



TDA Submission V2

ACP-2023-066

24 Nov 23

CONFIDENTIAL

1. INTRODUCTION

Flylogix are an unmanned aircraft service provider, focused on the offshore energy sector. Flylogix have been contracted to complete methane emission surveys of oil and gas platforms in the Southern North Sea from March 2024. These surveys will be achieved by using an unmanned aircraft with a methane sensor fitted to it. The operations will be conducted in a Temporary Danger Area (TDA).

Flylogix have submitted an airspace change request (ACP-2023-66) to establish this TDA.

2. OBJECTIVES OF THIS DOCUMENT

This document gives the final submission for the TDA, following engagement with other airspace users.

3. DESIGN PRINCIPLES

When designing the proposed TDA Flylogix had four principles

1. Minimise the airspace within the TDA to reduce the impact on other air users
 - a. Where possible, segment the TDA to minimise the airspace contained within active portions of the TDA for individual operations and to ease DACS provision and deconfliction.
2. Minimise, and if possible, avoid the TDA covering land and the coast. To facilitate this the UA is operated from the coast and flown Visual Line of Sight for take-off and landing – entering the TDA before going BVLOS over the water
3. Avoid areas where other aircraft operate below 1,500ft – for example airfields and HTZs
4. Keep the design of the TDA as simple as possible, to make it easy to communicate to others and reduce the chance of error, for example when inputting as a geofence into the UA autopilot.
5. Tactically manage the TDA through NOTAM to ensure it is only active when required, minimising the impact on other air users

4. FEEDBACK AND ACTIONS FROM STAKEHOLDER ENGAGEMENT

Flylogix conducted Stakeholder Engagement to understand the safety and operational viability of the proposed TDA and to ensure minimum possible impact on other air users. The strategy for this engagement is outlined in *Stakeholder Engagement Plan - ACP-2023-066* and the results of the



engagement are included in *Summary of Stakeholder Engagement - ACP-2023-066*. Both of these have been submitted to the CAA and will be uploaded to the Airspace Change Portal.

Following the engagement Flylogix

- Agrees to contact local helicopter operators who are conducting flights to an oil and gas platform near the TDA in advance to get a schedule of their flights and deconflict where possible.
- Will operate only when a DACS is available from Anglia Radar. The frequency for this service will be published on the NOTAM and in the AIC – along with Flylogix contact details.
- Flylogix will be available for direct contact by telephone before and during operations if additional information is required

5. PROPOSED DESIGN AND OVERVIEW OF OPERATIONS

This has been laid out in the standard format of an AIC for clarity and reflects the original TDA design submitted with the stakeholder engagement and in accordance with application of the design principles laid out in Section 3 of this document and section 5.3 of the Stakeholder Material.

The BLVOS flights will remain within the confines of the TDA described below and will be promulgated via NOTAM in conjunction with Anglia Radar following promulgation of the AIC.

Flights will be between 1.5 hours and 5 hours long. The TDA activation time will be scheduled to include 15 minutes before take-off and end up to 4 hours after the last scheduled landing time. This contingency will be determined by weather forecast and by the uncertainty in helicopter flights and other operations at these facilities. 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. Flylogix will also inform relevant stakeholders of the cancelled operations.

Whilst the activity is being carried out the method of communication with Anglia Radar will be by telephone between the Pilot in Charge (PIC) and Anglia Radar Watch Manager. Two mobile phones are employed by Flylogix one of which has the telephone number solely shared by the PIC and the Anglia Radar Watch Manager to ensure that there is always an open line of communication. Comms are tested on the morning of the operation to ensure suitable mobile phone coverage. This procedure has taken place previously during ACP-2022-011. Within Flylogix Operations Manual which forms part of the OSC the above procedure for communication between Flylogix and the ANSP is detailed.

The RPAS crew have a rolling map which demonstrates the position of the aircraft, the position of the route, the position of the TDA and all features on aeronautical charts and all ADSB enabled aircraft, all AIS equipped ships. The RPAS is equipped with multiple GPS capabilities coupled with an alarm system to ensure that the integrity of the GPS signal is known. There is a Mode S transponder fitted to the aircraft to enable further situational awareness. There is an independent satellite tracker which is independently powered which uses GPS to also report the position of the RPAS. This is further detailed within the OSC and has been the method of displaying the RPAS position for previous operations within TDAs.

The TDA complex for each day will be activated via NOTAM with Anglia Radar as the controlling authority. As the RPAS progresses through each TDA segment a call will be made to Anglia Radar

Watch Supervisor by the PIC to advise them that a particular segment has been cleared and progressing with route. The RPAS will operate within the TDA segment surrounding the asset and will all Anglia Radar prior to commencing the return journey. This is detailed in the OSC and has been the procedure for previous operations within TDAs. The Mode S is subject to Anglia and Humberside Radar coverage (which can be provided upon request from NERL) and is for suitable for additional situational awareness. It will not be used as the source of information for the provision of the DACS and the TOI reflects that communication will be via telephone to confirm the positioning of the RPAS.

The PIC will communicate no less than 24 hours with Anglia Radar and before the activation of the NOTAM. Anglia Radar will confirm that they are content to provide the DACS for the particular day of planned operations and this will then lead to the activation of the NOTMA no less than 24 hours prior to the flying taking place. These lead in times are a minimum and additional time will be given taking into consideration weekends, public holidays etc. On the morning of the planned activity the PIC will once again contact Anglia Radar to ensure that the DACS provision can be established.

There are ten flights planned and flights will be predominately conducted at weekends (although some flights may take place midweek subject to traffic) and times when there is less oil and gas helicopter traffic. Flylogix may conduct multiple flights in a single day.

To activate the TDA, a NOTAM will be published at least 24 hours in advance of planned flights detailing activations times. If UA activity is cancelled for whatever reason, we will request the NOTAM is cancelled.

As part of the OSC submitted the following operating limitations will apply:

FX2 Series Operational Limitations	
Visibility	VFR Day ONLY – 5km visibility
Cloud Base	VFR – Clear of Cloud, Surface in Sight
Weather	Day VMC, No Lightening Forecast or observe in the TDA, No Snow
Temperature	Above 0 degrees C and blow 40 degrees C. Below the freezing layer (Fmet105)
Windspeed <u>TOI</u> Site	Headwind <25kts Crosswind Limit 10kts Hard
Windspeed at Asset	Headwind <30kts
Rain/Snow	>1.5mm of rain per hour. No snow.

90 Degree Crosswind <10Kts, Including Gusts

Based on Aviation Forecast (METAR) and Local Unofficial Met (GCS Davis Wx system)

← Headwind <25Kts

The UA will be fitted with ADS-B in and out and a Mode-S transponder. If the transponder is non-functioning, the mission will be cancelled/aborted. In the event of loss of communication or a fault identified with the transponders the same procedures apply to all classification of airspace and it will instigate a return to base. Anglia Radar will be notified immediately. Anglia Radar also have the ability to request a return to base in the event that they identify a transponder failure. These procedures are detailed within the Operations Manual which forms part of the OSC.

Flylogix does consider the impact of wake turbulence and the loading of the aircraft is monitored, with an alarming system, during the flight but it also forms part of the post flight data analysis. Wake turbulence is monitored on the aircraft not only with regards to transit but because it is also an effect at the location of the assets (which the RPAS system is robust enough to endure). It is felt that the separation of the RPAS during flight against other aircraft as provided by the TDA is robust enough and has not been experienced as an issue previously where helicopters have previously overflown the RPAS system.

Consideration of the Humber Gateway TMZ has been given as this is transited as part of TDA A. Flylogix comply with the requirements of the Humber Gateway and Anglia Radar, being the operating authority for the TMZ, are content that the TDA proposal and will take on the classification and rules of airspace over which the TDA lies. This was requirement was discussed within the previous iteration of ACP 2022-011 and a TDA within a TMZ was not considered to be exclusive of each other but please do let me know if further discussion on this would be helpful.

Consideration has also been given to operations of other aircraft operators within the area, this has been carried out as part of the stakeholder engagement but also as part of discussions with Anglia Radar. These routes are informal and are managed by Anglia Radar. Anglia Radar are content to dynamically manage the traffic situation, for example in the event of potential weather implications Anglia Radar will take a decision as to whether the operations can take place. This has been the case within previous operations and Flylogix will always take the decision and guidance of Anglia Radar.

TEMPORARY DANGER AREA (Southern North Sea)

BVLOS RPAS SURVEYING

5th March 2024 to 2nd June 2024

1. During the period between 5th March 2024 to 2nd June 2024 a Remotely Piloted Aircraft System (RPAS) will conduct BVLOS surveying of offshore installations situated in the Southern North Sea. The RPAS will depart from Hollym Airfield and operate between surface and 800ft AMSL.
2. As the RPAS will be operating Beyond Visual Line of Sight and does not have full Detect and Avoid capability, a Temporary Danger Area complex will be established as below. The RPAS is also equipped with an ADS-B and Mode-S transponder.
3. The TDA complex is sponsored by FlyLogix Ltd in accordance with Airspace Change reference ACP-2023-066.

4. The TDA complex consists of two TDAs broken into segments, only those TDAs and segments required for a flight will be activated.

ALL DATES AND TIMES OF ACTIVATION WILL BE NOTIFIED BY NOTAM

5. EG DxxxA

When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N534630 E0001850

N534334 E0002552

N534124 E0000510

N534442 E0000112

N534630 E0001850

6. The TDA is established between surface and 1300 FT AMSL.

7. Within EG DxxxA, a Danger Area Crossing Service (DACs) will be available from Anglia Radar on frequency TBC MHz

8. EG DxxxB

When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N540412 E0001120

N540238 E0001818

N534334 E0002552

N534630 E0001850

N540412 E0001120

9. The TDA is established between surface and 1300 FT AMSL.

10. Within EG DxxxB, a Danger Area Crossing Service (DACs) will be available from Anglia Radar on frequency TBC MHz

11. EG DxxxC

When required 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N543322 E0012523

N542935 E0012743

N540238 E0001818

N540412 E0001120

N543322 E0012523

12. The TDA is established between surface and 1300 FT AMSL.

13. Within EG DxxxC, a Danger Area Crossing Service (DACCS) will be available from Anglia Radar on frequency TBC MHz

14. EG DxxxD

When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N543947 E0022024

N543108 E0022432

N542935 E0012743

N543322 E0012523

N543947 E0022024

15. The TDA is established between surface and 1300 FT AMSL.

16. Within EG DxxxD, a Danger Area Crossing Service (DACCS) will be available from Anglia Radar on frequency TBC MHz

17. EG DyyyA

When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N534749 E0003256

N534428 E0003719

N534124 E0000510

N534442 E0000112

N534749 E0003256

18. The TDA is established between surface and 1300 FT AMSL.

19. Within EG DyyyA, a Danger Area Crossing Service (DACCS) will be available from Anglia Radar on frequency TBC MHz

20. EG DyyyB



When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N535422 E0004641

N535422 E0005830

N534428 E0003719

N534749 E0003256

N535422 E0004641

21. The TDA is established between surface and 1300 FT AMSL.

22. Within EG DyyyB, a Danger Area Crossing Service (DACS) will be available from Anglia Radar on frequency TBC MHz

23. **EG DyyyC**

When required between 5th March 2024 to 2nd June 2024, a TDA is established within the area bounded by straight lines joining successively the following points:

N540646 E0003108

N540820 E0011026

N535422 E0011026

N535422 E0003108

N540646 E0003108

24. The TDA is established between surface and 1300 FT AMSL.

25. Within EG DyyyC, a Danger Area Crossing Service (DACS) will be available from Anglia Radar on frequency TBC MHz

26. Further information regarding a DACS can be found within UK Enroute Information ENR 1.1 – General Rules.

27. DACS approval is not guaranteed

28. Further enquiries can be made to Airspace Regulation (Utilisation), Safety and Airspace Regulation Group, Civil Aviation Authority on telephone number 01293768202.

29. As part of the ACP process requirements, Flylogix is collecting feedback and complaints regarding this TDA and its impact over its duration which will be shared with the CAA. All feedback regarding this may be sent via email to lucy@blackswansl.com or simonsmith@blackswansl.com.

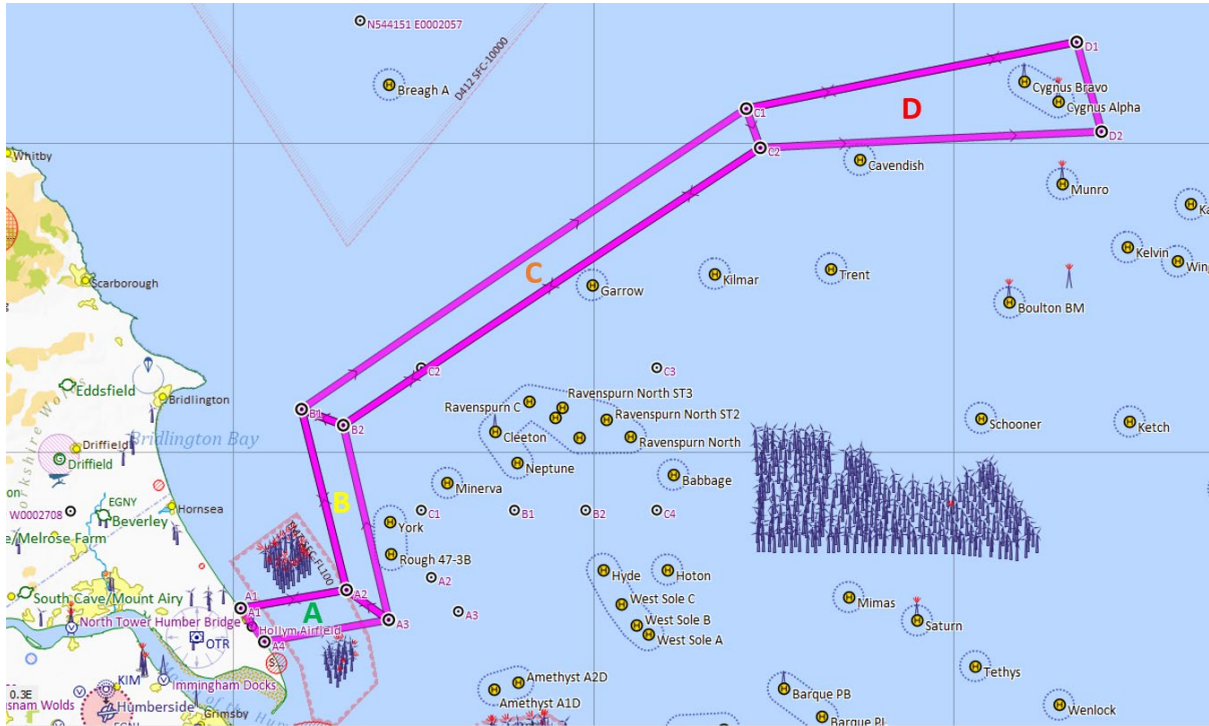


Figure 1 - Chart of TDA EG Dxxx (segments labelled)

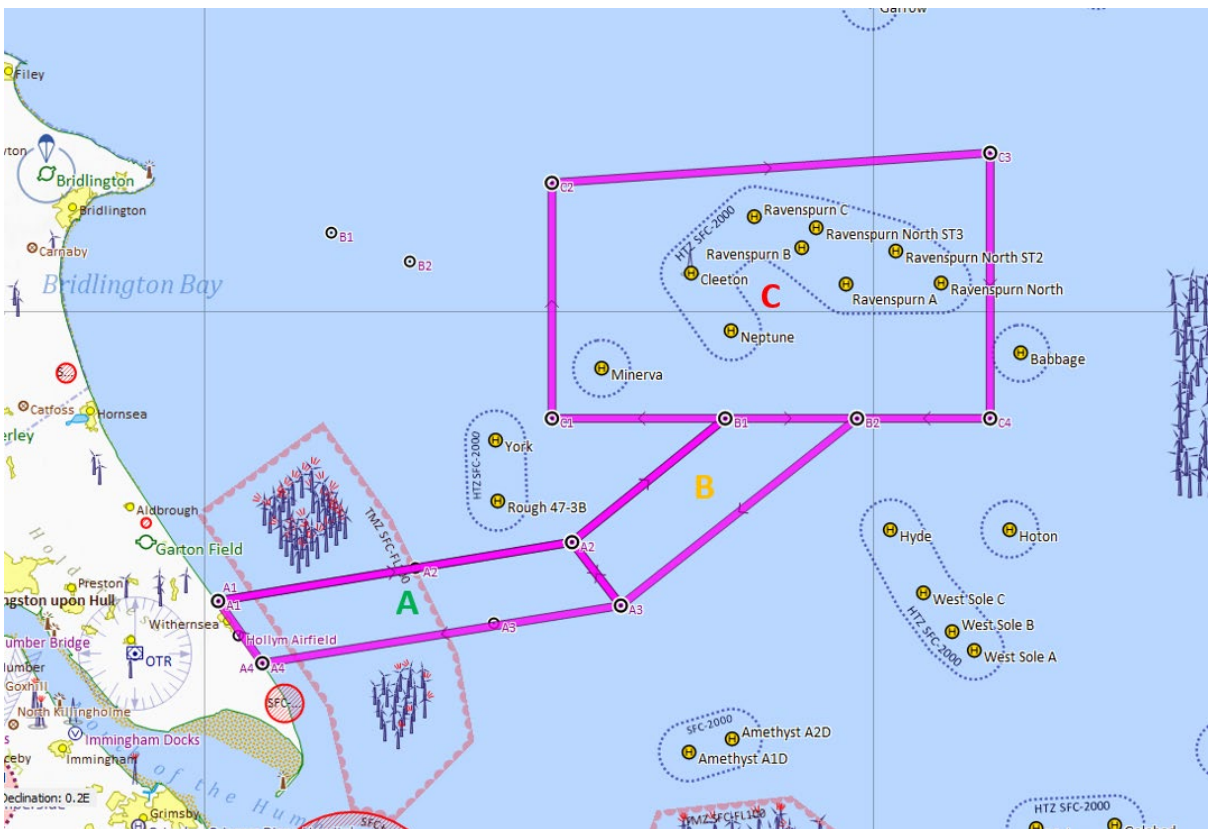


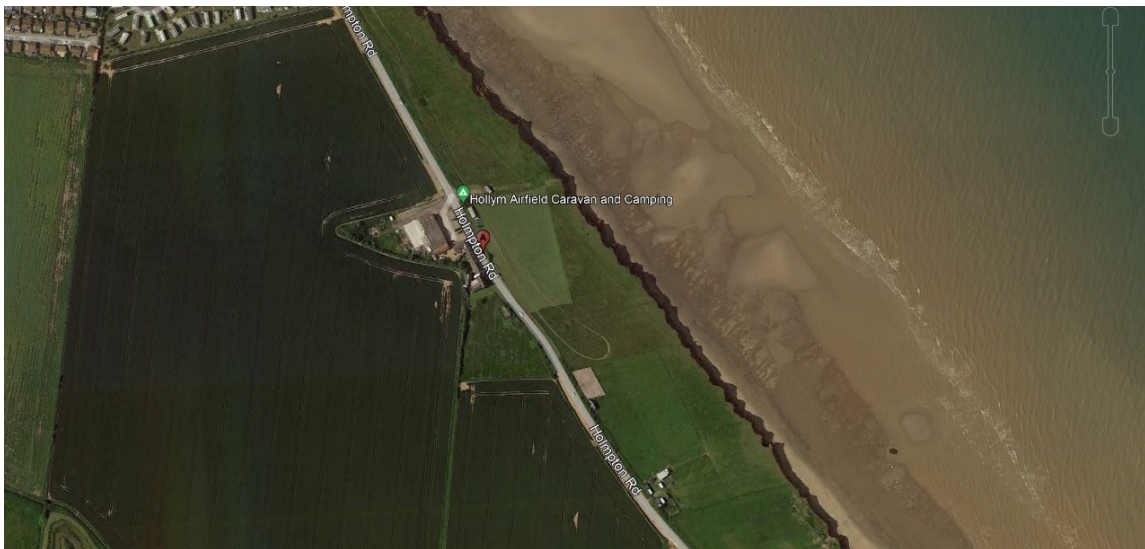
Figure 2 - Chart of TDA EG Dyyy (segments labelled)

6. NOISE ASSESSMENT

The requirement for the TDA stems from the need to conduct the flights BVLOS out to the assets and is for a fixed temporary duration from 5th March 2024 to 2nd June 2024. The TDA will only be activated for the duration of the activity and should that activity be cancelled then a request to cancel the NOTAM will be raised. When the total flights have been concluded, no more than 10 and mainly at the weekends, the AIC will be cancelled.

The TDA, as demonstrated at Fig 1 and Fig 2 above extends from the shoreline out to the assets. A review of FlightRadar24 has provided negligible GA traffic (although it is accepted that non transponding traffic will not be detected) over the area of interest and therefore it is not anticipated that there will be any changes to traffic patterns. The commercial rotary wing traffic that operate from inland, out over the coast and to oil and gas platforms route to the south and to the north of the proposed TDA and therefore their flight patterns should not be effected when routing over land. Should the commercial rotary wing traffic wish to transit out at any point which conflicts with the TDA then the Anglia Radar will be able to approve the aircraft into the area once the RPAS has vacated and in accordance with the TOI. The general indicated transit altitude of the commercial rotary wing traffic is also above the upper limited of the TDA and therefore the flight path should not be altered.

According to previous measurements, the mean maximum sound pressure level (LASmax) of the aircraft when the UA is cruising at a height of 400ft AMSL is $\leq 45\text{Db}$, which is virtually undetectable from ground. The most audible part of the flight, i.e., take-off and landing will take place at Hollym Airfield where there is negligible uninvolved persons and the aircraft will lift and transit directly out over the sea into the subsequent portions of the TDA climbing to a transit altitude of 600 – 800ft AMSL. During the activation period, there will be a maximum of 10 return flights. It is believed that the noise impact with such a short span of time, and small noise footprint, is negligible.



7. ADDITIONAL SUPPORTING EVIDENCE

The air system being operated within this proposed TDA is subject to an Operating Safety Case which has been submitted to the RPAS team within the CAA and any operations will be subject to a OA.



The DACS provided by Anglia Radar (NATS) will be in accordance with the procedures approved by the CAA.