CAA Operational Assessment

Title of airspace change proposal	Temporary Danger Area for BVLOS Operations in the Northern North Sea
Change sponsor	Flylogix Ltd.
Project reference	ACP-2023-083
Account Manager	[redacted]
Case study commencement date	
Case study report as at	

Instructions

In providing a response for each question, please ensure that the 'status' column is completed using the following options:

- YES
- NO
- PARTIALLY
- N/A

To aid the SARG Lead it may be useful that each question is also highlighted accordingly to illustrate what is:

resolved YES not resolved PARTIALLY not compliant ....NO....

Executive Summary

Flylogix, an unmanned aircraft service (UAS) provider focussed on the offshore energy sector, have been contracted to complete methane emission surveys of oil and gas platforms from Shetland. The surveys are achieved using an unmanned aircraft fitted with methane sensor in a beyond-visual-line-of-sight (BVLOS) regime. In order to conduct these flights safely, in accordance with current regulatory requirements and in the absence of suitably approved detect-and-avoid capability, the BVLOS activity must be segregated. To achieve this, the sponsor has requested a Temporary Danger Area (TDA) complex for the 90 day period to undertake this work. The TDA complex originates from Shetland out to oil and gas platforms to the east and west of the island (distance approximately 120nm). It is proposed that operation takes place between 2 May and 14 July 2024. The UAS is to be operated from SCATSTA, a disused airport approximately 15nm from the closest airfield at Tingwall.

The sponsor intends to only activate the TDA on the days the flights are taking place and for the period of the flights. The intended activity is planned for the weekends where possible to minimise impact on offshore helicopter operations which are the most frequent users of the airspace.

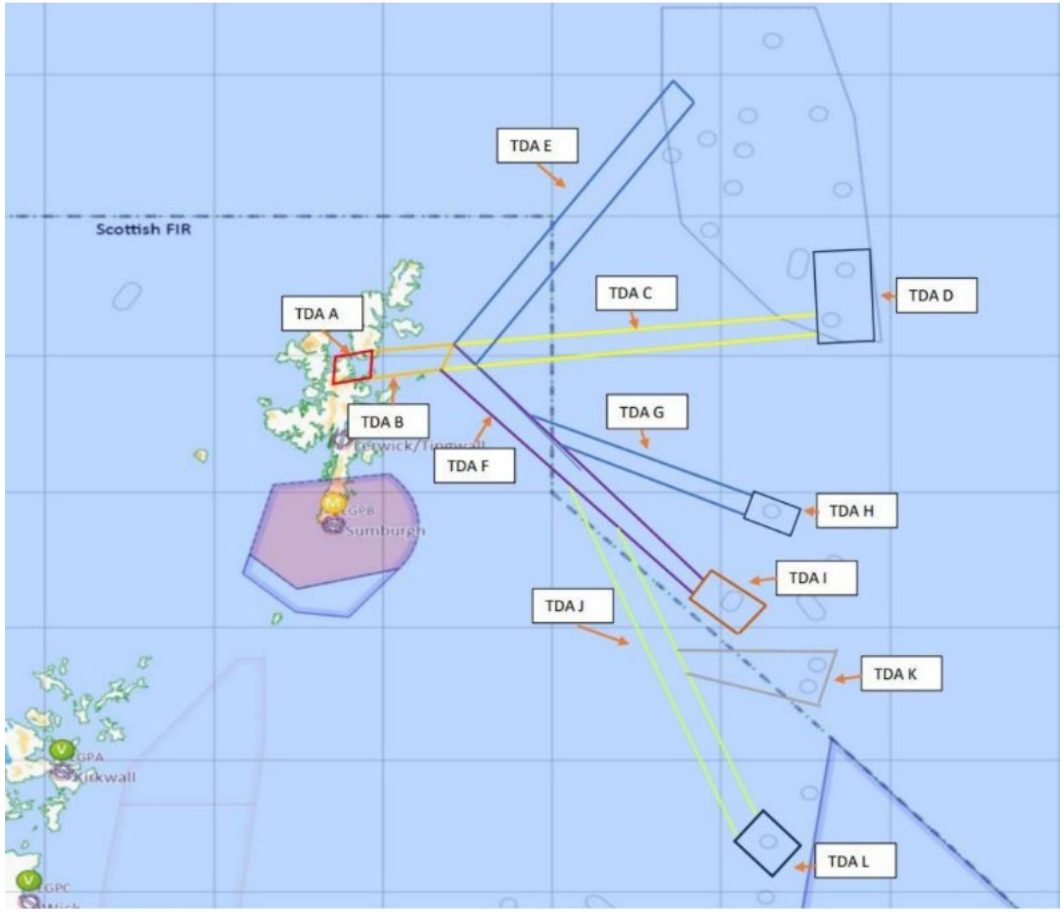
Given the above, the impact on other airspace users will be low while offering protection to the BVLOS RPAS operation.

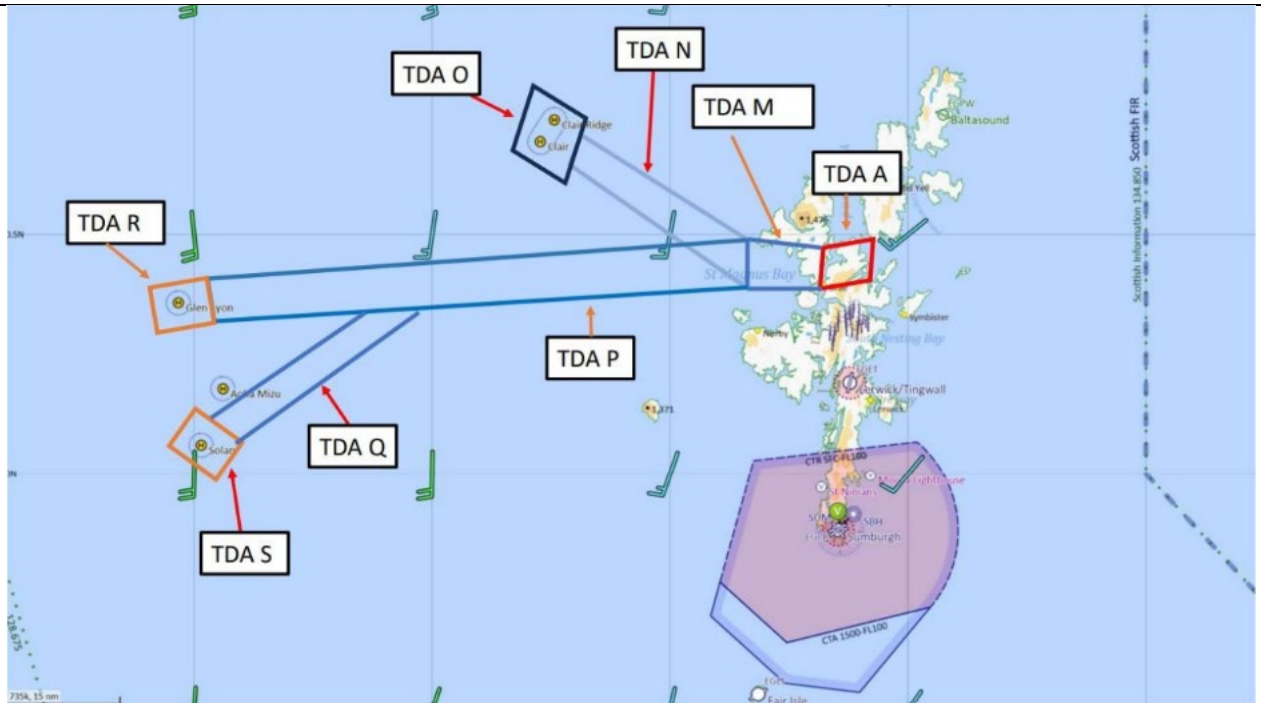
1.	Justification for change and options analysis (operational/technical)	Status
1.1	Is the explanation of the proposed change clear and understood?	YES
	The explanation provided in the DAP1916 Statement of Need and Summary of Stakeholder Engagement is clear and understood.	
1.2	Are the reasons for the change stated and acceptable?	YES
	With no approved detect-and-avoid capability, the proposed TDA is an acceptable means to achieve UAS BVLOS operation. CAP 722: Unmanned Aircraft System Operations in UK Airspace gives three ways that BVLOS operations can be completed: a. By showing a Detect and Avoid system that is equivalent to See and Avoid, b. By segregating the operation, or c. By showing the operation has no aviation risk. There is currently no certification or Acceptable Means of Compliance in the UK for UA of the size of Flylogix's aircraft, flying BVLOS. This means option b is the only viable solution and is in accordance with CAP2533 Airspace Policy Concept: Airspace Requirements for the Integration of Beyond Visual Line of Sight (BVLOS) Unmanned Aircraft	
1.3	Have all appropriate alternative options been considered, including the 'do nothing' option?	YES
	A 'do nothing' option would not allow this activity to take place in the manner proposed by the sponsor. Temporary changes to the airspace design do not require options consideration.	
1.4	Is the justification for the selection of the proposed option sound and acceptable?	YES
	The selection of a TDA is a sound and acceptable means to achieve separation between a UAS in the BVLOS regime and other airspace users.	

2.	Airspace description and operational arrangements	Status

2.1	Is the type of proposed airspace design clearly stated and understood?	YES

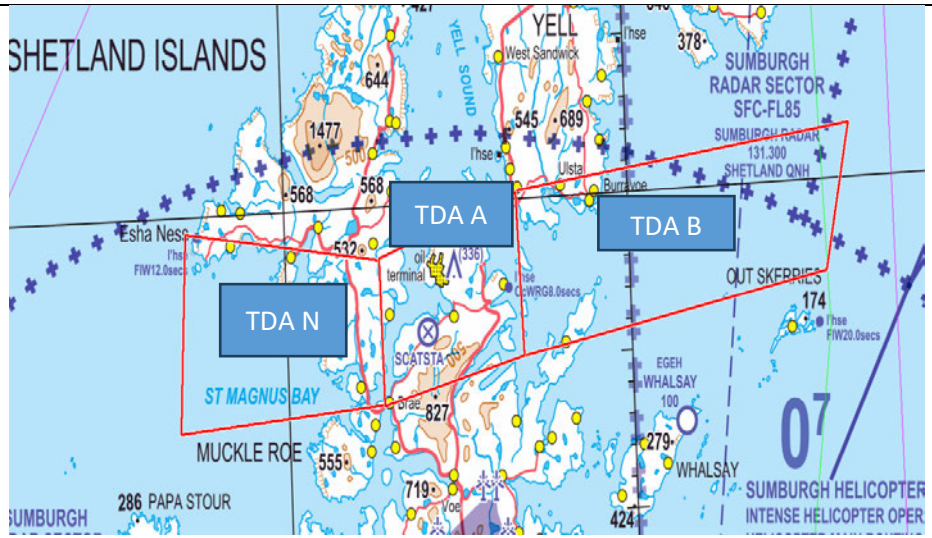
Yes, the airspace design is formed by a complex of 19 TDA segments, from surface to 1300ft AMSL:





This accommodates the UAS transiting up to an altitude of 800ft AMSL with operations between 150ft and 600ft near the oil and gas platforms. This allows a 500ft vertical separation between the UAS and upper limit of TDA. Operations are day VFR only. TDA F will not be flown due to close proximity to Norwegian airspace.

Overland segments are:

		
2.2	Are the hours of operation of the airspace and any seasonal variations stated and acceptable?	YES
	The TDA is requested to be notified for a duration of 90-days from 2 May to 14 July 2024. The sponsor plans to conduct a total of up to 15 flights and may conduct multiple flights per active day. Flights will be between 3 and 4.5 hours long with activation 30 minutes before flight up to 3 hours after last scheduled landing time (contingency for weather delays). Flight is day VFR only. If the UA lands before the end of the TDA activation, Flylogix will inform ATC and request of the CAA that the NOTAM is cancelled.	
2.3	Is any interaction with adjacent domestic and international airspace structures stated and acceptable including an explanation of how connectivity is to be achieved? Has the agreement of adjacent States been secured in respect of High Seas airspace changes?	YES
	Originally submission included a segment that encroached upon Norwegian airspace. This has been removed at the request of the ANSP. Although the structure does not now enter the Polaris FIR, the sponsor has engaged with AVINOR, ATS provider in the Polaris FIR, in Norway to make them aware and has received contact details in case of accidental excursion into the FIR, Stavanger ACC would be contacted.	

2.4	Is the supporting statistical evidence relevant and acceptable?	N/A
	N/A. No statistical evidence is required for a temporary change.	
2.5	Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?	N/A
	No analysis is required for a temporary change which segregates operations.	
2.6	Are any draft Letters of Agreement and/or Memoranda of Understanding included and, if so, do they contain the commitments to resolve ATS procedures (ATSD) and airspace management requirements?	YES
	Aberdeen and the sponsor have entered into an agreement and Aberdeen have produced TOIs to cover the duration of the planned flights. Aberdeen, Brent and Sumburgh Radars will provide the SUACS. An LOA has been agreed between the sponsor and ANSP.	
2.7	Should there be any other aviation activity (low flying, gliding, parachuting, microlight site etc) in the vicinity of the new airspace structure and no suitable operating agreements or ATC Procedures can be devised, what action has the change sponsor carried out to resolve any conflicting interests?	YES
	There is no evidence of unresolved conflicting interests within the engagement material.	
2.8	Is the evidence that the airspace design is compliant with ICAO SARPs, airspace design & FUA regulations, and Eurocontrol guidance satisfactory?	N/A
	N/A	

2.9	Is the proposed airspace classification stated and justification for that classification acceptable?	N/A
	N/A – this is special use airspace that retains the class of airspace in that area.	
2.10	Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?	YES
	The TDA, by its nature, is designed to segregate the activity taking place inside from other air users. Aberdeen Radar (Sumburgh Radar and Brent Radar) have agreed to provide a SUACS which will potentially allow transit when active. The Sponsor has liaised with JRCC and commits to providing crew telephone numbers for contact in case of SAR tasking with the TDA.	
2.11	Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation.)	YES
	The sponsor proposes to publish an AIC prior to activation and activate by NOTAM at least 24-hours in advance. In addition to this, the sponsor has committed to prior deconfliction with Airtask and sharing activation information by email with JRCC and Bristow. There will be SUACS provision.	
2.12	Is there a commitment to allow access to all airspace users seeking a transit through controlled airspace as per the classification, or in the event of such a request being denied, a service around the affected area?	YES
	Yes – a SUACS will be provided by Sumburgh Radar or Brent Radar.	
2.13	Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?	YES
	See 2.12.	

2.14	Are any airspace user group's requirements not met?	
	There is no indication within the engagement material that an airspace user group's requirements are not met.	
2.15	Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).	N/A
	There is no delegation of ATS.	
2.16	Is the airspace design of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments?	YES
	To accommodate the UAS transiting up to 800ft, the TDA extends vertically to 1300ft to allow a 500ft buffer. Laterally, the TDA is designed iaw the OSC requirements of the UAS. The UAS should not be within 1nm of the TDAs horizontal edge or emergency procedures are triggered. There was no concern raised from identified stakeholders about the complexity of the TDA complex and a similar complex was submitted, and used, in this area by the Sponsor previously.	
2.17	Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)? (Refer to buffer policy letter.)	YES
	The structure lies solely in class G airspace not adjacent to other structures. The internal buffer within the TDA is sufficient (subject to OSC approval) to contain the activity. There are no additional buffer requirements	
2.18	Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures?	YES
	The proposed TDA is designed to segregate activity within it from third party airspace users. A SUACS will be provided and the sponsor has committed to not activating the structure without a SUACS.	

2.19	Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?	YES
	The majority of the structure is over the sea with a small proportion over low lying unpopulated land.	
2.20	If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?	N/A
	The structure does not lie close to, or overlap, another airspace structure.	
2.21	Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?	N/A
	N/A	

3.	Supporting resources and communications, navigation and surveillance(CNS) infrastructure	Status
3.1	Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:	
	• **Communication:** Is the evidence of communications infrastructure including RT coverage together with availability and contingency procedures complete and acceptable? Has this frequency been agreed with AAA Infrastructure?	
	A SUACS will be provided by Sumburgh or Brent Radar.	

	• **Navigation:** Is there sufficient accurate navigational guidance based on in-line VOR or NDB or by approved RNAV-derived sources, to contain the aircraft within the route to the published RNP value in accordance with ICAO/ Eurocontrol standards? For example, for navaids, has coverage assessment been made, such as a DEMETER report, and if so, is it satisfactory?	
	This will be a low altitude Class G operation over the sea, not reliant on any ground-based navigation aid. The aircraft itself uses GNSS capability to ensure that it remains within the TDA and procedures are in place if the navigation capability of the aircraft is diminished.	
	• **Surveillance:** Radar provision – have radar diagrams been provided, and do they show that the ATS route/airspace structure can be supported?	
	N/A	
3.2	Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growth acceptable?	
	Aberdeen, Sumburgh and Brent Radar have indicated that they are content to provide the SUACS in their response to Flylogix's engagement on the proposed TDA.	

4.	Maps/charts/diagrams	Status
4.1	Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates? (We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with aeronautical cartographical standards (see airspace change guidance), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals.)	YES
	The sponsor provided stakeholders with a suitable chart that depicted the TDA which is replicated in the final submission (with small changes made as a result of the engagement with Aberdeen). WGS84 coordinates were provided to stakeholders and a draft AIC has been provided to describe the final proposal.	
4.2	Do the charts clearly indicate the proposed airspace change?	YES

	Yes, the charts clearly indicate the proposed change.	
4.3	Has the change sponsor identified AIP pages affected by the change proposal and provided a draft amendment?	YES
	Yes, the sponsor has provided the final proposal in the form of a draft AIC which will be CAA reviewed prior to submission. The AIC defines the SUACS frequencies.	
4.4	Has the change sponsor completed the WGS84 spreadsheet and submitted to the CAA for approval?	N/A
	There is no requirement for the trial sponsor to meet ADQ compliance for an AIC.	

5.	Operational impact	Status
5.1	Is the change sponsor's analysis of the impact of the change on all airspace users, airfields and traffic levels, and evidence of mitigation of the effects of the change on any of these, complete and satisfactory? Consideration should be given to:	
	a) Impact on IFR General Aviation traffic, on Operational air traffic or on VFR General Aviation traffic flow in or through the area.	
	Overall, the proposed structures, due to their over sea location result in little sign of impact to other airspace users. A summary of the main stakeholders is as follows: <u>General Aviation</u> The areas of operation appear to be outside that used by general aviation. Light Aircraft Association, British Gliding Association and an individual GA stakeholder expressed that they result in little impact. <u>Airports</u>	

	HIAL (Sumburgh Airport) and Shetland Island Airport (Tingwall) confirmed that there is no impact to their operations. <u>ANSP</u> NATS Aberdeen were content with the proposal and the CAA also suggested a period of time between publication of AIC and activation – the sponsor acknowledged this.	
	b) Impact on VFR Routes.	N/A
	No VFR routes have been identified by the sponsor.	
	c) Consequential effects on procedures and capacity, i.e. on SIDs, STARs, holds. Details of existing or planned routes and holds.	N/A
	There are no consequential effects on procedures and capacity.	
	d) Impact on airfields and other specific activities within or adjacent to the proposed airspace.	N/A
	No impacts noted.	
	e) Any flight planning restrictions and/ or route requirements.	N/A
	NIL	
5.2	Does the change sponsor consultation material reflect the likely operational impact of the change?	YES
	The engagement material is judged to have adequately reflect the operational impact.	

Case study conclusions – to be completed by Airspace Regulator (Technical)	Yes/No
Has the change sponsor met the SARG airspace change proposal requirements and airspace regulatory requirements above?	YES
The sponsor proposed an appropriate structure to segregate UAS BVLOS activity, engaged with relevant stakeholders and refined the proposal based on stakeholder suggestions. From the engagement summary provided, the structure is a safe method of segregating the activity within it, it appears to be of appropriate dimensions and the impact is minor as a result of stakeholders exclusively coming from ANSP and the offshore aviation industry.	

RECOMMENDATIONS/CONDITIONS/PIR DATA REQUIREMENTS	Yes/No
Are there any Recommendations which the change sponsor **should try** to address either before or after implementation (if approved)? If yes, please list them below.	
GUIDANCE NOTE: *Recommendations are something that the change sponsor* ***should try*** *to address either before or after implementation, if indeed the airspace change proposal is approved. They may relate to an area in which the change sponsor is reliant upon a third party to actually come to an agreement and consequently they do not carry the same 'weight' as a Condition.*	
Are there any Condition(s) which the change sponsor **must fulfil** either before or after implementation (if approved)? If yes, please list them below.	
GUIDANCE NOTE: *Conditions are something that the change sponsor* ***must fulfil*** *either before or after implementation, if indeed the airspace change proposal is approved. If their proposal is approved, change sponsors* ***must observe*** *any condition(s) contained within the regulatory decision; failure to do so* ***will usually*** *result in the approval being revoked. Conditions should specify the consequence of failing to meet that condition, whether that be revoking the ACP or some alternative.*	

Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.	

GUIDANCE NOTE: *PIR data requirements concerns any specific data which the change sponsor* ***must*** *collate post-implementation, if indeed the airspace change proposal is approved. Please use this section to list any such requirements so that they can be captured in the regulatory decision accordingly.*

General summary

The sponsor has presented the case for a TDA to enable maritime UAS in the BVLOS regime to complete tasking up to 120nm offshore from Shetland for the oil and gas industry. The scope of the ACP is similar to previous TDAs the sponsor has had approved. As the TDA is low level (to 1300ft) in the maritime environment with limited activations over the 90-day validity period, the impact appears to be low and confined to offshore operators for the oil and gas industry. Aberdeen, Sumburgh and Brent ATC Units will provide a SUACS and are also the ATS providers for the majority of the helicopter/ Oil rig traffic operating in vicinity of the TDA structure. Stakeholders appear content with the proposal. Ultimately, the TDA is a safe means to segregate UAS BVLOS activity from third-party traffic.

A period of time must be allowed between publication of the AIC and first flight. AIC is due publication on 30 May 2024.

Comments and observations

Operational assessment sign-off	Name	Signature	Date
Operational assessment completed by Airspace Regulator (Technical)	[redacted]	[redacted]	16 April 2024
Principal Airspace Regulator comment / Decision	**Name**	**Signature**	**Date**
Operational assessment conclusions approved by Principal Airspace Regulator	[redacted]	[redacted]	29 April 2024

Principal Airspace Regulator Comments and Decision: PASS