

UAVE Ltd

Airspace Change – ACP-2022-025

EG D298A,B&C

Dolgellau Geophysical Survey

UAS BVLOS in Segregated Airspace

Summary Report

Targeted Aviation Stakeholder Engagement

(Redacted)

Version 2.2

Dated: 4th October 2023

Amendment record

Issue	Amendment	Date
V1.0	Initial Issue	13/03/2023
V2.0	Incorporating feedback from the CAA	14/08/2023
V2.1	TDA sectors re-named using designation number and re-ordered from West to East	23/08/2023
V 2.2	Additional DAAIS provision, Deconfliction with Llanbedr airspace & incorporating final feedback from the CAA	04/10/2023

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If this document is updated following meetings with the Civil Aviation Authority (CAA) or for any other reason, the SUA Operator as Change Sponsor will publish a new version on the CAA Airspace Change online portal for all to see. This is to enable the CAA to refer to the correct version if it needs to publish a determination of whether an airspace change is a relevant option to investigate. If this document is updated following meetings with the Civil Aviation Authority (CAA) or for any other reason, the SUA Operator as Change Sponsor will publish a new version (redacted) on the CAA Airspace Change online portal for all to see. This is to enable the CAA to refer to the correct version if it needs to publish a determination of whether an airspace change is a relevant option to investigate.

Referenced Documents

Document	Version	Version & Date	Source
CAP 1616	Airspace Change – Guidance on the regulatory process for changing the notified airspace design and planning and planned and permanent redistribution of air traffic, and on providing airspace information	Version 4.0 March 2021	CAP 1616
DA/TDA Policy 20200721	CAA Policy for the Establishment of Permanent and Temporary Danger Areas	Version 1.0 21 July 2020	DA/TDA Policy 20200721
CAP1827	Beyond Visual Line of Sight (BVLOS) operations of unmanned aircraft systems (UAS) in unsegregated airspace: Sandbox brief	Version 1.0 1 August 2019	CAP 1827

Acronyms and abbreviations

ACP	Airspace Change Proposal
AFISO	Aerodrome Flight Information Service Officer
AMSL	Above Mean Sea Level
ASU	Air Support Unit
ATC	Air Traffic Control
ATIS	Air Traffic Information Service
BMFA	British Model Flying Association
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority

CAP	Civil Aviation Publication
DAAIS	Danger Area Activity Information Service
FIS	Flight Information Service
Freq	Frequency
FRZ	Flight Rules Zone
GA	General Aviation
HEMS	Helicopter Emergency Medical Services
HLS	Helicopter Landing Site
LTD	Limited
MCA	Maritime Coastguard Agency
MOD	Ministry of Defence
NATMAC	National Air Traffic Management Advisory Committee
NHS	National Health Service
NOTAM	Notice to Airman
POC	Proof of Concept
RA(T)	Restricted Area (Temporary)
SFC	Surface
SUA	Small Unmanned Aircraft
TDA	Temporary Danger Area
TIO	Temporary Information Order
TOLP	Take-off & Landing Point
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
VFR	Visual Flight Rules

Glossary

Aeronautical Information Publication	Long-term information essential to air navigation, including the detailed structure of UK airspace and flight procedures, which forms part of the UK Integrated Aeronautical Information Package. Sometimes informally known as the Air Pilot. Publication is the responsibility of the CAA but is carried out under licence by NATS. www.ais.org.uk
Air navigation service provider	An organisation which operates the technical system, infrastructure, procedures, and rules of an air navigation service system, which may include air traffic control.
Airspace change proposal	A request (usually from an airport or air navigation service provider) for a permanent change to the design of UK airspace
Airspace design	Together, the airspace structure and flight procedures
Airspace change process	The staged process an airspace change sponsor follows to submit an airspace change to the CAA for a decision. The process includes actions associated with implementation and post implementation review, after the CAA or, where applicable Secretary of State, decision
Airspace Modernisation Strategy	A co-ordinated strategy and plan for the use of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace,

	<p>prepared and maintained by the CAA, incorporating the previous Future Airspace Strategy. It is a requirement of the Air Navigation Directions 2017.</p> <p>https://www.caa.co.uk/Commercialindustry/Airspace/Airspace-ModernisationStrategy/Aboutthe-strategy/</p>
Airspace structure	<p>Designated volumes of airspace within identified characteristics, including the equipment aircraft wanting to enter that airspace must carry and actions pilots must carry out before entering that airspace.</p> <p>The volumes of airspace are designed to ensure the safe and optimal operation of aircraft.</p> <p>Airspace structures consist of:</p> <p>(a) controlled airspace, namely control zones, control areas, terminal control areas and airways;</p> <p>(b) airspace restrictions, namely danger, restricted and prohibited areas;</p> <p>(c) radio mandatory zones, transponder mandatory zones;</p> <p>(d) other airspaces specified by the CAA when defining the airspace change process, such as, for example, flight information zones, aerodrome traffic zones, temporary segregated areas, temporary reserved areas or free-route airspace</p>
Beyond Visual Line of Sight (BVLOS)	<p>An operation in which the remote pilot or observer does not use visual reference to the remotely piloted aircraft in the conduct of flight.</p>
Consultation	<p>Formal process seeking input into a decision, undertaken in line with the Gunning Principles, and government guidance</p>
Danger Area	<p>Airspace within which activities dangerous to the flight of aircraft may exist at notified times.</p>
Design principles	<p>The principles encompassing the safety, environmental and operational criteria and the strategic policy objectives that the change sponsor seeks to achieve in developing the airspace change proposal. They are an opportunity to combine local context with technical considerations, and are therefore drawn up through discussion with affected stakeholders.</p>
Engagement	<p>Catch-all term for developing relationships with stakeholders, covering a variety of activities including but not limited to consultation, information provision, regular and one-off meetings and fora, workshops and town hall meetings & discussions.</p>
Feedback	<p>Informal response to engagement – change sponsors may be expected to seek feedback from stakeholders in addition to formally consulting them.</p>

Military operations	Operations undertaken by military aircraft, or military aerodromes.
Overflight	For the purposes of airspace changes, overflight is defined according to the CAA's report, CAP 1498 which outlines a measurement based upon community perception. It does not portray noise impacts. www.caa.co.uk/cap1498
Portal	The CAA's airspace change portal – an online portal containing details of all current and previous airspace changes, including the ability to respond to consultations. https://airspacechange.caa.co.uk
Representative group	Stakeholder group that gathers together those with similar interests in a proposal. It could be at an industry level (for instance the Airport Operators Association), national level (for instance the Aviation Environment Federation) or local level (for instance LAA).
Sponsor (or change sponsor)	An organisation that proposes, or sponsors, a change to the airspace design in accordance with the CAA's airspace change process.
Stakeholder	An interested third party in an airspace change or PPR proposal
Statement of Need	The means by which the change sponsor sets out what airspace issue or opportunity it is seeking to address and what outcome it wishes to achieve, without specifying solutions, technical or otherwise.
Uncontrolled airspace	Airspace in which aircraft are able to fly freely through the airspace without being constrained by instructions in routeing or by air traffic control, unless they require an air traffic control service.
Unmanned aircraft system (UAS)	An Unmanned Aircraft System (UAS) comprises individual 'System Elements' consisting of the Unmanned Aircraft (UA) and any other System Elements necessary to enable flight, such as a Remote Pilot Station, Communication Link and Launch and Recovery Element. There may be multiple UAs, RPS or Launch and Recovery Elements within a UAS.

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1 Introduction

UAVE Ltd (the change sponsor) is seeking a temporary airspace change to support its week-long fixed wing UAS geophysical air survey between October 2023 and January 2024. The airspace change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users. Following an assessment meeting with CAA Airspace Regulation to discuss UAVE Ltd’s Statement of Need, it was agreed that to facilitate its operations a Temporary Danger Area (TDA) would be required, the proposals for which would be subject to a formal targeted aviation stakeholder engagement exercise. This document provides a summary of UAVE Ltd’s formal targeted aviation stakeholder engagement exercise that UAVE Ltd undertook between 29th November 2022 and 17th January 2023 and the discussions which followed to allow aviation stakeholders to comment formally on UAVE Ltd’s TDA design and operational proposals.

1.1 Executive Summary

The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

Following an Assessment Meeting with CAA Airspace Regulation to discuss UAVE Ltd’s Statement of Need, it was agreed that to facilitate its operations a Temporary Danger Area (TDA) would be required, the proposals for which would be subject to a formal targeted aviation stakeholder engagement exercise.

This document provides a summary of UAVE Ltd’s 2022-025 Airspace Change design to allow aviation stakeholders to comment formally on UAVE Ltd’s TDA design and operational proposals.

1.2 Current Airspace Description

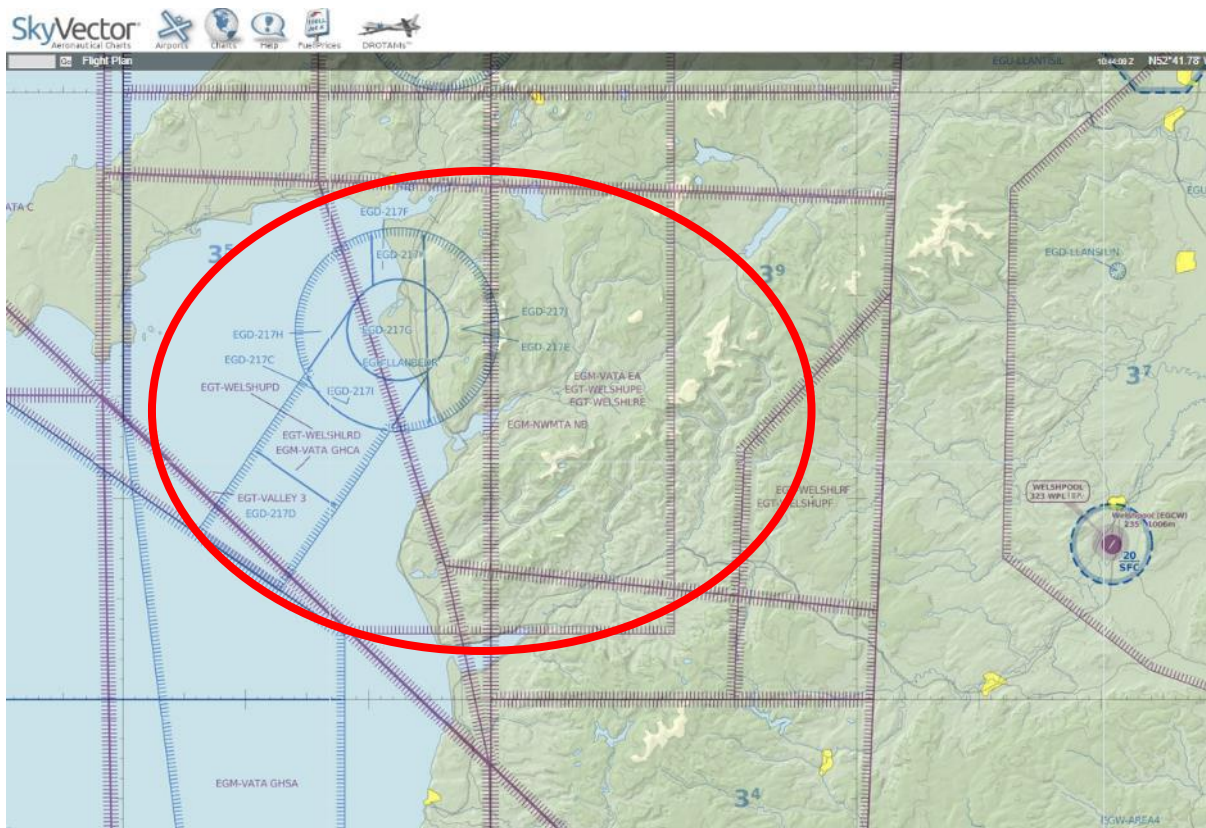


Figure 1: Airspace Map: UAS Survey Area – Red oval approximate Area of Interest

The airspace within the area of interest is comprised of the D217 Danger Area Complex (Llanbedr) and Class G Airspace, Figure 1.

2 UAVE Ltd's Statement of Need/justification

UAVE Ltd have been commissioned by Gold Mines of Wales (Operations) Ltd to carry out an aerial geophysical survey of a land around the town of Dolgellau, located in the county of Gwynedd, Wales, co-ordinates, 52°44'32.64"N, 3°53'7.78"W. The survey will use UAVE Ltd's Prion MK3 large UAS, equipped with an aeromagnetic payload to carry out a geophysical survey of the area concerned. UAVE Ltd initially requested a volume of segregated airspace within which to safely execute these operations to be available between May and July 2023. However, the requested timeline has been put back to between October 2023 and January 2024.

3 Initial Airspace Description

3.1 Segregated airspace

UAVE Ltd presented the initial airspace design to local airspace users:

Identification and Lateral Limits			Upper Limit	Lower Limit	Remarks
1			2		3
TDA 1: TDA ALPHA Survey Area (Green Polygon)			Lower Limit: SFC Upper Limit: 3500 ft AMSL (FL035)		Activity: UAS Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
#	Latitude	Longitude			
1	52 38 23.90894 N	4 10 6.84312 W			
2	52 42 27.4807 N	3 59 51.37051 W			
3	52 50 30.38107 N	3 39 31.20043 W			
4	52 54 16.3856 N	3 39 6.84067 W			
5	52 50 52.78236 N	4 0 35.55943 W			
6	52 50 46.30772 N	4 0 28.7199 W			
7	52 50 28.9252 N	4 0 13.49476 W			
8	52 50 10.97471 N	4 0 0.18968 W			
9	52 49 52.53383 N	3 59 48.86151 W			
10	52 49 33.68221 N	3 59 39.55849 W			
11	52 49 14.50128 N	3 59 32.32005 W			
12	52 48 55.07384 N	3 59 27.17668 W			
13	52 48 35.48374 N	3 59 24.1498 W			
14	52 48 15.81549 N	3 59 23.25167 W			
15	52 47 56.1539 N	3 59 24.48537 W			
16	52 47 36.58374 N	3 59 27.84478 W			
17	52 47 17.18932 N	3 59 33.31462 W			
18	52 46 58.05421 N	3 59 40.87057 W			
19	52 46 39.26079 N	3 59 50.47933 W			
20	52 46 20.88995 N	4 0 2.09881 W			
21	52 46 3.02076 N	4 0 15.67832 W			
22	52 45 45.73007 N	4 0 31.15879 W			
23	52 45 29.09224 N	4 0 48.47304 W			
24	52 45 13.17878 N	4 1 7.54608 W			
25	52 44 58.05809 N	4 1 28.29542 W			
26	52 44 43.79512 N	4 1 50.63144 W			
27	52 44 30.45112 N	4 2 14.45782 W			
28	52 44 18.08341 N	4 2 39.67187 W			
29	52 44 6.74507 N	4 3 6.16505 W			
30	52 43 56.48476 N	4 3 33.82339 W			
31	52 43 47.34651 N	4 4 2.52801 W			
32	52 43 39.36952 N	4 4 32.15559 W			
33	52 43 32.59 N	4 5 2.58001 W			
1	52 38 23.90894 N	4 10 6.84312 W			
Identification and Lateral Limits			Upper Limit	Lower Limit	Remarks

1			2	3
TDA 2: TDA BRAVO Talybont (Orange Polygon)			Lower Limit: SFC Upper Limit: 2800 ft AMSL (FLO28)	Activity: UAS Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
#	Latitude	Longitude		
1	52 42 27.4807 N	3 59 51.37051 W		
2	52 38 23.90894 N	4 10 6.84312 W		
3	52 35 22.38574 N	4 9 58.03486 W		
4	52 35 38.55655 N	3 59 33.12768 W		
1	52 42 27.48323 N	3 59 51.36933 W		

REGIONAL VIEW OF PROPOSED AIRSPACE DESIGN

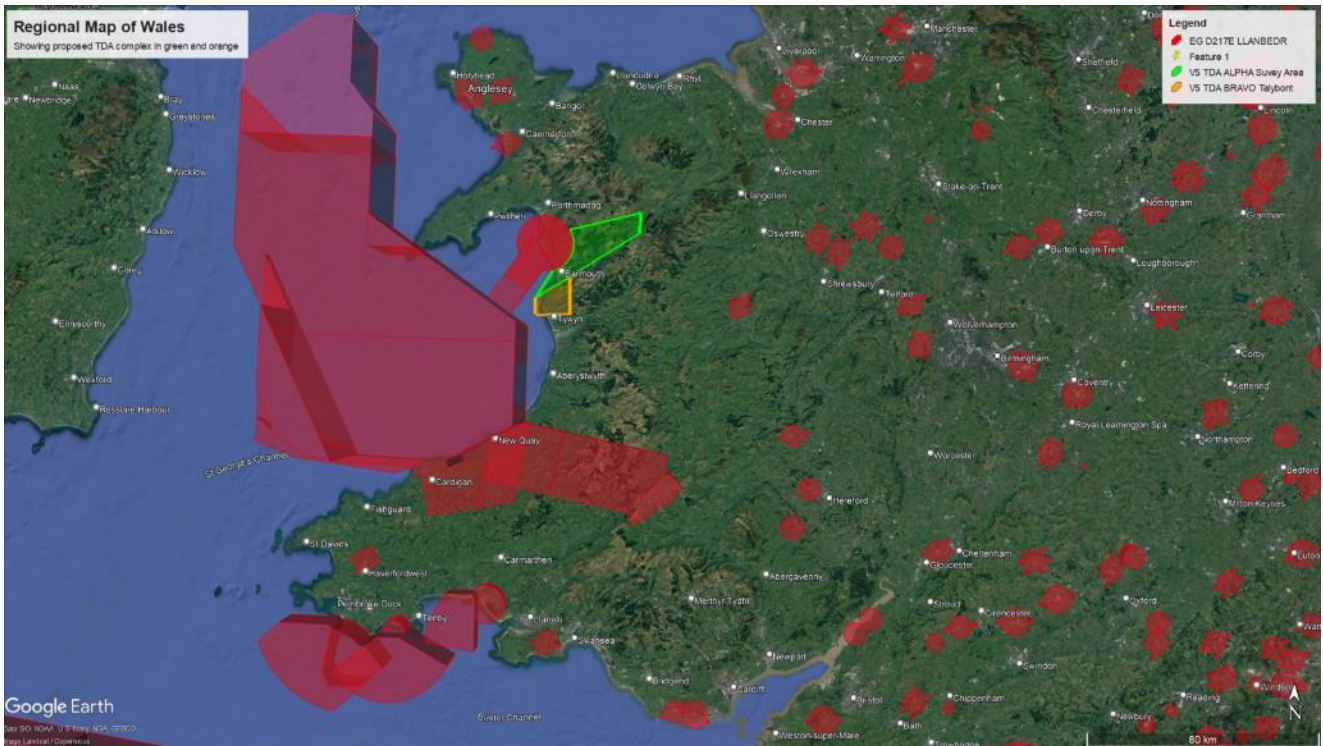


Figure 2: Requested TDA Complex, TDA ALPHA (green polygon), TDA BRAVO (orange polygon), Existing Danger Areas (red polygons)

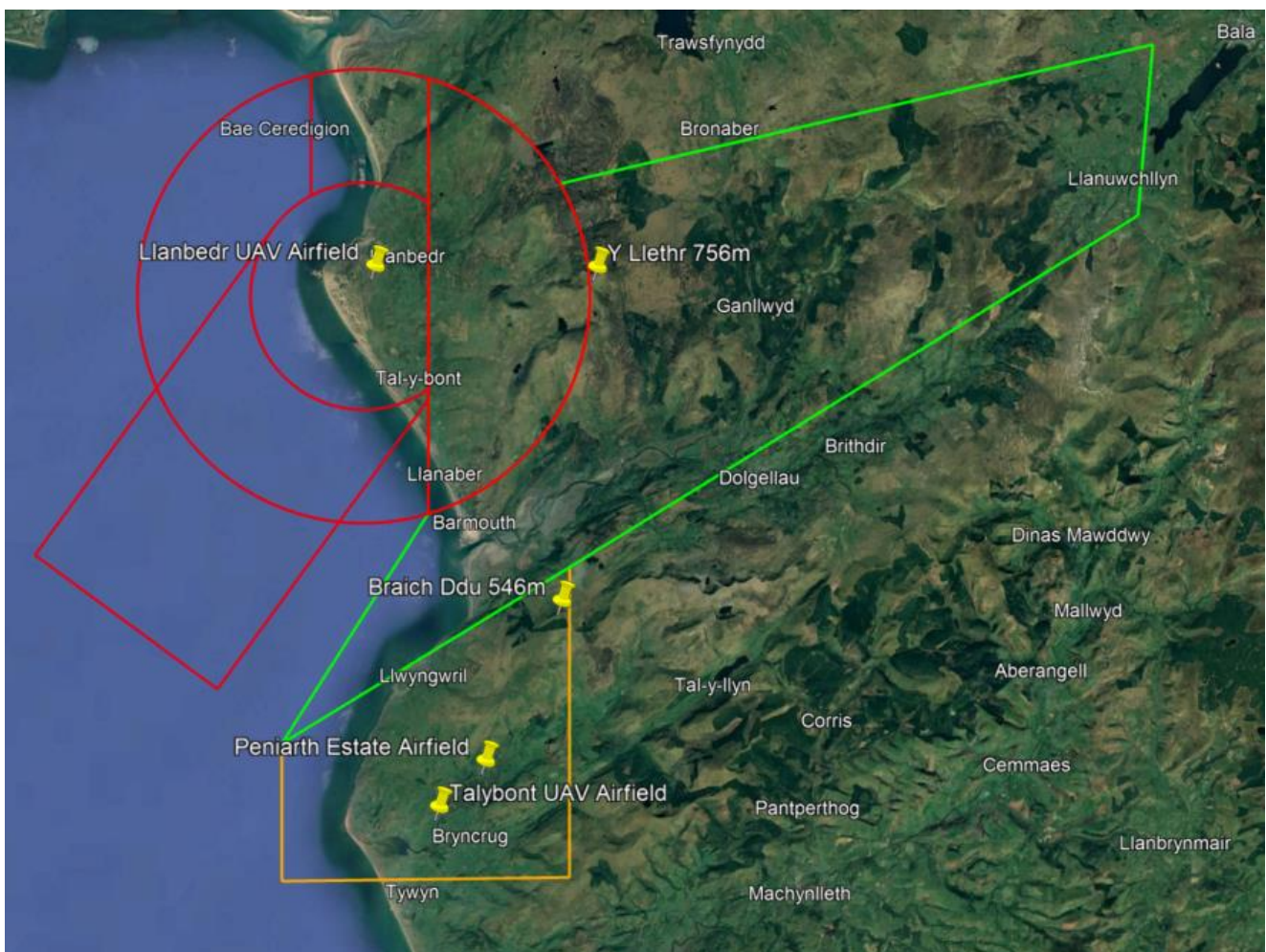


Figure 3: Zoom of Requested TDA Complex – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217 Complex (red polygons)

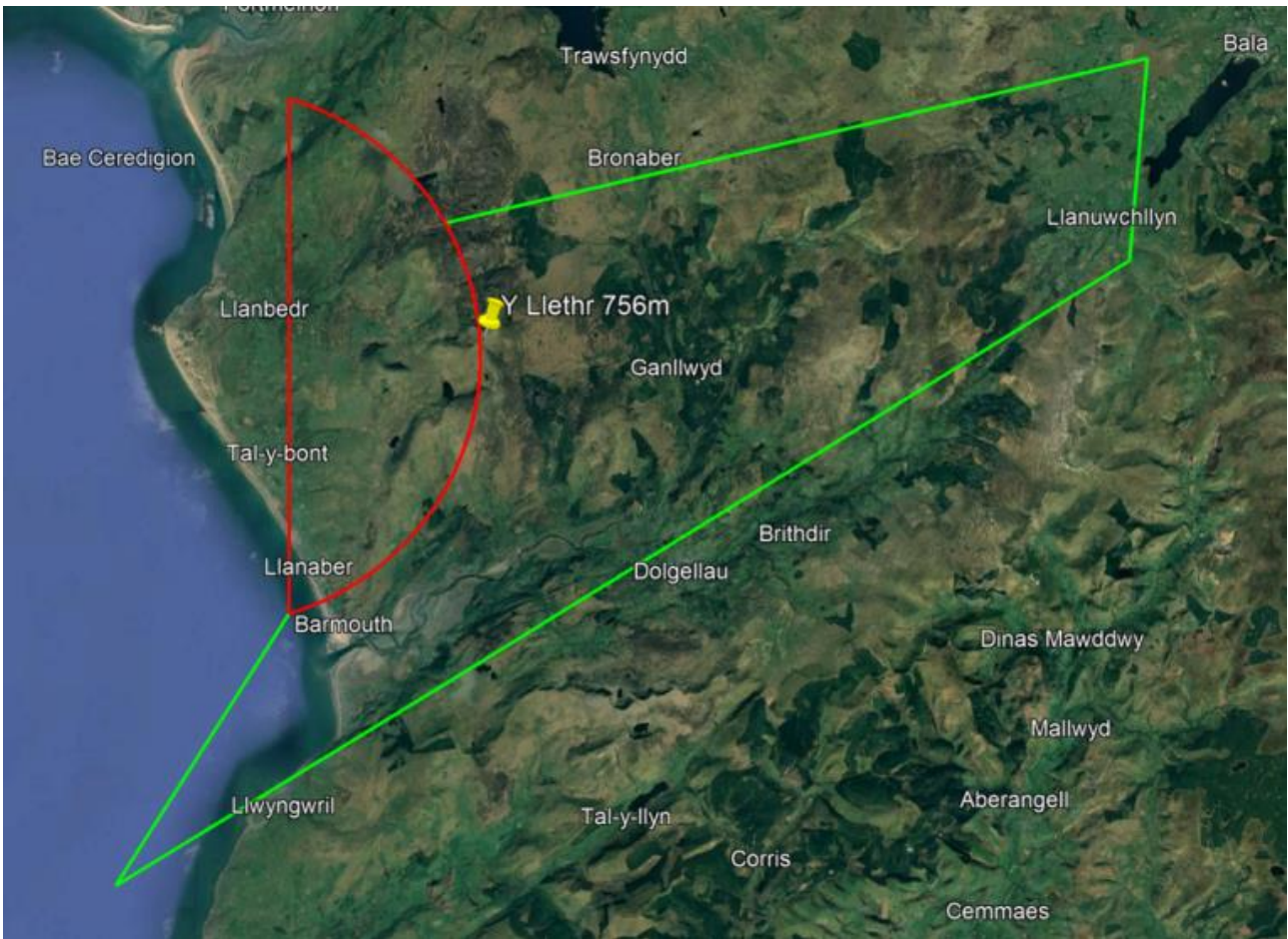


Figure 4: Requested TDA Complex covering survey areas – TDA ALPHA (green polygon) along with Existing Danger Area EGD217E (red polygon)

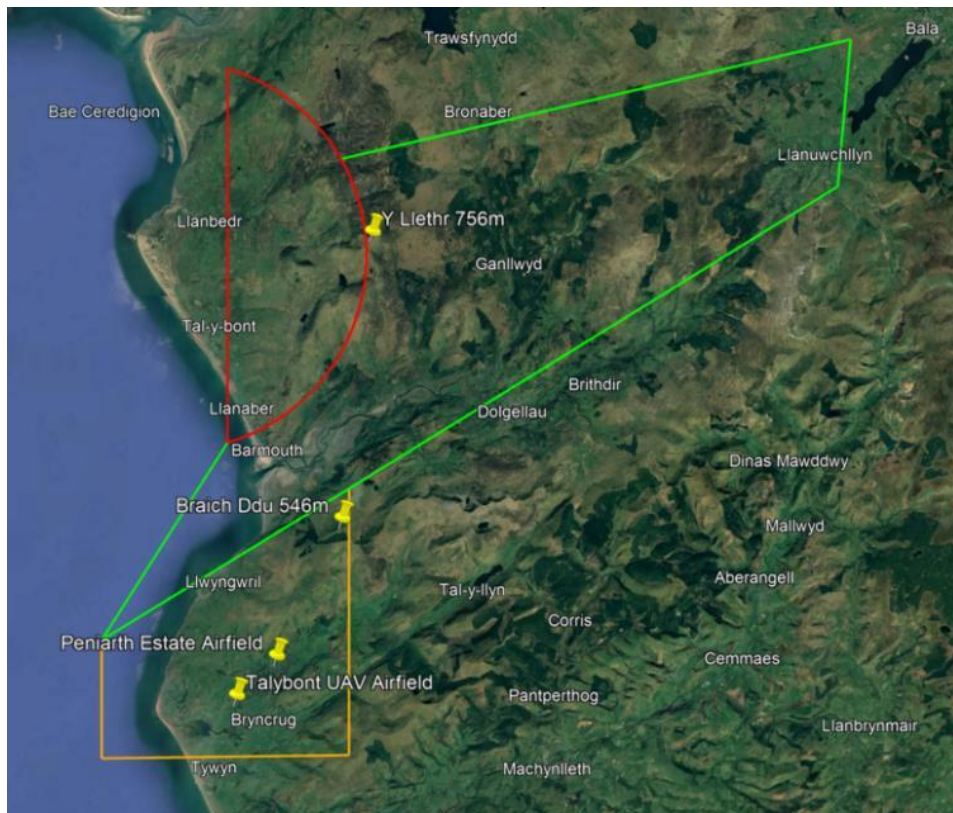


Figure 5: Requested TDA Complex for flight operations from Talybont – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217E (red polygon)

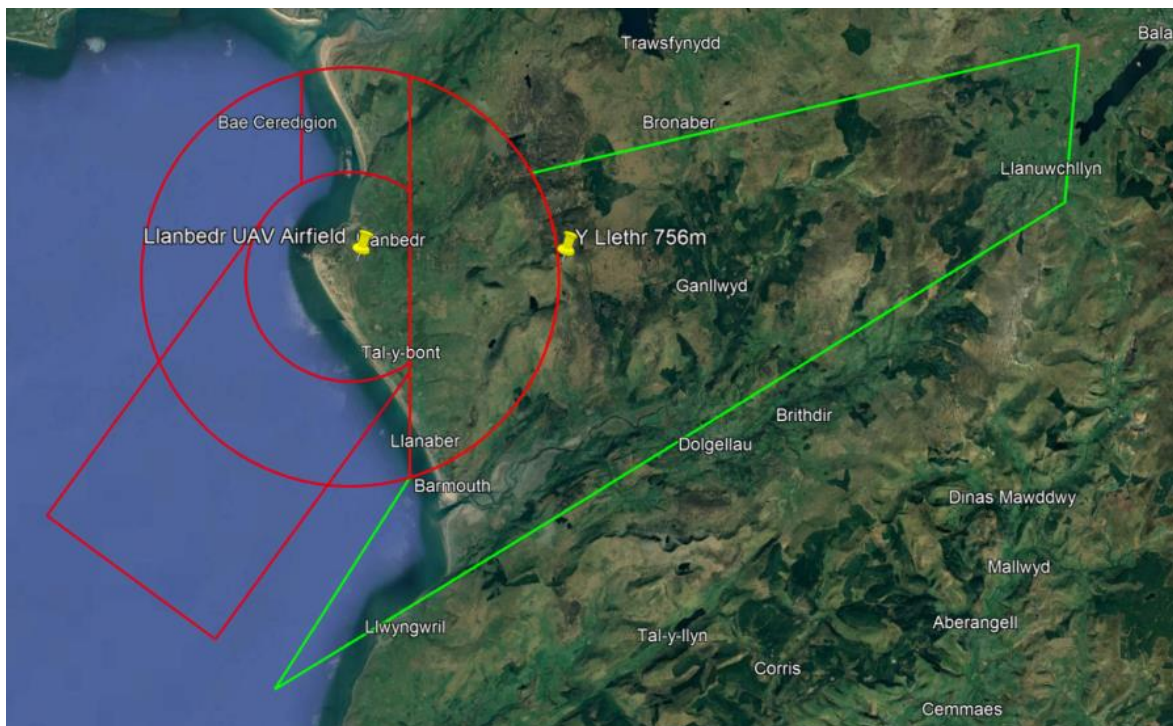


Figure 6: Requested TDA Complex for flight operations from Llanbedr – TDA ALPHA (green polygon) along with Existing Danger Area complex EGD217 (red polygons)

3.2 Notification

CAA Airspace Regulation will promulgate TDA activations by NOTAM for the period of planned use.

3.3 TDA activation

Date	Time
Monday to Friday only 2 May 2023 and 30 July 2023	Monday – Friday (inc. public holidays) 08.00-18.00 hrs Local Time (ATC hours) or daylight hours if shorter

SUA operations team have planned to mobilise for 2 weeks (10 working days) of which 5 days are expected to be SUA flying days. The expectation is that we will issue NOTAMs for 5 days of operations across a 10 day period

On days no activity is planned the TDA will not be activated.

The TDA is requested to be available for a 90 day period to enable efficient scheduling of the survey operations.

4 Engagement overview

4.1 Stakeholder identification

UAVE Ltd engaged with the following aviation stakeholders based on recommendations from the CAA and local airspace users:

National Air Traffic Management Advisory Committee (NATMAC) Distribution List

Local Airfields

Local Air Ambulance (HEMS)

Local MCA

Local MOD

Plus those who actively identified themselves to the change sponsor following the publication of the ACP2022-025 CAA portal.

4.2 Engagement Material: Stakeholders

UAVE Ltd shared the engagement material containing details and a map of the proposed TDA, as well as the proposed process to enable the safe operation of the TDA.

Materials containing technical information were presented in an accessible way as possible so as not to create a barrier to the provision of feedback.

4.3 Communications

UAVE Ltd shared engagement material with stakeholders by uploading copies to the CAA Airspace Change portal ([ACP-2022-025](#)) (Appendix P CAA ACP-2022-025 Targeted Stake Holder Engagement 29Nov2022-v1) and providing a copy by email, which was completed at the start of the process on 29th November 2022. The formal engagement process ended on 17th January 2023. Following engagement a revised design with the proposed area reduced was emailed on 25th January 2023 (Appendix Q CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2)

Many phone calls were made both from UAVE Ltd & from individual stakeholders to discuss & review the information contained in the engagement materials up to and including the 17th February 2023.

UAVE Ltd proactively encouraged stakeholders to provide feedback by sending three emails during the course of the stakeholder engagement to try and elicit a response. The text of the emails is below.

Initial Email, 29th November 2022

“UAVE Ltd (the airspace change sponsor) is seeking a temporary airspace change to support its 2 week-long fixed wing Unmanned Aircraft System (UAS) airborne geophysical survey in the Dolgellau area of Wales between 2 May 2023 and 30 July 2023.

The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

The CAA and/or UAVE Ltd have identified you and/or your organisation as a stakeholder for this engagement, which commenced today, Tuesday 29th November 2022 and will conclude on or after Tuesday 17th January 2023, a minimum seven week period (less the three Christmas / New Year bank holidays).

The attached document, CAA ACP-2022-025 Targeted Stake Holder Engagement 29Nov2022-v1.pdf, provides a summary of the Airspace Change proposal to allow you to comment formally on the TDA design and operational proposals. These proposals are not “set in stone” and UAVE Ltd are open to discuss amendments.

Please confirm your receipt of this email.”

Reminder 1, 20th December 2022

“We are three weeks into the engagement process. Please send a simple return email stating “Received” to confirm that you have the information.”

Reminder 2, 13th January 2023

“Please be advised that the Targeted Stakeholder Engagement for ACP-2022-025 closes on 17th January. If you have any comments or concerns you wish to raise please let me know.”

4.4 Feedback

Where stakeholders asked that we share their feedback in full with the CAA, UAVE Ltd have included the full set of email correspondence with that Stakeholder in the appendices. All feedback was collated and stored on UAVE Ltd’s secure server as a record of the activity and ready for sharing with the CAA where necessary. Where stakeholders requested that UAVE Ltd keep them updated with progress of the airspace change, UAVE Ltd will do this.

5 Original Airspace Change Proposal Design

5.1 Segregated airspace

UAVE Ltd requires a volume of segregated airspace within which to safely execute its operations and presented the following proposed airspace design to local airspace users:

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Identification and Lateral Limits			Upper Limit Lower Limit	Remarks
1			2	3
TDA 2: TDA BRAVO Talybont (Orange Polygon)			Lower Limit: SFC Upper Limit: 2800 ft AMSL (FLO28)	Activity: UAS Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
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REGIONAL VIEW OF PROPOSED AIRSPACE DESIGN

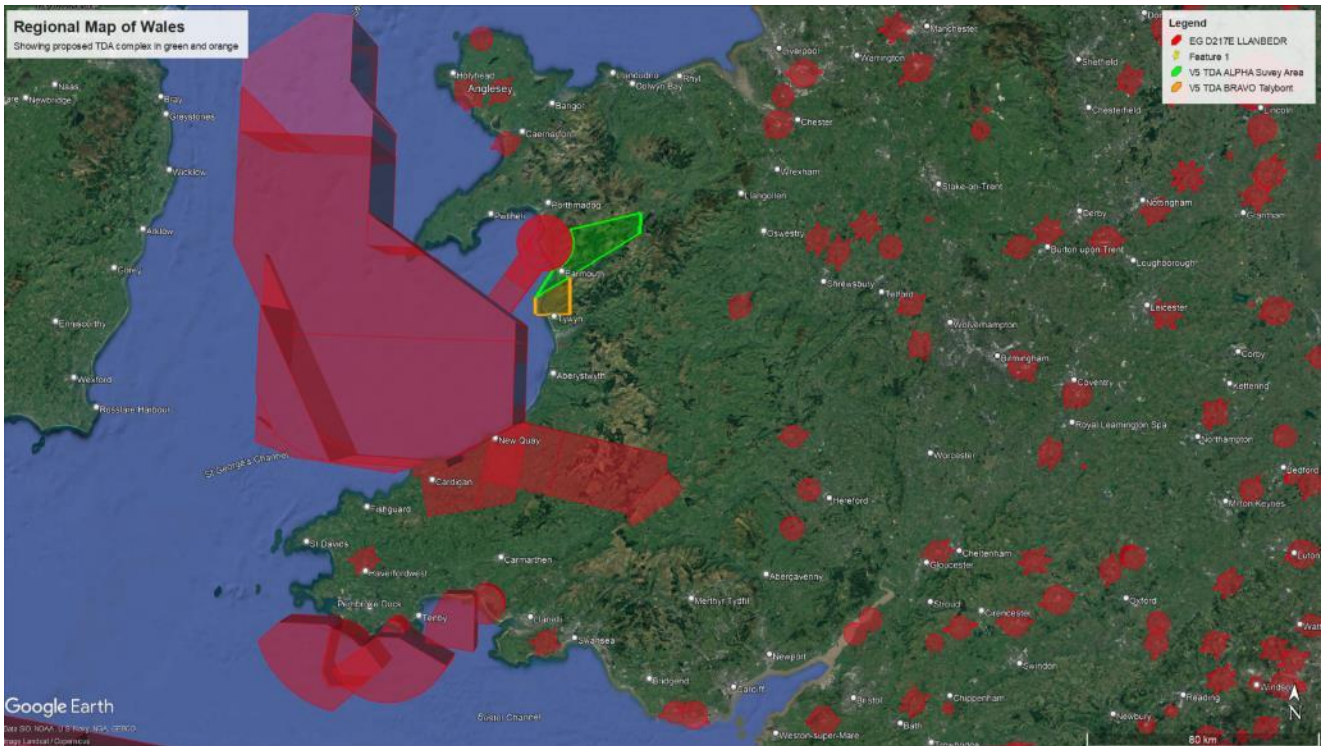


Figure 7: Requested TDA Complex, TDA ALPHA (green polygon), TDA BRAVO (orange polygon), Existing Danger Areas (red polygons)

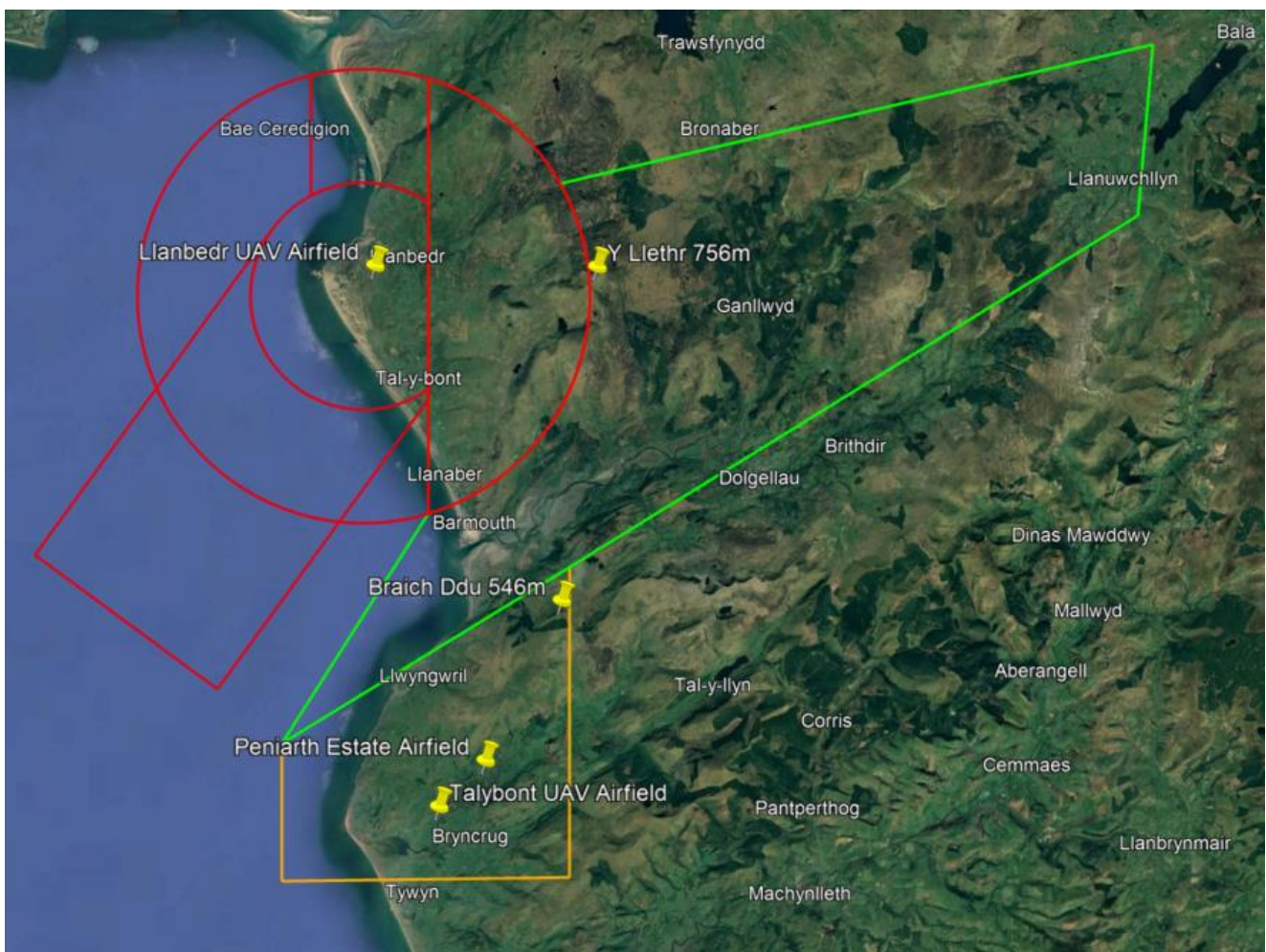


Figure 8: Zoom of Requested TDA Complex – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217 Complex (red polygons)

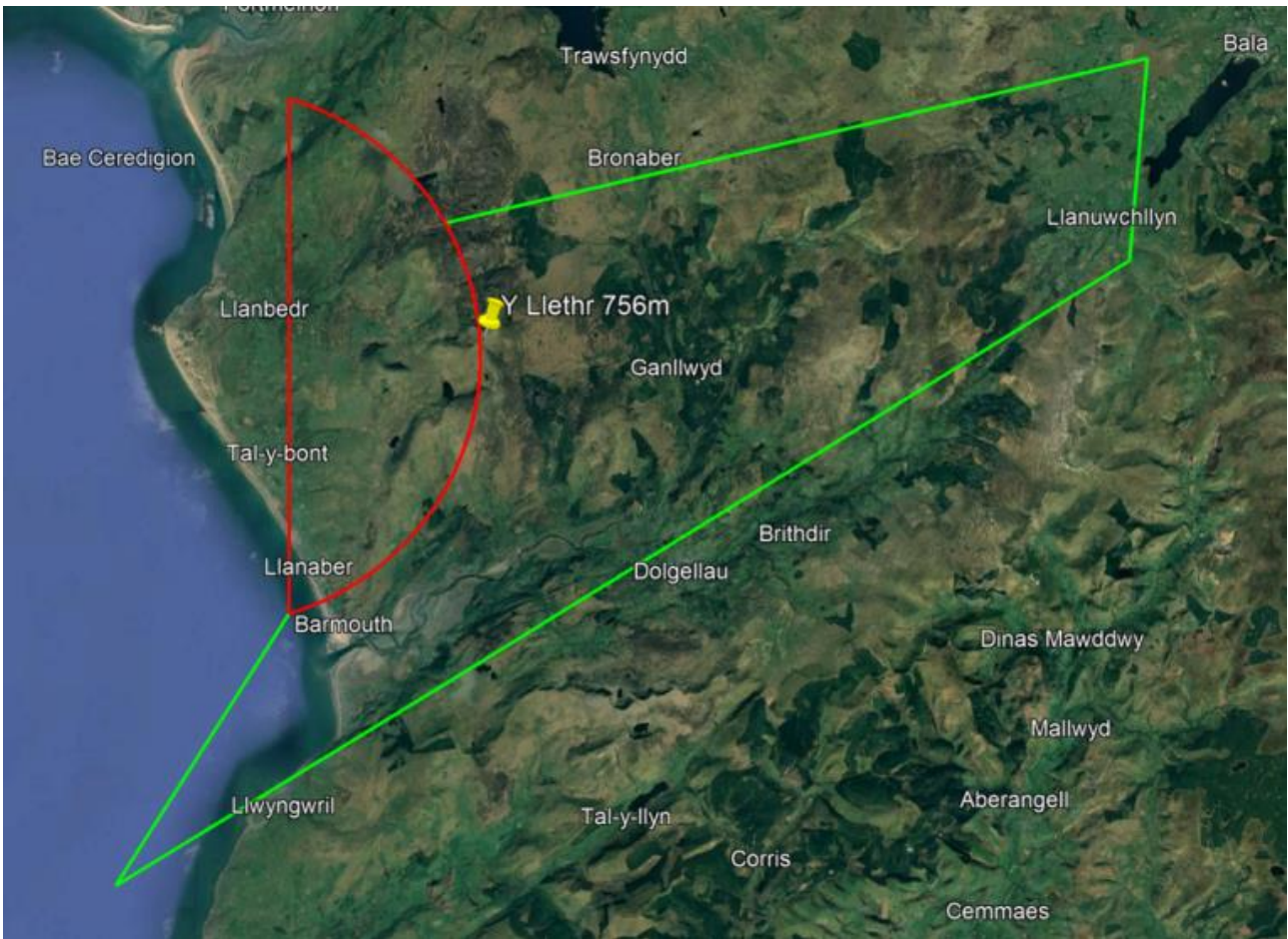


Figure 9: Requested TDA Complex covering survey areas – TDA ALPHA (green polygon) along with Existing Danger Area EGD217E (red polygon)

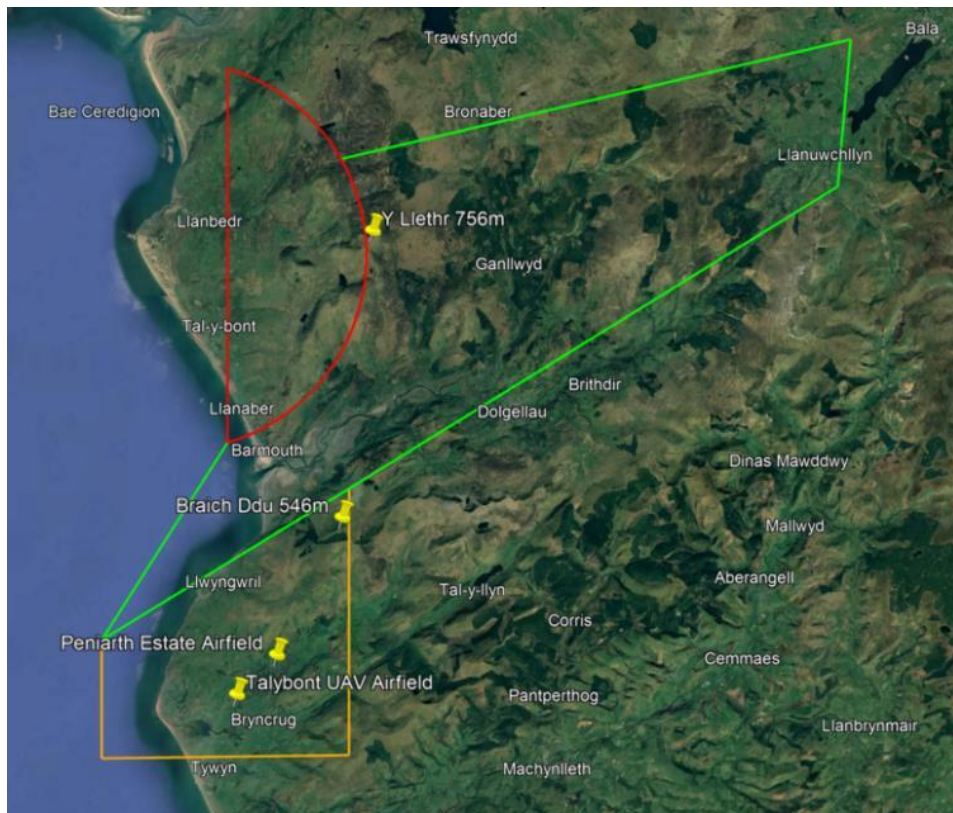


Figure 10: Requested TDA Complex for flight operations from Talybont – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217E (red polygon)

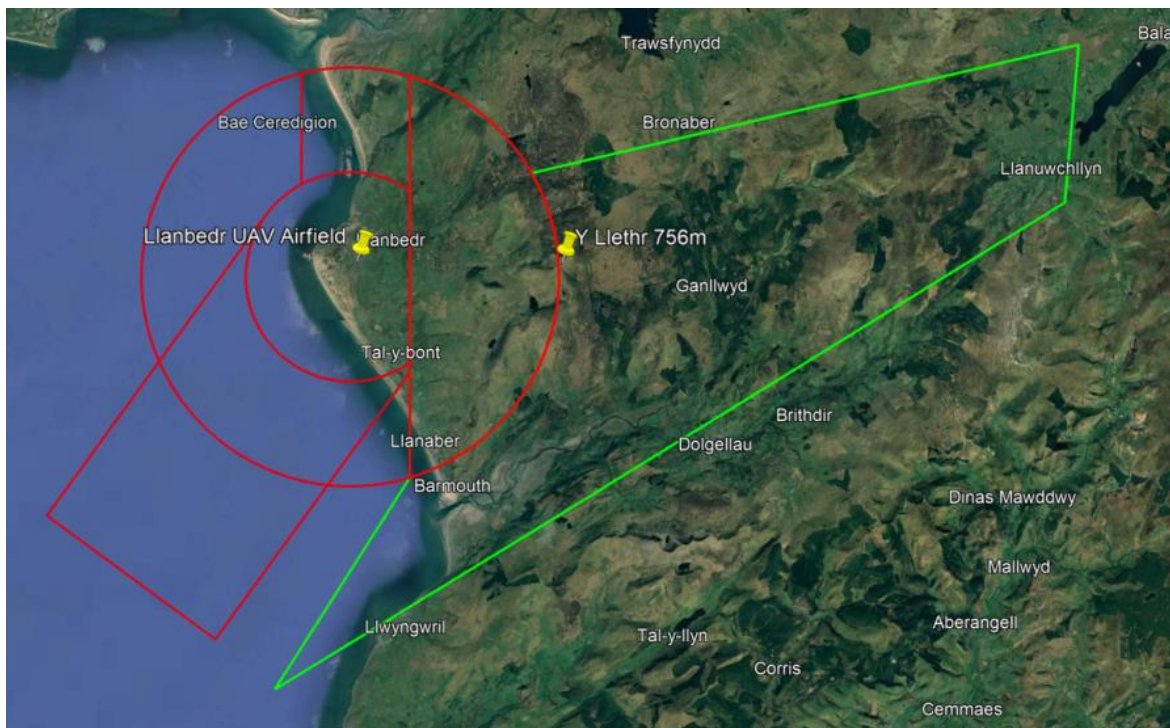


Figure 11: Requested TDA Complex for flight operations from Llanbedr – TDA ALPHA (green polygon) along with Existing Danger Area complex EGD217 (red polygons)

5.2 Notification

CAA Airspace Regulation will promulgate TDA activations by NOTAM for the period of planned use.

5.3 TDA activation

Date	Time
Monday to Friday only 2 May 2023 and 30 July 2023	Monday – Friday (inc. public holidays) 08.00-18.00 hrs Local Time (ATC hours) or daylight hours if shorter

SUA operations team have planned to mobilise for 2 weeks (10 working days) of which 5 days are expected to be SUA flying days. The expectation is that we will issue NOTAMs for 5 days of operations across a 10 day period

On days no activity is planned the TDA will not be activated.

The TDA is requested to be available for a 90 day period to enable efficient scheduling of the survey operations.

6 Summary of feedback

The formal engagement period with all stakeholders commenced on Tuesday 29th November 2022 and concluded on Tuesday 17th January 2023, a seven week period (less the three Christmas / New Year bank holidays). UAVE understand the minimum recommended engagement period is 6 weeks.

Following on the CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2.pdf was distributed on 25th January 2023 and engagement with RAF Valley continued until 17th February 2023 when they approved our request for RAF Valley to operate as the Danger Area Activity Information Service (DAAIS) as Valley LARS on frequency 125.225MHz. NATS also agreed to provide an additional DAAIS service on London Flight Information Service (LONDON FIS) on frequency 124.75MHz in order to provide a more ubiquitous DAAIS service around the steep terrain of the proposed TDA.

The proposed TDA will not be activated if the Llanbedr Danger Areas D217C or D217D are active so that North to South and South to North traffic is not blocked, further reducing the impact to aviation stakeholders.

(Figures 12&13)

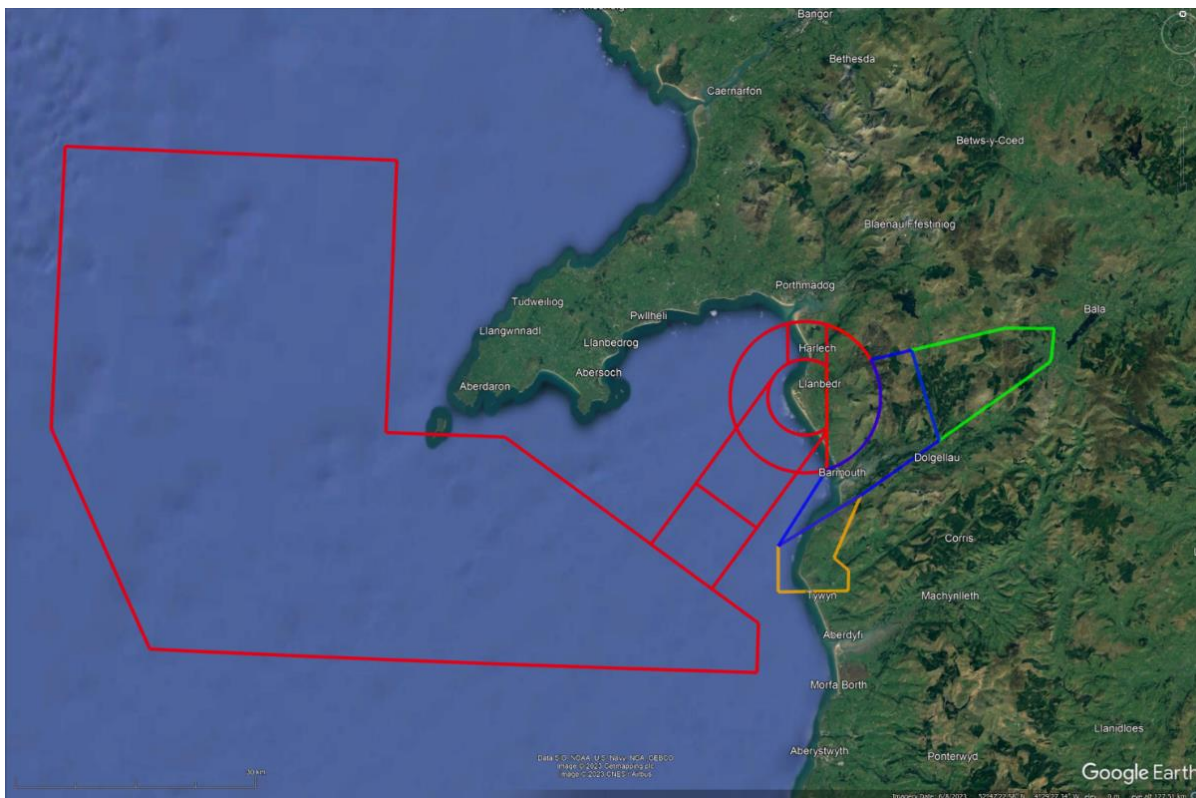


Figure 12: Regional TDA Complexes. Proposed EG D298 – EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon). Existing D217 & D201 (Red Polygons).

NB These TDA complexes cannot all be active at the same time.



Figure 13: Regional TDA Complexes. Proposed EG D298 – EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon). D217 (excluding D217C&D) & D201 (Red Polygons). **NB These TDA complexes can all be active at the same time.**

Engagement with NPAS commenced on 4th May 2023 and concluded on 17th July 2023 a period of 10 weeks.

UAVE Ltd contacted 48 stakeholders and received feedback in written form from 17 stakeholders. All except one of the stakeholders who engaged in the process were by the end of the process broadly supportive of the proposed TDA and raised no further issues and/or were willing to work with UAVE Ltd to find a solution that enables safe operations for both manned and unmanned systems.

Negative Responses

1 stakeholder expressed a negative response to the TDA. Their objection was with the setting up of segregated airspace in principle and not due to a particular need to access the airspace around Dolgellau.

Neutral Responses

7 stakeholders provided neutral responses

6 stakeholders acknowledged receipt but provided no further feedback.

1 stakeholder requested information on details of the Danger Area Crossing Service UAVE would provide. UAVE responded because the survey area is within an area of steep terrain and with UAS flights between 150ft and 500ft AGL we do not expect to have full radar coverage of the UAS during operations and as such we would be unable to provide an ATC, radar based, TDA Crossing Service for this proposed TDA. Instead, we proposed a Danger Area Activity Information Service (DAAIS).

Supportive Responses

9 stakeholders were supportive.

3 of these stakeholders had no concerns but provided no further feedback.

Initially, the 3 emergency service operators were concerned about how UAVE Ltd's UAS operations might impact their operations given their need for airspace primacy at all times and at very short notice. UAVE has agreed to put in place a Temporary Operating Instruction (TOI) with NPAS, ARCC/MCA and HEMS operator, Babcock, to cover the proposed TDA activity. Babcock requested loiter points at 10km intervals be put in place to facilitate the crossing of the TDA. Initially 5 loiter points were discussed, however after it was decided that all operations would be conducted from Talybont Airfield the transit Loiter point to Llanbedr was no longer required and so a list of 4 loiter points was agreed. NPAS requested the TDA feature on Airbox and that ADS-B In was visible at the Ground Control Station which UAVE agreed to.

Initially, the MOD were concerned. As part of the stakeholder engagement the MOD invited UAVE to attend a meeting at RAF Valley to better understand how the RAF used the airspace in the area for their fast jet training. Following the engagement the proposed eastern TDA ALPHA area (now EG D298C) was reduced in size around Lake Bala to provide a low level access route from RAF Valley to the Machynleth Loop (Mach Loop) fast jet training area. UAVE agreed to put in place a Memorandum Of Understanding (MOU) with RAF Valley to cover the proposed TDA activity & MOD Valley agreed to provide the DAAIS for the proposed TDA. The draft MOU has been agreed and covers the same information as the emergency services TOI along with agreements to release back airspace quickly and efficiently after UAV operations ceased. The MOU once signed will be provided to the CAA prior to the commencement of UAV activities.

An initial response on behalf of the gliding community provided mapped information of glider flights within the TDA on weekdays. Following an email discussion and a re-evaluation of the activity levels in the proposed TDA area over the past few years, if UAVE can provide:

- Reasonable notice of activation via the NOTAM system, and
- A frequency we can call to establish whether the area is active (a cancellation NOTAM is hard to pick up in flight)

then I don't think we will have an issue. UAVE offered to put in place an 'interested parties' list to provide TDA timing information.

A GA pilot with aircraft hangarage at Peniarth Estate grass airstrip was concerned about access to the airstrip during operation of the TDA. Taking this feedback into account UAVE redesigned the TDA to exclude the Peniarth Estate Airfield.

Full versions of the 17 written responses to the targeted aviation stakeholders engagement exercise can be viewed in section: [8 Appendices](#)

6.1 Emergency services

- Aerial emergency services or providers of aerial emergency services required routine access or transit through the airspace in question, sometimes with minimal or no notice.
- MOD authorized military air traffic may require transit or landing within the area.
- NPAS/Police ASU may require access to or transit through the TDA in an emergency situation.
- HM Coastguard/MCA aircraft may require transit or activity within the TDA.
- Clearance into the TDA must be available to emergency service aircraft with as little as 10 minutes notice, including when emergency service aircraft are already airborne.
- UAVE has agreed to put in place a Temporary Operating Instruction (TOI) with NPAS, ARCC/MCA and HEMS operator, Babcock, to cover operations within the proposed TDA.

6.2 Schedule services and general aviation

- The proposals would not directly affect scheduled services but will have some local affect to general aviation, Talybont Airfield will be closed to other air traffic during the operation of the TDA, Peniarth Estate Airfield will have a reduced approach from the West and local glider pilots transiting the area will be required to stay above 3,500ft.
- Discussions have been held with XXXX the owner and operator of Talybont Airfield and Peniarth Estate Airfield since March 2022. An HSE visit to Talybont Airfield was undertaken on 28 March 2022 and the report is attached in Appendix R (Talybont_HSE_operational_site.pdf) Discussions concluded with the agreement that the airfield was suitable for UAV operations. Airfield Operating notes as provided by XXXX are in the attached spreadsheet in Appendix S (Talybont Airfield Information.xls).XXXX provided a list of regular operators of the Peniarth Estate airfield so that UAVE could engage with them through the stakeholder process. As a result of the engagement TDA BRAVO (now EG D298A) was redesigned to provide access to Peniarth Estate Airfield.
- Take-off and landing will be from Talybont Airfield. Llanbedr Airfield will not be used nor any of the D217 Danger Area.

6.3 Unmanned aircraft (UA)

- There is always a risk that members of the public could be flying UAV's in the area, the NOTAM & TDA area are believed to be sufficient to create awareness & mitigate the risk of collision or conflict with the survey drone operations, in addition the BMFA & UAV membership bodies have been advised of this proposal & would advise their membership via their communications (both web-based & hard copy publications) of the survey flights in advance.

6.4 Deconfliction

- All stakeholders expected to see a deconfliction process addressed in a mutually agreed Temporary Operating Instruction (TOI) a copy of which is shown in the Appendix U.

Several stakeholders recommended & requested that UAVE Ltd should email them directly on the planned daily flying programme for our activities. These are summarised within the TOI.

6.5 Noise Impact

The minutes from initial assessment meeting, ACP-2022-025 STAGE 1 DEFINE - ACP ASSESSMENT MEETING MINUTES 31AUG2022.pdf have been uploaded to the ACP Portal.

JC refers to XXXX, CAA Airspace Regulator (Environment).

“Item 3 – Issues or opportunities arising from proposed change

JC requested further information from UAVE regarding UAS flights over inhabited areas. GG responded that the UAVE UAS Operating Safety Case (OSC) states that flights can only be conducted in rural areas away from any towns and villages. JC advised that if the flights do not overfly inhabited areas then assessment of UAS noise could be scoped out. Additionally as the Danger Area is unlikely to result in rerouting of other airspace users then the assessment of the consequential noise impacts on other airspace users can also be scope out. “

7. UAVE Ltd response

7.1 UAVE Ltd responses to change proposal feedback:

UAVE Ltd appreciates the feedback that other airspace users took the time to provide and looks forward to working with them (and the CAA) to agree an airspace design and robust deconfliction process that satisfies everyone where reasonably practicable.

Having reviewed this valued feedback, UAVE Ltd considers and/or proposes the following:

7.1.1 Deconfliction process

Operational Area, Contingency Area and Emergency Buffer

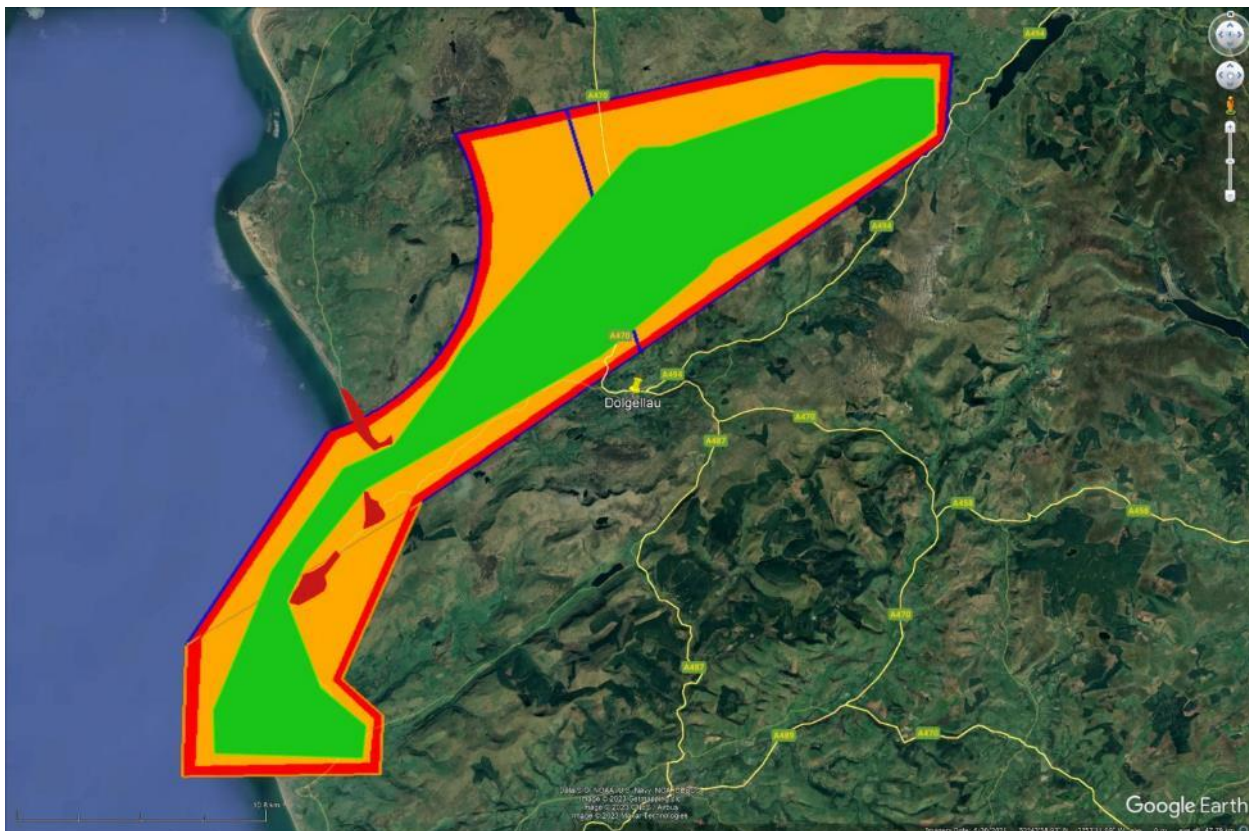


Figure 14: Map of TDA complex showing Operational Area in solid green, Contingency Area in solid orange and Emergency Buffer in solid red. Smaller red polygons denote geo-fenced exclusion zones over populated areas

The TDA complex has an emergency buffer of 500m laterally and 500ft vertically built into the design. Therefore the UAV will not fly within 500m of 500ft of any other air-user flying along the TDA boundary. This Emergency buffer is marked in red on the map above.

Populated areas such as Barmouth which sit within the TDA are geo-fenced exclusion zones specified within the autopilot system to ensure that UAV operations are not undertaken over populated areas.

The Operational Area, marked in green, denotes the area in which the UAV survey operations and transit to and from Talybont airfield are planned to be undertaken.

The remainder of the airspace is defined as the Contingency Area and is marked in orange. Field crew will be aware of the proximity of the UAS to each of these airspace classification volumes as the information is on the flight monitor map facility on the ground station. The position of the aircraft determined from the GPS

navigational information relayed to the ground station is superimposed on this same map with a real-time update (maximum refresh delay 2 seconds).

UAVE Ltd has confirmed its deconfliction process and has produced a comprehensive and robust Temporary Operating Instruction (TOI) in collaboration with the emergency services and the CAA.

UAV Loiter positions

UAVE will put in place a network of 4 pre-agreed loiter positions at ~10km intervals which the UAV could reach within 7.5 minutes of notification where the UAV could loiter, in a 200m radius at 500ft agl, to enable a safe crossing of the TDA for NPAS, MCA, SAR or HEMS operations, if suitable UAV fuel reserves were remaining.

A map of suggested loiter points is below showing the 200m loiter radius in red and 700m radius in yellow which would provide min 500m separation.

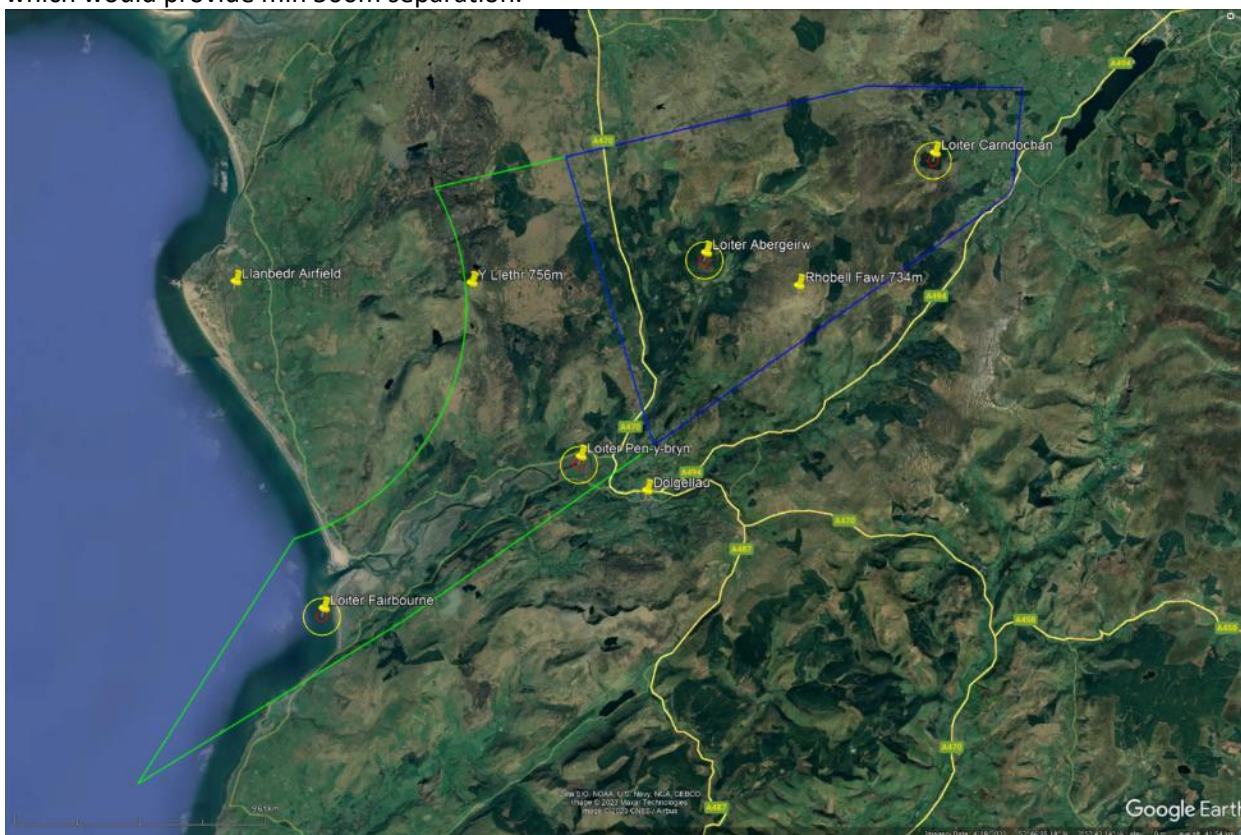


Figure 15: Map of TDA ALPHA (now EG D298B) and TDA CHARLIE (now EG D298C) showing location of loiter points

Table of Loiter Points

Loiter Point Name	Latitude	Longitude	Ground Altitude, ft amsl	Loiter Altitude, ft amsl
Loiter Fairbourne	52°41'56.32"N	4° 4'1.86"W	0ft	500ft
Loiter Pen-y-bryn	52°45'12.82"N	3°55'25.13"W	7ft	600ft
Loiter Abergeirw	52°49'29.38"N	3°51'18.64"W	1214ft	1800ft
Loiter Carndochan	52°51'40.21"N	3°43'32.95"W	1224ft	1800ft

Summary of protection measures

- NOTAM 24 hours in advance of TDA activation
- DAAIS hosted by RAF Valley
- Pre-defined UAV loiter points with the TDA
- Mode S and ADS-B EC out on the UAV
- ADS-B In monitored by the Ground Crew
- TDA and loiter points uploaded to Airbox
- Ground Crew contactable during operations on Air Band Radio
- Ground Crew contactable during operations on Mobile Phones

The TOI is attached as Appendix U.

No UAS operations will be conducted over inhabited areas.

Electronic Conspicuity

The Prion Mk3 UAV will be fitted with an ADS-B Transponder and provide an ADS-B out discrete squawk of 3765 during all flight operations.

For this survey the flight operations profile of the UAV, 150-500ft agl in an area of steep terrain, will likely mean that UAV ADS-B position information is not available via direct line of sight to other air users 100% of the time the UAS is airborne.

7.1.2 Airspace change

- Having reviewed the feedback response from stakeholders & wishing to work with all stakeholders in a mutually productive safe manner, UAVE Ltd considers & or proposes to change the design of the TDA as detailed below.

Details of the volume of airspace required including coordinates:

Following feedback from the CAA the definition of TDA Arc was changed and coordinates rounded to nearest second. TDA BRAVO was re-named EG D298A. TDA ALPHA was split into two portions EG D298B and EG D298C. EG D298B and EG D298C delimit the core survey area and enable the survey areas to have NOTAM's activated independently to enable a more efficient use of airspace than the single larger TDA ALPHA as previously proposed. The activation start date was changed from July to October 2023.

Following engagement, the original proposed TDA ALPHA (Blue Outline Polygon) has been reduced in size at the eastern end to provide low level access for RAF fast jet training and split into two areas now termed revised EG D298B (blue filled polygon) and revised EG D298C (green filled polygon). This means that when daily operations are planned solely within the revised EG D298B boundary the revised EG D298C airspace can be left open for normal access.

The original proposed TDA BRAVO (Now EG D298A) (Pink Outline Polygon) has been reduced in size along it's eastern border to provide access to Peniarth Estate Airfield (revised Orange filled polygon).

UAVE propose these TDA's will be notified by NOTAM's on a daily basis meaning only airspace required for the days UAV flights will be active.

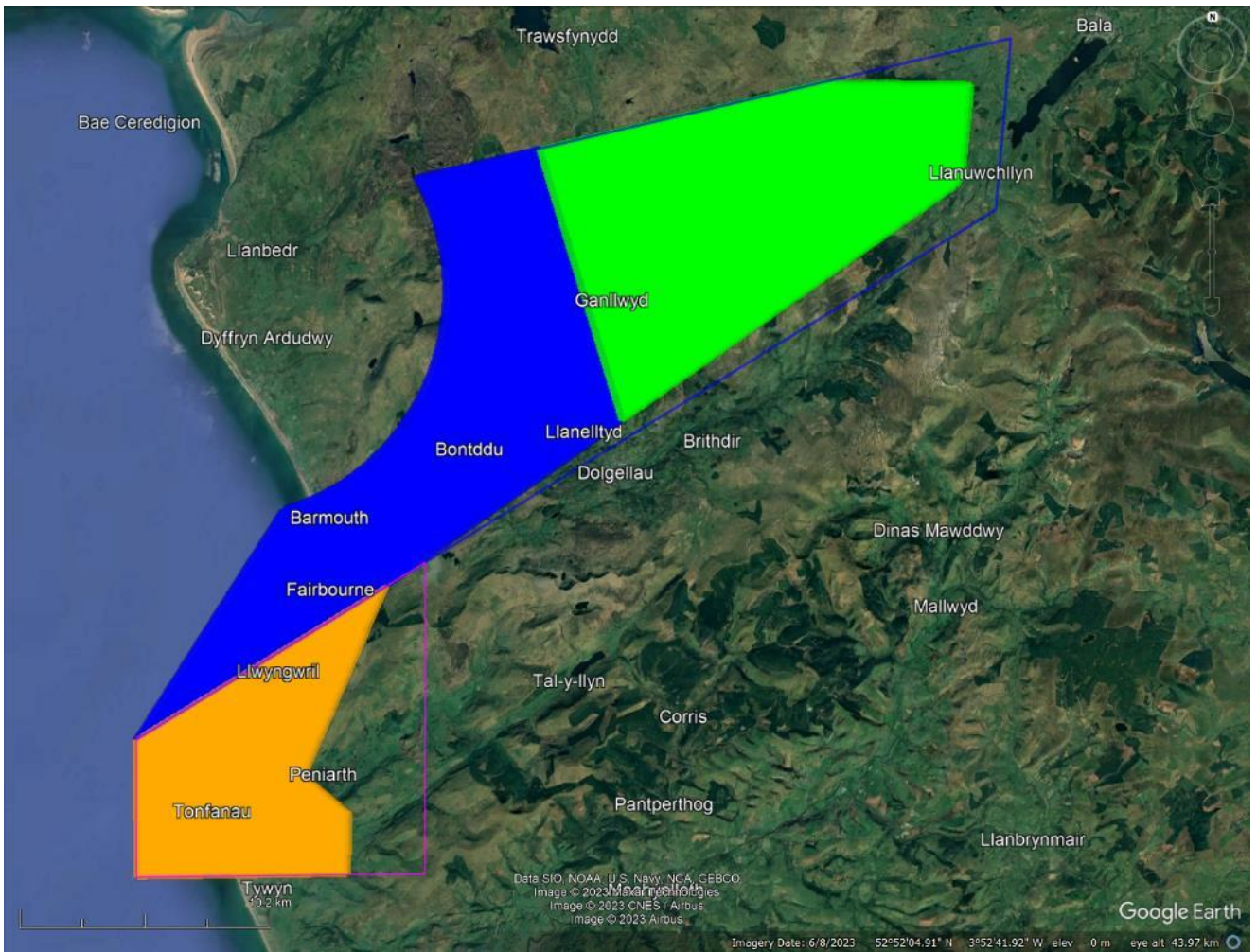


Figure 16: Comparison of original proposed TDA ALPHA (Blue outline polygon) and the Revised EG D298B (Blue Filled Polygon) and EG D298C(green filled polygon) and comparison of original proposed TDA BRAVO (Pink outline polygon) and the Revised EG D298A (Orange Filled Polygon)

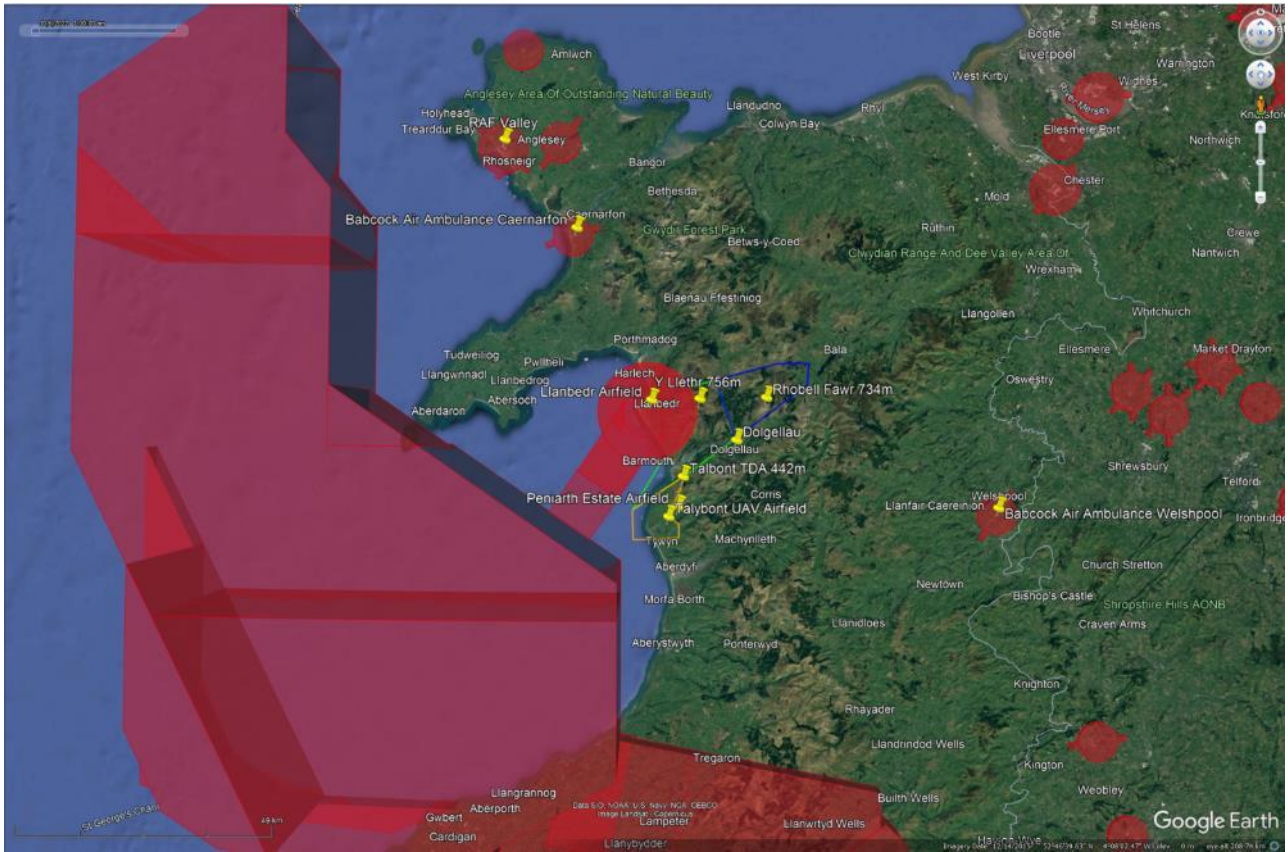


Figure 17: Regional View Revised TDA Complex, EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon) Existing Danger Areas (red polygons)



Figure 18: Zoom of Revised TDA Complex – EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon)

The survey task is for the aircraft to fly at an altitude of between 150-500ft above the surface, allowing for a minimum 500ft vertical separation between the UAV and any other air traffic gives a required segregated airspace height for the TDA of 1,000ft above surface level.

The table below provides the maximum height of the surface within the proposed TDA Complex EG D298A,B&C

TDA	Max Ground Level, ft AMSL	TDA Ceiling Height, ft AMSL
EG D298A	1,450	2,500
EG D298B	2,479	3,500
EG D298C	2,407	3,500

EG D298A has been designed to enable transit from the survey area to Talybont Airfield. The lower terrain relief of EG D298A compared to EG D298B enables EG D298A to have a lower TDA ceiling height of 2,500ft AMSL which provides a lower crossing height for other airspace users.

The beyond visual line of sight UAS operations will be contained wholly within the TDA with UAS operations coming no closer than 500m with any outside edge of the TDA complex.

REVISED EG D298A



Figure 19: Map of EG D298A – Orange Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2		3
TDA1: EG D298A Talybont (Orange Polygon)				Lower Limit: SFC Upper Limit: 2500 ft AMSL		Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00-16.45 DAAIS: Valley LARS FREQ: 125.225 DAAIS Alternative: LONDON FIS FREQ: 124.750 TEL: UAVE Ltd Flight Crew 07773 771812 Sponsor: UAVE Ltd
#	Latitude	Longitude	Comments			
a)	523824N	0041007W	Westernmost join point with EG D298B			
b)	524155N	0040115W	Easternmost join point with EG D298B			
c)	523744N	0040400W				
d)	523656N	0040222W				
e)	523535N	0040221W				
f)	523523N	0040959W				
g)	523824N	0041007W	Westernmost join point with EG D298B			

This equates to a total surface area of 68 sq km and a volume of 58 cubic kilometres of airspace within EG D298A. The volume of airspace is calculated from average mean sea level (AMSL).

REVISED EG D298B

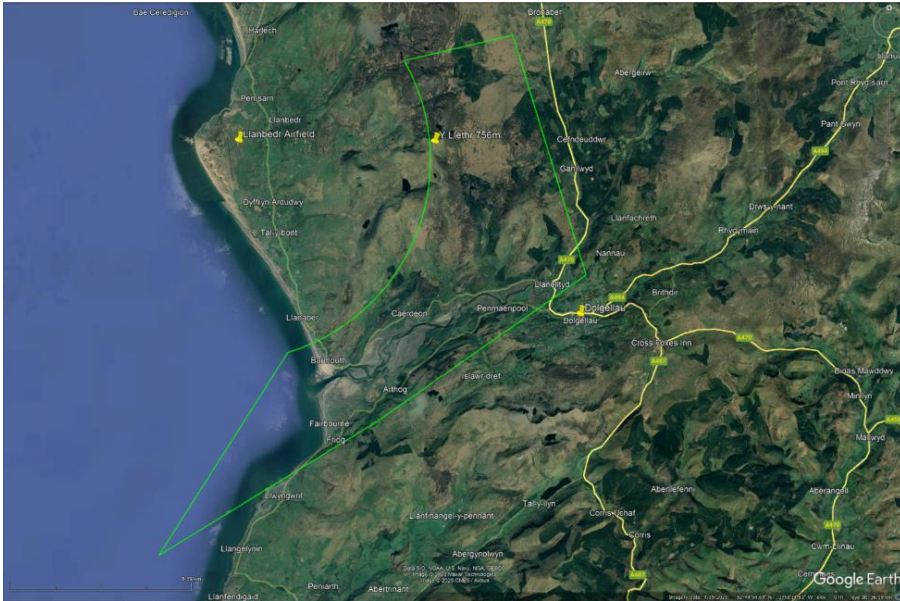


Figure 20: Map of EG D298B – Green Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2		3
TDA 2: EG D298B (Green Polygon)				Lower Limit: SFC Upper Limit: 3500 ft AMSL		Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00-16.45 DAAIS: Valley LARS FREQ: 125.225 DAAIS Alternative: LONDON FIS FREQ: 124.750T EL: UAVE Ltd Flight Crew 07773 771812 Sponsor: UAVE Ltd
#	Latitude	Longitude	Comments			
a)	525053N	0040036W	Northernmost point of arc			
b)	525136N	0035609W	Northernmost join point with EG D298C			
c)	524541N	0035252W	Southernmost join point with EG D298C			
d)	524155N	0040115W	Easternmost join point with EG D298A			
e)	523824N	0041007W	Westernmost join point with EG D298A			
f)	524333N	0040503W	Southernmost point of Arc			
g)	Then anticlockwise by arc of circle radius 5NM centred on 524817N 0040738W to					
h)	525053N	0040036W	Northernmost point of arc			

This equates to a total surface area of 136 sq km and a volume of 146 cubic kilometres of airspace within EG D298B. The volume of airspace is calculated from average mean sea level (AMSL).

REVISED EG D298C

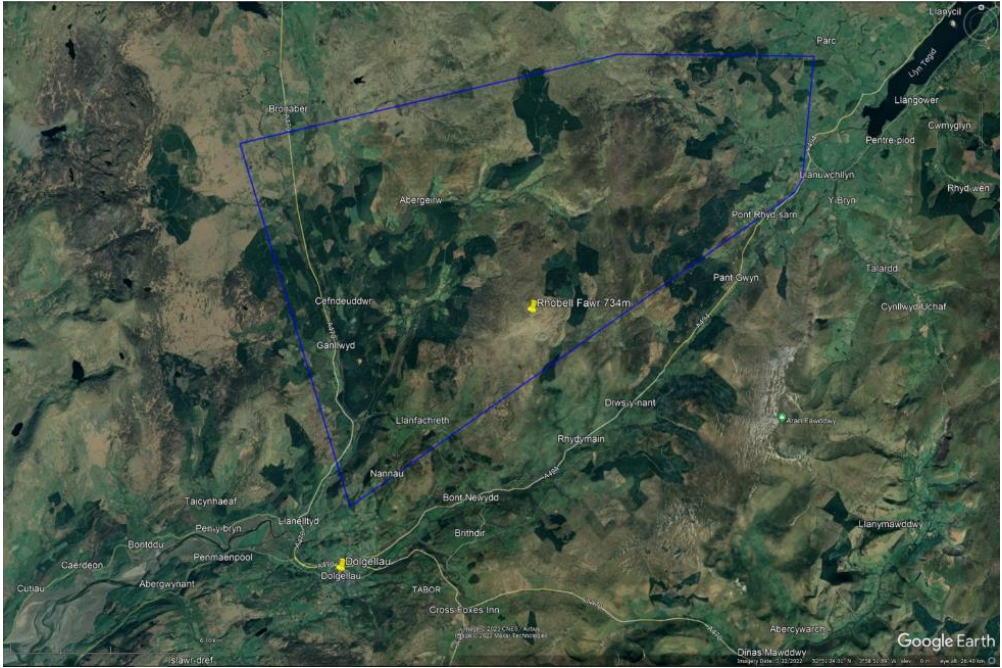


Figure 21: Map of EG D298C – Blue Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2	3	
TDA 3: EG D298C (Blue Polygon)				Lower Limit: SFC Upper Limit: 3500 ft AMSL	Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00-16.45 DAAIS: Valley LARS FREQ: 125.225 DAAIS Alternative: LONDON FIS FREQ: 124.750 TEL: UAVE Ltd Flight Crew 07773 771812 Sponsor: UAVE Ltd	
#	Latitude	Longitude	Comments			
a)	525136N	0035609W	Northernmost join point with EG D298B			
b)	525313N	0034551W				
c)	525316N	0034031W				
d)	525114N	0034046W				
e)	525100N	0034059W				
f)	524541N	0035252W	Southernmost join point with EG D298B			
g)	525136N	0035609W	Northernmost join point with EG D298B			

This equates to a total surface area of 136 sq km and a volume of 146 cubic kilometres of airspace within EG D298C. The volume of airspace is calculated from average mean sea level (AMSL).

Details of the required hours of operation:

Time: Monday – Friday (inc. public holidays): Hours (UTC): 07.00-16.45

Duration: 23rd October 2023 to 20th January 2024

8 Stakeholders

8.1 Civil Aviation Authority

The CAA is involved at every stage of the airspace change process.

8.2 Stakeholders

The following 31 stakeholders declined to respond to either the initial email or the two reminder emails

#	Organisation	Sent Date	3 week reminder date sent	Final 6 week reminder date sent	Close Date
1	Airspace4All	29.11.2022	20.12.2022	13.01.2023	17.01.2023
2	Airport Operators Association (AOA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
3	Aircraft Owners and Pilots Association (AOPA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
4	Airspace Change Organising Group (ACOG)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
5	Aviation Environment Federation (AEF)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
6	British Airways (BA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
7	BAe Systems	29.11.2022	20.12.2022	13.01.2023	17.01.2023
8	British Airline Pilots Association (BALPA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
9	British Balloon and Airship Club	29.11.2022	20.12.2022	13.01.2023	17.01.2023
10	British Business and General Aviation Association (BBGA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
11	British Hang Gliding and Paragliding Association (BHPA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
12	British Microlight Aircraft Association (BMAA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
13	British Model Flying Association (BMFA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
14	British Skydiving	29.11.2022	20.12.2022	13.01.2023	17.01.2023
15	Drone Major	29.11.2022	20.12.2022	13.01.2023	17.01.2023
16	General Aviation Alliance (GAA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
17	Guild of Air Traffic Control Officers (GATCO)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
18	Honourable Company of Air Pilots (HCAP)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
19	Helicopter Club of Great Britain (HCGB)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
20	Heavy Airlines	29.11.2022	20.12.2022	13.01.2023	17.01.2023
21	Iprosurv	29.11.2022	20.12.2022	13.01.2023	17.01.2023
22	Isle of Man CAA	29.11.2022	20.12.2022	13.01.2023	17.01.2023
23	Light Aircraft Association (LAA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
24	Low Fare Airlines	29.11.2022	20.12.2022	13.01.2023	17.01.2023
25	Military Aviation Authority (MAA)	29.11.2022	20.12.2022	13.01.2023	17.01.2023

26	PPL/IR (Europe)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
27	UK Airprox Board (UKAB)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
28	UK Flight Safety Committee (UKFSC)	29.11.2022	20.12.2022	13.01.2023	17.01.2023
29	United States Air Force Europe (3rd Air Force-Directorate of Flying (USAFE (3rd AF-DOF))	29.11.2022	20.12.2022	13.01.2023	17.01.2023
30	GA Pilot	29.11.2022	20.12.2022	13.01.2023	17.01.2023
31	GA Pilot	29.11.2022	20.12.2022	13.01.2023	17.01.2023

The following stakeholders did respond and the table summarises the discussions. The full texts of all the emails is found in the relevant appendices (Apx)

Apx	Organisation	Sent	Email Receipt	Questions	Action
A	Airfield Operators Group (AOG)	Y	20.12.2022	No longer the rep	Remove from email list
B	Association of Remotely Piloted Aircraft Systems UK (ARPAS-UK)	Y	17.01.2023	Supportive	No action
C	British Gliding Association (BGA)	Y	04.12.2022	Provided information on the number of glider flights on weekdays. Asked about TDA crossing service	Responded radar based crossing service not appropriate for terrain and flight profile. UAVE requested further info on gliding activity on weekdays below 3500ft for the May-July period. Email discussion concluded that if UAVE provide reasonable notice of activation via NOTAM and a DAAIS then they would not have an issue with the proposal.
D	British Helicopter Association (BHA)	Y	29.11.2022	Asked about TDA Crossing service	Responded radar based crossing service not appropriate for terrain and flight profile.

E	Ministry of Defence - Defence Airspace and Air Traffic Management (MoD DAATM) & RAF VALLEY	Y	30.11.2022	Contents Received. Will respond within timeframe	The area is heavily used by the MoD. Email discussion and Liaison Visit with RAF Valley. Following engagement, the original proposed eastern TDA ALPHA (now EG D298C) was reduced in size at the eastern end to provide low level access for RAF fast jet training. It was agreed a MoU be put in place to cover operations.
F	NATS	Y	29.11.2022	Contents received	No action
G	Navy Command HQ	Y	18.01.2023	No Concerns	No action
H	Talybont Airfield Owner/Operator	Y	29.11.2022	Received	No action
I	GA Pilot	Y	29.11.2022	Access requested to Talybont and Peniarth during TDA operations	Redesigned TDA BRAVO (now Eg D298A) to exclude Peniarth Estate airfield and reduced the height of the TDA.
J	GA Pilot	Y	29.11.2022	Contents Noted	No action
K	GA Pilot	Y	20.12.2022	Received	No action
L	GA Pilot	Y	21.12.2022	Has an over-arching objection to <u>any</u> TDA for the purposes of segregated RPAS operations rather than any <u>specific</u> objection to the Dolgellau TDA in particular.	Questions passed to CAA
M	Llanbedr Airfield Operator	Y	29.11.2022	Requested Airspace booking dates for existing danger Area Complex EGD217 and if Llanbedr Airfield would be used as an operations base.	Email discussion focussed on procedure for utilising EGD217 if required.
N	Maritime and Coastguard Agency (MCA) & ARCC	Y	30.11.2022	Wanted to understand how interaction between operational SAR flights and the UAV would be managed.	UAVE sent the TOI for Newton Stewart as a reference document and agreed to put in place a revised version for Dolgellau
O	Babcock International	via BHA	04.01.2023	Wanted to understand how interaction between operational HEMS flights and the UAV would be managed.	UAVE sent the TOI for Newton Stewart as a reference document and agreed to put in place a revised version for Dolgellau

T	NPAS	Via CAA	04.05.2023	Requested additional safety measures with TDA notified on Airbox and ADS-B in visible at Ground Control Station	Additional safety measures researched and agreed by UAVE
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KEY

Green Fill = Positive / Acceptable, Pink Fill = Neutral, Orange Fill = Negative/Unacceptable

All stakeholders are detailed in the submission.

The stakeholder list was built from the NATMAC distribution list.

The owners and operators of local airfields (Llanbedr, Talybont and Peniarth Estate) were added along with local GA pilots identified by the owner of Talybont and Peniarth Estate airfields.

In addition, one GA Pilot requested via the ACP portal to be added to the stakeholder list.

8.3 Complaints during operations

During UAS operations UAVE will actively monitor and log any further comments or complaints from the airspace community with a report provided at the end of the operations to the CAA. The info@uave.co.uk email address will be advertised within the AIC for this specific purpose.

Appendix A Airfield Operators Group

From: XXXX

Sent: Tuesday, December 20, 2022 12:54 PM

To: XXXX

Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

I am no longer the AOG rep. on NATMAC.
Please amend your records and delete me from your mailing list.
Best regards and thanks.
XXXX

Sent from my iPhone

Appendix B ARPAS-UK

From: XXXX

Sent: Tuesday, January 17, 2023 9:52 AM

To: XXXXX

Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Dear XXXX,

Thank you for your email and your time this morning on the telephone.

On behalf of ARPAS UK, the Drone trade association, I fully support your ACP 2022-025 request for a TDA as set out in your targeted stakeholder engagement letter dated 29th November 2022. In particular we support further UAS BVLOS operations for the purposes of further developing magnetic geophysical surveys, which we see as an excellent use case.

Kind regards

XXXX

XXXX
Regulation Director

ARPAS-UK
XXXXX
www.arpas.uk
Twitter: @ARPASUK
LinkedIn: ARPAS-UK

XXXX



Appendix C British Gliding Association

From: XXXX
Sent: Friday, February 3, 2023 10:24 AM
To: XXXXX
Cc: XXXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your consideration.

For the proposed TDA NOTAM will be issued giving 24 hours advanced warning of all active UAS flying days.

The DAAIS will provide a frequency you can call to establish whether the area is active.

Please let me know if any other gliding clubs would like to be added to the interested parties list.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

M XXXX

T XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 02 February 2023 17:26
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Thanks XXXX

We expected that the TDA would in fact be Prohibited due to the need to segregate the UAS. Just checking



Can we suggest that during operation you also monitor 'FLARM Radar' as most gliders operating in that area are likely to be FLARM-equipped. Some, but not all, will also have Mode C/S and ADS-B.

There are many web sites that provide a 'FLARM Radar' service – for example <https://glideandseek.com/> or <http://live.glidernet.org/>

We can't easily produce Flight Path maps restricted to only those three months. But I have looked at activity

levels in that area over the past few years and provided we have

Reasonable notice of activation via the NOTAM system, and
A frequency we can call to establish whether the area is active (a cancellation NOTAM is hard to pick up in flight)

then I don't think we will have an issue.

We at Denbigh Gliding would certainly like to be added to your list of 'interested parties' – we will check with other gliding sites whether they would also like to be added.

Best regards

XXXX

From: XXXX
Sent: 01 February 2023 12:17
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your feedback.

In answer to your questions:

Q1) If you are describing it as a 'Danger Area', with associated DAAIS, do you expect this airspace to be prohibited to other traffic in the periods of operation?

The Temporary Danger Area (TDA) with associated DAAIS would be prohibited to other air traffic during active periods. The TDA would be activated by NOTAM.

Q2) How do you propose to monitor for 'intruders' – inadvertent or otherwise – during the periods of activation?

Due to the steep nature of the terrain in the survey area radar coverage cannot be relied upon for monitoring therefore UAVE will monitor the local GA VHF channel and will be actively broadcasting the UAV position on both Mode S and ADS-B out.

Whilst the TDA complex duration is requested for 90 days, the SUA operations team have planned to mobilise for 2 weeks (10 working days) of which 5 days are expected to be SUA flying days. The TDA will only be activated, by NOTAM, on active SUA flying days to minimize the impact of this airspace change on other airspace users. NOTAMs will be advised at least 24 hours in advance. In the event that operations on any given day finish early the NOTAM will be de-activated to release the airspace. The DAAIS will be available to provide updates on activity at any given time during the proposed hours of operation from 08:00 to 18:00.

UAVE would be happy to include you on the list of interested parties whom we will notify when the SUA operation window is narrowed down.

Best regards,

XXXX

Business Development
UAVE Limited



W www.uave.co.uk

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 31 January 2023 17:56

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Thank you XXXX,

I will look at preparing some data for those months over a number of years as this will provide a more realistic averaged picture of traffic levels. The routes tend to follow the high ground, to take advantage of both ridge lift and thermals breaking away from the peaks.

If you are describing it as a 'Danger Area', with associated DAAIS, do you expect this airspace to be Prohibited to other traffic in the periods of operation?

How do you propose to monitor for 'intruders' – inadvertent or otherwise – during the periods of activation?

I suspect that the most important mitigations are going to be how you predict and communicate the dates and times of your operation, and the means you provide for pilots before and during flight to establish whether your UAV is airborne. If this is done in a proactive and flexible manner, I am sure we can come to a sensible way to work together.

Best regards

XXXX

From: XXXX

Sent: 31 January 2023 16:16

To: XXXX

Cc: XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your prompt reply and the link to the gliding club locations.

The focus on data from May-July 2022 mimics the window of potential UAS operations in 2023.

If we have a better understanding of the historical frequency of weekday glider flights per month within the area we can use the information to better understand the impact of the proposed TDA on gliding activity.

Best regards,

XXXX

Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX>

Sent: 31 January 2023 15:41

To: XXXX

Cc: XXXX

Subject: ACP-2022-025 Targeted Stakeholder Engagement

Hello XXXX

Pete has passed on your enquiry.

I would reiterate that the heat map we have already provided is weekday only and below 3500 ALT.

Can I ask why you are focussed on those specific months and only in 2022? A single year's data doesn't usually provide a typical picture.

In principle, gliding might take place in this area from any club in the UK. In practice, the majority will be from those in Wales and the west of England. See <https://www.gliding.co.uk/club-finder/>

I can confirm that thermal activity is usually declining by 6pm, so the 3 hour 'window' 6pm to 9pm isn't much use I'm afraid.

Best regards

XXXX, Denbigh Gliding

From: XXXX <XXXX>

Sent: Tuesday, January 31, 2023 11:03 AM

To: XXXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your initial response.

Can you provide any of the additional information requested below to help assess the impact of our proposed UAS survey.

A response by Monday 6th February would enable the information to feature in the Targeted Stakeholder Engagement Report for the CAA.

Best regards,

XXXX

Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: 13 January 2023 17:37

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your comments and the heat map.

Responses to your questions are included below in red.

Please can you provide further information on the gliding activities in the Dolgellau area to enable us to better assess the impact of the TDA.

In particular:

A heat map of weekday flights below 3500ft asl from the period from May 2022 to end July 2022

A summary table detailing the number of **weekday** flights below 3500ft asl in May 2022, June 2022 and July 2022

The location of the airfields used by you members

The heat map shows a few preferred routes, do these target the bare rock high ground?

Our UAV operations are planned to conclude by 6pm each day, is the three hours until sunset (~9pm in May-July) a suitable window for thermals and glider flights?

Best regards,

XXXX

Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX XXXX

Sent: 05 December 2022 16:56
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your comments and especially the heat map.
I will discuss with the operations team and get back to you.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 04 December 2022 20:25
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX

Thanks. Following discussion with local gliding operators, several points have emerged:
A heatmap* of weekday glider flights crossing the area below 3500' demonstrates that despite the statement "the majority of current flights in this area to be recreational and be undertaken on evenings and at weekends" there is recreational activity taking place midweek that will be impacted by your proposed TDA. Gliding activity is impacted by weather of course.

Noted.

We note that 'Altitude' and 'Flight Level' are being used when ideally you should refer solely to 'Altitudes'.

Thank you.

'The TDA is requested to be available for a 90 day period to enable efficient scheduling of the survey operations.' We recognise that you are planning for next summer and are probably dealing with a lot of uncertainties in the scheduling. However, this does mean that it is much more difficult for us to schedule our planned activities to avoid the 10 days out of 90 days when the TDA will be active. That needs to be addressed.

The window of operation will become clearer the nearer we get to the survey operations. We will provide more clarity on this as our planning progresses, although we cannot plan for the weather, so a level of uncertainty will remain.

How will notification be managed? Will local ATC (Valley/Llanbedr/Caernarfon) be aware of when the UAS active and inactive during that day? Or will there be a dedicated frequency for aircraft to establish whether the UAS is in the air?

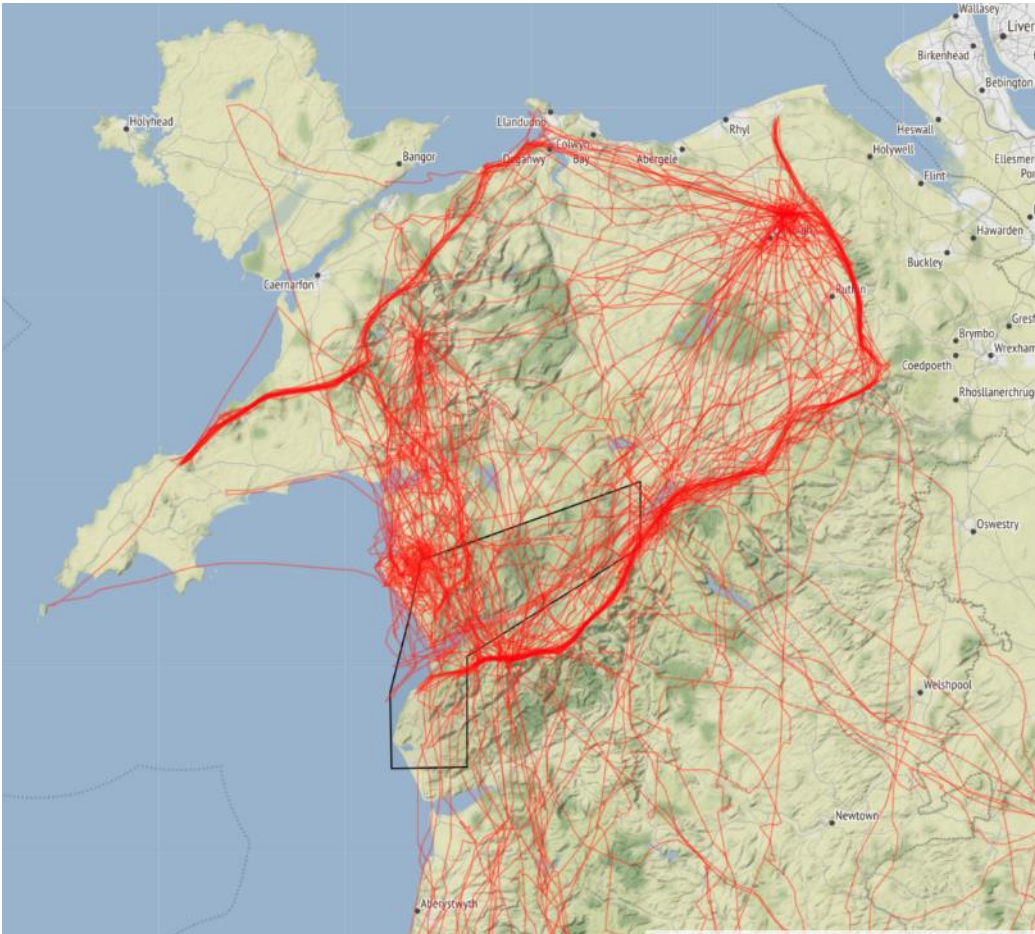
It is expected that local ATC will provide a DAAIS, although the details are not yet finalised. The TDA would only be activated whilst UAV operations were taking place.

It should of course be possible for aircraft to have access to a TDA crossing service. How will the crossing service be notified and provided, taking into consideration the terrain and that traffic will be below 3500' asl?

As the survey area is within an area of steep terrain and with flights between 150ft and 500ft agl we do not

expect to have full radar coverage of the UAV during operations and as such we would be unable to provide an ATC, radar based, TDA Crossing Service for this proposed TDA. Instead we have proposed a Danger Area Activity Information Service.

*The heat map:



We look forward to your responses.
Kind regards
XXXX

Appendix D British Helicopter Association

From: XXXX <XXXX>
Sent: Tuesday, November 29, 2022 3:37 PM
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your email.

As the survey area is within an area of steep terrain and with flights between 150ft and 500ft AGL we do not expect to have full radar coverage of the UAV during operations and as such we would be unable to provide an ATC, radar based, TDA Crossing Service for this proposed TDA. Instead we have proposed a Danger Area Activity Information Service with the host and frequency yet to be determined.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 29 November 2022 14:26
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX

Having read your proposal, I was struck there is no mention of a TDA Crossing Service, will this be provided by Llanbedr ATC?

Yours

XXXX

XXXX
Chief Executive
British Helicopter Association
Unit C2
Fairoaks Airport
Chobham
Surrey. GU24 8HU

XXXX

www.britishhelicopterassociation.org



RotorTechUK
Helicopter & UAV Expo + Conference

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A horizontal banner with a dark blue to red gradient background. On the left is the RotorTechUK logo, which includes a stylized rotor icon. To the right of the logo, the text '8-10 JUNE 2023' and 'SYWELL AERODROME' is displayed in white. On the far right, there is a light blue button with the text 'VISIT NOW' in white.

Appendix E Ministry Of Defence – Defence Airspace and Air Traffic Management (DAATM) & RAF VALLEY

From: XXXX
Sent: Friday, February 17, 2023 2:24 PM
To: XXXX <XXXX>
Cc: XXXX; XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

SATCO has come back to me with good news, Your request for us to operate as the Danger Area Activity Information Service (DAAIS) has been approved and we will operate as Valley LARS on frequency 125.225.

Once I have the Draft MOU complete, I will send it over to you for review prior to publishing officially.

Regards,

XXXX.

XXXX, GIFireE | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY | XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>
Sent: 17 February 2023 11:07
To: XXXX
Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Hi Will,

I need to prepare a report for the CAA next week and include the DAAIS information. The MOU is less time critical.

Are you able to host the DAAIS?

Thanks,

XXXX

On 17 Feb 2023, at 10:31, XXXXwrote:

XXXX,

Just wanted to keep you in the Loop as to where I am with the MOU. I am just awaiting comment back from SATCO to finalise some of the details of the MOU. I was delayed as my laptop decided to give up the ghost and

I lost all my previous work. I am now back to where I was and should have the MOU to you next week.

Regards,

XXXX.

XXXX, **GIFireE** | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>

Sent: 09 February 2023 18:54

To: XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks.

The Prion Mk3 UAV is fitted with a Trig TT21 transponder which provides both Mode S and ADSB-Out.

For the TDA UAVE sponsored in Dumfries last year, the DAAIS was hosted by Prestwick Airport ATC on 129.450 Mhz to enable airspace users to have up to date information on the activity status of the TDA complex. Under CAA guidance, this was provided as a "live" conversation not a recorded message. The flight profile of the UAS operations (150-500ft agl) and the complexity of the terrain did not allow permanent updates on position and hence offering a Danger Area Crossing Service for the TDA was not appropriate.

UAVE would like to request a similar DAAIS service from RAF Valley ATC for the proposed Dolgellau TDA complex. The UAS flight profile (150-500ft agl) and the complexity of the terrain make a Danger Area Crossing Service for the Dolgellau TDA complex inappropriate.

With RAF Valley hosting the DAAIS it would ensure rapid communication of the start of operations and the end of operations each day thus enabling the full use of any de-activated airspace on any given day.

Happy to answer any further questions or queries.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 09 February 2023 11:19
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

The Draft MOU is nearly complete. To make it as robust as possible please could you send me over details of the exact expectation you have of Valley ATC to provide you DAAIS. And also could you please re confirm what your UAS is capable of with regards to in and out transponders.

Please reply to myself and XXXX as she will be the SME for DAAIS and available traffic services.

Regards,

XXXX.

XXXX, GIFireE | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>
Sent: 08 February 2023 11:34
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

I am hoping to finalise my submission to the CAA this week for the TDA.

There are two things I wish to discuss:

Draft MOU for UAV ops
Hosting for the DAAIS

Please can you give me a call either today or tomorrow on my mobile 07736 691 911

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: 30 January 2023 10:45

To: XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX, XXXX,

Thanks for the feedback and your willingness to accommodate our UAS activities.

XXXX,

Please can you forward on a draft MOU.

Thanks,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 27 January 2023 13:17

To: XXXX

Subject: FW: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

Please see response from RAF Valley in reference to the update TDA submission, hopefully this means we have a solution that is fair and equitable for both parties.

If you need anything further, please let me know and thank you for your engagement on this.

Best regards,

XXXX

From: XXXX
Sent: 27 January 2023 11:59
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Sir,

PSB response from Sqn Ldr XXXX. OC Ops, Wg Cdr XXXX added comment that he was in agreement.

“Noting that the expected activation of the TDA will be a total of 5 days over a 2 week period in a 90 day block, the amended TDA south and east boundaries now enables aircraft in the low level system to route SW / NE to / from the Mach Loop with an easily identifiable feature to ensure safe separation e.g. stay south of the road before entering / on exiting the tight valley.”

“With an MOU in place and robust comms, 4 FTS should be able to maximise training opportunities whilst accommodating this UK plc task that is tied to that location. I assume UAVE is going to update their CAP 1616 submission accordingly but now see no ‘showstoppers’ from a 4 FTS perspective.”

Sqn Ldr XXXX also suggested an edit to the document as follows below

The proposed TDA complex (TDA ALPHA and TDA BRAVO) is within Class G airspace. UAVE expect the majority of current flights in this area to be recreational and be undertaken on evenings and at weekends. To mitigate the effect on other airspace users UAVE’s proposal is to activate the TDA only between 8am and 6pm local time (or ATC or daylight hours if either are shorter) and only on weekdays (Monday to Friday) leaving the weekends free of any additional flight restrictions. Whilst the TDA complex duration is requested for 90 days, the SUA operations are only expected to take 2 weeks (10 working days) and the TDA will only be activated, by NOTAM, on active SUA flying days to minimize the impact of this airspace change on other airspace users.

Following stakeholder engagement a revised design for both TDA ALPHA and TDA BRAVO is presented in this document, Version 2.

If there is anything else required from yourself or XXXX please let me know and I will do what I can to assist.

Regards,

XXXX.

XXXX, GIFireE | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY | XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX
Sent: 24 January 2023 16:47
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Please will you distribute at Valley, noting the short timeframe? Once responses are received please send on to me and I will pass on to XXXX.

Best regards,

XXXX

~~XXXX | SO2 Airspace Plans | Defence Airspace and Air Traffic Management | Aviation House | 1E Beehive Ringroad | Crawley | West Sussex | RH6 0YR | Mobile Telephone: XXXX~~

From: XXXX <XXXX>
Sent: 24 January 2023 16:19
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for organising and hosting the meeting at RAF Valley yesterday.

XXXX,

Attached is a .pdf showing the redrafted TDA Alpha following the guidance given in the discussions. The redrafted TDA coordinates are to follow. Please can you distribute the .pdf for comments, feedback by next Monday (30th January) would be appreciated.

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 20 January 2023 10:32
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

If you bring with you photographic ID you will be able to get booked in at the guardroom. And then if you take my external contact number from below and give me a ring once you are at the guardroom I will come and meet you to escort you onto camp.

Regards,

XXXX.

XXXX, **GIFireE** | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>

Sent: 20 January 2023 10:10

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Hi XXXX,

Thanks for the invite for Monday at RAF Valley.

Please can you let me know if you require ID or vehicle details in advance or whether I can complete entry registration on the day.

Thanks,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 19 January 2023 11:32

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks very much for getting in touch. I have been involved in the email trail between yourself and Sgt XXX so have an understanding of your requirements. To pull the meeting together I will need a bit of time as it would be a variety of key stakeholders that would want to be present so that we can all agree on a plan moving forwards.

What I will do is approach them to work out the best possible date of those 2 below and a time and get back to you if that's ok?

Regards,

XXXX.

XXXX, **GIFireE** | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>

Sent: 19 January 2023 11:17

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Is either Monday 23rd or Monday 30th January suitable for a liaison visit to RAF Valley to discuss military low-level flying requirements in the area of the proposed TDA.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 19 January 2023 10:27

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good morning XXXX,

XXXX (cc'd) will be the RAF Valley POC to discuss military low-level flying requirements in the area of the proposed TDA, please feel free to make contact directly to arrange a discussion/visit. I would be more than happy to join discussions but I am based in Portsmouth, so a virtual representation would be preferable, if possible.

Best regards,

XXXX

XXXX | SO2 Airspace Plans | Defence Airspace and Air Traffic Management | ~~Aviation House | 1E Beehive Ringroad | Crawley | West Sussex | RH6 0YR~~ | Mobile Telephone: XXXX

From: XXXX <XXXX>
Sent: 17 January 2023 09:48
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your detailed feedback.

UAVE would like to take up the offer of a liaison visit to RAF Valley to help us understand military low-level flying requirements in the Dolgellau area in order that a fair and equitable solution can be reached.

Please can you make the introductions so we can arrange a suitable date.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 16 January 2023 16:23
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

I am writing to you to provide the collated MOD feedback to ACP-2022-025. The bulk of the response has been provided by airspace users from 4 Flying Training School (4 FTS), based at RAF Valley, who routinely fly in the area. The engagement material for the ACP states that UAVE expect the majority of flights in the area to be recreational and undertaken at evenings at weekends. In reality, the area is heavily used by military aircraft and not just from RAF Valley, it is also well used by USAFE and other MOD aircraft.

Whilst 4 FTS could accommodate Area B, Area A will have a significant impact on military low-level flying as it blocks one of 2 routine low-level routes between North and South Wales (the Mach Loop). Although Area A does not sit directly over the Mach Loop, it makes routing to/from the Northern entry/exit impossible. The proposed TDA increases the 4 FTS risk of the Loss of Safe Separation (LoSS) against other military/GA traffic due to removal of a significant portion of the low-level operating area and funnelling through a small corridor

on the boundary of LFA 9 to get between North and South Wales. There is no flow control on the corridor as there is in the Mach Loop, so the risk of 'head to head' MAC is significantly increased. This risk would materialise when there is a 2500-3000 ft AMSL cloud base over Wales where 4 FTS aircraft need to remain at low-level as the Northeast to Southwest ridge of ground to the South of Lake Bala is impossible to route over.

Additionally, with LFA 7T active at the same time, this would be a significant impact to low-level operating areas available for 4 FTS aircraft. As a result, the aircraft may have to incur a fuel/time penalty to operate in LFA 16 or 17, or accept an increase in risk. There are specific flying training objectives against being exposed to the Mach Loop that would be hampered, as entry/exit from the South would be required. Area A may compress the totality of users in LFA 7 to a point where the risk of collision materialises.

It is possible to accommodate the proposed airspace and 4 FTS could cope if forced, as well as manage the risks; however, this proposal has been designed without understanding how the military use the area on a daily basis. If 4 FTS did not use LFA 7 for a period of 2 weeks over a 90 day period, it would seriously hamper output and would not solve the fundamental problem for other LFA 7 users. The MOD would like to understand whether the survey objectives could be achieved by adjusting proposed airspace dimensions, activation and usage times, or by exploring methods of deconfliction, which could potentially accommodate MOD and UAVE requirements. RAF Valley aircrew have proposed that a liaison visit would help UAVE to understand military low-level flying requirements in the area, so a fair and equitable solution can be reached between both parties.

The only other point raised was by 78 Sqn at Swanwick, whose radar maps cannot be amended on a temporary basis to display the TDA. They have requested that they are informed (via the Sponsor notifying DAATM) if and when the airspace is approved, so they can create an internal briefing note for controllers, which will inform them of the location and dimensions of the TDA so they can be relayed accordingly to relevant traffic.

Thank you for your engagement on the ACP and we hope that a solution can be agreed that would allow the requirements of all airspace users to be met.

Best regards,

XXXX

XXXX | SO2 Airspace Plans | Defence Airspace and Air Traffic Management | ~~Aviation House | 1E Beehive Ringroad | Crawley | West Sussex | RH6 0YR~~ | Mobile Telephone: XXXX

From: XXXX <XXXX>
Sent: Thursday, May 26, 2022 4:47 PM
To: XXXX
Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

OK, understood.

From: XXXX
Sent: 26 May 2022 16:35
To: XXXX
Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

I'm led to believe that will be part of the DATAM process, as they will consult with Valley during their process.

Kind regards,

XXXX

His/him

XXXX | SO3 A5 Ops | RAFALO | Dep ACLO | Station Operations | Operations Sqn | Operations Wing | RAF Valley | Holyhead | Anglesey | LL65 3NY | Internal: XXXX

'Training Aircrew, Saving Lives and Sustaining the Frontline'

From: XXXX <XXXX>

Sent: 26 May 2022 16:32

To: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

Thanks for your feedback.

We will engage with DATAM as part of the process.

Please can you still enquire as to if RAF Valley ATC would provide the Danger Area Activity Information Service (DAAIS) for this TDA.

Thanks,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 26 May 2022 16:08

To: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

I've discussed this with Sqn Ldr Ops, I was unaware that as part of the CAA process, they will contact DATAM who will process a consolidated Defence response!

As such, a visit here will likely be not required, and it will come from the airspace experts during the expressed consultation period.

Thank you for your early engagement with us thus far.

Kind regards,

XXXX

His/him

XXXX| SO3 A5 Ops | RAFALO | Dep ACLO | Station Operations | Operations Sqn | Operations Wing | RAF Valley | Holyhead | Anglesey | LL65 3NY | Internal: XXXX

'Training Aircrew, Saving Lives and Sustaining the Frontline'

From: XXXX <XXXX>

Sent: 26 May 2022 12:53

To: XXXX

Cc: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

Thanks for your call and your early engagement regarding the potential TDA around Dolgellau.

A summary of the points discussed is below:

The initial meeting for ACP-2022-025 between the CAA and UAVE has yet to be convened, so all timings are provisional and subject to the TDA evaluation process being green lighted by the CAA.

The proposed TDA outline, (orange polygon in DRAFT CAA ACP-2022-025 Targeted Stake Holder Engagement May 2022-v1.pdf) includes a lateral separation of 500m from any traffic passing along the boundaries of the TDA and a vertical separation of 500ft for any traffic passing over the TDA at the 3,500ft AMSL ceiling height (i.e. all UAV operations will be conducted between surface and 3,000ft AMSL within the TDA limits).

ACP-2022-025 on the CAA Airspace Change Portal shows a red polygon, this was provided to give a rough approximation to the focus area for airspace users and to solicit engagement in the process, the Orange polygon, as referenced in 2) shows the draft TDA design.

Operations are planned to be conducted from either Llanbedr or Talybont airfields, this has yet to be finalised. If operations were conducted from Llanbedr the landward portions of EG D217 would be activated on flying days as part of the flying activities. The final TDA design will likely be smaller once the final operations base is decided as transiting to both airfields will not be required.

A 6 week stakeholder engagement is planned to run from early June to mid/late July.

The TDA, if approved, would be available for BVLOS UAV operations from late September to late December.

The operations are planned to take 10 days, these could be consecutive however given the time of year these are likely to be in blocks to take advantage of suitable weather windows. On days no flight activity is planned the TDA will not be activated.

UAVE would provide 24 hours notice of airspace activation to RAF Valley as part of the NOTAM process, this should provide sufficient notice to the airmen at RAF Valley who tend to plan activities 2-3 hours in advance. UAVE requested if RAF Valley would provide the Danger Area Activity Information Service (DAAIS). In previous TDA's sponsored by UAVE the CAA requested this be a frequency whereby aviators could discuss in person with Air Traffic Control the status of the TDA on any particular day.

An initial assessment was that the location of RAF Valley low level flying activities would be impacted during the 10 days of planned operations but that RAF Valley would "try and be as co-operative as possible"

I welcome the continued dialogue with RAF Valley and look forward to a provisional meeting date in early June (in person or in Teams) to enable a more wide ranging discussion with your SME (Subject Matter Expert) stakeholders.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 26 May 2022 11:14

To: XXXX

Cc: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

1130 it is – speak then!

Kind regards

xxxx

His/him

XXXX | SO3 A5 Ops | RAFALO | Dep ACLO | Station Operations | Operations Sqn | Operations Wing | RAF Valley | Holyhead | Anglesey | LL65 3NY | Internal: XXXX

'Training Aircrew, Saving Lives and Sustaining the Frontline'

From: XXXX <XXXX>

Sent: 26 May 2022 11:10

To: XXXX

Cc: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

XXXX,

Thanks for getting back to me.

I am available from 11:30 for the rest of the day.

If 11:30 is suitable please call my mobile XXXX.

Otherwise please choose an alternative time this afternoon.

Thanks,

XXXX

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UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 26 May 2022 10:58

To: XXXX

Cc: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

Good Morning XXXX,

Can we set up a time to have a chat about the below?

Our main point at the moment is we need to understand operating area vs segregated area. The CAA airspace change website has a considerably larger areas displayed on their website.

Kind regards,

XXXX

His/him

XXXX | SO3 A5 Ops | RAFALO | Dep ACLO | Station Operations | Operations Sqn | Operations Wing | RAF Valley | Holyhead | Anglesey | LL65 3NY | Internal: XXXX

'Training Aircrew, Saving Lives and Sustaining the Frontline'

From: XXXX

Sent: 20 May 2022 12:34

To: XXXX

Cc: XXXX

Subject: RE: Dolgellau TDA early engagement and the provision of DAAIS

Good afternoon,

Thank you for your email, I have forwarded this email onto Fg Off XXXX, included in the email, who will look into this and be in touch in due course.

Kind regards,

XXXX

XXXX | Station Operations RAF Valley | Holyhead, Isle of Anglesey LL65 3NY

☎ DFTS: XXXX | ☎ Civ: XXXX ✉ Email: XXXX

This e-mail, and any files transmitted with it, is to be treated in accordance with its protective marking (if any) and is intended for the addressees only. If you are not a named addressee please notify the originator as soon as possible as this communication may contain privileged information. E-mail traffic on MOD systems is subject to monitoring, recording and auditing for lawful purposes. While this communication is believed to be free from viruses the MOD accepts no liability in this respect for any loss or damage. The statements expressed in this communication are personal and

do not necessarily reflect opinions or policies of the department.

From: XXXX <XXXX>
Sent: 20 May 2022 12:21
To: XXXX
Subject: Dolgellau TDA early engagement and the provision of DAAIS

Dear Sir/Madam,

UAVE have initiated an airspace change process with the CAA to ascertain if establishing a Temporary Danger Area north of Dolgellau is a suitable use of airspace to enable an unmanned aeromagnetic survey to be undertaken. The consultation period has yet to formally commence however I feel an early engagement would be beneficial given the proximity to the “Mach Loop”.

Airspace change ID
ACP-2022-025
Airspace change proposal public view (caa.co.uk)

A DRAFT Targeted Stake Holder Engagement is attached.

The proposed TDA area is within LFA7 and borders the northern and western edges of the “Mach Loop”.



I would welcome a telephone call on XXXX to discuss any initial concerns and also if RAF Valley would host the Danger Area Activity Information Service (DAAIS) in the event that the proposal is approved.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

T XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: Wednesday, January 25, 2023 4:13 PM

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

The redrafted coordinates and maps for the revised TDA's can be found in the attached .pdf.

CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2.pdf

Differences in the text from version 1 are highlighted in red.

Best regards,

XXXX

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UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: 24 January 2023 16:19

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for organising and hosting the meeting at RAF Valley yesterday.

XXXX,

Attached is a .pdf showing the redrafted TDA Alpha following the guidance given in the discussions. The redrafted TDA coordinates are to follow. Please can you distribute the .pdf for comments, feedback by next Monday (30th January) would be appreciated.

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 20 January 2023 10:32
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

If you bring with you photographic ID you will be able to get booked in at the guardroom. And then if you take my external contact number from below and give me a ring once you are at the guardroom I will come and meet you to escort you onto camp.

Regards,

XXXX

XXXX, GIFireE | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>
Sent: 20 January 2023 10:10
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Hi XXXX,

Thanks for the invite for Monday at RAF Valley.

Please can you let me know if you require ID or vehicle details in advance or whether I can complete entry registration on the day.

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 19 January 2023 11:32

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks very much for getting in touch. I have been involved in the email trail between yourself and Sgt XXX so have an understanding of your requirements. To pull the meeting together I will need a bit of time as it would be a variety of key stakeholders that would want to be present so that we can all agree on a plan moving forwards.

What I will do is approach them to work out the best possible date of those 2 below and a time and get back to you if that's ok?

Regards,

XXXX.

XXXX, GIFireE | OC Ops Flt | Station Operations | RAF Valley | Holyhead | Anglesey | LL65 3NY |
XXXX

TRiM Practitioner/Team Leader.

FOD Occurrence Report - Valley Airfield

FOD Occurrence Report - Mona Airfield

From: XXXX <XXXX>

Sent: 19 January 2023 11:17

To: XXXX

Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Is either Monday 23rd or Monday 30th January suitable for a liaison visit to RAF Valley to discuss military low-level flying requirements in the area of the proposed TDA.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 19 January 2023 10:27
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good morning XXXX,

XXXX (cc'd) will be the RAF Valley POC to discuss military low-level flying requirements in the area of the proposed TDA, please feel free to make contact directly to arrange a discussion/visit. I would be more than happy to join discussions but I am based in Portsmouth, so a virtual representation would be preferable, if possible.

Best regards,

~~XXXX~~

~~XXXX | SO2 Airspace Plans | Defence Airspace and Air Traffic Management | Aviation House | 1E Beehive Ringroad | Crawley | West Sussex | RH6 0YR | Mobile Telephone: XXXX~~

From: XXXX <XXXX>
Sent: 17 January 2023 09:48
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your detailed feedback.

UAVE would like to take up the offer of a liaison visit to RAF Valley to help us understand military low-level flying requirements in the Dolgellau area in order that a fair and equitable solution can be reached.

Please can you make the introductions so we can arrange a suitable date.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 16 January 2023 16:23

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

I am writing to you to provide the collated MOD feedback to ACP-2022-025. The bulk of the response has been provided by airspace users from 4 Flying Training School (4 FTS), based at RAF Valley, who routinely fly in the area. The engagement material for the ACP states that UAVE expect the majority of flights in the area to be recreational and undertaken at evenings at weekends. In reality, the area is heavily used by military aircraft and not just from RAF Valley, it is also well used by USAFE and other MOD aircraft.

Whilst 4 FTS could accommodate Area B, Area A will have a significant impact on military low-level flying as it blocks one of 2 routine low-level routes between North and South Wales (the Mach Loop). Although Area A does not sit directly over the Mach Loop, it makes routing to/from the Northern entry/exit impossible. The proposed TDA increases the 4 FTS risk of the Loss of Safe Separation (LoSS) against other military/GA traffic due to removal of a significant portion of the low-level operating area and funnelling through a small corridor on the boundary of LFA 9 to get between North and South Wales. There is no flow control on the corridor as there is in the Mach Loop, so the risk of 'head to head' MAC is significantly increased. This risk would materialise when there is a 2500-3000 ft AMSL cloud base over Wales where 4 FTS aircraft need to remain at low-level as the Northeast to Southwest ridge of ground to the South of Lake Bala is impossible to route over.

Additionally, with LFA 7T active at the same time, this would be a significant impact to low-level operating areas available for 4 FTS aircraft. As a result, the aircraft may have to incur a fuel/time penalty to operate in LFA 16 or 17, or accept an increase in risk. There are specific flying training objectives against being exposed to the Mach Loop that would be hampered, as entry/exit from the South would be required. Area A may compress the totality of users in LFA 7 to a point where the risk of collision materialises.

It is possible to accommodate the proposed airspace and 4 FTS could cope if forced, as well as manage the risks; however, this proposal has been designed without understanding how the military use the area on a daily basis. If 4 FTS did not use LFA 7 for a period of 2 weeks over a 90 day period, it would seriously hamper output and would not solve the fundamental problem for other LFA 7 users. The MOD would like to understand whether the survey objectives could be achieved by adjusting proposed airspace dimensions, activation and usage times, or by exploring methods of deconfliction, which could potentially accommodate MOD and UAVE requirements. RAF Valley aircrew have proposed that a liaison visit would help UAVE to understand military low-level flying requirements in the area, so a fair and equitable solution can be reached between both parties.

The only other point raised was by 78 Sqn at Swanwick, whose radar maps cannot be amended on a temporary basis to display the TDA. They have requested that they are informed (via the Sponsor notifying DAATM) if and when the airspace is approved, so they can create an internal briefing note for controllers, which will inform them of the location and dimensions of the TDA so they can be relayed accordingly to relevant traffic.

Thank you for your engagement on the ACP and we hope that a solution can be agreed that would allow the requirements of all airspace users to be met.

Best regards,

XXXX

XXXX | SO2 Airspace Plans | Defence Airspace and Air Traffic Management | ~~Aviation House | 1E Beehive Ringroad | Crawley | West Sussex | RH6 0YR~~ | Mobile Telephone: XXXX

From: XXXX <XXXX>
Sent: 29 November 2022 13:21
To: XXXX
Subject: ACP-2022-025 Targeted Stakeholder Engagement

Dear Sir / Madam,

UAVE Ltd (the airspace change sponsor) is seeking a temporary airspace change to support its 2 week-long fixed wing Unmanned Aircraft System (UAS) airborne geophysical survey in the Dolgellau area of Wales between 2 May 2023 and 30 July 2023.

The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

The CAA and/or UAVE Ltd have identified you and/or your organisation as a stakeholder for this engagement, which commenced today, Tuesday 29th November 2022 and will conclude on or after Tuesday 17th January 2023, a minimum seven week period (less the three Christmas / New Year bank holidays).

The attached document, CAA ACP-2022-025 Targeted Stake Holder Engagement 29Nov2022-v1.pdf, provides a summary of the Airspace Change proposal to allow you to comment formally on the TDA design and operational proposals. These proposals are not “set in stone” and UAVE Ltd are open to discuss amendments.

Please confirm your receipt of this email.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk
XXXX
T XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

Appendix F NATS

From: XXXX <XXXX>
Sent: Wednesday, January 11, 2023 3:15 PM
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Thanks Chris for your feedback.

Your response is noted and will be logged as part of the engagement.

From: XXXX
Sent: 10 January 2023 17:01
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Dear XXXX,

Thank you for providing NATS the opportunity to respond to your proposal.

We can confirm that there is no impact on our operation.

We also acknowledge the withdrawal of ACP 2022-078 (Scapa Flow).

Rgds
XXXX

Manager NATS Operational Policy
M: XXXX
E: XXXX

NATS Internal

Appendix G Navy Command HQ

From: XXXX
Sent: Wednesday, January 18, 2023 4:31 PM
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

No concerns or comments from an RN perspective.

KR,

XXXX

Lieutenant Commander XXXX | ATC Intelligent Customer | FGen NAvn Division | Navy Command Headquarters
| Sir Henry Leach Building, MP 2-4, Whale Island, Portsmouth, PO2 8BY | Tel: XXXX | Email: XXXX

From: XXXX <XXXX>
Sent: 18 January 2023 15:55
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

UAVE are seeking a temporary airspace change to support our 2 week-long fixed wing Unmanned Aircraft System (UAS) airborne geophysical survey in the Dolgellau area of Wales between 2 May 2023 and 30 July 2023.

The targeted engagement ran until yesterday however if you on behalf of Navy Command have any comments please respond soonest.

Otherwise a simple "no concerns or comments" response will suffice.

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 18 January 2023 08:25
To: XXXX
Cc: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Hello XXXX,

Our POC at Navy Command has now changed. I have cc'd the new incumbent Lt Cdr XXXX and could all future correspondence be sent to XXXX.

Kind regards,

XXXX

Commander XXXX | FGEN NAVN UAS Platform Lead | FGen NAVn Division | Navy Command Headquarters | Sir Henry Leach Building, MP 2-4, Whale Island, Portsmouth, PO2 8BY | Tel: XXXX | Email: XXXX

I am taking part in the Great South Run 2023 to raise money for the British Heart Foundation in memory of my friend CPOAET XXXX. If you feel like donating then please go to my fundraising page at the link below:
<https://greatsouthrun2023.enthuse.com/XXXX>

Appendix H Talybont Airfield Owner / Operator

From: XXXX
Sent: Friday, May 27, 2022 3:38 PM
To: XXXX
Cc: XXXX
Subject: RE: Talybont Airfield

Hi XXXX

Thanks for taking the time to meet with XXXX recently.
I would also like to ask that you pass to my colleague XXXX contact details for concerned persons that you may be aware of who can consider themselves a 'stakeholder' whom would like to engage in our airspace change discussion for the implementation of a Temporary Danger Area. This may help streamline our own process a little, so any contact details you have on file would be appreciated. CAA want to ensure we are comprehensive in our engagement exercise so as not to exclude any party intentionally or accidentally.

Thanks
XXXX

XXXX
Managing Director
UAVE Limited



W www.uave.co.uk

XXXX

M XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom



This message is subject to and does not create or vary any contractual relationship between UAVE Limited and you. Internet communications are not secure and therefore UAVE does not accept legal responsibility for the contents of this message. The message is intended for the addressee only and its contents and any attached files are strictly confidential. If you have received it in error, please telephone XXXX or email XXXX . Thank you.

UAVE Limited.
Company Registration Number: 08690924 (England and Wales)
Registered Address: Tudor Hall, Llwyndafydd, Llandysul, Wales. SA44 6BZ
Tel: XXXX
Web: www.uave.co.uk

From: XXXX XXXX
Sent: 02 April 2022 13:31
To: 'XXXX' XXXX
Cc: XXXX
Subject: RE: Talybont Airfield

Roger
ditto
XXXX

From: XXXX [mailto:XXXX]
Sent: 01 April 2022 19:41
To: XXXX XXXX
Cc: XXXX; XXXX; XXXX
Subject: Re: Talybont Airfield
Hi XXXX

XXXX and I discussed your option at Talybont Airfield today. We would like to pursue this and so will feature your site in our TDA application to CAA.

More details to follow.

Have a good weekend.

Regards
XXXX
Managing Director
UAVE Ltd

XXXX
XXXX

www.uave.co.uk

On 28 Mar 2022, at 18:25, XXXX wrote:

Hi XXXX
Updated version attached. Thanks.
If we opt for your airfield as a base for our flight operation we will be in touch again v soon as we will want to progress with the TDA public consultation.
Should be able to update you on Friday.
Best regards
XXXX
XXXX
Managing Director
UAVE Limited

From: XXXX
Sent: Thursday, March 24, 2022 10:22 AM
To: XXXX; XXXX
Cc: 'XXXX' XXXX; XXXX
Subject: RE: UAVE Limited

Guys

Contact details for the Talybont Airfield option are given in the attached.

I will wait for XXXX to respond to my email below. For our Project Management I attach here the contact details for the airfield and other reference information.

Thanks
XXXX

XXXX

Managing Director
UAVE Limited



[W www.uave.co.uk](http://www.uave.co.uk)

XXXX

M XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom



This message is subject to and does not create or vary any contractual relationship between UAVE Limited and you. Internet communications are not secure and therefore UAVE does not accept legal responsibility for the contents of this message. The message is intended for the addressee only and its contents and any attached files are strictly confidential. If you have received it in error, please telephone XXXX or email XXXX . Thank you.

UAVE Limited.

Company Registration Number: 08690924 (England and Wales)

Registered Address: Tudor Hall, Llwyndafydd, Llandysul, Wales. SA44 6BZ

Tel: XXXX

Web: www.uave.co.uk

From: XXXX

Sent: 24 March 2022 10:00

To: 'XXXX' <XXXX>

Cc: 'XXXX' XXXX; XXXX; 'XXXX' <XXXX>

Subject: UAVE Limited

Hello XXXX

Good to have spoken with you this morning. As mentioned we aim to fly a mineral exploration survey at a number of client identified areas of interest in the locality of Clogau gold mine. We are looking for a suitable location for the base of our operations. Flight times will be limited to daylight hours only during the late summer period. If the weather is favourable our activity will be limited to 3 or possibly 4 days.

We would like to seek you permission to visit to complete a routine HSE visit which we do for each new flying location. Two airfields are being considered. Your own and Llanbedr.

Our fixed wing UAV is the Prion Mk3 and details can be found at our website. The equipment is suited to an austere airfield location such as your own. In all eventualities we are required to work with the CAA to establish a temporary Danger Area to be active during the period of our flight operations as the equipment will be operating in a beyond visual line of site mode. These arrangements are 100% managed by ourselves as we have achieved at other rural locations for similar purposes in the UK.

If you could please confirm that you are happy to receive a visit from ourselves we would look to schedule something during next week or during the first week of April.

Kind regards

XXXX

Managing Director
UAVE Limited



W www.uave.co.uk

XXXX

M XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom



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UAVE Limited.

Company Registration Number: 08690924 (England and Wales)

Registered Address: Tudor Hall, Llwyndafydd, Llandysul, Wales. SA44 6BZ

Tel: XXXX

Web: www.uave.co.uk

From: XXXX XXXX

Sent: Monday, March 28, 2022 5:29 PM

To: XXXX

Cc: XXXX

Subject: RE: Talybont Airfield

Good to meet you too and thanks for your SitRep.

Only correction is under people/hamlet spelling should be TYWYN

Please send corrected version to confirm and I look forward to hearing from you next in August/September?

Kind regards

XXXX

XXXX, JP, FRICS, FRAGS,

Peniarth Estate

Tywyn

Gwynedd

LL369UD

XXXX

From: XXXX [mailto:XXXX]

Sent: 28 March 2022 17:16

To: 'XXXX XXXX'

Cc: 'XXXX'; XXXX

Subject: Talybont Airfield

Hello XXXX

Good to have met you today. Enjoyed the tour.

Please find attached the HSE report written up to record the findings from today's visit to Talybont Airfield. If I have misrepresented any item please do let me know.

Kind regards
XXXX
Managing Director
UAVE Limited

From: XXXX XXXX
Sent: Tuesday, November 29, 2022 3:29 PM
To: XXXX
Cc: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Confirming receipt.
Will get back to you shortly.
Regards
XXXX
Peniarth

Appendix I GA Pilot

From: XXXX
Sent: Wednesday, February 1, 2023 12:49 PM
To: XXXX
Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Dear XXXX,
Thank you for your consideration and adjustments to the proposed TDA to accommodate flying activities in and out of Peniarth Airfield.
Version 2 of CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2.pdf is a fair and acceptable compromise for myself as a stakeholder which I feel I can work with.
In appreciation
XXXX
XXXX
XXXX

On 31-Jan-23 11:26 AM, XXXX wrote:
Glyn,

Following your email and discussions with the UAVE team we have redesigned the proposed TDA BRAVO area to exclude Peniarth Estate Airfield and reduced the height of the TDA from 2,800ft to 2,500ft as documented in the attached:

CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2.pdf

The changes are highlighted in red.

This should significantly reduce the impact of the proposed TDA on the airspace around Peniarth Estate Airfield.

If you have any further comments please let me know by Monday 6th February to enable them to feature in the Targeted Stakeholder Engagement Report being prepared for the CAA.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk
XXXX
XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>
Sent: 30 November 2022 10:55
To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your response.
I will discuss with the operations team and get back to you.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 29 November 2022 19:44

To: XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Dear XXXX

Thank you for the TAD and CAA ACP-2022-025 request for a two weeks within period 02 May - July 30 2023

I am a recreational pilot with my aircraft hangarage at Peniarth grass airstrip under ownership of Mr XXXX
XXXX including Talybont grass airfield. Both airfields fall within your proposed Orange Polygon.

While always weather dependent, the summer months are usually busy at Talbont airfield and I enjoy regular flying during your proposed TAD period, one of which is the annual flight to the Isle of White Spamfield Flyin Fri 26 to Mon 29 May 2023 (includes 2 of your ops working days). There are likely to be other events including my annual aircraft inspection and flight check in mid June 2023.

Might you consider allowing me Peniarth airfield departures & arrivals by the shortest access point, if during your weekday period of operation with PPR ?

It is my intention to fit into your proposed schedule and of course comply with the associated NOTAMS thereby mitigating against any embarrassment.

I would hope to use the weekends to fly out of Peniarth when you would not be operational.

I am fitted with ADS-B IN & OUT transponder providing Electronic Conspicuity and with VHF radio.

I look forward to further correspondence and negotiation towards mutual success in your proposal.

Kind Regards

XXXX

Sent from my Galaxy

Appendix J GA Pilot

From: XXXX
Sent: Tuesday, November 29, 2022 1:51 PM
To: XXXX
Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Dear XXXX

Thank you for your communication dated 29th November 2022 contents which are duly noted.

Kind regards

XXXX
Sent from my iPad

From: XXXX <XXXX>
Sent: Tuesday, November 29, 2022 12:39 PM
To: XXXX
Cc: XXXX
Subject: Proposed Dolgellau Temporary Danger Area - Stakeholder Engagement

XXXX,

UAVE Ltd are currently in a process with the CAA to ascertain if a Temporary Danger Area is appropriate use of airspace for our planned BVLOS UAS geophysical survey around Dolgellau in 2023. A proposed operations base for our UAS activities is Talybont Airfield and XXXX XXXX has provided your details as a regular user of the airfield with whom we might wish to engage.

We are keen to engage with you and have added your details to the targeted stakeholder list.

You should shortly receive the generic communication and document regarding the stakeholder engagement however I thought a brief introduction would help to provide some context.

If you have any questions on the process please do not hesitate to contact me.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

T XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

Appendix K GA Pilot

From: XXXX

Sent: Tuesday, December 20, 2022 5:02 PM

To: XXXX

Subject: Re: FW: ACP-2022-025 Targeted Stakeholder Engagement

Received with thanks

On Tue, 20 Dec 2022 at 12:38, <XXXX> wrote:

Dear Sir / Madam,

We are three weeks into the engagement process.

Please send a simple return email stating "Received" to confirm that you have the information.

Thanks,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

Appendix L GA Pilot

From: XXXX <XXXX>
Sent: Tuesday, January 31, 2023 4:50 PM
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your responses which will be provided in full to the CAA in the Targeted Stakeholder Engagement Report.

Please confirm that I have understood your response correctly in that you have an over-arching objection to any TDA for the purposes of segregated RPAS operations rather than any specific objection to the Dolgellau TDA in particular.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>
Sent: 04 January 2023 10:08
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your engagement with our TDA request on 21st December 2022 and your follow up on 3rd January 2023.

As your objection was based on Airspace Regulations I forwarded your email to the CAA for their comment.

I am awaiting their response.

Thanks for your patience.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 03 January 2023 09:53

To: XXXX <XXXX>

Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Thank you XXXX,

,

When will you be entering into a dialogue in accordance with CAP1616? Please ensure this email is included in the Airspace Change Portal. We can use to measure your response.

In CAP1616 Appendix C the CAA says

1. Are there any seldom heard groups impacted?
2. engagement will be required throughout the process by sponsors.
3. ...The CAA's own stakeholder engagement, undertaken during the stages of the process that it leads
4. The core principle underpinning the CAA's assessment of whether a change sponsor is engaging stakeholders effectively will be evidence that the change sponsor is engaging in a two-way conversation.
5. How will they be engaged? What are their needs/requirements? Are there any seldom heard groups impacted? How will material be targeted for different groups and situations identified?
6. Throughout the process, the change sponsor owns the requirement for stakeholder engagement.
7. The change sponsor must be clear to stakeholders about how proposed airspace changes evolve through the stages of the process and how their feedback has informed these evolutions.
8. the CAA will seek evidence stakeholders are content that their views have been captured and taken into account by the change sponsor.

Regards

XXXX

----- Original message -----

From: XXXX <XXXX>

Date: 22/12/2022 16:53 (GMT+00:00)

To: XXXX

Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thank you for your email. I will forward it onto the CAA Airspace Regulator who is responsible for this ACP.
best regards,

XXXX

On 21 Dec 2022, at 18:21, XXXXwrote:

XXXX

OBJECTI9N

Dear Sir

In do not object to the integration of drones/RPAS into UK airspace, but I do object to the creation of airspace that segregates such traffic, on the following grounds.

Point 1 Airspace does not guarantee safety

Discussion :-

Statistics published by the Airspace Safety Initiative

<https://airspacesafety.com/statistics/>

demonstrate that the creation of more and more airspace increases the level of infringements for all classes of licence. Safety has not been enhanced by adding to the already complicated airspace structures across the UK. The statistics support the view that airspace is an outdated concept.

The sponsor has not demonstrated that the proposed airspace will improve safety. Just saying that it will be safe is not satisfactory.

NATS are working towards an upper airspace largely free of restrictions.

<https://www.nats.aero/news/the-biggest-airspace-change-ever-implemented-in-the-uk/>

What argument can possibly support more airspace in the lower airspace domain.

CAA officers have allowed the application to progress without discharging their duty under criminal law. They have not examined safety and have not recorded the safety argument for this airspace,

Point 2 air transport Act 2000 section 70

<https://www.legislation.gov.uk/ukpga/2000/38/section/70>

(1)The CAA must exercise its air navigation functions so as to maintain a high standard of safety in the provision of air traffic services; and that duty is to have priority over the application of subsections (2) and (3).

(a)to secure the most efficient use of airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic;

(b)to satisfy the requirements of operators and owners of all classes of aircraft

(4)The CAA must exercise its air navigation functions so as to impose on providers of air traffic services the minimum restrictions which are consistent with the exercise of those functions.

Discussion :-

It is a criminal offence for the CAA or its employees to fail in their duty of care for safety. The Act provides no defence neither does it provide latitude as to when the CAA and its employees may exercise this duty. In a gateway assessment for Stage 1 or this application, the CAA's officers have not examined the safety criteria on which this application is founded. The officers have assessed that airspace is "an appropriate option" without publishing an investigation into safety criteria. It is they who are responsible under Criminal law for ensuring that the CAA's obligations under the law are met,

It is evident that CAA officers have committed a criminal act by failing to examine the safety for this airspace.

The Act very clearly makes safety solely a CAA responsibility and gives no means of avoiding it.

Point 3 safety case - no safety case has been presented

From CAP1818

a. No part of a current functional system may be changed until a valid safety case exists that shows that the safety risk will be acceptable according to valid risk criteria for the change.

b. A safety case is: "a structured argument, supported by a body of evidence that provides a compelling, comprehensible and valid case that a [functional] system is safe for a given application in a given operating environment".

The purpose of the impact analysis is to identify all POSSs whose existing assurance (arguments and evidence that their specifications are trustworthy) will be invalidated by the change, and hence establish the Scope of

the change (see below).

The purpose of the safety case is to convince the Service Provider that the proposed change will be safe and to communicate the reasons for that belief to an interested stakeholder e.g. directors and senior management, regulator, judicial review or court.

Discussion:-

Under the Transport Act, as described above, the CAA and its employees commit a criminal act if they fail to treat safety as a priority. There is no defence. Despite this, CAA officers have allowed this application to continue without insisting on the creation of a safety case at the outset. Without a safety case the CAA officers have failed to establish on what basis airspace is a viable option. Instead they have treated safety as an afterthought. *CAA officers have committed a criminal act by failing to insist on a safety case for this airspace from the outset.* The Act very clearly makes safety a CAA responsibility and gives no means of avoiding or deciding when it should take place.

Point 3 airspace modernisation

CAP1711 airspace modernisation. There are many references to integration rather than segregation.

For example

"Airspace modernisation is also expected to improve access to airspace for General Aviation, by enabling greater integration (rather than segregation) of different airspace user groups. The same is true for new airspace users such as drones and spacecraft."

Discussion:-

CAA officers have failed at their stage 1 review to identify airspace modernisation as a constraint against which the sponsor's application would be judged. Airspace modernisation must be a fundamental design criterion, yet this isn't mentioned.

Segregation is fundamental the opposite strategy to CAP1711.

Point 4 Aircraft Certification

In the following text IFR flying is used as a broad metaphor for BVLOS.

My conventional world classifies aircraft as either.

1. Those types that will never be suitable for flight in IFR. (The 'flying flea' is an example)
2. Those types which can be flown IFR but are not suitably equipped.
3. Those types which can be flown IFR and are suitably equipped.

The pilot must be suitably rated.

If I, as a qualified IFR pilot, was to approach the CAA and ask to fly a type 1 aircraft IFR, I would, quite rightly be given short shrift.

If I as a qualified IFR pilot was to approach the CAA and ask to fly a type 2 aircraft IFR, I'd be told to go away and equip it and come back when it's certified.

I don't need to ask anyone whether I can jump in a type 3 aircraft and fly off into wild blue yonder in IMC.

There would be not a cat's chance in hades of getting controlled airspace to fly a type 1 or type 2 aircraft IFR.

Discussion:-

The rules for flying different types of aircraft are clear. If I were to fly a new aircraft type, a test programme would be agreed and the aircraft would be allowed to fly in an appropriate airspace under supervision. The aircraft may then receive a conditional certificate of airworthiness allowing flight under continued supervision

or specific conditions.

At some point such restrictions may be removed. This established, safe process removes the need for restrictions as it progressively integrates new aircraft into existing airspace without segregation.

The debate regarding the safe integration of a new aircraft type without the constraint of airspace has not been made a constraint in their stage 1 review, nor has it been debated. It is the CAA and its employees who, under criminal law, are responsible for initiating the debate over safety, not the sponsor. The CAA are silent which constitutes a criminal act.

Point 5 Flight safety

Exercise 18 of the PPL syllabus includes an exercise in flying in poor weather at low level. A pilot who, for whatever reason, finds themselves over the sea VFR at 500ft, obeying rule 5, being clear of persons, property and vessels is legal but has no protection from controlled airspace. The aircraft can be flown legally at 500ft, and possibly below. There is no obligation to carry either a Radio or Transponder, and at 500 ft VHF line of sight is not viable

The establishment of a controlled airspace across a significant portion of airspace at sea level presents a safety hazard to all airmen. An airman approaching such a barrier in unexpected marginal conditions will be flying under pressure, may not be able to turn back and has one safe route to land removed.

A RPAS that is either a certified BVLOS or operating under a certificate to fly would not require controlled airspace and the safety of other air users would not be compromised.

Discussion:-

Safety of all airspace users is a priority. A RPAS is remotely controlled, and whereas its size can cause a great of damage, its operation doesn't threaten its own crew! A RPAS can threaten the lives of crew of another aircraft, not only through collision but also by denying other craft free movement through airspace in accordance with the Air Transport Act 2000 section 70. By denying safe transit through airspace CAA officers commit a criminal act by obstructing the free flow of traffic in an unsafe environment.

Objection

I object to this ACP and the conduct by which it is undertaken on the grounds described above.

Ensure that this response is published in the CAA's airspace change portal, verbatim. In the event that this submission is not published in the ACP, the sponsor may have committed a criminal act.

XXXX

XXXX

Appendix M Llanbedr Airfield Operator

From: XXXX <XXXX>
Sent: Wednesday, February 1, 2023 1:01 PM
To: XXXX
Cc: XXXX; XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Hi Jeremy,

Thanks for your feedback.

The decision has not been finalised however the launch and recovery site for these ops is planned to be either Llanbedr or Talybont.

As a minimum UAVE would require D217E/J to be activated surface to 6,000ft for one day of operations. This would link to the proposed TDA ALPHA to be activated by UAVE from surface to 3,500ft. See map in the attached CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2.pdf

In addition UAVE would like to request if Llanbedr would be open to host the proposed DAAIS for TDA ALPHA and TDA BRAVO.

In addition if UAVE were to base operations at Llanbedr we would require D217A/G & D217E/J to be activated surface to 6,000ft for an expected 5 days of operations along with access to the runway for our Prion Mk3 UAV & crew van which houses the Ground Control Station.

Please can you advise any costs associated with 1,2 & 3 above.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 31 January 2023 16:34
To: XXXX
Cc: XXXX; XXXX
Subject: Re: ACP-2022-025 Targeted Stakeholder Engagement

Hi XXXX

As it stands we have no firm bookings for D217 activation for the period 2nd May to 30th July 2023. We do

have several enquiries for activities during this period but we expect them to be contained to Area A so your access to Area E shouldn't be a problem. We're very keen to see your activity go ahead as it will be a really good use of the DA.

As part of our Letter of Agreement with RAF Valley and the MOD Danger Area Activity Manager for D201 we have to give 14-days' notice of intent to activate the DA and then a minimum 24 hours' notice of actual activation via NOTAM (up to 48 hours if we intend to activate from 2000' to 6000' rather than / or as well as surface to 2000'). Some additional questions for you that will also help our planning:

Do you intend to launch and recover from Llanbedr? If so we will need to activate both Areas A and E. Note that we are not allowed to activate Areas B-D at the same time as Area E (and vice-versa) in order to maintain a north-south transit corridor for GA that is not too far offshore (or too close to the mountains).

Will you need to operate at an altitude greater than 2000ft AMSL within Area A or E? If so we will also need to activate Areas G and J that extend these volumes up to 6000ft AMSL.

On how many days do you think that Areas A/G and E/J will need to be activated?

Many thanks.

Best regards

Jeremy



From: XXXX <XXXX>
Date: Tuesday, 31 January 2023 at 10:55
To: XXXX
Cc: XXXX, XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement
Lee,

To aid the planning of our Dolgellau UAV survey please can you let me know the dates you already have activity within EGD217 booked in the 02 May 2023 and 30 July 2023 window.

Access to EGD217E is of particular importance.

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: 30 November 2022 11:32

To: XXXX

Cc: 'XXXX' XXXX; XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

The activation of the whole EGD217 complex would allow our ops team the flexibility for the UAV to transit from the survey area to Llanbedr Airfield either as the crow flies over land or via the Mawddach Estuary and the coast.

The activation of EGD217E is of particular importance as it covers part of the geophysical survey area.

However the airspace requirements are dependent upon the TDA consultation process and are not yet fixed either spatially or temporally.

UAVE are requesting the TDA to be available for a 90 day period between 02 May 2023 and 30 July 2023 in which we would have the flexibility to plan the most suitable dates for the 10 days (max) flight activities.

To aid our planning please can you let me know the dates you already have activity within EGD217 booked in the 02 May 2023 and 30 July 2023 window.

Thanks,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 29 November 2022 20:16

To: XXXX

Cc: XXXX; XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX

Thanks for getting back to us further. Sorry still a bit vague on your airspace requirements from us. We need to have a clear understanding of what areas are required and when as we need to ensure our FISO is booked in for any DA activation and we have no conflicting activities taking place when the DA is activated. We have a number of activities already booked for June and July so need some further clarity please
Can you clarify further please areas required to be activated and when (with dates if possible).

Thanks

Area(s) of DA required

D217E would be required to be activated for the survey activities. It is proposed to activate the whole D217 complex if transiting to Llanbedr to enable the transit to be made over land or over water.

Number of days usage – proposed duration of flights in the DA

Core survey 2-3 days, individual flight duration 3 hours, max 2 weeks (10 weekdays) mobilisation to the field

XXXX

From: XXXX <XXXX>

Sent: 29 November 2022 17:38

To: XXXX

Cc: XXXX; XXXX; XXXX

Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

XXXX,

Thanks for your swift response.

The requirement currently is as below

Area(s) of DA required

D217E would be required to be activated for the survey activities. It is proposed to activate the whole D217 complex if transiting to Llanbedr to enable the transit to be made over land or over water.

Number of days usage – proposed duration of flights in the DA

Core survey 2-3 days, individual flight duration 3 hours, max 2 weeks (10 weekdays) mobilisation to the field

Confirm would be Mon to Friday between 0800 and 1800

Yes

Other facilities required – office/ workshop/ stores

No other facilities required, GCS is operated from our van which would need to be alongside the runway.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX

Sent: 29 November 2022 15:54

To: XXXX <XXXX>

Cc: XXXX; XXXX; XXXX

Subject: FW: ACP-2022-025 Targeted Stakeholder Engagement

XXXX

Thanks for forwarding your email (along with attachment) through. I have sent this to both Jeremy and David for any comments they may have.

I note it is proposed that this covers the period 02 May to the 30 July 2023

In relation to our DA are you still looking at the below which you previously provided or has this changed in any way ?

Area(s) of DA required

D217A & D217E (onshore portions of your new Danger Area). A dedicated TDA would be applied for to cover the AOI and a transit corridor back to D217E.

Number of days usage – proposed duration of flights in the DA

2-3 days, individual flight duration 3 hours

Confirm would be Mon to Friday between 0800 and 1800

Yes

Other facilities required – office/ workshop/ stores

No other facilities required, GCS is operated from our van which would need to be alongside the runway.

Regards

XXXX



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Whilst this message has been checked for all known viruses, we cannot accept liability for any damage sustained as a result of software viruses and

advise that you carry out your own virus checks before opening any attachment.
Please consider the environment before printing this e-mail

Appendix N ARCC / Maritime and Coastguard Agency

From: XXXX <XXXX>
Sent: Friday, December 2, 2022 6:15 PM
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Thanks XXXX.

We will prepare and forward an updated TOI when the flight operations base within the TDA is finalised.

Have a good weekend.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 02 December 2022 17:46
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

Thank you for your reply, having read through the attached documentation, it seems clear that SAR Operations would not be hampered and that we can telephone, if required, to request the drone be grounded for any rescue missions that may occur in or around the TDA. If this arrangement is in place I can see no reason why a SAR operation may be hampered therefore see no reason to object to the temporary airspace change.

Kind regards,

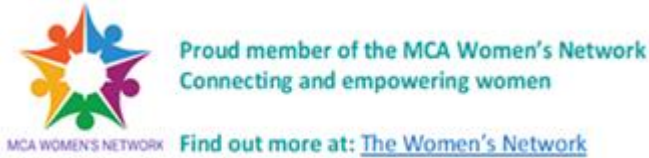
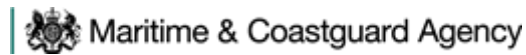
XXXX
JRCC Comander (Aeronautical)
HM Coastguard Operations

XXXX
XXXX
XXXX



HM Coastguard
Joint Rescue Coordination Centre (JRCC) UK
Unit 12 Kites Croft Business Park
PO14 4LW Fareham, Hampshire UK

To Search, To Rescue, To Save
www.gov.uk/mca



From: XXXX <XXXX>
Sent: 02 December 2022 17:01
To: XXXX
Subject: RE: ACP-2022-025 Targeted Stakeholder Engagement

Good Afternoon XXXX,

Thanks for your consideration and feedback.

For a previous TDA in 2020 (Newton Stewart, Dumfries) UAVE put in place a Temporary Operating Instruction (TOI) to detail our interaction with SAR operations.

Attached is the historical TOI, UAVE Ltd.Prion MK3.TOI V4 31st Aug.2021.pdf

UAVE are proposing to fly the same Prion Mk3 Fixed Wing UAV with the same aeromagnetic payload as flown in Newton Stewart in Dolgellau. Would a similarly worded TOI for the proposed Dolgellau area (ACP-2022-025) with updated maps and contact details be suitable.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 30 November 2022 15:33
To: XXXX
Subject: FW: ACP-2022-025 Targeted Stakeholder Engagement

Good afternoon XXXX,

Canvassing our crew at Caernarfon only the obvious question of suppression arises. In the event we have an

immediate need to transit the area for operational SAR purposes, we would require a robust and easy means of communication to your operators on the day.

For info, this email address is the generic account for the JRCC-AR (ARCC in old money) and monitored by the Duty Air Supervisor 24/7 on rotating shifts.

Regards

XXXX

XXXX
JRCC Tactical Commander (Aeronautical)
HM Coastguard, UKARCC

XXXX
XXXX
XXXX



HM Coastguard
JRCC, Unit 12, Kites Croft Business Park,
Fareham, PO14 4LW

To Search, To Rescue, To Save
www.gov.uk/mca



Appendix O Babcock International

From: XXXX <XXXX>
Sent: Friday, January 13, 2023 2:52 PM
To: XXXX
Subject: RE: CAUTION: External email - RE: ACP-2022-025 (UNCLASSIFIED)

Thanks XXXX.

I will prepare the TOI document accordingly and send a draft to you for review

Best regards,

XXXX
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UAVE Limited



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XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 09 January 2023 17:29
To: XXXX
Subject: RE: CAUTION: External email - RE: ACP-2022-025 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Hi XXXX,

Could I also ask you to add the local GA frequency, c/s etc on the TOI as well?

Based on the transit distance/ time for the UAV to RTB I suggest we establish agreed loiter points and include them in the TOI as well although I would suggest they are based on place names just in case a crew isn't carrying a decode.

BW,

XXXX

XXXX MSc cfs | Chief Pilot
UK Aviation | Aviation
Babcock International Group
Babcock Onshore | Building Se32-33 | Gloucestershire Airport | Cheltenham | Gloucestershire | GL51 6SP
XXXX
www.babcockinternational.com

babcockTM

Creating a safe and secure world, together

From: XXXX <XXXX>
Sent: 05 January 2023 17:11
To: XXXX
Subject: RE: CAUTION: External email - RE: ACP-2022-025 (UNCLASSIFIED)

Hi XXXX,

We will add your 24hrs Flight Operations contact details to our TOI.

Our UAV pilots will have access to VHF radios and will monitor the local GA frequency. They will be contactable using the call sign "Prion Ground". The Prion Mk3 UAV will be equipped with ADS-B out (1090MHz) providing real time position information.

The maximum distance the UAV will be from the airfield within the proposed TDA is 42.8km. If flying at our standard cruise speed of 80km/h it would take 33 minutes to transit back to the airfield and land the UAV.

In addition to return to home we could put in place a network of pre-agreed loiter positions at 10km intervals which the UAV could reach within 7.5 minutes where the UAV could loiter, in a 200m radius at 500ft agl, to enable a safe crossing of the TDA for your HEMS operations, if suitable UAV fuel reserves were remaining.

A draft sketch of 5 loiter points, Loiter Alpha to Loiter Echo is attached.

Please let me know your thoughts.

Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 04 January 2023 15:38
To: XXXX
Subject: RE: CAUTION: External email - RE: ACP-2022-025 (UNCLASSIFIED)

Classification: UNCLASSIFIED

Hi XXXX,

That would work I think. Please feel free to add our 24hrs Flight Operations contact details that are contained in

the example LoA I sent you.

For my SA:

Do you have a frequency that your pilots monitor that we could call if airborne and re tasked?
How long would you expect it to take to get your vehicle on the ground if it was operating at the farthest edge of the TDA and unable to 'hold'?

BW,

XXXX

XXXX MSc cfs | Chief Pilot
UK Aviation | Aviation
Babcock International Group
Babcock Onshore | Building Se32-33 | Gloucestershire Airport | Cheltenham | Gloucestershire | GL51 6SP
XXXX
www.babcockinternational.com

babcock[™]

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From: XXXX <XXXX>

Sent: 04 January 2023 14:09

To: XXXX

Subject: CAUTION: External email - RE: ACP-2022-025 (UNCLASSIFIED)

XXXX,

Thanks for your consideration and feedback.

For a previous TDA in 2020 (Newton Stewart, Dumfries) UAVE put in place a Temporary Operating Instruction (TOI) to detail our interaction with MCA SAR operations.

Attached is the historical TOI, UAVE Ltd.Prion MK3.TOI V4 31st Aug.2021.pdf

UAVE are proposing to fly the same Prion Mk3 Fixed Wing UAV with the same aeromagnetic payload as flown in Newton Stewart in Dolgellau. Would a similarly worded TOI for the proposed Dolgellau area (ACP-2022-025) with updated maps and contact details be suitable.

Best regards,

XXXX

Business Development

UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: 04 January 2023 13:33
To: XXXX
Subject: ACP-2022-025 (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED

Good afternoon XXXX,

As the Chief Pilot and Head of Flight Operations for Babcock I have been passed your email dated 29 November 2022 by the BHA as we are the Aviation providers for the Welsh Air Ambulance charity. We operate four EC145 aircraft in Wales with the closed to your proposed TDA being at Caernarfon and Welshpool. These aircraft operate generally between the hours of 0700hrs and 2000hrs 7 days a week. We also operate a 24hr NVIS HEMS aircraft based in Cardiff that covers the whole of Wales when the other three bases close. Our forth base is at Dafen near Swansea. Our aircraft are ADS-B in and out equipped.

Having looked at your change proposal and the heights involved I believe that it has the potential to significantly detrimentally effect lifesaving HEMS operations through and into the area. I am afraid that unless we are able to agree some form of LoA that robustly captures how we will safely deconflict UAS and HEMS aircraft operations that simultaneously guarantees unimpeded access by a category Alpha HEMS aircraft we will have to object to this proposal.

Therefore, could I ask you to provide me with more detail in regards to how you would see us deconflicting our aircraft. I have attached an example LoA that we have used in the past should it be useful.

Many thanks and I look forward to hearing from you,

XXXX

XXXX MSc cfs | Chief Pilot
UK Aviation | Aviation
Babcock International Group
Babcock Onshore | Building Se32-33 | Gloucestershire Airport | Cheltenham | Gloucestershire | GL51 6SP
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Appendix P CAA ACP-2022-025 Targeted Stake Holder Engagement 29Nov2022v1

UAVE Ltd

Airspace Change
ACP-2022-025

UAS BVLOS
in Segregated Airspace

Targeted Aviation Stakeholder Engagement

Version 1

Dated: 29th November 2022

Amendment record

Issue	Amendment	Date
V1.0	Initial Issue	29/11/2022

This document is controlled by the Change Sponsor (UAVE Ltd - UAS Operator). The initial release version and any subsequent revision will be subject to the approval of the UAS Operator. Amendments to this document will be recorded in the Amendment Record. For reference, a copy of this version and all superseded versions will be stored on a secure server.

If this document is updated following meetings with the Civil Aviation Authority (CAA) or for any other reason, the UAS Operator as Change Sponsor will publish a new version on the CAA Airspace Change online portal for all to see. This is to enable the CAA to refer to the correct version if it needs to publish a determination of whether an airspace change is a relevant option to investigate.

Referenced documents

Document	Version	Version & Date	Source
CAP 1616	Airspace Change – Guidance on the regulatory process for changing the notified airspace design and planning and planned and permanent redistribution of air traffic, and on providing airspace information	Version 4.0 March 2021	CAP 1616

Acronyms and abbreviations

ACP	Airspace Change Proposal
AMSL	Above Mean Sea Level
ATC	Air Traffic Control
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DAAIS	Danger Area Activity Information Service
FL	Flight Level
FREQ	Frequency
HRS	Hours
NOTAM	Notice to Airman
Ltd	Limited
SFC	Surface
SUA	Small Unmanned Aircraft
TBD	To Be Determined
TDA	Temporary Danger Area
TEL	Telephone
UAS	Unmanned Aircraft System

Introduction

UAVE Ltd (the change sponsor) is seeking a temporary airspace change to support its 2 week-long fixed wing Unmanned Aircraft System (UAS) airborne geophysical survey in the Dolgellau area of Wales between 2 May 2023 and 30 July 2023.

The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

Following an Assessment Meeting with CAA Airspace Regulation to discuss UAVE Ltd's Statement of Need, it was agreed that to facilitate safe UAS Beyond Visual Line Of Sight (BVLOS) operations a Temporary Danger Area (TDA) would be required, the proposals for which would be subject to a targeted aviation stakeholder engagement exercise. For this BVLOS survey the UAS will be operated in the Specific category and be equipped with an ADS-B Out transponder providing Electronic Conspicuity for the benefit of third parties however this does not equate to a full detect and avoid capability.

The Statement of Need and the minutes of the Assessment Meeting can be downloaded from the CAA Airspace Change Portal, <https://airspacechange.caa.co.uk/>, by searching under Airspace Change ID: ACP-2022-025.

The requested TDA complex has been split into two conjoined areas TDA ALPHA and TDA BRAVO. TDA ALPHA delimits the core survey area when combined with the existing danger area EGD217E. TDA BRAVO provides a transit corridor to Talybont Airfield. The remaining EGD217 complex provides a transit corridor to Llanbedr Airfield.

The proposed TDA complex (TDA ALPHA and TDA BRAVO) is within Class G airspace. UAVE expect the majority of current flights in this area to be recreational and be undertaken on evenings and at weekends. To mitigate the effect on other airspace users UAVE's proposal is to activate the TDA only between 8am and 6pm local time (or ATC or daylight hours if either are shorter) and only on weekdays (Monday to Friday) leaving the weekends free of any additional flight restrictions. Whilst the TDA complex duration is requested for 90 days, the UAS operations are only expected to take 2 weeks (10 working days) and the TDA will only be activated, by NOTAM, on active UAS flying days to minimize the impact of this temporary airspace change on other airspace users.

Safe vertical separation

The survey task is for the aircraft to fly at an altitude of between 150-500ft above the surface. Allowing for a minimum 500ft vertical separation between the UAS and any other air traffic gives a required segregated airspace height for the TDA Complex of 1000ft above surface level. Given that the maximum height of the surface within the proposed TDA ALPHA is Y Llethr Mountain at 2,479ft AMSL (756m) (Latitude 52°48'44.40"N, Longitude 3°59'18.14"W) the safe ceiling height for TDA ALPHA will be 3,500ft AMSL (FL035) Given that the maximum height of the surface within the proposed TDA BRAVO is Braich Ddu Mountain at 1791ft AMSL (546m) (Latitude 52°41'23.13"N, Longitude 4°0'15.18"W) the safe ceiling height for TDA BRAVO will be 2,800ft AMSL (FLO28)

Safe lateral separation

UAS operations within the proposed TDA complex will remain wholly within the bounds on the TDA complex and come no closer than 500m to any outside edge to maintain safe lateral separation with any other air traffic.

Segregated airspace

UAVE Ltd requires a volume of segregated airspace within which to safely execute its operations and presents the following proposed airspace design to local airspace users:

Identification and Lateral Limits			Upper Limit	Lower Limit	Remarks
1			2		3
TDA 1: TDA ALPHA Survey Area (Green Polygon)			Lower Limit: SFC Upper Limit: 3500 ft AMSL (FL035)		Activity: UAS Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
#	Latitude	Longitude			
1	52 38 23.90894 N	4 10 6.84312 W			
2	52 42 27.4807 N	3 59 51.37051 W			
3	52 50 30.38107 N	3 39 31.20043 W			
4	52 54 16.3856 N	3 39 6.84067 W			
5	52 50 52.78236 N	4 0 35.55943 W			
6	52 50 46.30772 N	4 0 28.7199 W			
7	52 50 28.9252 N	4 0 13.49476 W			
8	52 50 10.97471 N	4 0 0.18968 W			
9	52 49 52.53383 N	3 59 48.86151 W			
10	52 49 33.68221 N	3 59 39.55849 W			
11	52 49 14.50128 N	3 59 32.32005 W			
12	52 48 55.07384 N	3 59 27.17668 W			
13	52 48 35.48374 N	3 59 24.1498 W			
14	52 48 15.81549 N	3 59 23.25167 W			
15	52 47 56.1539 N	3 59 24.48537 W			
16	52 47 36.58374 N	3 59 27.84478 W			
17	52 47 17.18932 N	3 59 33.31462 W			
18	52 46 58.05421 N	3 59 40.87057 W			
19	52 46 39.26079 N	3 59 50.47933 W			
20	52 46 20.88995 N	4 0 2.09881 W			
21	52 46 3.02076 N	4 0 15.67832 W			
22	52 45 45.73007 N	4 0 31.15879 W			
23	52 45 29.09224 N	4 0 48.47304 W			
24	52 45 13.17878 N	4 1 7.54608 W			
25	52 44 58.05809 N	4 1 28.29542 W			
26	52 44 43.79512 N	4 1 50.63144 W			
27	52 44 30.45112 N	4 2 14.45782 W			
28	52 44 18.08341 N	4 2 39.67187 W			
29	52 44 6.74507 N	4 3 6.16505 W			
30	52 43 56.48476 N	4 3 33.82339 W			
31	52 43 47.34651 N	4 4 2.52801 W			
32	52 43 39.36952 N	4 4 32.15559 W			
33	52 43 32.59 N	4 5 2.58001 W			
1	52 38 23.90894 N	4 10 6.84312 W			

Identification and Lateral Limits			Upper Limit	Lower Limit	Remarks
1			2		3
TDA 2: TDA BRAVO Talybont (Orange Polygon)			Lower Limit: SFC Upper Limit: 2800 ft AMSL (FLO28)		Activity: UAS Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
#	Latitude	Longitude			
1	52 42 27.4807 N	3 59 51.37051 W			
2	52 38 23.90894 N	4 10 6.84312 W			
3	52 35 22.38574 N	4 9 58.03486 W			
4	52 35 38.55655 N	3 59 33.12768 W			
1	52 42 27.48323 N	3 59 51.36933 W			

FIGURE 1 REGIONAL VIEW OF PROPOSED AIRSPACE DESIGN

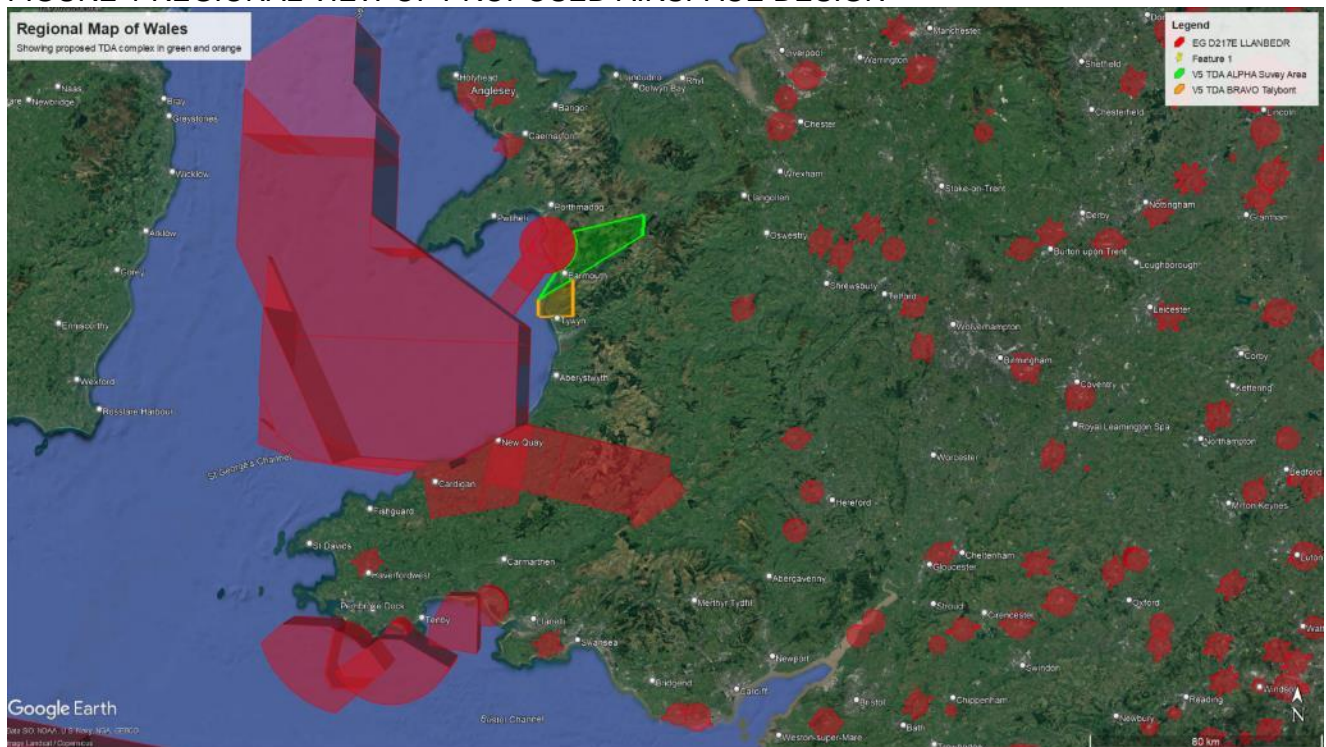


Figure 1: Requested TDA Complex, TDA ALPHA (green polygon), TDA BRAVO (orange polygon), Existing Danger Areas (red polygons)

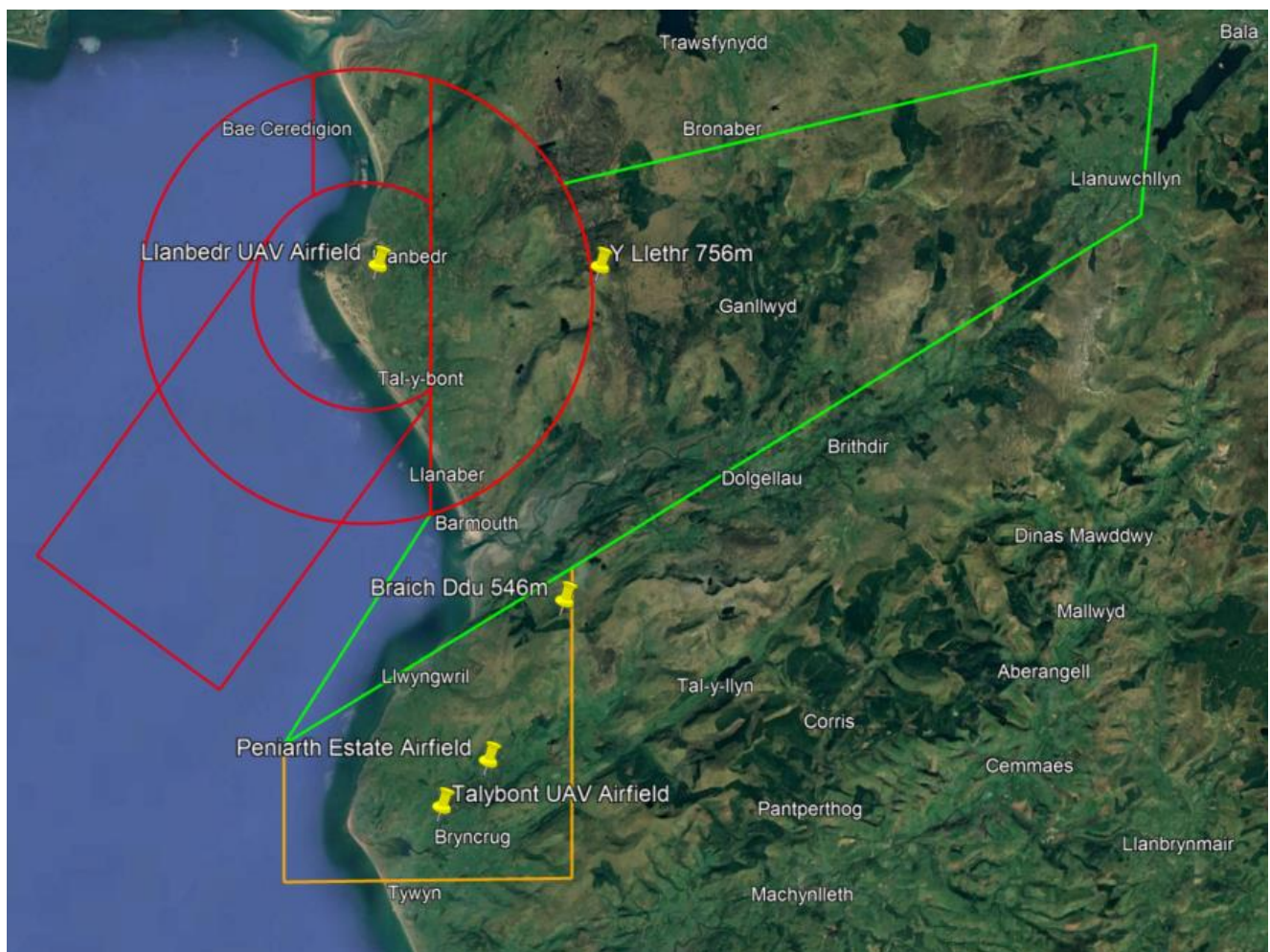


Figure 2: Zoom of Requested TDA Complex – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217 Complex (red polygons)



Figure 3: Requested TDA Complex covering survey areas – TDA ALPHA (green polygon) along with Existing Danger Area EGD217E (red polygon)

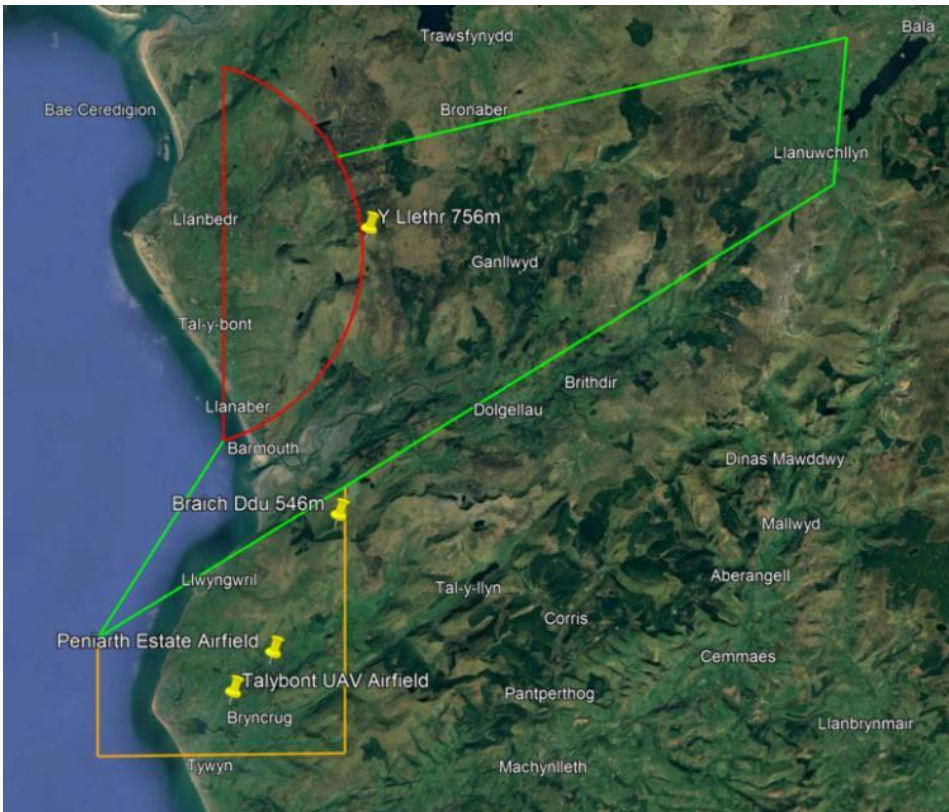


Figure 4: Requested TDA Complex for flight operations from Talybont – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217E (red polygon)

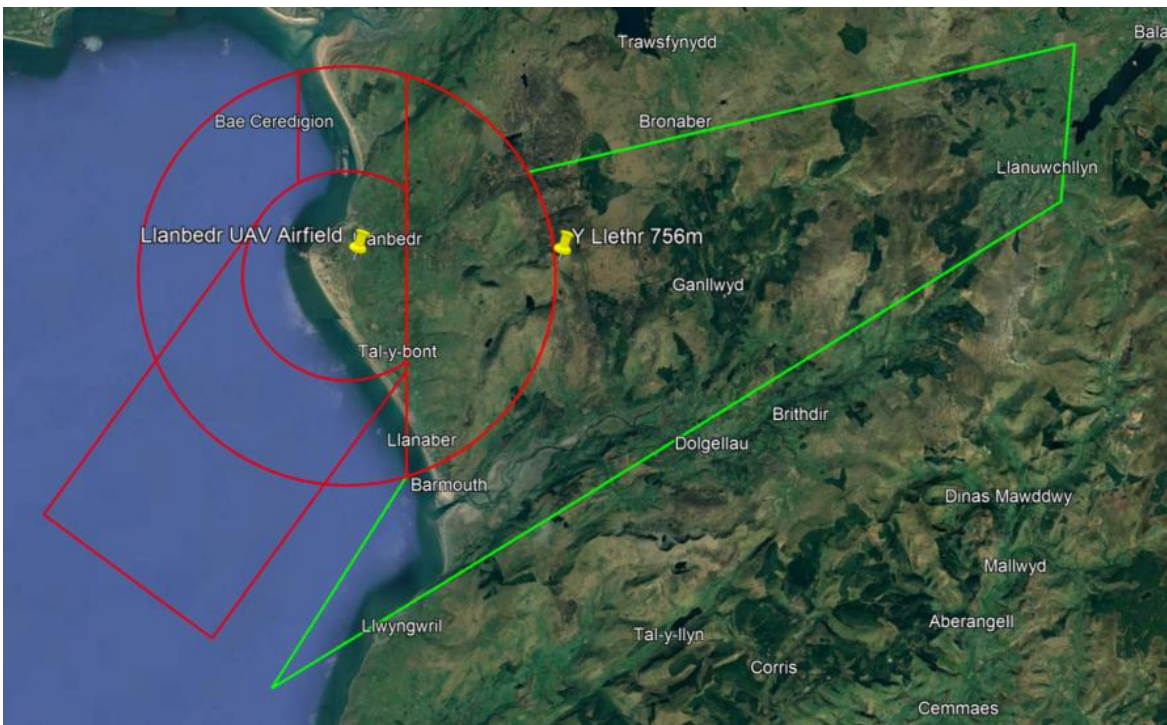


Figure 5: Requested TDA Complex for flight operations from Llanbedr – TDA ALPHA (green polygon) along with Existing Danger Area complex EGD217 (red polygons)

Notification

CAA Airspace Regulation will promulgate TDA activations by NOTAM for the period of planned use.

TDA activation

Date	Time
Monday to Friday only 2 May 2023 and 30 July 2023	Monday – Friday (inc. public holidays) 08.00-18.00 hrs Local Time (ATC hours) or daylight hours if shorter

UAS BVLOS operations are expected to take no more than 10 days (2 weeks Monday-Friday) during which time the TDA will be activated by NOTAM.

On days no activity is planned the TDA will not be activated.

The TDA is requested to be available for a 90 day period to enable efficient scheduling of the survey operations.

Appendix Q CAA ACP-2022-025 Targeted Stake Holder Engagement 25Jan2023-v2

UAVE Ltd

Airspace Change
ACP-2022-025

SUA BVLOS
in Segregated Airspace

Targeted Aviation Stakeholder Engagement

Version 2

Dated: 25th January 2023

Amendment record

Issue	Amendment	Date
V1.0	Initial Issue	29/11/2022
V2.0	Reduced Area of TDA ALPHA and TDA BRAVO	25/01/2023

This document is controlled by the Change Sponsor (UAVE Ltd - SUA Operator). The initial release version and any subsequent revision will be subject to the approval of the SUA Operator. Amendments to this document will be recorded in the Amendment Record. For reference, a copy of this version and all superseded versions will be stored on a secure server.

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Referenced documents

Document	Version	Version & Date	Source
CAP 1616	Airspace Change – Guidance on the regulatory process for changing the notified airspace design and planning and planned and permanent redistribution of air traffic, and on providing airspace information	Version 4.0 March 2021	<u>CAP 1616</u>

Acronyms and abbreviations

ACP	Airspace Change Proposal
AMSL	Above Mean Sea Level
ATC	Air Traffic Control
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DAAIS	Danger Area Activity Information Service
FL	Flight Level
FREQ	Frequency
HRS	Hours
NOTAM	Notice to Airman
Ltd	Limited
SFC	Surface
SUA	Small Unmanned Aircraft
TBD	To Be Determined
TDA	Temporary Danger Area
TEL	Telephone
UAS	Unmanned Aircraft System

Introduction

NOTE: Changes from V1 are in red text

UAVE Ltd (the change sponsor) is seeking a temporary airspace change to support its 2 week-long fixed wing Small Unmanned Aircraft (SUA) geophysical air survey between 2 May 2023 and 30 July 2023.

The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

Following an Assessment Meeting with CAA Airspace Regulation to discuss UAVE Ltd's Statement of Need, it was agreed that to facilitate SUA operations a Temporary Danger Area (TDA) would be required, the proposals for which would be subject to a targeted aviation stakeholder engagement exercise.

The Statement of Need and the minutes of the Assessment Meeting can be downloaded from the CAA Airspace Change Portal, <https://airspacechange.caa.co.uk/>, and searching under Airspace Change ID for ACP-2022-025.

The requested TDA complex has been split into two conjoined areas TDA ALPHA and TDA BRAVO. TDA ALPHA delimits the core survey area when combined with the existing danger area EGD217E. TDA BRAVO provides a transit corridor to Talybont Airfield. The remaining EGD217 complex provides a transit corridor to Llanbedr Airfield.

The proposed TDA complex (TDA ALPHA and TDA BRAVO) is within Class G airspace. UAVE expect the majority of current flights in this area to be recreational and be undertaken on evenings and at weekends. To mitigate the effect on other airspace users UAVE's proposal is to activate the TDA only between 8am and 6pm local time (or ATC or daylight hours if either are shorter) and only on weekdays (Monday to Friday) leaving the weekends free of any additional flight restrictions. Whilst the TDA complex duration is requested for 90 days, the SUA operations are only expected to take 2 weeks (10 working days) and the TDA will only be activated, by NOTAM, on active SUA flying days to minimize the impact of this airspace change on other airspace users.

Following stakeholder engagement a revised design for both TDA ALPHA and TDA BRAVO is presented in this document, Version 2.

Safe vertical separation

The survey task is for the aircraft to fly at an altitude of between 150-500ft above the surface. Allowing for a minimum 500ft vertical separation between the SUA and any other air traffic gives a required segregated airspace height for the TDA Complex of 1000ft above surface level. Given that the maximum height of the surface within the proposed TDA ALPHA is Y Llethr Mountain at 2,479ft AMSL (756m) (Latitude 52°48'44.40"N, Longitude 3°59'18.14"W) the safe ceiling height for TDA ALPHA will be 3,500ft AMSL (FL035) Given that the maximum height of the surface within the proposed TDA BRAVO is **the hill at 1450ft AMSL (442m) (Latitude 52°40'50.81"N, Longitude 4° 2'3.44"W) the safe ceiling height for TDA BRAVO will be 2,500ft AMSL (FL025)**

Safe lateral separation

SUA operations within the proposed TDA complex will remain wholly within the bounds on the TDA complex and come no closer than 500m to any outside edge to maintain safe lateral separation with any other air traffic.

This document provides a summary of UAVE Ltd's 2022-025 Airspace Change design to allow aviation stakeholders to comment formally on the TDA design and operational proposals. The TDA design presented in this document is not "set in stone" and UAVE Ltd are open to discuss amendments with aviation stakeholders.

UAVE Ltd's change proposals

Segregated airspace

UAVE Ltd requires a volume of segregated airspace within which to safely execute its operations and presents the following proposed airspace design to local airspace users:

Identification and Lateral Limits			Upper Limit	Lower Limit	Remarks																																																																																																														
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1			2	3
TDA 2: TDA BRAVO Talybont (Orange Polygon)			Lower Limit: SFC Upper Limit: 2500 ft AMSL (FLO25)	Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (LOCAL): 08.00-18.00 DAAIS: TBD FREQ: TBD TEL: UAVE Ltd Flight Crew Sponsor: UAVE Ltd
#	Latitude	Longitude		
1	52 36 55.7863 N	4 2 21.02717 W		
2	52 37 43.72394 N	4 3 59.68332 W		
3	52 41 54.53748 N	4 1 14.85779 W		
4	52 38 23.36539 N	4 10 3.92948 W		
5	52 35 22.38574 N	4 9 58.03486 W		
6	52 35 34.64824 N	4 2 20.4648 W		
1	52 36 55.7863 N	4 2 21.02717 W		

FIGURE 1 REGIONAL VIEW OF PROPOSED AIRSPACE DESIGN

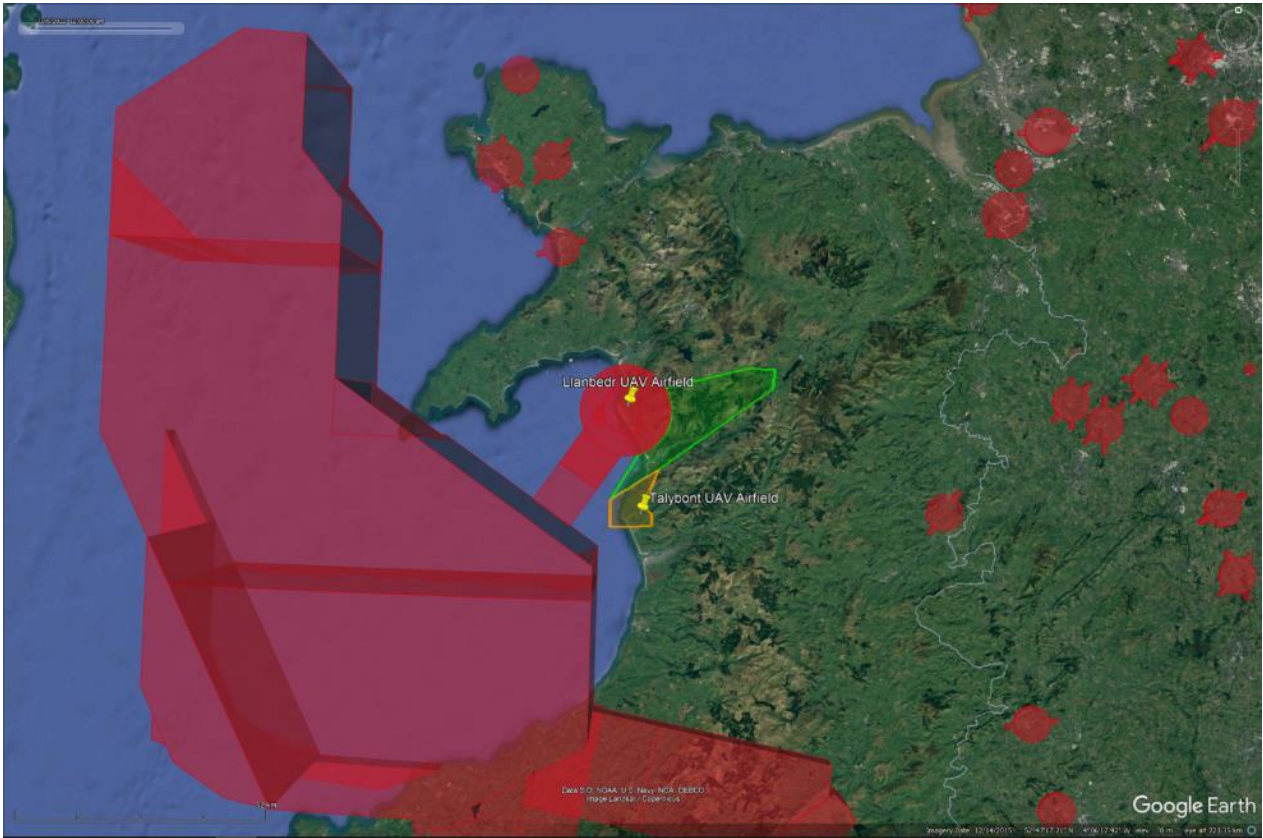


Figure 1: Revised TDA Complex, TDA ALPHA (green polygon), TDA BRAVO (orange polygon), Existing Danger Areas (red polygons)

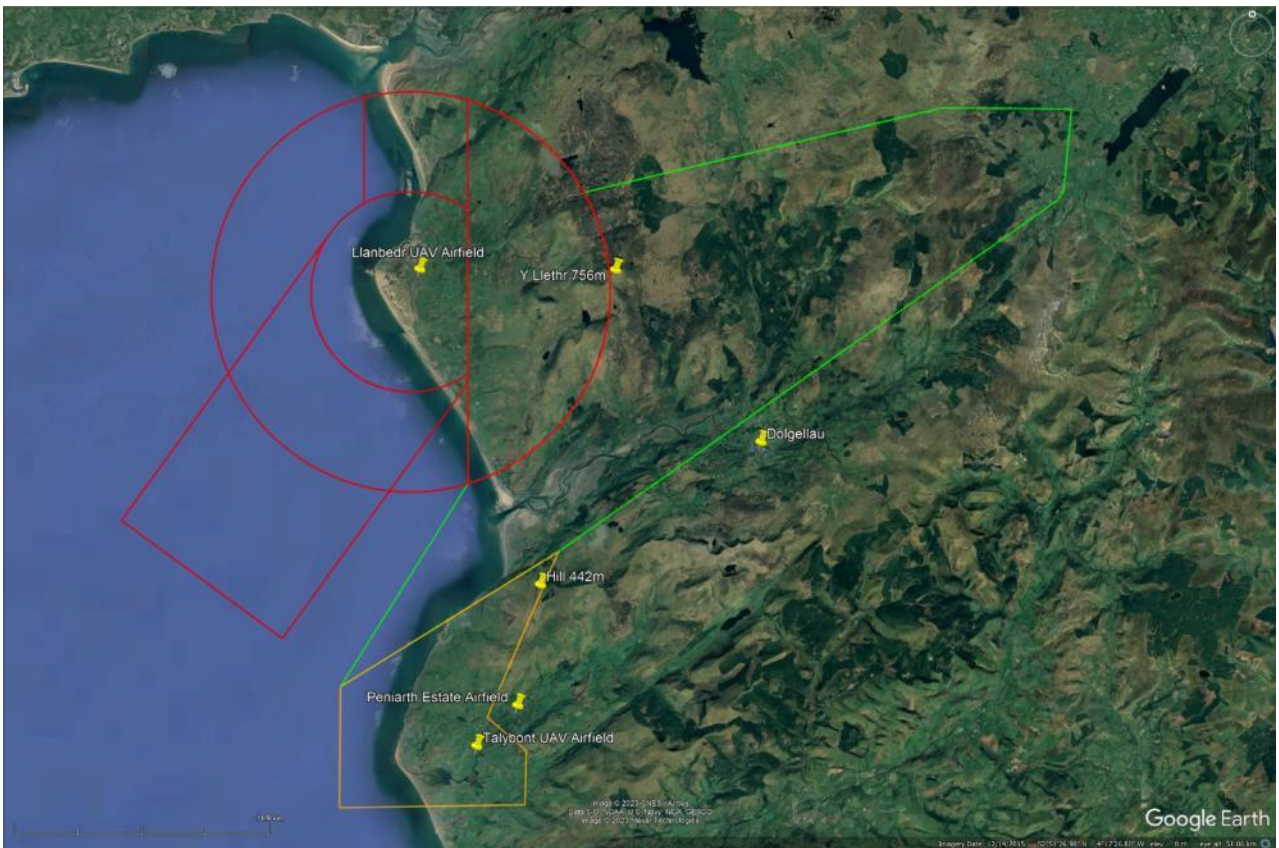


Figure 2: Zoom of Revised TDA Complex – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217 Complex (red polygons)



Figure 3: Revised TDA Complex covering survey areas – TDA ALPHA (green polygon) along with Existing Danger Area EGD217E (red polygon)

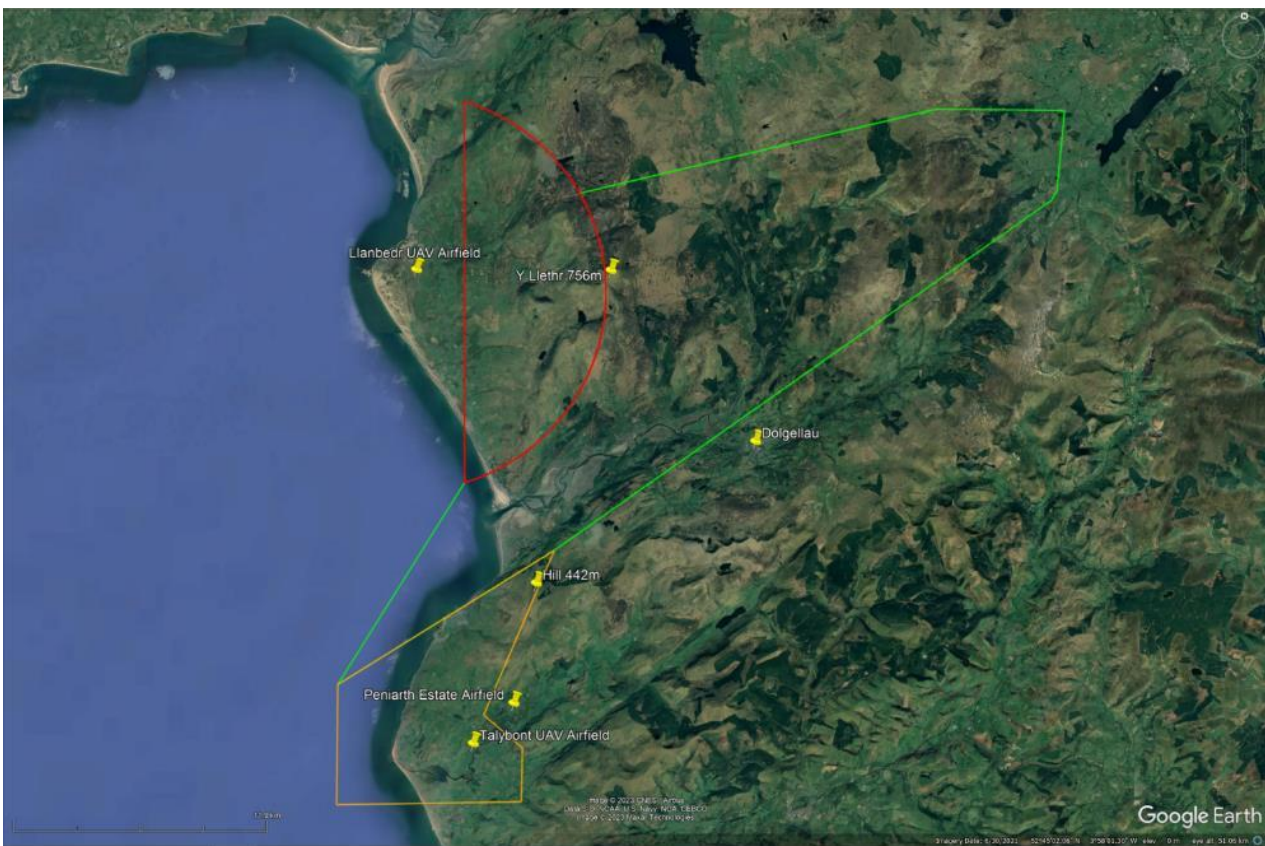


Figure 4: Revised TDA Complex for flight operations from Talybont – TDA ALPHA (green polygon) and TDA BRAVO (orange polygon) along with Existing Danger Area EGD217E (red polygon)

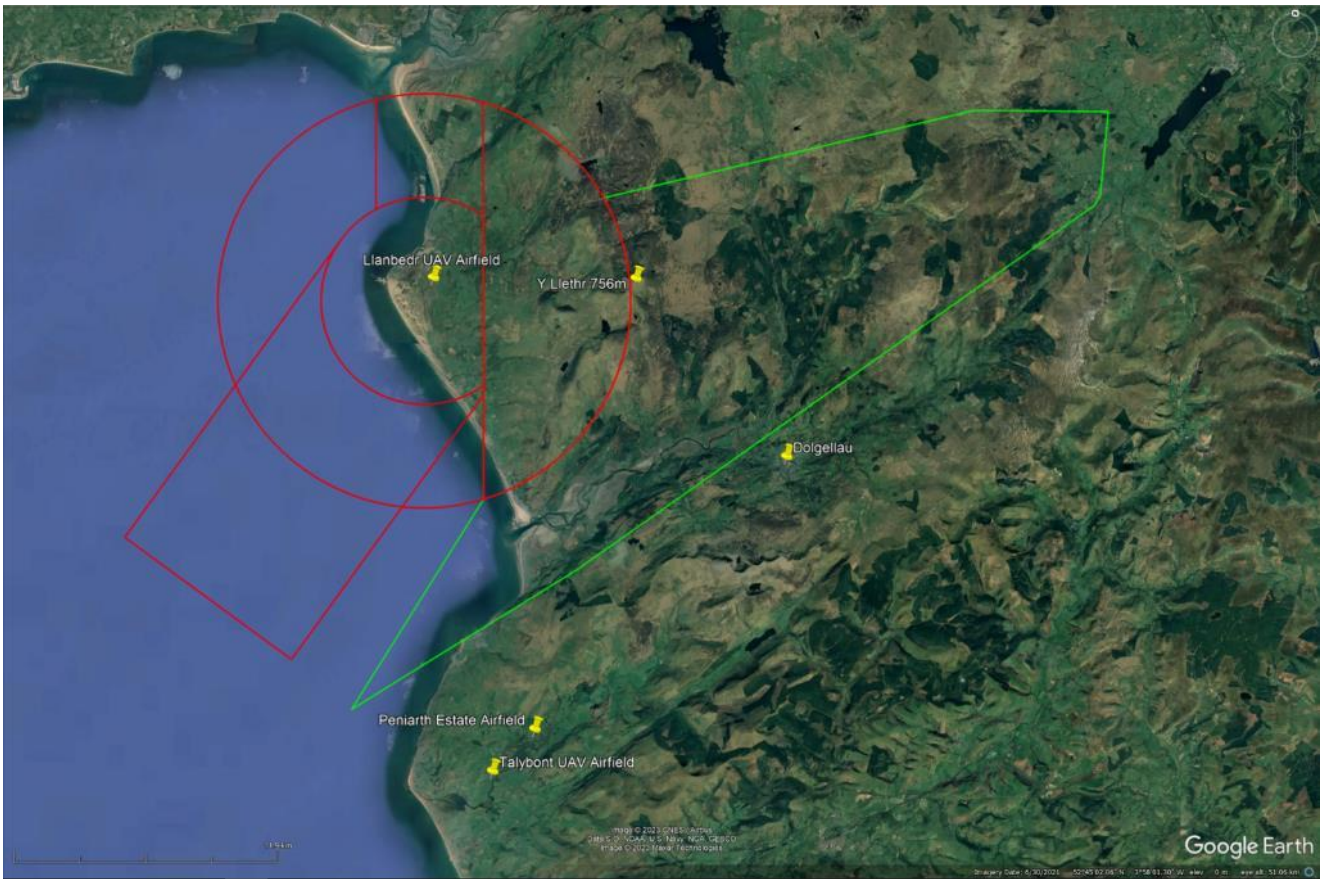


Figure 5: Revised TDA Complex for flight operations from Llanbedr – TDA ALPHA (green polygon) along with Existing Danger Area complex EGD217 (red polygons)



Figure 6: Revised TDA BRAVO (orange polygon) providing access to Peniarth Estate Airfield

Notification

CAA Airspace Regulation will promulgate TDA activations by NOTAM for the period of planned use.

TDA activation

Date	Time
Monday to Friday only 2 May 2023 and 30 July 2023	Monday – Friday (inc. public holidays) 08.00-18.00 hrs Local Time (ATC hours) or daylight hours if shorter

UAS BVLOS operations are expected to take no more than 10 days (2 weeks Monday-Friday) during which time the TDA will be activated by NOTAM.

On days no activity is planned the TDA will not be activated.

The TDA is requested to be available for a 90 day period to enable efficient scheduling of the survey operations.

Appendix R Talybont HSE Operational Site Report

Operational Form

HSE New Airfield Audit Form

General Details

Visit date

28-Mar-22

XXXX

Latitude	N52° 36.7
Longitude	W004° 04.5

DESCRIPTION OF AIRFIELD ANTICIPATED USE	
Grass strip with rise to central position flanked by stock fencing	
Two wind socks	
Adequate hangar space direct to apron	
NNE - SSW	

SITE SURVEY

Field Crew Composition	
Safety Pilot	Y
RPSO	Y
Observer	N
FOM	Y
Payload Operator	N

Location		
Site name	Talybont Airfield	
Altitude	40 ft AMSL	
Downloaded map to GS (tick)		
Vehicle access	Y/N	Y
Preparation work required	none	

ITEM	ACTION TO COMPLETE	FINDINGS
AIRSPACE	Airspace class (A, C, D, E, F, G) ATC permission required?	G, TDA yes
TERRAIN	flat/mountainous,/boggy/ other	flat
PROXIMITIES	Other aircraft, aerodrome, heli pads, model sites	Llanbedr 11 Kms
HAZARDS	live firing, high intensity radio transmissions, gas venting	none
RESTRICTIONS	nuclear power station, prison, govt infrastructure	none
SENSITIVITIES	nature reserves, byelaws, recreational areas	Snowdonia NP
PEOPLE	villages, hamlets, caravan sites	Tywyn within 1Km
LIVESTOCK	local farms	Peniarth Estate
PERMISSION	local authority, landowners, military	Peniarth Estate
ACCESS	public rights of way, gates & roads	road to entrance
CORDON	is a cordon required	no
FOOTPATHS	public footpaths, bridle paths, others	none
ALTERNATE	emergency landing sites	Peniarth House
RISK MITIGATION	avoid peak third party activity times	land 03 avoid A493
WEATHER	24 hour forecast	TBA
NOTAMS	NOTAMS that may effect operations	TBA

CONTACT No.S

Police	0800 555 111
Local hospital	01248 384384
Local ATC	01407762241 ex 7461
Local ATS	TBA
Military Control	01407762241 ex 7461
NOTAM via	TBA

SAFETY RISK LEVEL**Risk Levels**

1	Extremely improbable, almost inconceivable event will occur
2	Improbable, Very unlikely to occur
3	Remote, Unlikely to occur but possible
4	Occasional, Likely to occur sometimes
5	Frequent, Likely to occur many times

SAFETY RISK SEVERITY**Risk Levels**

1	Negligible, Nuisance of little consequence
2	Minor, Results in minor injury
3	Major, Serious injury or minor injury to multiple persons
4	Hazardous, Very serious injury
5	Catastrophic, Results in fatality or one or more persons

HAZARD	LEVEL	SERVERITY	MITIGATION MEASURES
livestock	1	1	good quality stock fencing
3rd party	1	1	private land, access prohibited
vegetation	1	1	approach and departure kept clear
A493 road	3	2	use runway 03 when possible
undershoot	1	1	select touchdown prior to central rise
overshoot	1	1	select touchdown prior to central rise

Picture 1 runway NNE to left, SSW to right. 500m x 16m



Picture 2 runway 03 view to central rise



Appendix S Talybont Airfield Information

Updated **Talybont**
13-Apr-23 **For the attention of:-**

Grass **NNE/SSW** (500m x 16m) 40ft amsl
03R / 21L Unlicensed

Operated by: XXXX XXXX, Peniarth, Tywyn. Gwynedd LL36 9UD

Up to Date details at XXXX Email: XXXX

Tel: XXXX

N52° 36.7 W004° 04.5 one mile NE of TYWYN, adjacent to the River Dysynni & A493

Nearest Alternates: **WELSHPOOL (EGCW) 123.25** (34 nm) tel:01938-555062

CAERNARFON (EGCK) 122.25 (31nm) tel:01286-830800

Not necessarily in order of importance

- 1 Airfield operator does not live at strip - **PPO thus essential to allow sheep clearance**
- 2 **Sheep will be kept off the runway for one hour only after your requested ETA**
- 3 **Visitors MUST carry their own third party insurance**
- 4 Remember to call the Red Arrows/Purple Airways freephone number: **0500-354802**
- 5 Advisable to call Valley (**134.35**) or Llanbedr (**122.50**) especially during week
- 6 Runway **03R** rises 10 feet in first 200 meters and then falls, see below
- 7 Runway **21L** rises 30 + feet in first 300 meters and then falls, see above
- 8 Do not land long - you cannot stop! see above
- 9 Remember that grass is **very** slippery when wet
- 10 Clear approaches over 5 foot hedges
- 11 Best to be lightly loaded on first visit
- 12 Avoid overflying local houses and villages where possible
- 13 This is a short field that can suffer from rotor in N & NW winds - particularly on **21L**
- 14 The valley rises from sea level to 3,000 feet in only seven miles - it deserves respect
- 15 Livestock may be safely grazing and they are not frightened of aircraft
- 16 **No landing fees - unless you upset my neighbours or fail to obtain Prior Permission**
- 17 Please do not "buzz" field - you **will be** reported by one of my neighbours
- 18 Occasional radio for microlights on **129.82** Callsign is: **"Talybont Micro Base"**
- 19 BMAA, FFA and PFA members are particularly welcome
- 20 Experienced pilots with STOL aircraft welcome - no students or experts please
- 21 Join in the overhead at 1000ft QNH and **Check the direction of both windsocks**
- 22 Microlight pilots must bring their own oil (limited mogas may be available)
- 23 Fast aircraft are advised to avoid slow-flying, obstinant and over weight Cormorants
- 24 please do not park on the runway
- 25 there are a couple of spare bicycles in the hanger for the adventurous
- 26 Gyro flyers are no longer allowed to land here
- 27 **If in doubt - please DON'T**
- 28 **The "Information Received" - top right - must be quoted on arrival in the overhead -**

29 **or by prior telephone contact - or you will not be allowed to land !!!**

30 Aberdovey Golf Club tel:01654-767493 / fax:01654-767027

31 Penhelig Arms Hotel tel:01654-767215

32 Taxi tel:01654-710015

33 Car Hire (35 miles) tel: 01970 - 626200 / 01970 - 636936

Appendix T NPAS

From: XXXX <XXXX>
Sent: Monday, July 17, 2023 8:03 AM
To: XXXX
Subject: RE: NPAS contact

Hi XXXX,

Thank you for your email and I can confirm that these mitigations are acceptable for the coordination of any police flights.

Best regards

XXXX

Capt XXXX MSC
Head of Flight Operations/ Pennaeth Gweithrediadau Hedfan
National Police Air Service/ Gwasanaeth Awyr Cenedlaethol yr Heddlu

Mobile: XXXX
Email: XXXX
Web: www.npas.police.uk



From: XXXX <XXXX>
Sent: Friday, July 14, 2023 2:03 PM
To: XXXX <XXXX>
Subject: RE: NPAS contact

XXXX,

Thanks for your feedback on Flight Levels. Please can you confirm that the mitigation measures outlined below are acceptable to NPAS for the UAS flights within the proposed TDA.

The UAVE Ground Crew will have the capability to receive ADS-B IN
UAVE will work with Airbox to have the operational area within the TDA (Solid green area as shown in Operational Area Contingency Area and Emergency Buffer 13Jun2023.jpg) uploaded (as .kml) to Airbox

Thanks,

XXXX

Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>

Sent: Thursday, July 6, 2023 3:28 PM

To: XXXX

Cc: XXXX<XXXX>

Subject: RE: NPAS contact

Hi XXXX,

Thanks for forwarding this, I do have a query regarding the dimensions of the TDA. You state it will be 3500AMSL(FLO35) or 2500AMSL(FLO25) however AMSL and Flight Level (FL) are based on two different pressure settings (QNH for AMSL and Standard Pressure 1013 for Flight Levels) and will (unless QNH is 1013) give two different heights above ground. I would suggest that you use AMSL and Regional QNH as this is what aircraft are likely to be using. 3000ft is the transition level in your area of operations and therefore even IFR traffic will not be using a Flight Level below FL30.

Stakeholder	Type of Organisation	Type of Contact Required	Contact Name	Contact	Comments
NPAS	Police	Email	Ops Centre	XXXX	24 hours

Best regards

XXXX

Capt XXXX MSC

Head of Flight Operations/ Pennaeth Gweithrediadau Hedfan

National Police Air Service/ Gwasanaeth Awyr Cenedlaethol yr Heddlu

Mobile: XXXX

Email: XXXX

Web: www.npas.police.uk



From: XXXX <XXXX>

Sent: Monday, July 3, 2023 12:21 PM

To: XXXX <XXXX>
Cc: XXXX<XXXX>
Subject: RE: NPAS contact

XXXX,

Two action points:

Since our Teams meeting on 11May I can confirm that:

The UAVE Ground Crew will have the capability to receive ADS-B IN
UAVE will work with Airbox to have the operational area within the TDA (Solid green area as shown in Operational Area Contingency Area and Emergency Buffer 13Jun2023.jpg) uploaded (as .kml) to Airbox

Please can you confirm that these are suitable mitigation measures for the proposed UAS flights.

The draft TOI for the proposed UAS survey around Dolgellau (ACP-2022-025) is attached for your review. The CAA are currently making their assessment of the ACP proposal and their decision is expected imminently. Please can you populate the table of contact details for weekly and daily operations (p25 & 26), and send any comments or updates using the tracked changes (already on).

Thanks,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>
Sent: Thursday, May 11, 2023 6:23 PM
To: 'XXXX' <XXXX>
Cc: 'Walters, David' <XXXX>
Subject: RE: NPAS contact

XXXX,

Thanks for a very useful TEAMS call earlier.
Below is a summary of the discussion.

We discussed the mitigation measures already proposed for the Dolgellau TDA namely:

NOTAM 24 hours in advance of TDA activation
DAAIS hosted by RAF Valley
Mode S and ADS-B EC out on the UAV
Pre-defined UAV loiter points with the TDA

Ground Crew Air Band Radio
Ground Crew Mobile Phone

Some concerns were raised by NPAS as to the level of EC visibility of the UAV due to the steep nature of the terrain if emergency crossing was required.

NPAS requested the following additional measures:

Ground Crew have the capability to receive ADS-B IN to enable UAVE Ground Crew to track emergency traffic when it is crossing the TDA to monitor deconfliction

Uploading the daily UAV flight plan (as .kml) to Airbox, 24 hours in advance, so that the UAV flight plan would appear on the Airbox App used by NPAS (& HEMS / SAR) in their cockpit displays to assist in deconfliction

UAVE agreed to investigate the feasibility of the additional measures and report back to NPAS.

Please let me know if you have any additional comments on the above summary.
Best regards,

XXXX
Business Development
UAVE Limited



W www.uave.co.uk

XXXX
XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>
Sent: Wednesday, May 10, 2023 7:34 AM
To: XXXX <XXXX>
Subject: Re: NPAS contact

Hi XXXX,

Thanks, please send an invite to the proposed TEAMS meeting.
best regards,

XXXX

On 10 May 2023, at 07:27, XXXX <XXXX> wrote:

Hi XXXX,

I am free 1530-1630 on Thurs 11th for a call or can set up a TEAMS meeting?

Best regards

XXXX

Capt XXXX MSC
Head of Flight Operations/ Pennaeth Gweithrediadau Hedfan
National Police Air Service/ Gwasanaeth Awyr Cenedlaethol yr Heddlu

Mobile: XXXX
Email: XXXX
Web: www.npas.police.uk

<image001.jpg>

<image002.jpg>

<image003.png>

<image004.png>

<image005.png>

From: XXXX <XXXX>
Sent: 09 May 2023 16:50
To: XXXX <XXXX>
Cc: XXXX; XXXX<XXXX>
Subject: RE: NPAS contact

You don't often get email from XXXX. Learn why this is important

XXXX,

Thanks for your email response and for providing information regarding the Airbox solution. I have sent requests for further information to both XXXX and XXXX.

Our Prion Mk3 UAS (3.8m fixed wing, 45kg MTOW) is equipped with a Trig TT21 transponder, Class 2 Mode S level 2els and ADS-B Class B0, to provide Electronic Conspicuity and we are happy to provide contact details for our field crew.

I would welcome a call, are you available this Thursday (11th May) either am or pm ?

Best regards,

XXXX
Business Development
UAVE Limited
<image006.jpg>

W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX <XXXX>
Sent: Tuesday, May 9, 2023 8:04 AM
To: XXXX
Cc: XXXX; XXXX<XXXX>

Subject: RE: NPAS contact

Hi XXXX,

Thank you for your email, we get a large number of similar requests however, your proposal would appear to be more likely to impact us than some others, due to several factors:

A fairly large area

Although operating at a relatively low height AGL, the high ground makes it more likely that transiting police aircraft would need to enter while flying below cloud.

The use of geographic holding points is only useful if these are immediately available to pilots in flight via an electronic mapping system.

No mention of the use of any Electronic Conspicuity, meaning that crews are relying on visual separation only, which is problematic when trying to detect a small UAS.

I would ask that you consider engaging with Airbox.

Airbox have worked with other UAV operators to create overlays visible on the ACANS mapping for emergency service operators. XXXX is our POC XXXX

Skyfarer operates drones between hospital sites SE of Birmingham. XXXX, Compliance Engineer at Skyfarer would be a good POC for them. XXXX

Skyfarer utilise the normal CAA channels for their TDA but as part of risk/mitigation they use Airbox to notify aviation users.

I believe a number of protocols were considered/agreed:

The TDA was split into sections.

During the NOTAM period, the live section was geofenced red (hot) by the drone operator. Blue (cold) when no drone was operating in that area.

Emergency Service aircraft couldn't see the drone on the Airbox platform but they could see the live section it was operating in.

The drone operator was given access to the emergency service Airbox accounts to see the HEMS, Coastguard and Police aircraft. This allowed them to be proactive in deconfliction.

Skyfarer Airbox setup

<image007.png>

<image008.png>

The use of Airbox coupled with a mobile phone number (published as part of any NOTAM), giving direct contact with the operating crew would give an acceptable level of safety.

Best regards

XXXX

Capt XXXX MSC

Head of Flight Operations/ Pennaeth Gweithrediadau Hedfan

National Police Air Service/ Gwasanaeth Awyr Cenedlaethol yr Heddlu

Mobile: XXXX

Email: XXXX

Web: www.npas.police.uk

<image001.jpg>

<image002.jpg>

<image003.png>

<image004.png>

<image005.png>

From: XXXX <XXXX>
Sent: 04 May 2023 16:18
To: XXXX <XXXX>
Subject: FW: NPAS contact

You don't often get email from XXXX. Learn why this is important

XXXX,

UAVE are sponsoring an Airspace Change Proposal in the Dolgellau area in Wales in order to undertake an airborne aeromagnetic survey for a mineral exploration company using our Prion Mk3 Fixed Wing UAS.

The process is on the CAA Airspace Change Portal under airspace change ID: ACP-2022-025
Airspace change portal (caa.co.uk)

The current airspace design under discussion is attached:
CAA ACP-2022-025 Targeted Stake Holder Engagement 28Apr2023-v3.pdf

As part of the airspace change process UAVE undertook a stakeholder engagement with both ARCC and Babcock HEMS however we omitted to discuss with NPAS hence this email.

The agreement we have with ARCC & Babcock is to put in place a TOI, along the lines of the attached TOI from a previous similar UAV survey in the UK in 2021, with the addition of 4 pre-defined loiter points at 10km intervals.

See UAVE Ltd.Prion MK3.TOI V4 31st Aug.2021.pdf & Suggested Loiter points for TOI 13Apr2023.pdf

I am happy to take a call and provide further information if that would be of assistance.

Please can you in the first instance confirm receipt of this email and following a review of the documents let me know if a similar arrangement is suitable for NPAS.

Best regards,

XXXX
Business Development
UAVE Limited
<image006.jpg>

W www.uave.co.uk

XXXX

XXXX

A Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom

V <https://www.youtube.com/watch?v=KkEOoTriAx8>

From: XXXX
Sent: Thursday, May 4, 2023 3:18 PM
To: XXXX

Cc: XXXX

Subject: FW: NPAS contact

Hi XXXX,

Hope you're well. We've had a discussion internally and would like to clarify whether National Police Air Service (NPAS) have been engaged during the process and if so, whether they are content with the proposals. I understand that the TOI that you are developing will be managed by the ARCC and should include NPAS but there is no information to suggest that NPAS are aware and content with the access arrangements.

Please can you provide any specific engagement that has been done with NPAS and any feedback that was received. If there has not been any direct engagement with NPAS, please see below for the best point of contact (Paul Watts) for you to cover off this requirement.

Also, if you are able to submit the amended summary report which removes references to Stakeholder Engagement V3 being sent to stakeholders, I would be grateful.

So far I have not had confirmation that the Safety Assessment has been assigned to an Inspector so it is looking like it will be very tight for a decision by 19 May. I'll keep you updated once I've heard back from the RPAS Team.

As always, please get in touch if you have any questions or queries.

Kind regards,

XXXX

From: XXXX

Sent: 04 May 2023 11:55

To: XXXX

Cc: XXXX; XXXX

Subject: RE: NPAS contact

Hi XXXX

The best person would be XXXX XXXX

Regards

<image009.png>

XXXX

Flight Operations Training Inspector (Rotary)

Civil Aviation Authority

Tel no: XXXX

Mob: XXXX

From: XXXX

Sent: 04 May 2023 11:31

To: XXXX

Cc: XXXX

Subject: NPAS contact

Hi XXXX,

Do you have the best contact details for NPAS for a sponsor who is proposing a TDA in west Wales?

Thanks,

XXXX

XXXX
Airspace Regulator
Safety and Airspace Regulation Group
UK Civil Aviation Authority
Tel: XXXX

www.caa.co.uk
Follow us on Twitter: @UK_CAA

<image010.png>

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Appendix U Temporary Operating Instruction

UAVE Ltd

Prion MK3 UAV

Temporary Operating Instruction (TOI)

Dolgellau Survey Temporary Danger Area (TDA)

ACP-2022-025

EG D298A, B & C

V4 9th October 2023

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1. Background of the Drone used and the company:

The drone/UAV to be used for the proposed Dolgellau Aerial Survey Project is the Prion MK3 Fixed Wing Aircraft. This UAV is designed, manufactured & flown by UAVE Ltd & their customers throughout both the UK & worldwide. The aircraft was first flown in 2006 & has been developed to the current MK3 version imagery is shown below:



Prion Mk 3 Surfaces



Prion Mk 3 Underside

The version to be employed for the Dolgellau Aerial Survey will be fitted with a 2-cylinder 120cc wet fuel motor & will be configured for Geophysical Survey work using a magnetometer payload.

A flight crew of one Manual Remote Pilot (RP) & one Ground Station Operator (2nd Remote Pilot/GSO) plus a Flight Operations Manager (FOM/Observer) are employed for all flights of this nature. The Manual Pilot can at anytime take-over manual flight control of the aircraft using a flight controller (transmitter) which overrides the automated flight profile used by the autopilot (Collins Aerospace Piccolo II)

UAVE Ltd are based at West Wales Airport, Ceredigion, West Wales, please see www.uave.co.uk for more information on the company, its products ,people, & services it provides to its customers & the UAV Industry both in the UK, EMEA, & Worldwide.

2. Purpose/Objective or Mission:

UAVE Ltd have been commissioned by a mining company, XXXX, to carry out an Aerial Geophysical Survey of areas around Dolgellau, Wales. Sensors onboard the UAV measure the changes in the earth's magnetic field from which the geology of the area can be modelled.

a. Type of Sortie and Payloads:

Each sortie may last up to 4 hours duration depending on the weather, task & other factors. The survey altitude flown will be between 150ft and 500ft above the surface. The payload flown will be a highly sensitive magnetometer which will be securely fitted within the airframe of the Prion MK3.

b. Drone Flight Path: With; distance & Time A-B. In addition to overall daily operating times:

The aircraft will be flown under BVLOS conditions, employed in straight flight paths (apart from flying around prohibited area/structures), with a target altitude of between 150ft and 500ft above ground level.. Transit flights between the Take off and landing area and the survey areas will be at up to 2,000ft amsl in EG D298A, and up to 3,000ft amsl in EG D298B&C. The ceiling of the proposed TDA will be 1,000ft above the highest point within each TDA allowing for a minimum of 500ft vertical separation between the UAV and any airspace users outside the TDA. The distance from the take off and landing strip to the furthest extent of the proposed TDA is 42.8km, which when traversed by the UAV travelling at a cruising airspeed of 80km/h in still wind conditions would take 33 minutes. The daily flight times will be between 07.00-16.45 hours UTC (daylight hours), Monday-Friday only.

Multiple flights are anticipated to take place over a 2 week period, (weekdays only) within a 90 day TDA period from **23rd October 2023 and 20th January 2024.**

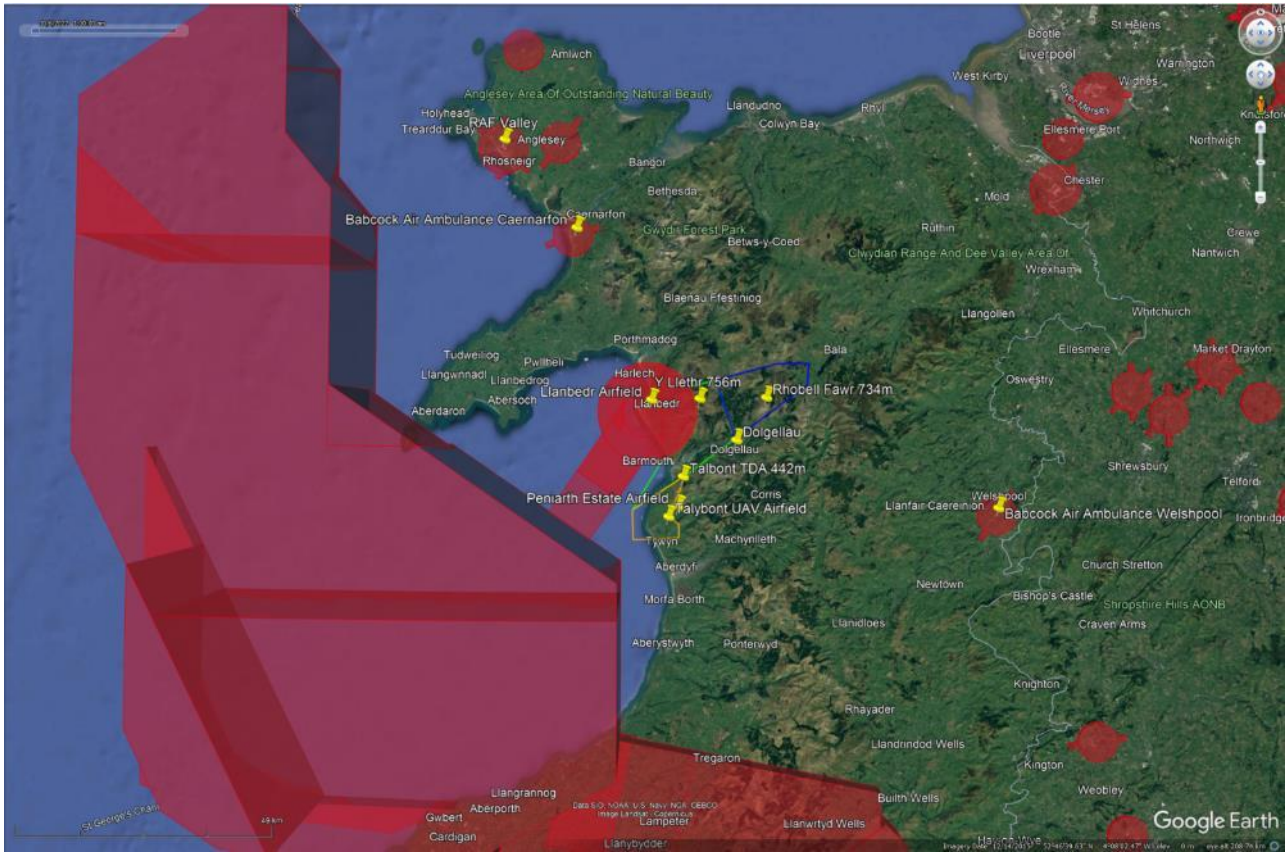
Actual times of TDA activation will be promulgated by NOTAM.

3. Electronic Conspicuity

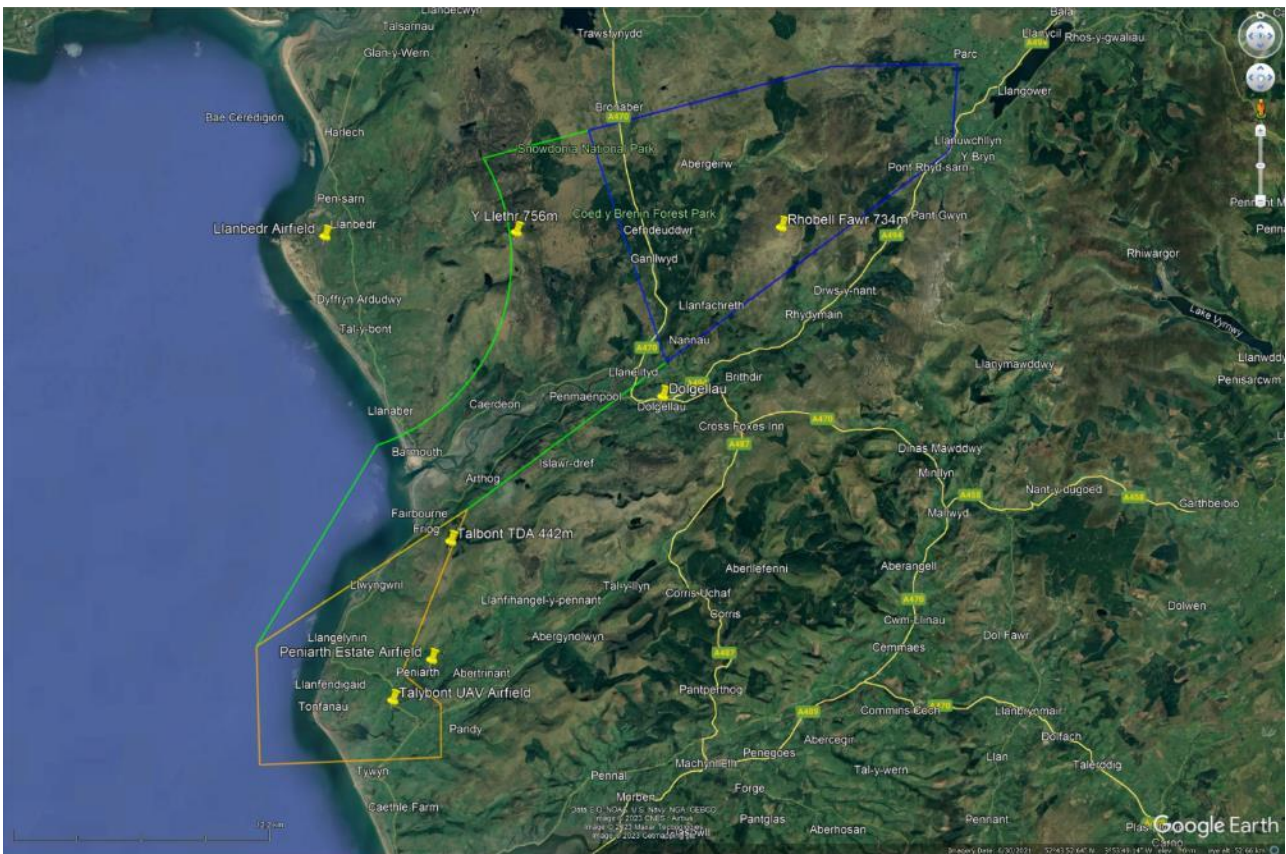
The Prion Mk3 UAV will be fitted with an ADS-B Transponder and provide an ADS-B out discrete squawk of 3765 during all flight operations.

For this survey the flight operations profile of the UAV, 150-500ft agl in an area of steep terrain, will likely mean that UAV ADS-B position information is not available via direct line of sight to other air users 100% of the time the UAS is airborne.

4. REGIONAL VIEW OF PROPOSED AIRSPACE DESIGN



Regional View Revised TDA Complex, EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon) Existing Danger Areas (red polygons)



Zoom of Revised TDA Complex – EG D298A (orange polygon), EG D298B (green polygon), EG D298C (Blue Polygon)

5. Proposed/Approved Airspace protection measures.

UAVE Ltd have applied for a CAA ACP – Temporary Danger Area based on the following imagery & information:

UAVE propose the TDA will be notified by NOTAM's on a daily basis meaning only airspace required for the days UAV flights will be active.

Danger Area Activity Information Service (DAAIS)

DAAIS will be provided by RAF Valley. However, due to the steep terrain in the area it may not always be possible to be in radio contact with RAF Valley therefore and alternatively DAAIS provision will be provided by London Flight Information Service (LONDON FIS).

a. Safe vertical separation

The survey task is for the aircraft to fly at an altitude of between 150-500ft above the surface. Allowing for a minimum 500ft vertical separation (vertical emergency buffer) between the UAS and any other air traffic gives a required segregated airspace height for the TDA Complex of 1000ft above surface level.

The maximum height of the surface within the proposed EG D298A the hill at 1450ft AMSL (442m) (Latitude 52°40'50.81"N, Longitude 4° 2'3.44"W) the safe ceiling height for EG D298A will be 2,500ft AMSL The maximum height of the surface within the proposed EG D298B is Y Llethr Mountain at 2,479ft AMSL (756m) (Latitude 52°48'44.40"N, Longitude 3°59'18.14"W) the safe ceiling height for EG D298B will be 3,500ft AMSL . The maximum height of the surface within the proposed EG D298C is Rhobell Fawr Mountain at 2,407ft AMSL (734m) (Latitude 52°48'51.48"N, Longitude 3°48'06.57"W) the safe ceiling height for EG D298C will be 3,500ft AMSL .

The table below provides the maximum height of the surface within the proposed TDA TDA Complex EG D298A,B&C and the proposed TDA ceiling height.

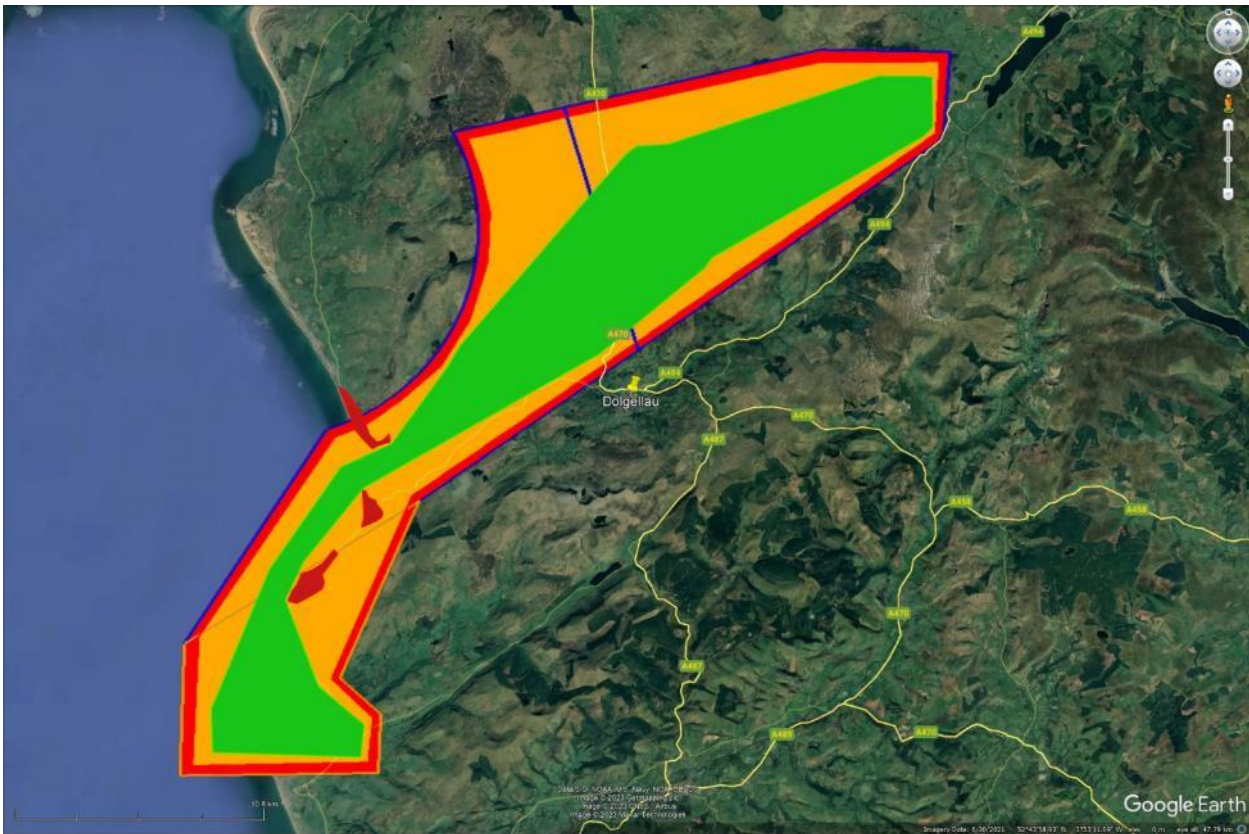
TDA	Max Ground Level, ft AMSL	TDA Ceiling Height, ft AMSL
EG D298A	1,450	2,500
EG D298B	2,479	3,500
EG D298C	2,407	3,500

EG D298A has been designed to enable transit from the survey area to Talybont Airfield. The lower terrain relief of EG D298A compared to EG D298B enables EG D298A to have a lower TDA ceiling height of 2,500ft AMSL which provides a lower crossing height for other airspace users.

b. Safe lateral separation

UAS operations within the proposed TDA complex will remain wholly within the bounds on the TDA complex and come no closer than 500m to any outside edge to maintain safe lateral separation with any other air traffic.

c. Operational Area, Contingency Area and Emergency Buffer



Map of TDA complex showing Operational Area in solid green, Contingency Area in solid orange and Emergency Buffer in solid red. Smaller red polygons denote geo-fenced exclusion zones over populated areas

The TDA complex has an emergency buffer of 500m laterally and 500ft vertically built into the design. Therefore the UAV will not fly within 500m of 500ft of any other air-user flying along the TDA boundary. This Emergency buffer is marked in red on the map above.

Populated areas such as Barmouth which sit within the TDA are geo-fenced exclusion zones specified within the autopilot system to ensure that UAV operations are not undertaken over populated areas.

The Operational Area, marked in green, denotes the area in which the UAV survey operations and transit to and from Talybont airfield are planned to be undertaken.

The remainder of the airspace is defined as the Contingency Area and is marked in orange. Field crew will be aware of the proximity of the UAS to each of these airspace classification volumes as the information is on the flight monitor map facility on the ground station. The position of the aircraft determined from the GPS navigational information relayed to the ground station is superimposed on this same map with a real-time update (maximum refresh delay 2 seconds).

d. UAV Loiter positions

UAVE will put in place a network of 4 pre-agreed loiter positions at ~10km intervals which the UAV could reach within 7.5 minutes of notification where the UAV could loiter, in a 200m radius at 500ft agl, to enable a safe crossing of the TDA for NPAS, MCA, SAR or HEMS operations, if suitable UAV fuel reserves were remaining.

A map of suggested loiter points is below showing the 200m loiter radius in red and 700m radius in yellow which would provide min 500m separation.



Map of EG D298B (green polygon) and EG D298C (blue polygon) showing location of loiter points

Table of Loiter Points

Loiter Point Name	Latitude	Longitude	Ground Altitude, ft amsl	Loiter Altitude, ft amsl
Loiter Fairbourne	52°41'56.32"N	4° 4'1.86"W	0ft	500ft
Loiter Pen-y-bryn	52°45'12.82"N	3°55'25.13"W	7ft	600ft
Loiter Abergeirw	52°49'29.38"N	3°51'18.64"W	1214ft	1800ft
Loiter Carndochan	52°51'40.21"N	3°43'32.95"W	1224ft	1800ft

c. Summary of protection measures

- NOTAM 24 hours in advance of TDA activation
- DAAIS hosted by RAF Valley, FREQ: 125.225MHz

Alternative DAAIS: LONDON FIS, FREQ: 124.750MHz

- Pre-defined UAV loiter points with the TDA
- Mode S and ADS-B EC out on the UAV
- ADS-B In monitored by the Ground Crew
- TDA and loiter points uploaded to Airbox
- Ground Crew contactable during operations on Air Band Radio
- Ground Crew contactable during operations on Mobile Phones

6. REVISED EG D298A



Figure 18: Map of EG D298A – Orange Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2		3
TDA1: EG D298A Talybont (Orange Polygon)				Lower Limit: SFC Upper Limit: 2500 ft AMSL		Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00-16.45 DAAIS: Valley LARS FREQ: 125.225 Alternative: LONDON FIS FREQ: 124.750 TEL: UAVE Ltd Flight Crew XXXX Sponsor: UAVE Ltd
#	Latitude	Longitude	Comments			
a)	523824N	0041007W	Westernmost join point with EG D298B			
b)	524155N	0040115W	Easternmost join point with EG D298B			
c)	523744N	0040400W				
d)	523656N	0040222W				
e)	523535N	0040221W				
f)	523523N	0040959W				
g)	523824N	0041007W	Westernmost join point with EG D298B			

This equates to a total surface area of 68 sq km and a volume of 58 cubic kilometres of airspace within EG D298A. The volume of airspace is calculated from average mean sea level (AMSL).

7. REVISED EG D298B

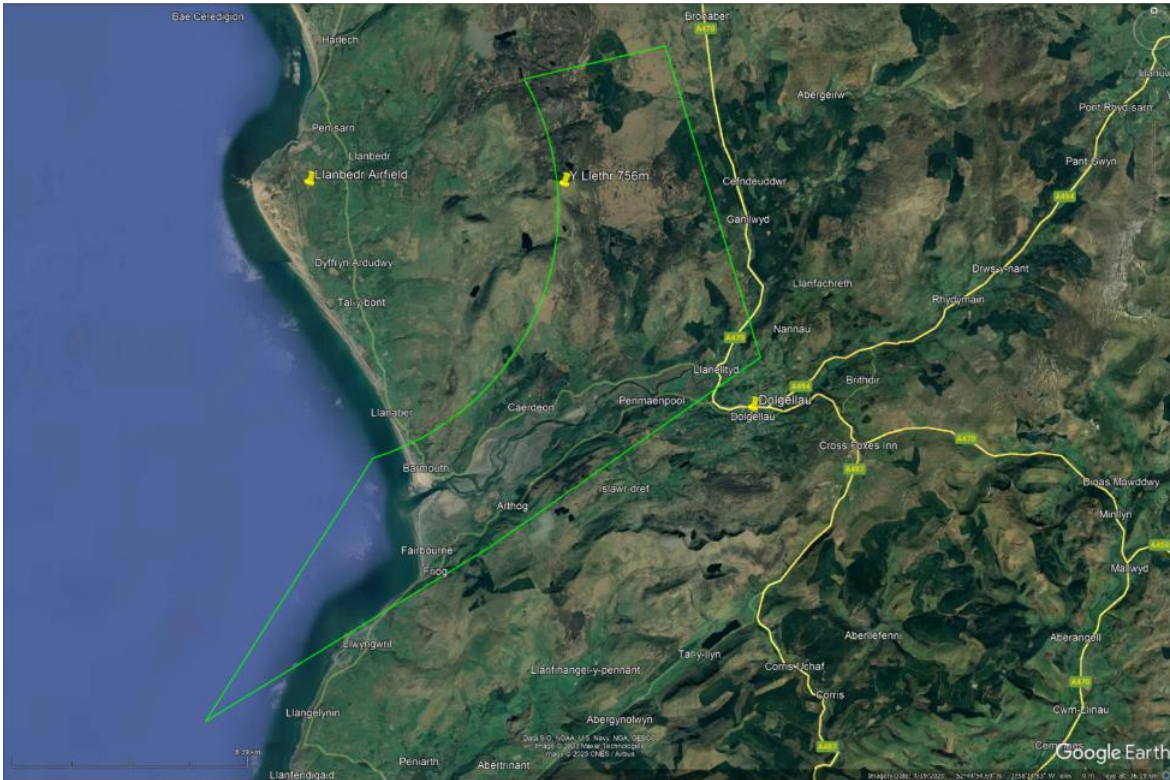


Figure 17: Map of EG D298B – Green Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2		3
TDA 2: EG D298B (Green Polygon)				Lower Limit: SFC Upper Limit: 3500 ft AMSL		Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00- 16.45 DAAIS: Valley LARS FREQ: 125.225 Alternati ve: LONDON FIS FREQ: 124.750 TEL: UAVE Ltd Flight Crew XXXX Sponsor: UAVE Ltd
#	Latitude	Longitude	Comments			
a)	525053N	0040036W	Northernmost point of arc			
b)	525136N	0035609W	Northernmost join point with EG D298C			
c)	524541N	0035252W	Southernmost join point with EG D298C			
d)	524155N	0040115W	Easternmost join point with EG D298A			
e)	523824N	0041007W	Westernmost join point with EG D298A			
f)	524333N	0040503W	Southernmost point of Arc			
g)	Then anticlockwise by arc of circle radius 5NM centred on 524817N 0040738W to					
h)	525053N	0040036W	Northernmost point of arc			

This equates to a total surface area of 136 sq km and a volume of 146 cubic kilometres of airspace within EG D298B. The volume of airspace is calculated from average mean sea level (AMSL).

8. REVISED EG D298C



Figure 19: Map of EG D298C – Blue Polygon

Identification and Lateral Limits				Upper Limit	Lower Limit	Remarks
1				2		3
TDA 3: EG D298C (Blue Polygon)				Lower Limit: SFC Upper Limit: 3500 ft AMSL		Activity: SUA Beyond Visual Line of Sight (BVLOS) Hours (UTC): 07.00-16.45 DAAIS: Valley LARS FREQ: 125.225 Alternative: LONDON FIS FREQ: 124.750 TEL: UAVE Ltd Flight Crew XXXX Sponsor: UAVE Ltd
#	Latitude	Longitude	Comments			
a)	525136N	0035609W	Northernmost join point with EG D298B			
b)	525313N	0034551W				
c)	525316N	0034031W				
d)	525114N	0034046W				
e)	525100N	0034059W				
f)	524541N	0035252W	Southernmost join point with EG D298B			
g)	525136N	0035609W	Northernmost join point with EG D298B			

This equates to a total surface area of 136 sq km and a volume of 146 cubic kilometres of airspace within EG D298C. The volume of airspace is calculated from average mean sea level (AMSL).

9. Drone Spec:



Appendix I Air Vehicle Characteristics

Prion Mk 3 Specifications

Aircraft

Wingspan	3.8m
Length	3.0m
Weight (configured for surveys)	32kg (approx)
Fuel capacity	6.5lts
Fuel consumption (cruising).....	
Cruising speed (for surveying)	80kph
Operational range	1000+km
Payload.....	optimal 10 kg, maximum 15 kg
Engine.....	120cc 4 stroke petrol
Engine control	Fuel injection ECU
Prop	28x14 – 3 blade carbon fibre
Landing gear options.....	Tricycle wheels .Skids with a launcher

Aircraft dismantles into components of 2m and less for transport.

Removable front section allows easy access to onboard systems and components.

Piccolo II autopilot system

Ground station with Iridium sat-phone link for beyond radio telemetry range flight

Real-time telemetry for aircraft, engine and data on separate screens

Pilot's console for manual control.

Real-time feedback of fuel consumption and capacity.

Engine ECU controlling fuel and ignition for optimum performance in all weather.

Engine data logged by ECU and external removable logger on continuous loop.

All onboard systems accessible through a plug in USB port.

Electrical power

External plug in ground power from 12v supply Standby

Onboard alternator supplying 24v, 12v and 5v outputs..... Engine running

Onboard battery with approximately 2 hours endurance

@ 20 degrees Celsius Emergency

Battery charging system Engine powered alternator

10. Drone actions in the event of malfunction:

For lost communications 'up' link during BVLOS. In a lost communication situation with no eyes on the aircraft and no radio or iridium link to the aircraft we anticipate no direct control. In the case the equipment failure is one of transmission from the ground station then the aircraft will likely still be transmitting. This will provide positional data telemetry which may still be received by the ground station. A seamless transition to down link communications operations only is managed by the autopilot. In this case the same lost communication autopilot system functions described in the preceding paragraphs of this section will be available. If iridium is being used and after several re-dial attempts the connection is not re-established, the same sequence of informing the ATC of the lost communication with the aircraft will occur and the Flight Crew will attempt to remedy the fault whilst the aircraft performs the automated lost communication flight maneuver sequence established by the Flight Crew prior to take off. If the link is being provided by iridium the system will automatically attempt to redial and make the connection. Sufficient time should be provided to allow a number of redial attempts.

With positional and altitude information still being received by the Flight Crew and likely radar monitoring during a BVLOS flight, then the Flight Crew should periodically during the lost coms exercise cross reference their own current positional information and aircraft heading information with that being separately monitored by the ATC via their radar service. In the case that all systems on the aircraft are healthy then the aircraft will eventually return to base and become EVLOS such that the ERP described above can prevail.

For lost communications 'down' link during BVLOS. With no eyes on the aircraft, and with a failure of the downlink data telemetry from the aircraft, it will not be known immediately whether it is only the down link function on the aircraft that is at fault or whether it is both down and up link that is at fault. A seamless transition to assumed up link only communications operations is managed by the autopilot system. If iridium is being used time enough should be provided for the system to attempt to reestablish the communication link through redialing the modem connection. In iridium does not reconnect and no radio telemetry is likely over the distance between ground station and

18

aircraft then the ATC will be informed of the issue and the next steps to be taken the return the aircraft safely to a EVLOS context. As the uplink may still be operational the mission should be re-tasked and the aircraft given the return to base instruction. Regardless the autopilot lost communication protocol will be triggered and in all eventualities the aircraft will follow the sequence of maneuvers as programmed during the pre-flight exercise by the GSO. Typically this will result in a return to base instruction. This will return the aircraft to VLOS operation. Coordination with the ATC who will be monitoring the aircraft position and altitude through their radar service will help to determine whether the aircraft is responding to attempts to send instructions via the up link. As such coordination with the ATC will be important to determine the if the aircraft can be re-tasked immediately and maintained under control of the GSO. During the aircrafts return leg, there should be constant and careful monitoring of the RSSI communication from the aircraft by the RPS should the fault be rectified. In all circumstances the aircraft is to be brought within radio data telemetry range and an attempt made to issue new commands to the aircraft and undertake a safe landing sequence if the runway is clear/with the permission of the ATC.

For lost up link and lost down link communication during BVLOS. The ERP in the case of a total loss of communication with the aircraft should be as above without the option to test an active uplink with assistance from the ATC. A seamless transition to full no communications flight operations is managed by the autopilot system. Priority for the Flight Crew is to inform the ATC, the return of the aircraft to VLOS by the autopilot will occur and if available operations can transition to use the radio link to land the aircraft safely or allow an automated landing if preferred by the RP.

In the case of a flyaway. Attempts will be made to re-establish communications then the air traffic service provider will be notified and the local emergency services. The aircraft will have experienced a failure with some aspects of the auto pilot system or the entire system. In the case of a partial failure of the autopilot the aircraft may maintain level flight until the fuel expires, in more dramatic failure of the autopilot the aircraft will likely ditch.

Throughout attempts should be made to resolve why the aircraft is unresponsive. If the systems become responsive after a period of flyaway behavior the RP should make the decision to land instruct the GSO to perform an automated landing at the most convenient emergency runway, or instruct the aircraft to return to base or otherwise instruct the aircraft to ditch if safe to do so. Action will be taken to mitigate as much as possible for shipping through the use by the field crew of available near real time vessel tracking tools such as <https://www.vesselfinder.com/> if offshore or otherwise available maps to avoid structures in onshore.

- **Pilot Incapacitation**

If the RP is not able to continue to provide support to a flight operation an alternative pilot will be immediately sought. If none are available the aircraft will be returned to the airfield under automated flight by the GSO whilst further efforts to provide a RP continue or otherwise for the RP present to confirm availability to perform the role safely. The aircraft will be landed at the first opportunity by the GSO using the automated systems to enable the RP to be replaced, rested or otherwise returned to full capacity.

11. Abort actions for SAR or HEMS Operations or transits:

In the event that any NPAS, MCA, SAR or HEMS aircraft requires to operate within or temporarily transit the proposed TDA airspace, UAVE Ltd Flight Crew will immediately terminate the Prion MK3 UAV mission by either:

- Initiating a Return to Base/Land command using the automated autopilot by the Ground Station Operator (second pilot).
- Initiating a “Hold Current Position/Loiter” command using the autopilot by the Ground Station Operator (second pilot)
- Immediately transit to a pre-defined Loiter Point and command a 200m radius loiter.
- Terminate the flight by operating the remote “engine kill switch” command using the autopilot by the Ground Station Operator (second pilot).
- Any other Emergency Profile deemed necessary by ARCC, NPAS, MCA, SAR or HEMS.

12. Contact details

a. Contact Us

The contact details below are for ARCC, NPAS, MCA, SAR or HEMS providers to alert UAVE of emergency flight activity and/or request grounding/suspension of UAV operations:

UAVE Prion MK3 Flight Crew:

Name	Flight Ops Crew Role	Land Line	Mobile
XXXX PRIMARY CONTACT	Flight Ops Manager, PRIMARY CONTACT	01545 561 111	XXXX PRIMARY CONTACT
XXXX	Safety Pilot	01545 561 111	XXXX
XXXX	Remote Station Operator/GSO	01545 561 111	XXXX
UAVE Ltd Main Office		01545 561 111	
VHF	Call sign	Frequency	Comments
Prion Mk3 Flight Crew	"Prion Ground"	125.225 (RAF Valley LARS) during flight operations Except during take off and landing at Talybont Airfield 129.82 (Talybont Micro Base)	

UAVE Ltd, Unit 7, West Wales Airport, Aberporth Technology Park, SA43 2DZ, United Kingdom
www.uave.co.uk

<u>TALYBONT AIRFIELD</u>			
Name	Role	Land Line	Mobile
XXXX	Owner and Operator Talybont Airfield	XXXX	XXXX
VHF	Call sign	Frequency	Comments
Talybont UAV Airfield	"Talybont Micro Base"	129.82	Only in use occasionally

Talybont Airfield, Peniarth, Tywyn. Gwynedd LL36 9UD
www.wynne.co.uk

DAAIS Contact Details: RAF VALLEY

<u>RAF VALLEY</u>			
Name	Role	Land Line	Mobile
DAAIS – RAF Valley		XXXX	DAAIS during RAF Valley ATC hours of operation 07:00-16:45 (UTC)
ATC OPS		XXXX	
ATIS		XXXX	
AR Ops Information		XXXX	
VHF	Call sign	Frequency	Comments

DAAIS – RAF Valley	Valley Radar (LARS)	125.225	DAAIS during RAF Valley ATC hours of operation 07:00-16:45 (UTC)
ATIS – RAF Valley	ATIS	120.725	

RAF Valley, Holyhead, Anglesey, LL65 3NY

DAAIS Contact Details: LONDON FIS

LONDON FIS			
VHF	Call sign	Frequency	Comments
DAAIS – London FIS	LONDON FIS	124.750	DAAIS during UAS flight operations 07:00-16:45 (UTC)

NATS, Sopwith Way, Swanwick, SO31 7AY

a. Stakeholder Regular Contacts

The table below detail the stakeholders UAVE will inform weekly and those UAVE will inform daily of upcoming UAV operations within the TDA.

This activity is **mandatory** & should be listed & noted as completed on the Flight Ops Managers daily checklists **BEFORE flights commence**.

VERY IMPORTANT: The Police, Air Ambulance, Military & Coastguard have priority access to the TDA area at all times & if requested, UAVE must immediately terminate any active survey flight & either return the Prion UAV back to base & advise the Emergency services when the aircraft has landed or fly the UAV to the nearest loiter point & advise the Emergency services when the aircraft is in its pre-determined location.

No Prion UAV flights can resume until the agency aircraft has completed its task & has cleared the TDA area.

Weekly in advance

Stakeholder	Type of Organisation	Type of Contact Required	Contact Name	Contact	Comments
Babcock International	HEMS operator	Email	Operations Officer	XXXX	24hrs
NPAS	Police	Email	Ops Centre	XXXX	24 hours
ARCC	Airborne Rescue Coordination Centre	Email	Ops centre	XXXX	
MCA	Coastguard	Email	XXXX	XXXX	
Llanbedr Airfield	Airfield Operator	Email	XXXX	XXXX	
Talybont Airfield & Peniarth Estate Airfield	Airfield Owner and Operator	Email	XXXX	XXXX	
British Gliding Association	UK Sport Gliding Governing Body	Email	XXXX	XXXX	
Denbigh Gliding Club	Gliding Club	Email	XXXX	XXXX	
RAF Valley	MOD & DAAIS	Telephone	Ops	XXXX	

24 hours in advance

Stakeholder	Type of Organisation	Type of Contact Required	Contact Name	Contact	Comments
Babcock Interantional	HEMS operator	Telephone	Operations Officer	XXXX	24hrs
NPAS	Police	Email	Ops Centre	XXXX	24 hours
ARCC	Airborne	Telephone	Ops centre	XXXX	

	Rescue Coordination Centre				
MCA	Coastguard	Email	XXXX	XXXX	
RAF Valley	MOD & DAAIS	Telephone	Ops	XXXX	

On the day – before take off and after landing

Stakeholder	Type of Organisation	Type of Contact Required	Contact Name	Contact	Comments
Babcock Interantional	HEMS operator	Telephone	Operations Officer	XXXX	24hrs
NPAS	Police	Email	Ops Centre	XXXX	24 hours
ARCC	Airborne Rescue Coordination Centre	Telephone	Ops centre	XXXXX	
MCA	Coastguard	Email	XXXX	XXXX	
RAF Valley	MOD & DAAIS	Telephone	Ops	XXXX	