

# BVLOS OPERATIONS CENTRAL NORTH SEA

## TDA Submission V3

### ACP-2024-005

July 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 Central North Sea from August 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-2024-005) 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 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 sea.

3. Whinnyfold was chosen for the following reasons:

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

Whinnyfold is situated next to bodies of water, therefore the travel of the UA over land is minimal reducing risk to those on the ground and will be conducted VLOS.

Whinnyfold is a private site with no crewed aviation on site.

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

Whinnyfold is 15nm from the closest airfield, Aberdeen/Dyce and its associated CTR and therefore should pose little impact to existing operations. Longside Aerodrome (Unlicensed) is 7nms to the North West.

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-2024-005*. 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. The phone number will be on the NOTAM.

## 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 BVLOS flights will remain within 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 6 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 inform AR Ops 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 7 August 24 to 25 August 24, 5 September 24 to 22 September 24 and 4 October 24 to 20 October 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 Aberdeen 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 and 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 NATS Aberdeen 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 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 before the next flight 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, Flylogix 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
- Readings 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, Mode 3C 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 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 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 (Central North Sea)**

**BVLOS RPAS SURVEYING**

**7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024**

1. During the period between 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a Remotely Piloted Aircraft System (RPAS) will conduct BVLOS surveying of offshore installations situated in the Central North Sea. The RPAS will depart from Whinnyfold 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-2024-005.
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 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N572520 W0014915

N272141 W0015310

N572124 W0013531

N572514 W0013456

N572520 W0014915

The TDA is established between surface and 1300 FT AMSL.

Within EG DxxxA, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

7. **EG DxxxB.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N572124 W0013531

N575521 E0011031

N575810 E0010231

N572514 W0013456

N572124 W0013531

The TDA is established between surface and 1300 FT AMSL.

Within EG DxxxB, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

8. **EG DxxxC.** When required, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N575521 E0011031

N580444 E0011227

N580502 E0010455

N580502 E0010331

N575521 E0011031

The TDA is established between surface and 1300 FT AMSL.

Within EG DxxxC, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

9. **EG DxxxD.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N574913 E0003925

N573557 E0010812

N574055 E0011240

N575040 E0004635

N574913 E0003925

The TDA is established between surface and 1300 FT AMSL.

Within EG DxxxD, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**10. EG DyyyE.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N572124 W0013531

N565639 E0004215

N570106 E0004341

N572514 W0013456

N572124 W0013531

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyE, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**11. EG DyyyF.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565808 E0003442

N564355 E0003923

N564421 E0004719

N565639 E0004215

N565808 E0003442

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyF, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**12. EG DyyyG.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October a TDA is established within the area bounded by straight lines joining successively the following points:

N570106 E0004341

N571035 E0010303

N571245 E0005945

N570239 E0004341

N570106 E0004341

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyG, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**13. EG DyyyH** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565639 E0004215

N564921 E0020738

N565337 E0020822

N570106 E0004215

N565639 E0004215

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyH, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**14. EG Dyyyl**. When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565115 E0014530

N563042 E0020151

N563217 E0020932

N565015 E0015620

N565115 E0014530

The TDA is established between surface and 1300 FT AMSL.

Within EG Dyyyl, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**15. EG DyyyJ**. When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565731 E0012512

N571051 E0020145

N571401 E0015640

N565820 E0011603

N565731 E0012512

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyJ, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**16. EG DyyyK.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N562908	E0015432
N561946	E0020014
N562420	E0022635
N563416	E0021931
N562908	E0015432

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyK, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**17. EG DyyyL.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N564921	E0020738
N564103	E0020554
N563857	E0022250
N564753	E0022540
N564921	E0020738

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyL, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**18. EG DyyyM.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines join in successively the following points:

N564921	E0020738
N564830	E0021829
N565243	E0021941
N565337	E0020822

N564921 E0020738

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyM, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**19. EG DyyyN.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565337 E0020822

N571034 E0022239

N571223 E0021527

N565425 E0020822

N565337 E0020822

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyN, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

**20. EG DyyyO.** When required between, 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 2024 a TDA is established within the area bounded by straight lines joining successively the following points:

N565456 E0015336

N565337 E0020822

N570426 E0015903

N570130 E0014423

N565456 E0015336

The TDA is established between surface and 1300 FT AMSL.

Within EG DyyyO, a Special Use Airspace Crossing Service (SUACS) will be available from Aberdeen Radar on the 134.100MHz, 135.175 or 132.550 as defined in UK AIP ENR 1.6, Paragraph 4.5.2.2.

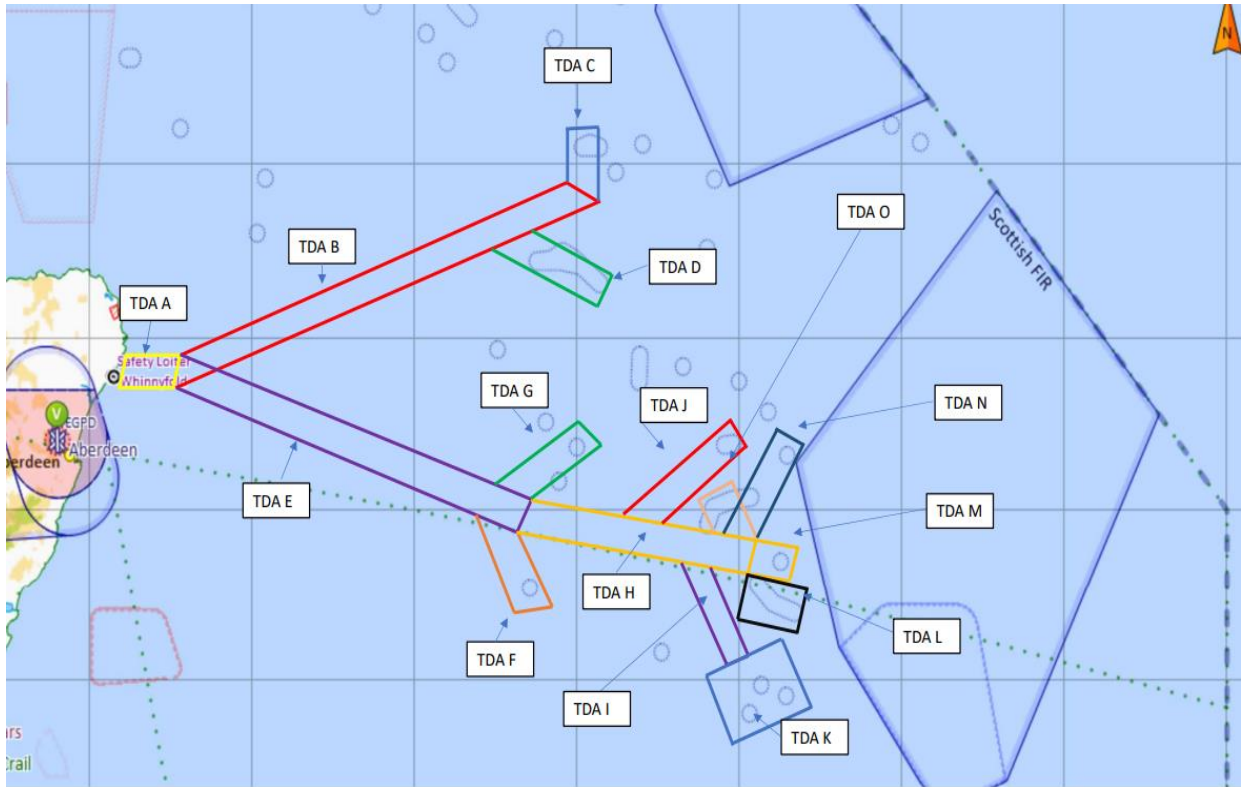
**21.** Further information regarding a Special Use Airspace Crossing Service (SUACS) can be found within UK Enroute Information ENR 1.1 – General Rules.

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

**23.**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.

**24.**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](mailto:arops@caa.co.uk)

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



## 6. NOISE ASSESSMENT AND IMPACT ON OTHER AIRSPACE USERS

- CAP1616g para 3.23 – the change sponsor must describe the current day scenario.
- CAP1616g para 4.11 – the change sponsor must consider and undertake an assessment of the noise impacts of a temporary or trial airspace change proposal that affects the distribution of air traffic below 7,000ft.

### Current Day Scenario

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 7<sup>th</sup> August 2024 to 20<sup>th</sup> October 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 15 and mainly at the weekends, the AIC will be cancelled.

Whinnyfold is immediately adjacent to the coast and approximately 15nms North of Aberdeen/Dyce and 7nms Southeast of Longsides Aerodrome (Unlicensed). For this ACP all operations are below 7000ft, are situated in CLASS G airspace and has no affect on any published VFR or IFR Routes.

Engagement with Longsides Aerodrome highlighted that aircraft do fly down the coastline at 1-2000ft for sightseeing. Through email interaction the VLOS section of this operation and the TDA dimensions which will allow that sort of flight to continue, especially when combined with a SUACS from NATS Aberdeen.

Offshore the proposed TDA network will mean interaction with Crewed Rotary Wing Traffic on Helicopter Main Routes from Aberdeen to Oil/Gas Rigs. Flylogix plans to fly mostly weekends to deconflict from the core of that traffic.

The TDA, as demonstrated at Fig 1 above extends from 1km offshore from Whinnyfold 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 Sector will be able to approve the aircraft into the area once the RPAS has vacated and in accordance with the TOI. NATS Aberdeen have agreed to provide SUACS for this ACP and therefore access will always be able to be made available for both scheduled Helicopter activity and Emergency Helicopter on SAROPS or similar.

### Noise Assessment

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 Whinnyfold where there are negligible uninvolved persons, and the aircraft will lift and transit directly out over the sea not above 400ft AMSL 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. THE HABITATS REGULATIONS ASSESSMENT

In accordance with CAP1616i para 9.8 to 9.10. and CAP1616g para 4.21 to 4.23- The Habitats Regulations Assessment – Early Screening was conducted using MagicMaps. The following two Figures firstly depict a narrow field of view adjacent to the Whinnyfold take-off and landing site and secondly an HRA focused on a more maritime environment. As described before the RPAS will initially operate VLOS up to 400ft AGL and once 1km offshore will enter the TDA at between 600-800ft AMSL.

The HRA highlighted an Important Bird Area (IBA) on the coastline and a Coastal SPA in the Intertidal area. With the plan to operate 15 return flights offshore over a 3-month period i.e., crossing the coastline 30 times, and for very short periods, we assess that the impact on the IBA is negligible. Over the Intertidal SPA the RPAS will be at an altitude of approximately 650ft AGL/AMSL and we assess the impact on that zone as nil.





## 8. 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 LOA/TOI procedures approved by the CAA.