TDA Submission V5

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.

After feedback from the ATM Inspector and confirmation from Flylogix TDA F will not extend over the Median Line and the RPAS will remain wholly within UK Airspace. Avinor had approved the operation but will now be informed of that fact.

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 six principles

1. Minimise the airspace within the TDA to reduce the impact on other air users.

   Where possible, segment the TDA to minimise the airspace contained within active portions of the TDA for individual operations and to ease SUACS 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. Scatsta airfield was chosen for the following reasons:

   Scatsta is clear of nearby existing Danger Areas and other notified airspace such as noise sensitive areas and bird sanctuaries.

   Scatsta is situated next to bodies or water, therefore the travel of the UA over land is minimal reducing risk to those on the ground.

   Scatsta is a disused airfield with no crewed aviation on site.

Scatsta is free of significant ground-based obstacles such as power lines.

Scatsta is 15nm from the closest airfield Tingwall and therefore should pose little impact to existing operations.

4. Avoid areas where other aircraft operate below 1,500ft – for example airfields and HTZs.

5. 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.

6. 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 results of the engagement are included in *Summary of Stakeholder Engagement - ACP-2023-083.* This has 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 SUACS is available from the appropriate NATS Aberdeen Sector. 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.

- Flylogix will engage with Avinor when access to TDA Segment F 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 with the confines of the TDA described below and will be promulgated via NOTAM in conjunction with the appropriate NATS Aberdeen Sector following promulgation of the AIC.

Flights will be between 3 hours and 4.5 hours long. The TDA activation time will be scheduled to include 30 minutes before take-off and end up to 3 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.

Flylogix may conduct multiple flights in a single day. During the 90-day period in which the TDA will be published, Flylogix plans to carry out three periods of flights which indicatively are currently planned for 2 May 24 to 19 May 24, 30 May 24 to 16 Jun 24 and 28 Jun to 14 July 24 (subject to weather and serviceability)

Whilst the activity is being carried out the method of communication with the appropriate NATS Aberdeen Sector will be by telephone between the Pilot in Charge (PIC) and NATS Aberdeen Watch Manager. Two mobile phones are employed by Flylogix one of which has the telephone number solely shared by the PIC and the NATS Abeerdeen 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 during previous Flylogix ACPs. 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 Flylogix Remote Pilot as the controlling authority. As the RPAS progresses through each TDA segment a call will be made to NATS Aberdeen Watch Manager 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 call the appropriate NATS Aberdeen Sector 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 the appropriate NATS Aberdeen Sector 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 SUACS and the TOI reflects that communication will be via telephone to confirm the positioning of the RPAS.

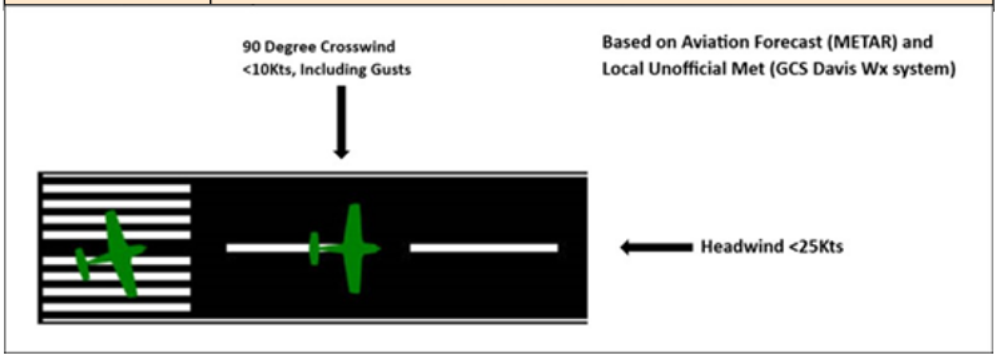
The PIC will communicate no less than 24 hours with NATS Aberdeen Watch Manager and before the activation of the NOTAM. The NATS Aberdeen Watch Manager will confirm that they are content to provide the SUACS for the particular day of planned operations and this will then lead to the activation of the NOTAM 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 NATS Aberdeen Watch Manager to ensure that the SUACS provision can be established.

There are fifteen 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.



Flylogix will consult the following sources of Met information to ensure compliance with these criteria:

- MET Aviation briefing service
- MET F214 & MET F215
- Readiings from the asset's weather station
- METAR & TAF's if available
- Skydemon
- Windy

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. This will relate individually to either Mode 3A, Mode3C or both. The appropriate NATS Aberdeen sector will seek to correlate a radar return with the reported position of the UA shortly after take-off. In the event of loss of communication or a fault identified with the transponders it will instigate a return to base. The NATS Aberdeen Watch Manager will be notified immediately. The appropriate NATS Aberdeen sector will 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 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 NATS Aberdeen.. These routes are informal and are managed by the appropriate NATS Aberdeen Sector. NATS Aberdeen are content to dynamically manage the traffic situation, for example in the event of potential weather implications NATS Aberdeen Watch Manager 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 the NATS Aberdeen Watch Manager.

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 1300ft 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

   The TDA is established between surface and 1300 FT AMSL.

   Within EG DxxxA, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

7. **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

N603012 W0010939

The TDA is established between surface and 1300 FT AMSL.

Within EG DxxxB, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

8. **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

   The TDA is established between surface and 1300 FT AMSL.

   Within EG DxxxC,.

9. **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

   The TDA is established between surface and 1300 FT AMSL.

   Within EG DxxxD, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar on frequency 123.155 MHz.

10. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyE, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

11. **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

    The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyF, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

12. **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

    The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyG, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

13. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyH, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

14. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyI, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

15. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyJ, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

16. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyK, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

17. **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

N591937 E0005404

N592528 E0005003

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyL, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

18. **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:

N585558 0011142E

N583907 0012510E

N583619 0011218E

N585527 0010252E

N585558 0011142E

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyM, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

19. E**G 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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyN, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

20. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyP, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

21. **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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyQ, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

22. 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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyR, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

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23. 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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyS, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

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:

N602057 W0032632

N602100 W0031810

N600457 W0034730

N600753 W0035336

N602057 W0032632

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyT, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

25.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

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyV, a Special Use Airspace Crossing Service (SUACS) will be available from Sumburgh Radar, Brent Radar or Aberdeen Radar on the appropriate frequency as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

26. Further information regarding a Special Use Airspace Crossing Service (SUACS) can be found within UK Enroute Information ENR 1.1 – General Rules.

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

28. 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.

29. 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)

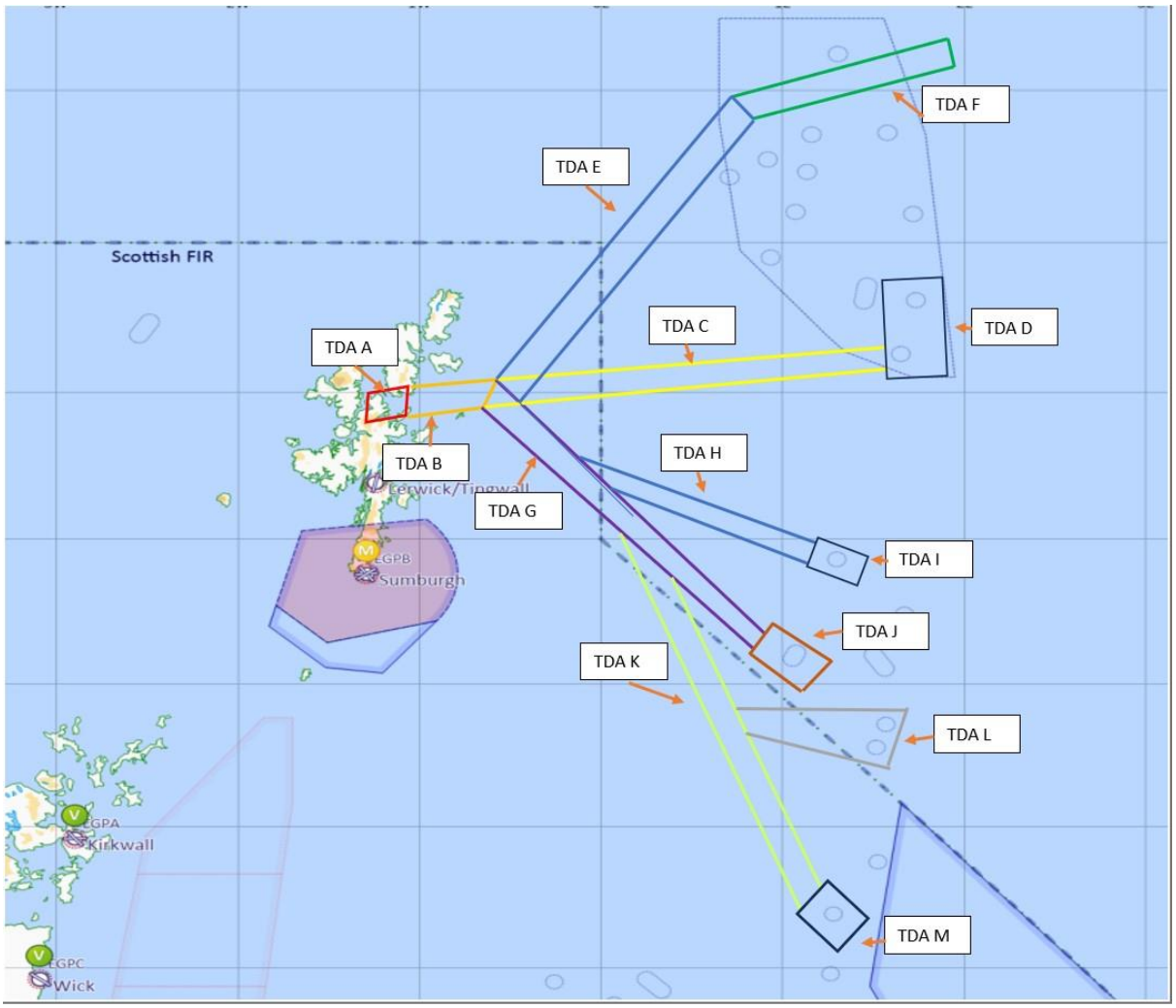
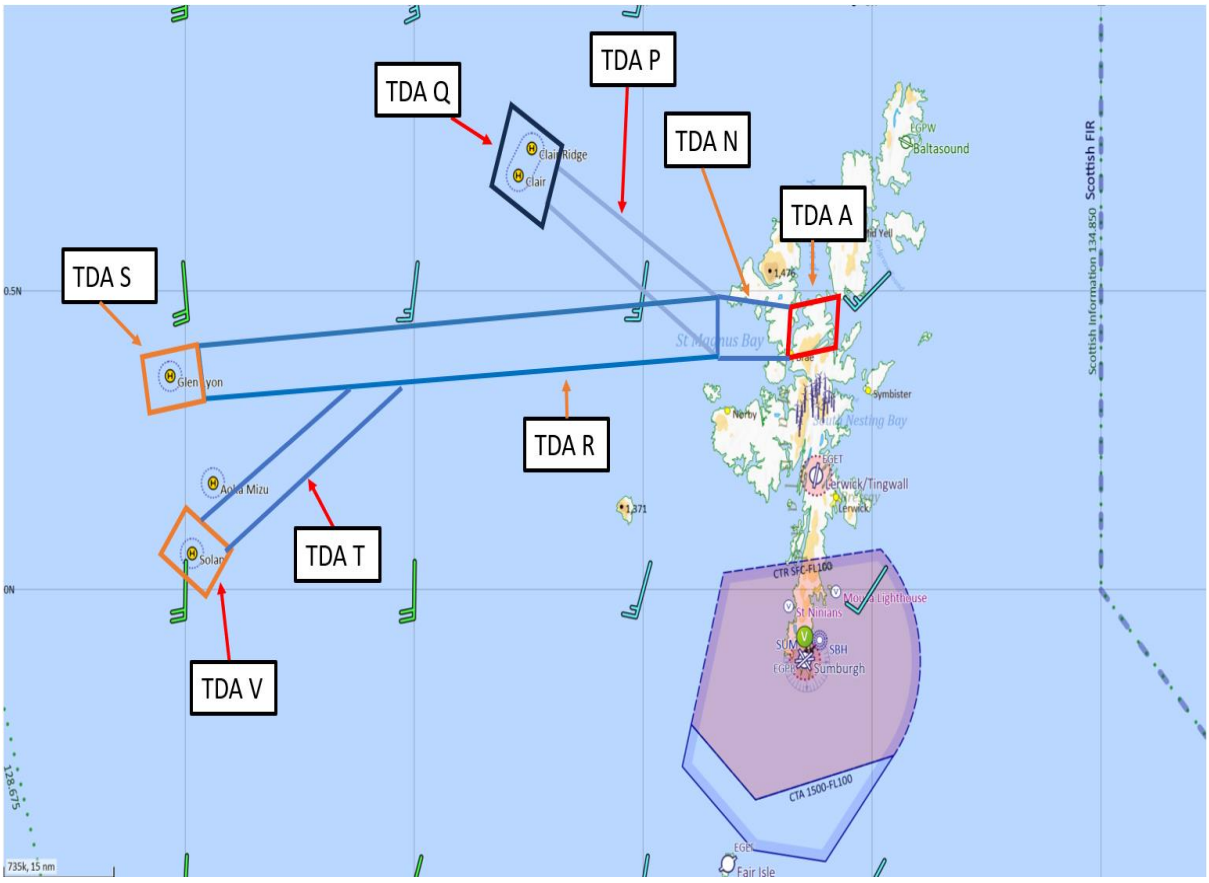


Figure 2 - Chart of TDA EG Dxxx (segments labelled)



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 2 May 2024 to 15th July 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 Scatsta airfield 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. Should the commercial rotary wing traffic wish to transit out at any point which conflicts with the TDA then the appropriate NATS Aberdeen Sectorr will be able to approve the aircraft into the area once the RPAS has vacated and in accordance with the TOI.

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 ≤45Db', which is virtually undetectable from ground. The most audible part of the flight, i.e., take-off and landing will take place at Scatsta Airfield where there are 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. 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 an OA.

The SUACS provided by the NATS Aberdeen Watch Manager will be in accordance with the procedures approved by the CAA.