CAA Environmental Assessment

Temporary Airspace Change Proposals

Title of airspace change proposal	TDA for unmanned aircraft operations in South North Sea
Change sponsor	Flylogix Holdings Ltd
Project reference	ACP-2023-066
Account Manager	[redacted]

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 decision maker, highlight each question accordingly to illustrate what is:

resolved YES not resolved PARTIALLY not compliant NO

1. Introduction

This Airspace Change Proposal (ACP) is for a temporary change to airspace design to enable Flylogix Holdings LTD ('the sponsor'), to conduct offshore Remotely Piloted Aircraft Systems (RPAS) Beyond Visual Line of Sight (BVLOS) operations. The purpose of these operations is to conduct methane gas emission surveys of oil and gas platforms using an FX2 type unmanned aircraft with a methane sensor fitted to it. The oil and gas platforms are located in the Southern North Sea off the east coast of Yorkshire.

The proposed temporary airspace change will see the introduction of two separate multi-segment Temporary Danger Areas (TDA) located over the North Sea to facilitate a total of 10 RPAS BVLOS flights. The TDA complex will consist of two separate TDAs, one for the Cygnus Field ("TDA EG Dxxx" – Figure 1 below), and one for the Ravenspurn field ("TDA EG Dyyy" Figure 2 below). TDA EG Dxxx will consist of four segments (A, B, C and D), and TDA EG Dyyy will consist of three segments (A, B and C.) All segments extend vertically from the surface (SFC) to 1300ft above mean sea level (AMSL) and will have a

nominal width of 4 nm (nautical miles). The RPAS BVLOS flights are expected to be between 1.5 and 5 hours in duration with the TDA being activated 15 minutes before take-off and ending up to 4 hours after the scheduled landing time. BVLOS flights will only take place in daytime VFR (Visual Flight Rules) and good meteorological conditions (>5km visibility, clear of cloud). The BVLOS portion of each flight will be confined to the boundaries of the TDA and the RPAS will transit to and from the TDA under visual line of sight (VLOS). Only one TDA will be active at any one time actioned via a NOTAM at least 24 hours in advance of planned flights. Both proposed TDAs will have an available Danger Area Crossing Service (DACS) provided by NATS Anglia Radar on a yet to be specified frequency.

Section 70(2) of the Transport Act 2000 requires the CAA to take account of any guidance on environmental objectives given to it by the Secretary of State (SofS) when carrying out its air navigation functions, namely the Air Navigation Guidance 2017 (ANG 2017). For temporary changes to airspace design, the ANG 2017 paragraph (Para) 2.13 requires that the CAA considers a sponsor's assessment of noise before making a decision. In addition, the ANG 2017 states that in circumstances where a temporary airspace arrangement would affect the distribution of air traffic below 7,000 ft., where practicable, the communities that may be affected should be informed prior to the change being implemented.1 CAP1616; "Airspace Change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information", Para B81 - B85 outline the environmental requirements that sponsors of temporary ACPs are required to follow.

Due to the short-term nature of temporary changes, there is no requirement for a sponsor to assess longer-term environmental impacts (i.e. CO2, local air quality, tranquillity, biodiversity).

[1] This requirement does not apply to airspace restrictions imposed by the SofS under powers included in the Air Navigation Order.

Figure 1 - Chart of TDA EG Dxxx (segments labelled)

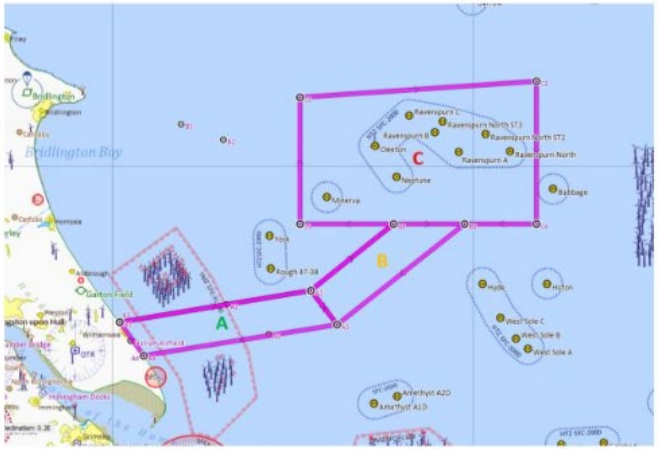

Figure 2 - Chart of TDA EG Dyyy (segments labelled)

2. Statement of Need		Yes/No
2.1	Does the Statement of Need include any environmental factors?	Yes
	The statement of need refers to the environmental benefit derived from the use of more environmentally friendly RPAS aircraft and equipment instead of the pre-existing manned aircraft. It also highlights that this temporary ACP will facilitate the surveying of methane emissions, which will support the UK Government's commitment to reducing methane emissions by 30% by 2030.	

3. Information conveyed to those affected		Status
3.1	Has the change sponsor adequately provided a justification for the change?	Yes
	The sponsor has justified that a TDA complex is required as the RPAS will be operating BVLOS for a large portion of each flight and does not have full Detect and Avoid (DAA) capability. There is an absence of further clarification, particularly for the benefit of non-aviation stakeholders, that a regulatory requirement (CAP 722) to establish segregated airspace (in this case a TDA) exists to enable RPAS (without DAA) BVLOS operations to take place.	
3.2	Has the change sponsor adequately confirmed the effective period of the change?	Yes
	The sponsor makes it clear in the *"TDA Final Submission document"* (dated 24 November 2023) that the effective period for the temporary airspace change will be from 5th March 2024 to 3rd June 2024 (91 days). The TDAs will only be activated for RPAS BVLOS operations to take place and will be cancelled once each scheduled flight is completed. It is also stated that once the 10 scheduled flights are completed, the AIC for the TDA complex will be removed.	
3.3	Has the change sponsor provided sufficient details of the frequency of flights?	Yes
	There are 10 scheduled flights planned for the duration of the proposed temporary airspace change. It is stated in the *"TDA Final Submission document"* that multiple flights may occur on the same day. The operations are primarily planned for the weekend; however, some may take place during the week subject to the oil and gas platform helicopter traffic in the region at the time. The planned flights will only take place in daylight and VFR conditions. Only one TDA within the proposed TDA complex will be activated at any given time to facilitate RPAS BVLOS operations to the relevant oil field.	
3.4	Has the change sponsor provided sufficient details of the typical altitudes of operations?	Yes

	The change sponsor states in both the *"TDA Final Submission document"* and *"Stakeholder Engagement Summary V1.1"* that the RPAS will operate at an altitude between SFC to 800ft (AMSL). The RPAS will transit at an altitude of 600-800ft AMSL to the oil and gas platforms. Whilst conducting the methane surveys the RPAS will operate at an altitude of between 150-600ft (AMSL) over the North Sea. The proposed TDA complex segments will vertically extend from the SFC to 1300ft (AMSL).	
3.5	Has the change sponsor adequately provided a qualitative description of changes to traffic patterns, illustrated using operational diagrams overlaid on Ordnance Survey maps or similar? *The diagrams should be of sufficient detail for those affected to identify where they live in relation of the changes in traffic pattern.*	Yes
	Labelled diagrams were included in the *"TDA Final Submission document"* and these highlight the location of the proposed TDA complex within which the RPAS BVLOS operations will take place. Co-ordinates for each TDA segments are also provided. The two proposed TDAs will not cover the coastline, minimising any potential disruption to any aircraft in the vicinity following the coast. A qualitative assessment is used to conclude that the impact upon other airspace users, and therefore traffic patterns, is likely to be minimal as the TDA complex will exist over the sea at relatively low level (SFC to 1300ft AMSL). Commercial rotary wing traffic serving the oil and gas platforms in the region are considered to typically operate to the north and south of the proposed TDA complex, as well as at a 'generally indicated' transit level above the upper limit (1300ft AMSL) of the proposed TDA complex. Additionally, the provision of a Danger Area Crossing Service (DACS) would enable aircraft to transit through the danger area, with permission, if required. The change sponsor was not able to quantify the number of general aviation aircraft likely to be impacted by the proposed TDA complex, concluding that having analysed FlightRadar24 ADS-B data the levels of GA (General Aviation) traffic operating in the proposed TDA area is 'negligible'. It should be noted that the sponsor recognises that FlightRadar24 data would only include transponding aircraft. Any potentially impacted aircraft would be able to fly above the TDA during the periods it is activated. Due to the limited activation time and the geographical location of the airspace being changed by this proposal this conclusion is reasonable.	
3.6	Has the change sponsor adequately provided typical noise levels at key locations?	Yes
	Typical noise levels at key locations have not been assessed as no such key locations were identified within the impacted area. The proposed TDA complex will be located entirely over the North Sea. The airfield being used for the RPAS BVLOS operations, Hollym Airfield, is located on the coastline, away from populated areas. The take-off and landing phase of each flight will take place within visual line of sight and therefore are outside the scope of this temporary ACP. Nevertheless, the change sponsor concludes that there are 'negligible uninvolved persons' *("TDA Final Submission document"*) within the vicinity of the Hollym Airfield where operations will start and finish. The RPAS will not commence BVLOS operations until it is within the	

	proposed TDA complex which is located over the sea, away from noise receptors and populated areas. As mentioned in section 3.5 above, noise impacts associated with the consequential impacts of this ACP on other airspace users are not anticipated. The change sponsor provided a high-level qualitative statement giving an indication of the likely noise levels that would be experienced on the ground whilst the RPAS is at a cruising altitude. The change sponsor suggests that the FX 2 Series RPAS creates 'little noise' and has been measured in previous testing as producing ≤45dB mean maximum sound pressure level (L_{ASmax} levels) at a cruising altitude of 400ft Above Ground Level (AGL). At the higher cruising altitude of 600-800ft AGL as proposed by the sponsor, the noise levels produced should be lower than the reference test level of ≤45dB and unlikely to be audible against background noise levels at these altitudes. As there will be a maximum of 10 flights completed and no key locations having been identified for noise assessment, the high-level qualitative approach is proportionate.	
	Has the information at 3.1 to 3.4 above been adequately conveyed to those affected?	Yes
	The change sponsor engaged with aviation stakeholders only due to the location of the proposed TDA complex being located over the sea, as well as Hollym Airfield being located on the coast, away from populated areas. The take-off, landing and transit to/from the TDA phases of each flight will be flown with visual line of sight and are therefore outside the scope of this ACP. There will be minimal flight over land as the RPAS will transit from the airfield (on the coastline) directly to the TDA complex (over the sea) under VLOS operations. Once inside the TDA complex the BVLOS operations will commence. As there were no key locations identified for the purposes of noise assessment, engagement with aviation stakeholders only is proportionate and in line with the requirements as per the Air Navigation Guidance 2017.	

4. Assessment of noise impacts		**Status**
4.1	Was the detail of the assessment of the noise impact agreed between the change sponsor and the CAA, or determined by the CAA (where there was no agreement)? *The CAA is required to consider the sponsor's assessment of the noise impact of each proposed temporary change to airspace design before it makes its decision on the proposal, unless it is satisfied that the specific details of the proposal mean that this is not needed. The detail of this assessment should be agreed between the sponsor and the CAA at an early stage of the sponsor's planning. Assessments may include consideration of both primary and secondary noise metrics. If agreement cannot be reached, the CAA will determine the detail of the assessment.*	No

	The detail of the assessment of the noise impact was not agreed between the change sponsor and the CAA; therefore, the CAA determined the detail of the required noise impact assessment upon receipt of the final submission.	
4.2	Has the assessment of noise impacts identified in Question 4.1 been adequately assessed and presented in the final submission to the CAA?	Yes
	Section 6 of the *"TDA Final Submission document"* produced by the sponsor contains a qualitative and high-level noise assessment. The change sponsor provides an indication of the likely noise impact generated by the RPAS based on a reference cruising altitude of 400ft (AGL). The proposed TDA complex is located entirely over the sea, and therefore detailed noise assessment would not be proportionate or necessary.	
4.3	Summary of anticipated noise impacts from the final proposed temporary airspace change.	
	The noise impacts from this temporary ACP are anticipated to be negligible. The proposed TDA complex is located entirely over the sea away from populated areas. The RPAS operations will take-off and land (VLOS) to/from the Hollym Airfield which is located on the coastline. The transit route from the airfield to the TDA (where BVLOS operations will take place) will not overfly any populated areas. The sponsor has 10 RPAS BVLOS flights planned between 5th March 2024 – 3rd June 2024. The unmanned aircraft (FX Type 2) being used for the proposed operational flights was previously measured by the sponsor as producing a noise level of ≤45dB (L_{ASmax}) whilst cruising at 400ft (AGL). It is stated in the submitted documentation that as part of this proposal the RPAS will typically cruise at an altitude of 600-800ft (AGL) over land, a higher altitude than the reference test conditions and therefore a noise level below 45 dB L_{ASmax} can be assumed. The impact upon other airspace users in the area is considered to be negligible and therefore a change in the distribution of air traffic below 7,000ft (AMSL) over populated areas is not anticipated. It should also be noted that the Hollym Airfield is located within class G, uncontrolled airspace and the proposed TDA complex is only relevant for the BVLOS part of the RPAS operations only. RPAS visual line of sight operations can already take place from Hollym Airfield without this proposed temporary airspace change.	

5. Compliance with relevant policy and guidance from Government or the CAA		Status
5.1	Has the change sponsor satisfied all relevant policy and/or guidance, with regards to environmental impacts of the proposed airspace change? *Notably, has the change sponsor complied with the environmental requirements in:* • *CAP1616: Airspace change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information;* • *CAP1616a: Airspace Change: Environmental requirements technical annex;* • *DfT Air Navigation Guidance 2017: Guidance to the CAA on its environmental objectives when carrying out its air navigation functions, and to the CAA and wider industry on airspace and noise management.* If a change sponsor has not complied with any aspect of those documents, have they provided a rationale and is it reasonable?	Yes
	The change sponsor has followed the CAP1616[2] temporary airspace change requirements in a proportionate manner given the nature of this proposal. The sponsor has justified the need for the TDA complex, as well as providing details regarding the period, nature and frequency of the planned RPAS BVLOS operations should the proposal be approved. The Air Navigation Guidance 2017 states that communities that may be affected by changes to the distribution of air traffic below 7,000ft should be informed prior to the change being implemented. This temporary ACP is not expected to change the distribution of air traffic below 7,000ft over populated areas.	

6. Recommendations/Conditions	Status

[2] CAP1616 Version 4 – 01.03.2021 - 31.12.2023 CAP1616: Airspace change: Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information (caa.co.uk)

6.1	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.*	No
	There are no Recommendations which the sponsor should address either before or after implementation (if approved).	
6.2	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.*	Yes
	The change sponsor must notify the CAA at the end of the temporary airspace change if any noise related complaints were received.	

Environmental assessment sign-off	Name	Signature	Date
Environmental assessment completed by Airspace Regulator (Environment)	[redacted] Airspace Regulator (Env)	[redacted]	12.12.2023
Environmental assessment approved by Manager Airspace Regulation (or alternative delegation of authority)	[redacted] Principal Airspace Regulator	[redacted]	12/03/2024