ACP-2025-010

TDAs to enable BVLOS flight of demonstration of Cargo UAV from Tingwall Shetland Islands to Haugesund Norway

Engagement with Aviation Stakeholders

Dear Stakeholder,

We are contacting you as a valued member of the aviation community to kindly request your feedback on the Temporary Airspace Change Proposal ACP-2025-010. Building on previous operations within the area, Windracers are now looking to undertake a Beyond Visual Line of Sight (BVLOS) flight from Tingwall (Shetland) to Haugesund (Norway).

We will take all responses into consideration and appreciate any feedback received.

This ACP aims to establish Temporary Danger Areas (TDAs) in both the Scottish and Polaris FIR during notified periods. The TDAs will enable the single flight of a Windracers ULTRA Uncrewed Aircraft System (UAS) aircraft along the designated route

This letter is part of the formal stakeholder engagement process to be submitted to the CAA. We will appreciate any feedback received.

Operational Summary

ACP-2025-010 aims to enable a BVLOS flight using TDAs from Tingwall to Haugesund for a single flight of the Windracers ULTRA MK2, a UAS cargo aircraft Windracers – Low-Cost Logistics Champion.

This flight will represent many firsts, including the first civilian BVLOS flight from UK to Norway, and the longest Windracers over-sea UAS BVLOS flight. It shows the possibility of connecting Shetland with Scandinavia. The main goal is to prove that the Windracers system can operate effectively to this distance, at height, whilst using SATCOM C2 technologies, in Shetland and Norway weather conditions, deliver a supplementary cargo transport service, and demonstrate the platforms' sustainable future.

The flight is planned to take place in September 2025.

Air Navigation Service Provisions

NATS Aberdeen are being consulted with regards to providing a Special Use Airspace Crossing Service (SUACS) for the affected airspace inside the Scottish FIR and Norwegian Delegated Airspace, and Tingwall ATC will provide a Special Use Airspace Activity Information Service (SUAAIS) for the TDA within their ATZ.

Avinor will be providing equivalent services in the Polaris FIR.

Temporary Danger Area Geometry

Figure 1 shows the proposed TDA geometry between Shetland and Haugesund within the Scottish FIR and Delegated Airspace. It consists of 3 individual TDA segments (TDA A, B & C), all being 1.73 nautical miles (nm) in diameter and with vertical limits detailed in Table 1.

Figure 1 ACP-2025-010 TDAs

Table 1 – TDA Vertical Limits and Flight Altitudes

TDA Segment	Vertical Limits	Flight Altitude
TDA – A	SFC-2000'	1000'
TDA – B	SFC-FL80	1000' climbing to FL60-FL70
TDA – C	FL50-FL80	FL60-FL70
TDA - D	FL50-FL80	FL60-FL70

The airspace has been designed to minimise impact to North Sea rig traffic by being above the routes and not overflying any permanent maritime structures, whilst maintaining below commercial fixed wing operating heights.

TDAs

TDA - A Tingwall ATZ:
Circle 2 nm radius centred on:
60°11'31"N 001°14'37"W

TDA – B Straight lines connecting, avoiding the ATZ:
60°13'27"N 001°13’15"W
60°14'34"N 001°11'38"W
60°14'34"N 000°40'27"W
60°12'50"N 000°40'27"W
60°12'50"N 001°09'48"W
60°12'09"N 001°10'43"W

TDA – C Straight lines connecting:
60°14'34"N 000°40'27"W
60°14'34"N 000°00'00"W
60°12'50"N 000°00'00"W
60°12'50"N 000°40'27"W

TDA – D Straight lines connecting:
60°14'34"N 000°00'00"W
59°55'16"N 002°05'01"E
59°53'36"N 002°03'51"E
60°12'50"N 000°00'00"W

Loiter Point W
60°13'40.94"N 001° 4'47.69"W

Loiter Point X
60°13'39.43"N 000° 3'19.14"W

Loiter Point Y
59°54'43.34"N 002° 1'32.49"E

Schedule

The single one-way flight is planned to take place in September and will be scheduled to minimise interference with existing commercial movements at the airports in use. To ensure stakeholders remain informed, the TDAs to be activated will be communicated to key stakeholders at least five days in advance. Additionally, each TDA activation will be formally issued as a NOTAM at least 24 hours before the scheduled activity.

Windracers are conscious of the potentially precocious nature of the weather in the region during autumn, so the actual date of flight will be promulgated closer to September but can be no later than 30th September.

The TDAs will be active 30 minutes prior to the expected entry time and will remain active until the aircraft has passed the halfway point of the flight. This is expected to be a total TDA activation time of 120 minutes.

The TDAs will be promptly deactivated as soon as possible. This setup minimises airspace impact and grants Windracers flexibility to manage the flight.

To minimise disruption to other air traffic, once the aircraft has climbed out of Tingwall and reached its enroute altitude, TDA C has a "floating" structure, with altitude limits between FL50 and FL80. This design allows other aircraft to pass above and below the active TDAs. Additionally, NATS Aberdeen will be asked to provide a SUACS for the TDA segments B, C & D, allowing other aircraft to cross through the TDA if Windracers are not actively operating within it or are sufficiently distant to offer safe crossing.

Tingwall ATC will provide a SUAAIS for TDA A which encompasses Tingwall ATZ.

Deconfliction

ULTRA UAS is equipped with ADS-B in/out and a Mode S transponder for electronic conspicuity. The aircraft is also visually conspicuous, with a 10 m wingspan and provided with position and navigation lights. Details on how to contact the flight crew for position reports will be circulated prior to operations.

Failsafe Mechanisms

The ULTRA UAS incorporates multiple failsafe mechanisms along with dual redundant systems. Should a communications issue occur the UAS will navigate to the closest 'return route.' This is a pre-programmed route with defined waypoints that will take the aircraft into VLOS range without leaving the defined TDA. The aircraft will then loiter in place until the UAV Pilot (situated at the airfield) takes control and recovers the aircraft manually.

Holding Locations

Holding locations (Loiter Points W, X & Y – see Figure 1) are pre-defined points the UAS can be directed to on the request of ATC, due to an emergency or as a holding point to allow manned aircraft to land. Standard Windracers procedures place them over water.

The aircraft can also be instructed to hold at any point within the TDA by ATC authorities.

NOTE: The aircraft also has pre-programmed rally points that are within 1000 ft of the airfield. These will only come into effect during an emergency loss of communications. ATC will be notified following the Aviate, Navigate, Communicate chain. When within VLOS, the UAV Pilot on the ground at the airfield, will take control and manually land the aircraft.

Current Day scenario

Airspace

The majority of the UK airspace in the region is classified as Class G, with the main exception being the controlled airspace around Sumburgh Airport. There is a Fast Jet Danger Area between FL245 and FL550, covering northern mainland Scotland, Orkney, and Fair Isle, posing a specific hazard to operations at higher altitudes.

Additionally, there is a Danger Area complex surrounding SaxaVord Spaceport, located on the northern tip of Unst in Shetland, which extends into the adjacent sea.

Existing Operations

Loganair operates flights from Sumburgh south to the Orkneys and Scottish mainland.

From Tingwall, Airtask runs essential services to Foula and Fair Isle, maintaining crucial connectivity between these remote areas.

Additionally, regular helicopter movements occur from Sumburgh to various oil rigs located in the surrounding sea. Search and Rescue (SAR) helicopters are also frequently active in the region, both for training and operational missions.

Population

Shetland is considered sparsely populated, with population densities of 15.6 people per km^2.

Environmental Considerations

The Shetland archipelago is home to a wide range of protected and endangered species, particularly birds, both breeding and non-breeding. In accordance with CAP1616G guidance, an assessment has been conducted for Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSI), and Ramsar Sites along the proposed TDA complex.

Figure 3 illustrates the locations of all SACs, SPAs, and Ramsar Sites situated under the TDA complex, along with the potentially affected SSSI.

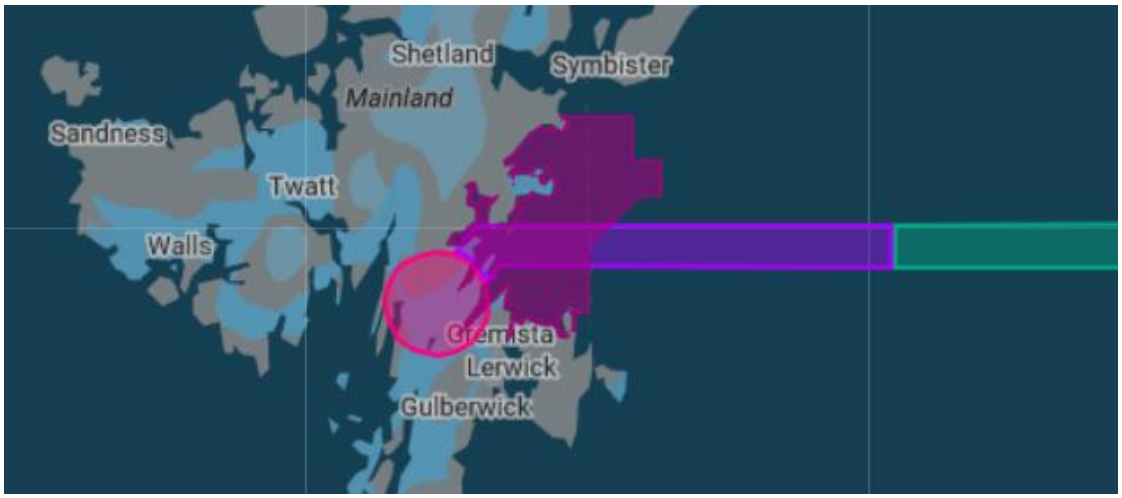

Figure 2 - SSSIs, SPAs & Ramsar Sites

Impact assessment

Airspace

The TDA complex will be in Class G airspace, avoiding the controlled airspace surrounding Sumburgh Airport and Saxavord Spaceport

TDA A matches the Tingwall ATZ. The vertical limits for TDA segments B, C & D will be FL80 and will have no interference with the Fast Jet Danger Area, which operates between FL245 and FL550.

This flight will remain clear of D902A & B, where SaxaVord Space Centre is located.

Existing Operations

Timing of the UAS flight will be scheduled to deconflicted with the regularly scheduled movements of Airtask at Tingwall. Windracers will continue to make efforts to further deconflict in real-time, especially in cases of delays or cancellations. It is also recognized that emergency traffic and Search and Rescue (SAR) helicopters will have priority over UAS operations.

To minimise the impact on other helicopter traffic, a "floating" TDA has been designed to be above the helicopter operating areas. Additionally, NATS Aberdeen are being asked to provide a SUACS. This setup allows helicopter traffic etc to either fly below active TDA segments or receive authorisation to cross through the TDA whenever possible.

Figure 3: SPAs (pink), SACs (blue) and SSSIs (yellow) en-route

Population

As highlighted in the current day scenario, Shetland is classified as sparsely populated. The majority of the TDA complex is designed to be over water. Wherever this has not been possible, routes have been planned to avoid densely populated areas.

Noise impact on the population is evaluated separately and details are provided later in this section.

Environmental Considerations

Advice has indicated that Windracers' operations are unlikely to adversely affect the natural heritage interests of international importance in the Special Protection Areas (SPAs). The environmental assessment concluded that the UAS loitering locations are situated a sufficient distance from airfields, reducing the likelihood of disturbance to sensitive species. Additionally, it was noted that existing flights between Tingwall and Fair Isle have led to habituation among bird populations, which either tolerate or avoid these disturbance zones.

This conclusion is supported by observations made in Orkney during July 2024, where no detectable disturbance to birds was caused by UAS operations. However, to further minimise environmental impact, Windracers will ensure that, wherever possible, overflights of SACs, SPAs, and Ramsar Sites in Shetland will occur at a minimum altitude of 3,000 feet, in accordance with CAA guidance.

Noise Impact

A noise impact assessment was conducted for the aircraft to be used within these trials. This impact assessment adhered to the guidelines provided by the CAA's Environmental Regulators. Given the planned height of the flight route the noise impact is anticipated to be low.

Why are we contacting you?

During the planning of this airspace change we have identified a wide range of individuals and organisations within the aviation community that could be affected or might have interest in this airspace change, and we believe you (or the organisation you represent) fall into this group.

You have been contacted as part of a Stakeholder Engagement Strategy intended to:

- ensure the safety and operational viability of the project,
- keep you informed of any changes to the ACP-2025-010,
- make sure that the principles of design and the proposed TDA will not have a harmful impact on other aviation activities, and
- develop deconfliction procedures with selected agencies to preserve adequate separation between the Uncrewed Aircraft and other frequent airspace users.

Windracers will provide a channel of communications to receive feedback or complaints from all stakeholders and the general public during the period of implementation of the TDAs. All queries received will be informed to the CAA and action will be taken where necessary to reduce the impact of this Airspace Change.

We are requesting all stakeholders to participate in this Engagement Strategy so that we can identify and manage the risks of the operation.

How to Submit Your Feedback

You can submit your feedback about ACP-2025-010 by responding to the email that delivered this briefing sheet.

If you do not wish to be contacted again regarding ACP-2025-010 please get in touch with Windracers by also replying to the email.

Please state ACP-2025-010 in the Subject Line.

Please remember to submit your feedback as soon as possible to allow us the maximum time to discuss any changes needed to ensure the operations are safe, viable, and minimise the impact on stakeholders.

Stakeholder engagement for ACP-2022-010 will finish at **17:00 on Thursday 30th May 2025.**

If you have any queries, please do not hesitate to contact us. We look forward to hearing from you.

Yours Faithfully,

[redacted]
Head of Safety & Regulation

Windracers

17/04/2025