <p>A noise impact assessment will be carried out to consider the drone noise footprint. Egis added that a safety assessment will be conducted involving the development of the safety argument. This will necessarily include an ALARP demonstration given the capability limitations of RPAS with respect to existing rules of the air including demonstration of see and avoid capability.</p> <p>The Technical Airspace Regulator from the CAA recommended a review of CAP2533 (Policy Concept for Airspace Requirements for Integration of BVLOS Unmanned Aircraft) due to the degree of reliance on ATC and the presence of an RPAS operator. It was advised that the change sponsor sets out the different phases of the trial within the trial plan ensuring that the ACP application can demonstrate the potential to satisfy the objectives associated with each phase of the trial. A phased approach that is logical, rational and considers safety is recommended.</p> <p>Egis explained that the operational concept and therefore the safety argument would incorporate the use of a FID to an extended range beyond the vicinity of the aerodrome.</p> <p>The Technical Airspace Regulator from the CAA commented that a training plan will be required for the ANSP to provide training to ATC. The regulator asked if there are separate teams for take-off and landing at each location. Windracers responded that there will be two people at each location, whilst Kirkwall will have a team of engineers and maintenance technicians. Windracers have operated in the area and are familiar with the airfields. There is a training program in place, alongside the operating safety case, which upskills pilots to operate in those areas.</p> <p>The Technical Airspace Regulator asked if any of the landing locations without an ANSP present. Egis responded that the six airfields in the Orkney Isles, operated by the OIC, each have operating procedures in place to manage the arrivals and departures. HIAL noted that an air-ground service is provided to aircraft using the OIC airfields. The operations at OIC airfields will be included in the HAZID sessions, as well as ground-based hazards that exist at each location. The findings will be incorporated in the safety case, trial plan and OSC.</p>	<p style="text-align: center;">Airspace Regulator (E & C)</p>
<p>Item 5 – Provisional timescales*</p> <p>Egis provided the provisional timescales that reflect the sponsor's ambition for the process and are aligned to the guidance provided in CAP1616. The indicative dates are as follows:</p> <ul style="list-style-type: none"> • 23/08/2024: Statement of Need Submission • 22/10/2024: CAA Assessment Meeting • Nov 2024: Stakeholder engagement period commences • June 2025: Safety case delivery; Four-part CAP670 compliant • June 2025: Trial ACP submission pack (at maturity and ready for submission). • Jul-Nov 2025: Work Package 5 Phase 5 - Submission of the ACP package. • Nov 2025 - May 2026: Work Package 5 Phase 6 - Trial implementation. <p><i>* The timeline agreed may become subject to change by the CAA. As outlined in CAP 2541 it is not the CAA's intent to conduct a re-prioritisation of all ACPs currently in progress, but only to prioritise when we believe this is required. Such prioritisation will be conducted on a case-by-case basis and in</i></p>	

<p><i>accordance with the principles outlined in CAP 2541. Should it be considered necessary to reprioritise an ACP a member of the Airspace Regulation team will contact the sponsor directly.</i></p>	
<p>Item 6 – Next steps</p> <p>Egis provided an outline of next steps to be taken as follows:</p> <ol style="list-style-type: none"> 1. Draft minutes of meeting 2. Upload minutes and presentation to portal 3. Continue work on ACP Regulatory pack including Airspace Design, CONOPS, Trial Plan, Operational Documentation and Safety Case. 4. Windracers will continue work on CONOPS, Operational Procedures and ORA. 5. Key stakeholder engagement (1-1 meetings), briefings to GA and HIAL Kirkwall Airport Staff, and an information pack for additional targeted stakeholders. 6. Further engagement with CAA SME across range of policy areas including the suitability of a FID to support the provision of a FIS within the TOTZ.. 	
<p>Item 7 – Any other business</p> <p>The Technical Airspace Regulator asked about scenario planning, specifically in relation to an outage of the FID during trial operations. Egis responded that the trial plan and airspace design include loiter and rally points as a mitigation to ensure that the UAS operations can be brought to a safe state in line with the ConOps fallback procedures. Furthermore, any failures will invoke the ATC and/or Windracers emergency procedures.</p> <p>The Technical Airspace Regulator commented that the FID will have to undergo a trial period to ensure that the technology is efficient. HIAL responded that the O-date of the FID is 2nd February 2025. The plan is to ensure the FID is operational, with controllers fully trained and competent, for at least eight weeks before conducting SATE related technical assessments, Human Factors assessments and a training gap analysis to demonstrate that the FID is an acceptable means of providing ATC with the enhanced situational awareness required to support the provision of a Flight Information Service (FIS) or Basic Service within the TOTZ.</p> <p>The Technical Airspace Regulator added that a review of the TRA would be helpful to evaluate whether the airspace design meets the design requirements of a TRA.</p> <p>The Engagement and Consultation Airspace Regulator stated that version 5 CAP 1616g applies and there is a requirement for a formal engagement period to be launched with a start date and closing date. This involves sharing material with stakeholders to allow them to provide feedback. CAP1616g states that a duration of 6 weeks is a reasonable starting point and a full explanation of the rationale for the selected timeline must be presented within the change sponsor’s stage 4 submission. It is recommended that reminders are issued as part of the engagement activity. Considering the proposed applications for an RMZ/TMZ, the change sponsor should ensure that all relevant GA stakeholders are identified. The Airspace Regulator highlighted requirements set out within CAP 1616g including to engage on safety and operational viability, providing stakeholders with a description of the current-day scenario and explaining the potential impacts of the proposal. It was recommended that if the operational area chart presented at the Assessment Meeting is included in any engagement material that the clarity of the chart be improved. At stage 4 submission, the CAA expect to see stakeholder engagement evidence, including stakeholder list, engagement materials used, raw data feedback received from stakeholders and the response to that feedback.</p> <p>The Environmental Airspace Regulator commented on the requirements for a noise assessment within CAP1616i, specifying that the affected community must be identified and informed of planned operations. The Noise assessment criteria is determined by the length of the proposed trial, as detailed in CAP1616g paragraphs 4.14 - 4.20 and CAP 1616i, paragraphs 11.1 - 11.8. The sponsor was reminded to apply the tone</p>	

<p>correction factor for any multi-rotor platforms, as described in CAP 1616i paragraph 11.8.</p> <p>There is a requirement to undertake and submit a Habitats Regulations Assessment Early Screening Criteria evaluation as described in CAP 1616g paragraphs 4.21 - 4.23. The sponsor was advised that, whilst the duration of the trial is limited, the timing of the implementation phase may have an impact on seasonal activities associated with some protected species/habitats and engagement with the relevant Statutory Nature Conservation Body may be appropriate.</p> <p>The Technical Airspace Regulator stated that the ACP application pack will need to be submitted using the template in annex 5 in CAP1616G.</p> <p>█ requested the minutes for the Assessment meeting to be forwarded to the CAA within one week so that they could be verified prior to returning to the Sponsor for redaction. The redacted minutes and presentation would need to be published on the airspace change portal by 5th November 2024. █ closed the Assessment Meeting.</p>	
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ACTIONS ARISING FROM INTEGRATED BVLOS OPERATIONS TRIAL (ACP-2024-041) ASSESSMENT MEETING

Subject	Name	Action	Deadline
TRA, TMZ and RMZ application	Airspace Regulator (Technical)	To provide documentation on the requirement of separate applications for the TRA, TMZ and RMZ.	(Note that the requested information was shared during the meeting using the Teams Chat function.)
Stakeholder Engagement Register	Airspace Regulator (E & C)	Contact details of CAA Flight Operations colleague.	

Sponsor: Highlands and Islands Airports Ltd.