

DRAFT

TDA Submission V1

ACP-2023-083

February 24

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 Northern North Sea from May 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-2023-083) 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-2023-083* and the results of the engagement are included in *Summary of Stakeholder Engagement - ACP-2023-083*. 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 Sumburgh 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 Sumburgh 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 Sumburgh Radar will be by telephone between the Pilot in Charge (PIC) and Sumburgh Radar Watch Manager. Two mobile phones are employed by Flylogix one of which has the telephone number solely shared by the PIC and the Sumburgh 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 Sumburgh Radar as the controlling authority. As the RPAS progresses through each TDA segment a call will be made to Sumburgh 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 Sumburgh 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 Sumburgh 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 Sumburgh Radar and before the activation of the NOTAM. Sumburgh 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 Sumburgh 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 ToL Site	Headwind <25kts Crosswind Limit 10kts Hard
Windspeed at Asset	Headwind <30kts
Rain/Snow	>1.5mm of rain per hour. No snow.

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. Sumburgh Radar will be notified immediately. Sumburgh 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 overflowed the RPAS system.

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 Sumburgh Radar. These routes are informal and are managed by Sumburgh Radar. Sumburgh Radar are content to dynamically manage the traffic situation, for example in the event of potential weather implications Sumburgh 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 Sumburgh Radar.



TEMPORARY DANGER AREA (Northern North Sea)

BVLOS RPAS SURVEYING

2nd May 2024 to 14th July 2024

1. During the period between 2nd May 2024 to 14th July 2024 a Remotely Piloted Aircraft System (RPAS) will conduct BVLOS surveying of offshore installations situated in the Northern North Sea. The RPAS will depart from Scatsta 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-2023-083
4. Only the danger areas required for each flight will be activated to minimize impact to other air users.
5. The required TDAs will be notified for activation by NOTAM no less than 24 hours prior to the planned flights.

REQUIRED DANGER AREAS AND TEMPORARY SEGREGATED AREAS WILL BE NOTIFIED BY NOTAM

6. **EG DxxxA.** When required between 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:
N602341 W0012139

N602821 W0012144

N603012 W0010939

N602459 W0010920

N602341 W0012139
7. The TDA is established between surface and 1300 FT AMSL.
8. Within EG DxxxA, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz

9. **EG DxxxB.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602459 W0010920

N603012 W0010939

N603145 W0004026

N602703 W0004253

N602459 W0010920

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

11. Within EG DxxxB, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

12. **EG DxxxC.** When required, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602703 W0004253

N603145 W0004026

N603820 E0012832

N603405 E0012627

N602703 W0004253

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

14. Within EG DxxxC, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155MHz.

15. **EG DxxxD.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N603405 E0012627

N605223 E0013449

N605231 E0015203

N603315 E0015220

N603405 E0012627

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

17. Within EG DxxxD, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

18. **EG DyyyE.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602703 W0004253

N603145 W0004026

N612409 E0004533

N612100 E0005053

N603225 W0003055

N602703 W0004253

N612100 E0005053

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

20. Within EG DyyyA, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

21. **EG DyyyF.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N612409 E0004533

N614157 E0015016

N613817 E0015419

N612100 E0005053

N612409 E0004533

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

23. Within EG DyyyB, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. EG DyyyG. When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602703 W0004253

N603145 W0004026

N594120 E0004637

N593705 E0004115

N602703 W0004253

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

26. Within EG DyyyG, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

27..EG DyyyH. When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N601023 W0000240

N600006 E0011034

N595641 E0010416

N600644 E0000334

N601023 W0000240

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

27. Within EG DyyyH, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. EG DyyyI. When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N600006 E0011034

N595804 E0012944

N595154 E0012029

N595641 E0010416

N600006 E0011034

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

26.Within EG DyyyI, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyJ.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N594120 E0004637

N593908 E0012050

N592823 E0010609

N593705 E0004115

N594120 E0004637

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

26.Within EG DyyyJ, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyK.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N593705 E0004115

N585558 E0011142

N585527 E0010252

N594605 E0002602

N593705 E0004115

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

26.Within EG DyyyK, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyL.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N592528 E0005003

N592608 E0014359

N591053 E0014152

N591927 E0005453

N592528 E0005003

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

26. Within EG DyyyL, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyM.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N593705 E0004115

N583907 E0012510

N583619 E0011218

N585527 E0010252

N593705 E0004115

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

26. Within EG DyyyM, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyN.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602310 W0013932

N602928 W0013831

N602821 W0012144

N602341 W0012139

N602310 W0013932

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

26. Within EG DyyyN, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyP.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602310 W0013932

N603837 W0022439

N604224 W0022024

N602928 W0013831

N602310 W0013932

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

26. Within EG DyyyP, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyQ.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N603527 W0022834

N603921 W0024548

N605127 W0023011

N604721 W0021413

N603527 W0022834

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

26. Within EG DyyyQ, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyR.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602310 W0013932

N601950 W0035553

N602441 W0035745

N602928 W0013831

N602310 W0013932

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

26. Within EG DyyyR, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyS.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N601842 W0040837

N602344 W0040934

N602441 W0035745

N601950 W0035553

N601842 W0040837

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

26. Within EG DyyyS, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyT.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N602100 W0031810

N602057 W0032632

N600457 W0034730

N600753 W0035336

N602100 W0031810

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

26. Within EG DyyyT, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

24. **EG DyyyV.** When required between, 2nd May 2024 to 14th July 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N600457 W0034730

N595916 W0035612

N600328 W0040755

N600857 W0035604

N600457 W0034730

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

26. Within EG DyyyV, a Danger Area Crossing Service (DACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

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

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

30. 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.

31. Note: Further enquiries can be made to Airspace Regulation (Utilisation), Safety and Airspace Regulation Group, Civil Aviation Authority via email to arops@caa.co.uk

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

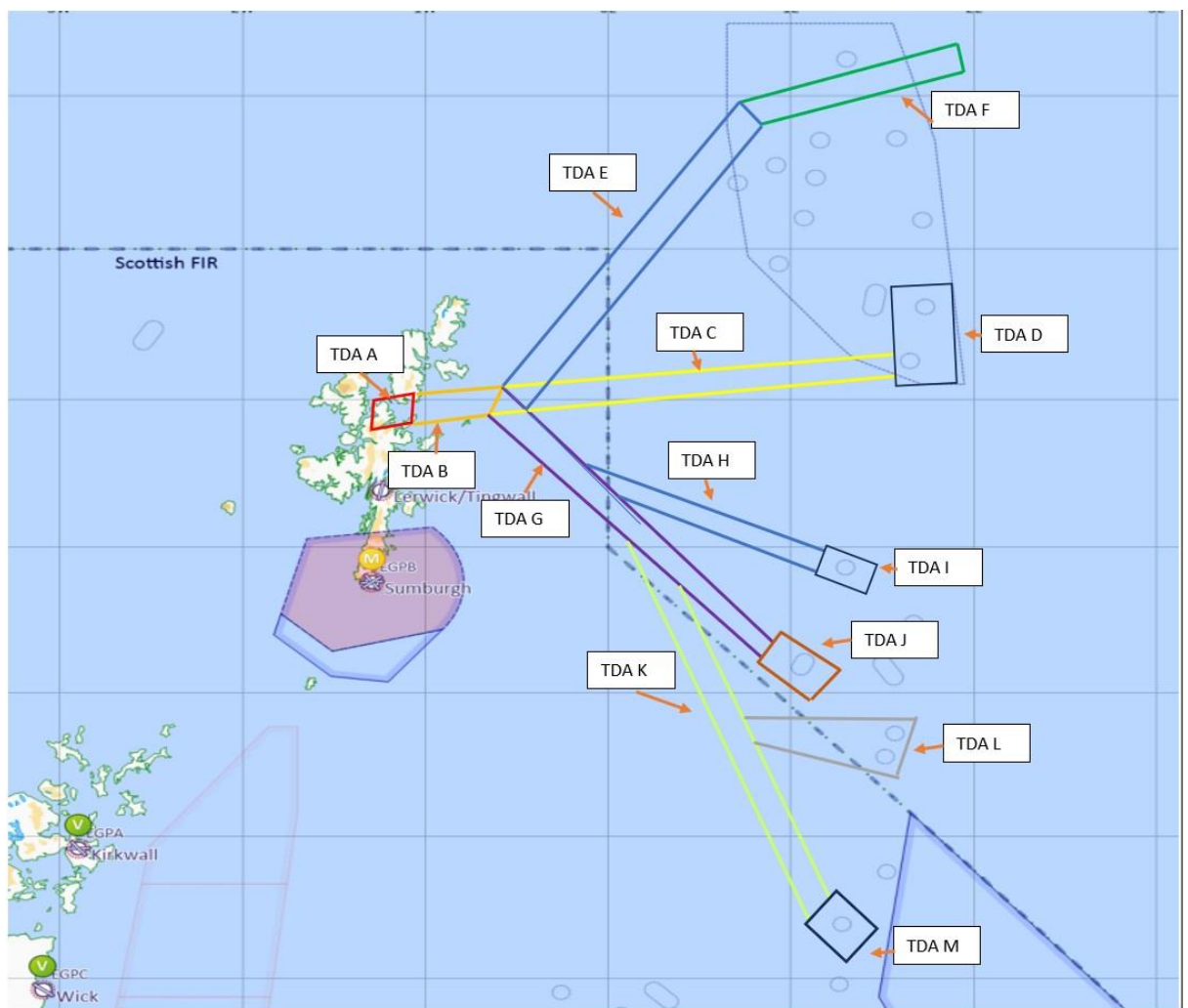
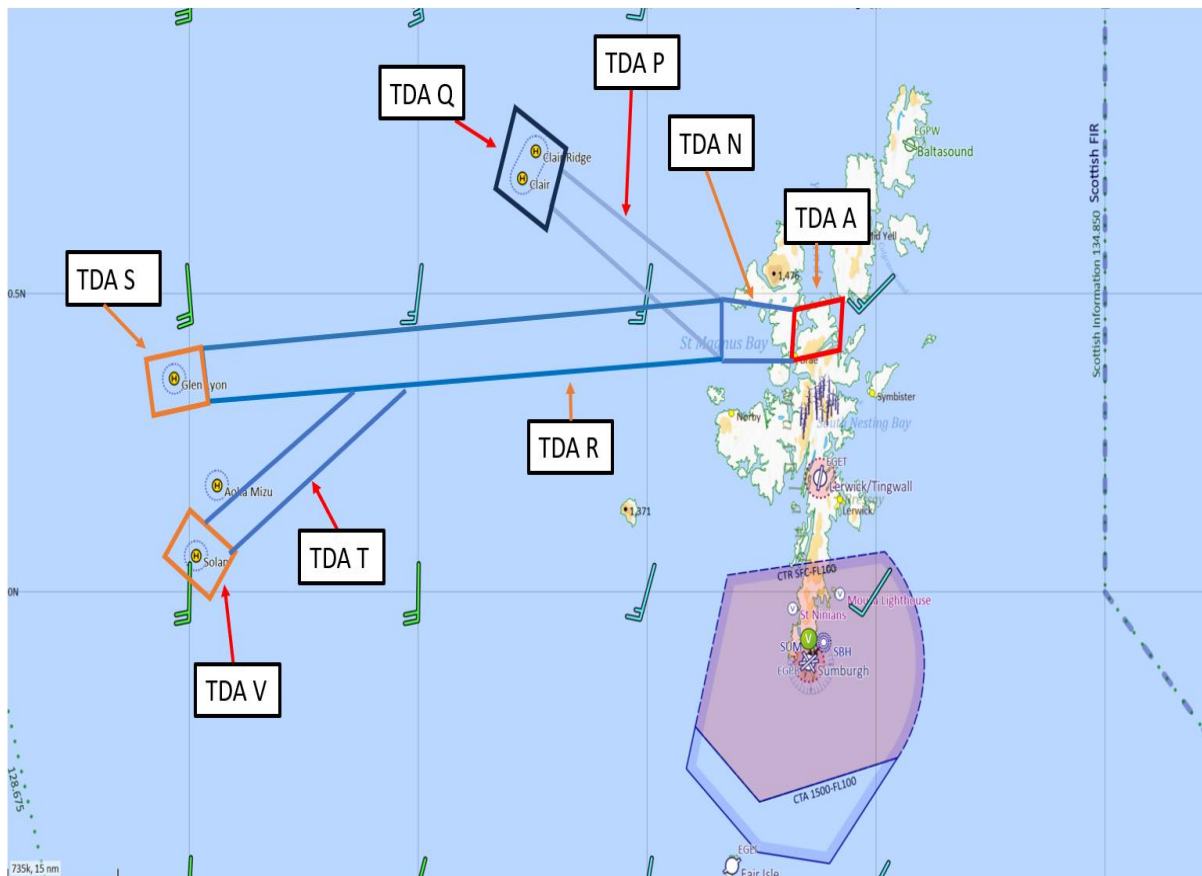


Figure 2 - Chart of TDA EG Dxxx (segments labelled)

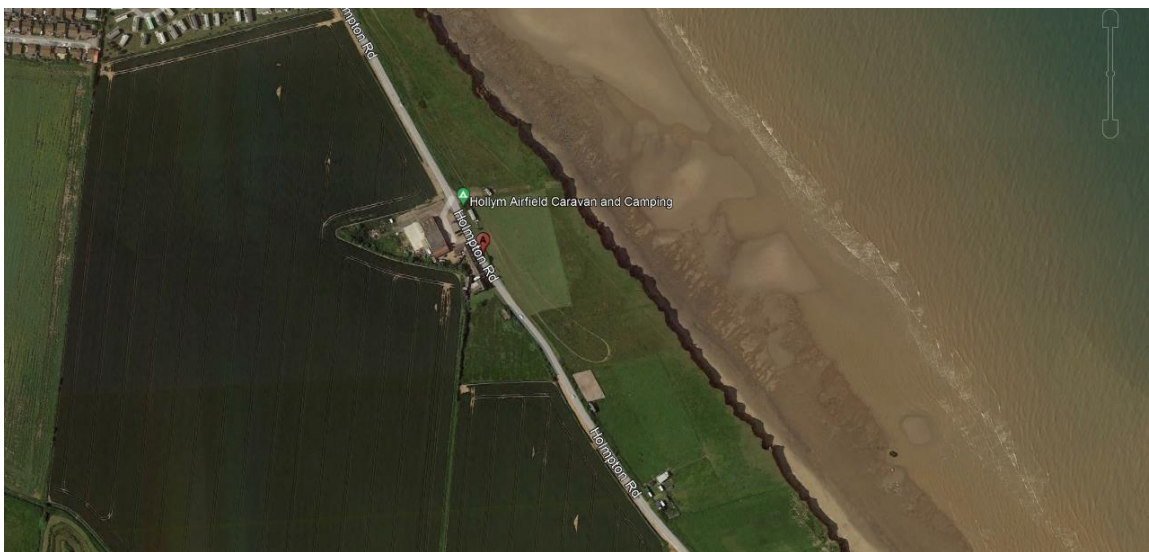


6. NOISE ASSESSMENT

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 Sumburgh 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 Sumburgh Radar (NATS) will be in accordance with the procedures approved by the CAA.