UAVE Ltd

Airspace Change – ACP-2020-049

UAS BVLOS in Segregated Airspace (Newton Stewart)

Summary Report

Targeted Aviation Stakeholder Engagement

(Redacted)

Version 1.4

Dated: 2nd July 2021

Amendment record

Issue	Amendment	Date
V1.0	Initial Issue	27/04/2021
V1.1	Amended Copy	10/05/21
V1.2	Amended Copy	13/05/21
V1.3	Amended Copy	30/06/21
V1.4	Amended Copy (revised airspace design)	02/07/21

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 For reference, a copy of this version and all superseded versions will be stored on a secure server.

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
HLS	Helicopter Landing Site
LTD	Limited
MCA	Maritime Coastguard Agency
MOD	Ministry of Defence
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, prepared and maintained by the CAA, incorporating the previous Future Airspace Strategy. It is a requirement of the Air Navigation

	Directions 2017. https://www.caa.co.uk/Commercialindustry/Airspace/Airspace-ModernisationStrategy/Aboutthe-strategy/
Airspace structure	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. The volumes of airspace are designed to ensure the safe and optimal operation of aircraft. Airspace structures consist of: (a) controlled airspace, namely control zones, control areas, terminal control areas and airways; (b) airspace restrictions, namely danger, restricted and prohibited areas; (c) radio mandatory zones, transponder mandatory zones; (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
Beyond Visual Line of Sight (BVLOS)	An operation in which the remote pilot or observer does not use visual reference to the remotely piloted aircraft in the conduct of flight.
Consultation	Formal process seeking input into a decision, undertaken in line with the Gunning Principles, and government guidance
Danger Area	Airspace within which activities dangerous to the flight of aircraft may exist at notified times.
Design principles	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.
Engagement	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.
Feedback	Informal response to engagement – change sponsors may be expected to seek feedback from stakeholders in addition to formally consulting them.
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.

Contents

Contents

1 Introduction

UAVE Ltd (the change sponsor) is seeking a temporary airspace change to support its 2-3 week-long fixed wing UAV geophysical air survey between September to November 2021.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 completed between September 2020 and June 2021 to allow aviation stakeholders to comment formally on UAVE Ltd's TDA design and operational proposals.

1.1 Executive Summary

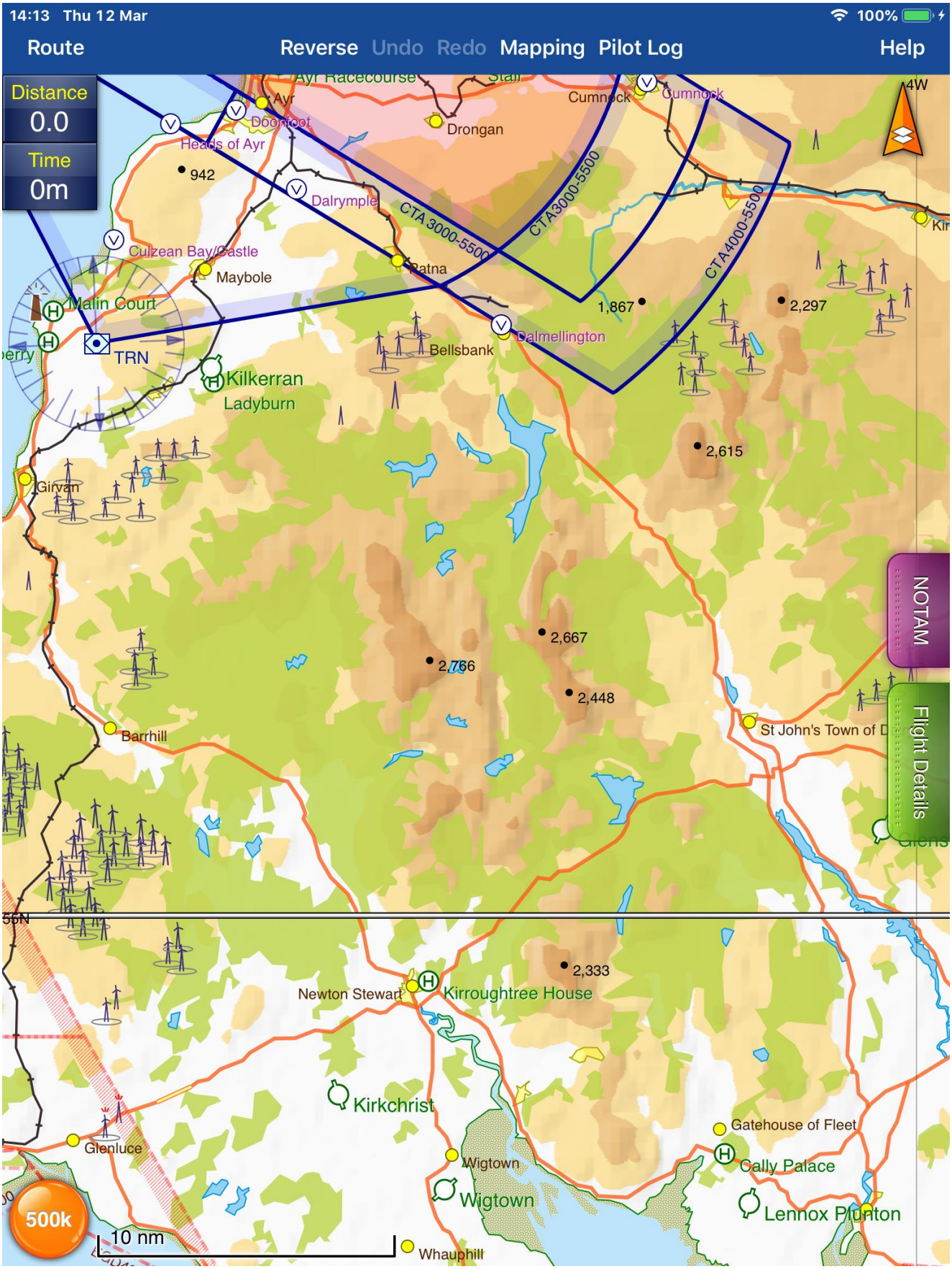
The Airspace Change process, CAA CAP 1616, mandates that all airspace change – temporary or permanent – can only be requested and implemented once due consideration has been given to the possible positive and negative impacts of the change on other airspace users.

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 2020-049 Airspace Change design to allow aviation stakeholders to comment formally on UAVE Ltd's TDA design and operational proposals.

1.2 Current Airspace Description

Class G uncontrolled airspace – see imagery below:


14:13 Thu 12 Mar
100%
Route
Reverse Undo Redo Mapping Pilot Log
Help
Distance
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Ayr Racecourse
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Doonfoot
Heads of Ayr
Drongan
Cumnock
942
Dalrymple
CTA 3000-5500
CTA3000-5500
CTA4000-5500
Culzean Bay/Castle
Maybole
Patna
Malin Court
TRN
Kilkerran
Ladyburn
Bellsbank
Dalmellington
1,867
2,297
2,615
Girvan
2,667
2,766
2,448
Barrhill
St John's Town of D
NOTAM
Flight Details
2,333
Newton Stewart
Kirroughtree House
Kirkchrist
Glenluce
Gatehouse of Fleet
Wigtown
Cally Palace
Wigtown
Lennox Plunton
Whauphill
500k
10 nm

2 UAVE Ltd's Statement of Need/justification

UAVE Ltd requires a volume of segregated airspace within which to safely execute its operations, namely the use of its current planned unmanned aircraft platform (Prion MK3) to carry out a geophysical flight survey of an area of land situated to the N, NE & NW of the town of Newton Stewart, Dumfries, Scotland during the period of 1st September & November 29th 2021.

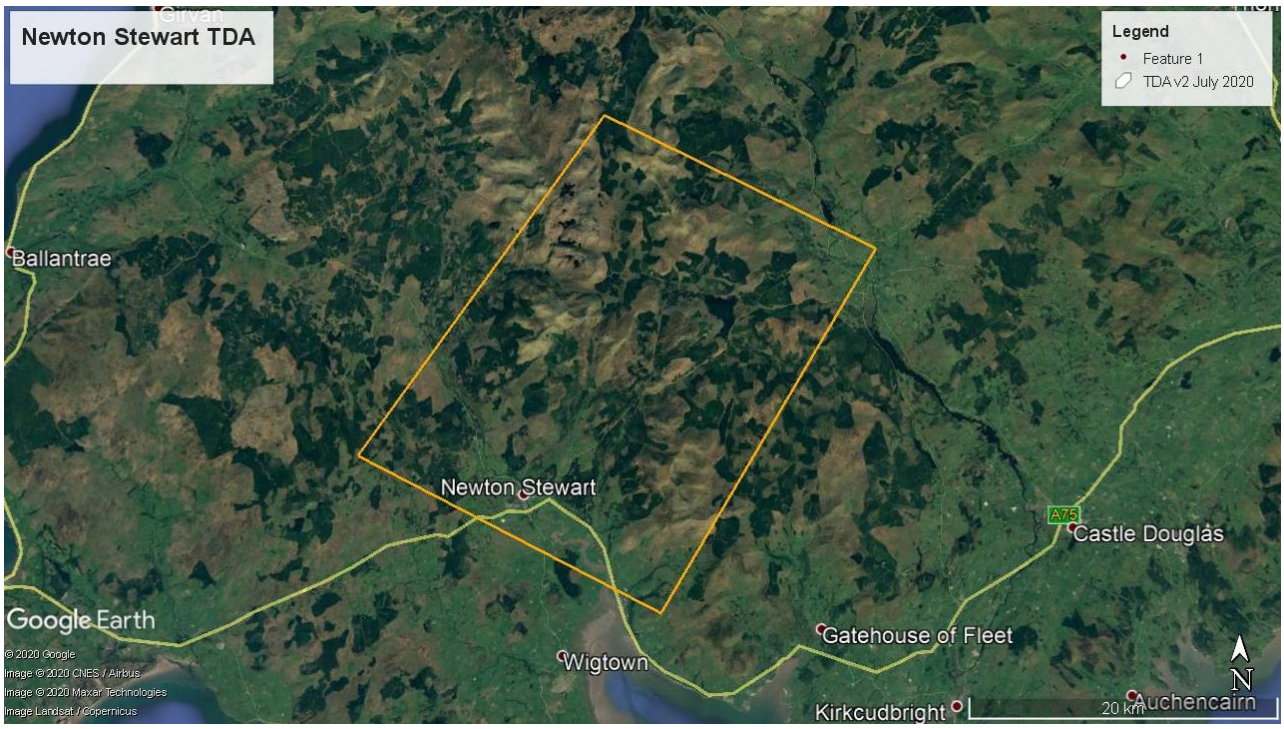
3 Proposed Airspace Description

3.1 Segregated airspace

UAVE Ltd have presented the following proposed airspace design to local airspace users:

<table>
<tr><th>Identification and Lateral Limits</th><th>Upper Limit
Lower Limit</th><th>Remarks</th></tr>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td>TDA 1: Newton Stewart
<table><tr><td>Point</td><td>Lat</td><td>Long</td></tr><tr><td>1</td><td>55.1019</td><td>-4.12846</td></tr><tr><td>2</td><td>55.179</td><td>-4.40217</td></tr><tr><td>3</td><td>54.9823</td><td>-4.65009</td></tr><tr><td>4</td><td>54.8918</td><td>-4.34535</td></tr></table></td><td>Lower Limit: SFC
Upper Limit: 3670 ft AMSL</td><td>Activity: UAS Beyond Visual Line of Sight (BVLOS)
Hours: 09.00-17.00
DAAIS: Prestwick Information
FREQ: Prestwick Approach: 129.450 121.500 Emergency, Prestwick Information ATIS: 121.130, Prestwick Radar 124.630.
TEL: UAVE Ltd Flight Crew
Sponsor: UAVE Ltd</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>

FIGURE 1: TOP DOWN VIEW(S) OF PROPOSED AIRSPACE DESIGN



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 1st September- 29th November 2021	09.00-17.00 hrs. Mon-Friday

4 Engagement & consultation overview

4.1 Stakeholder identification

UAVE Ltd engaged with the same aviation stakeholders as those identified & previously contacted during the informal engagement exercise, with some additional stake holders added & engaged following recommendations from the CAA & other stakeholders who actively identified themselves to the change sponsor following the publication of the updated ACP2020-049 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-2020-049) and providing a copy by email, which was completed during May-June 2021. Where an email was not available, through submission of enquiries to websites with details of the engagement exercise, UAVE Ltd offered to send the material upon receipt of a valid email address.
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 30th June 2021.

UAVE Ltd proactively encouraged stakeholders to provide feedback, even if they had already provided feedback during the informal engagement process or, if there was no impact, to confirm no impact.

4.4 Feedback

Where stakeholders asked that we share their feedback in full with the CAA, UAVE Ltd provided this information at Step 3d Collate & Review Responses stage of the Airspace Change process during June 2021.
All feedback was collated and stored on UAVE Ltd's & contractors 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:

<table>
<tr><th>Identification and Lateral Limits</th><th>Upper Limit
Lower Limit</th><th>Remarks</th></tr>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td>TDA 1: Newton Stewart
<table><tr><th>Point</th><th>Lat</th><th>Long</th></tr><tr><td>1</td><td>55.1019</td><td>-4.12846</td></tr><tr><td>2</td><td>55.179</td><td>-4.40217</td></tr><tr><td>3</td><td>54.9823</td><td>-4.65009</td></tr><tr><td>4</td><td>54.8918</td><td>-4.34535</td></tr></table></td><td>Lower Limit: SFC
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TEL: UAVE Ltd Flight Crew
Sponsor: UAVE Ltd</td></tr>
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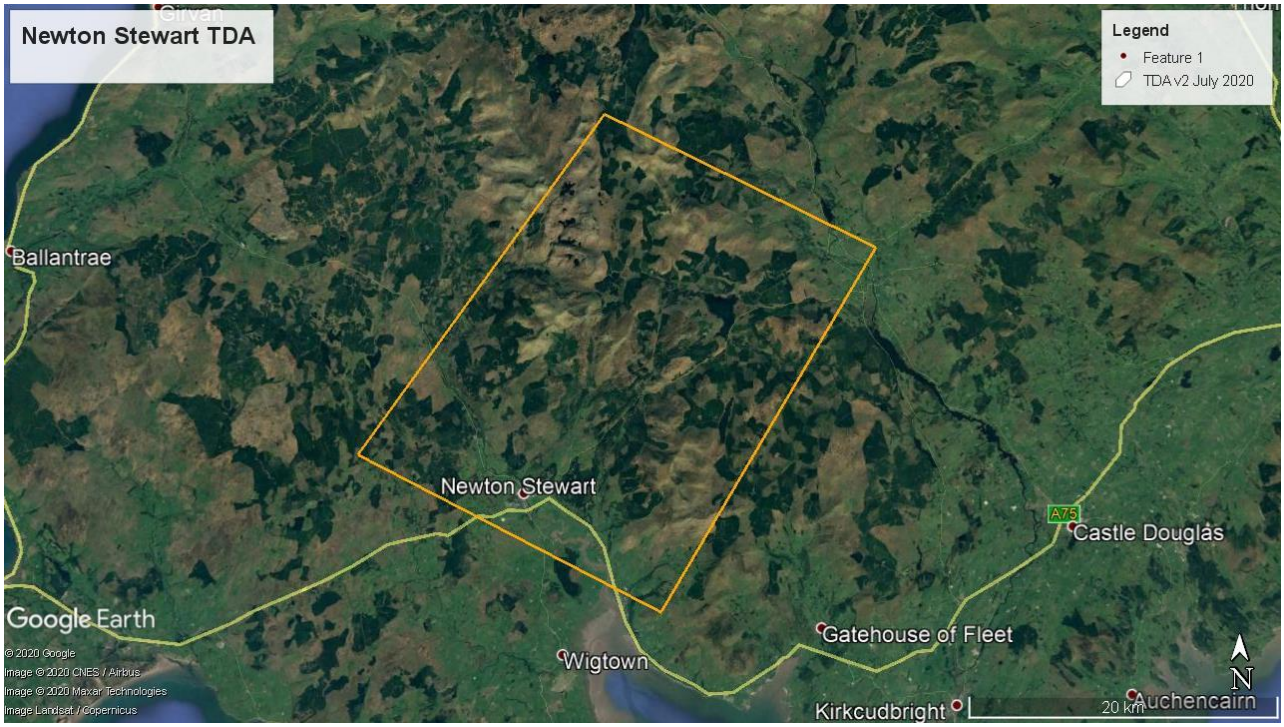
FIGURE 1: TOP DOWN VIEW(S) OF PROPOSED AIRSPACE DESIGN



5.2 Notification

CAA Airspace Regulation will promulgate TDA activations by NOTAM on the days of planned use.

5.3 TDA activation

Date	Time
Monday to Friday : 1st September – 29th November 2021	09.00-17.00 hrs. Mon-Friday

6 Summary of feedback

UAVE Ltd received feedback in written form from 15 stakeholders. Virtually all of the Stakeholders who engaged in the process were broadly supportive of the proposed TDA and raised no issues and/or were willing to work with UAVE Ltd to find a workable solution that enables a safe manned and unmanned mix of operations.
Emergency service operators & the MoD have been supportive to the proposals.
Concerns were raised by 3 individual (GA) stakeholders & one GA representative body regarding the overall design & implementation of the original proposed design & suggestions were received on an alternative airspace design from these stakeholders.
Emergency services and their operators are understandably concerned about how UAVE Ltd's operations will safely deconflict with their operations, given their need for airspace primacy at all times and at very short notice.
A Temporary Operating Instruction has been drafted (TOI) with their agreement and approval.

UAVE Ltd has included email confirmations of agreement/acceptance in the Appendices below.

UAVE Ltd provides the following summary of responses from aviation stakeholders on the TDA complex proposals.

Full, unredacted versions of the 15 written responses to the formal targeted aviation stakeholders engagement exercise can be viewed in section: 9 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.
- Police Scotland 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 note, including when emergency service aircraft are already airborne.
- If short-notice clearances are not available, more pre-emptive clearances whenever emergency aircraft are tasked into the area would be required when the weather is poor.

6.2 Schedule services and general aviation

- The proposals would not directly affect scheduled services but may have some local affect to general aviation, a commercial float-plane operation based at Prestwick Airport, a local farm-strip/airfield owner & local glider pilots transiting the area whilst flying in competitions or BGA award based flying tasks.
- The proposed TDA does not take place in an area known to be on the approach to Prestwick, Castle Kennedy (GA) or West Freugh (MOD) airfields.
- Both Castle Kennedy Airfield (GA) & the Dumfries & Galloway Gliding Club based to the far East of the area have been advised of the proposals. Castle Kennedy are supportive of the TDA application & the UAV Project. Some individual members of the Gliding Club have mooted some concerns as noted above.

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 confliction 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 Tactical Operating Instruction (TOI) a copy of which is shown in the Appendix below.

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

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

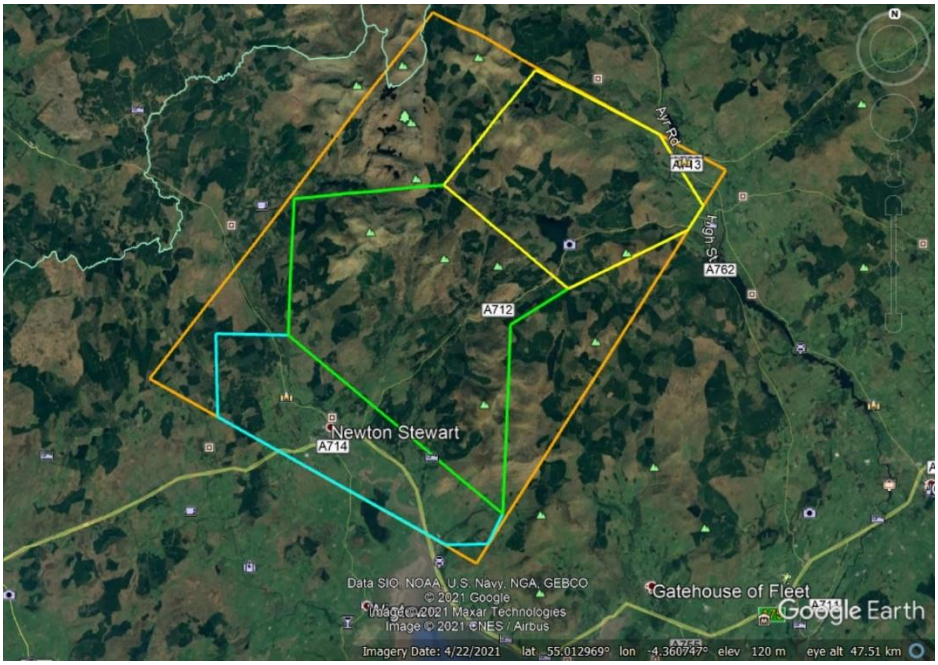
UAVE Ltd is in the process of confirming its deconfliction process and intends to produce a comprehensive and robust Temporary Operating Instruction (TOI) that secures the approval of relevant stakeholders and the CAA.

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:

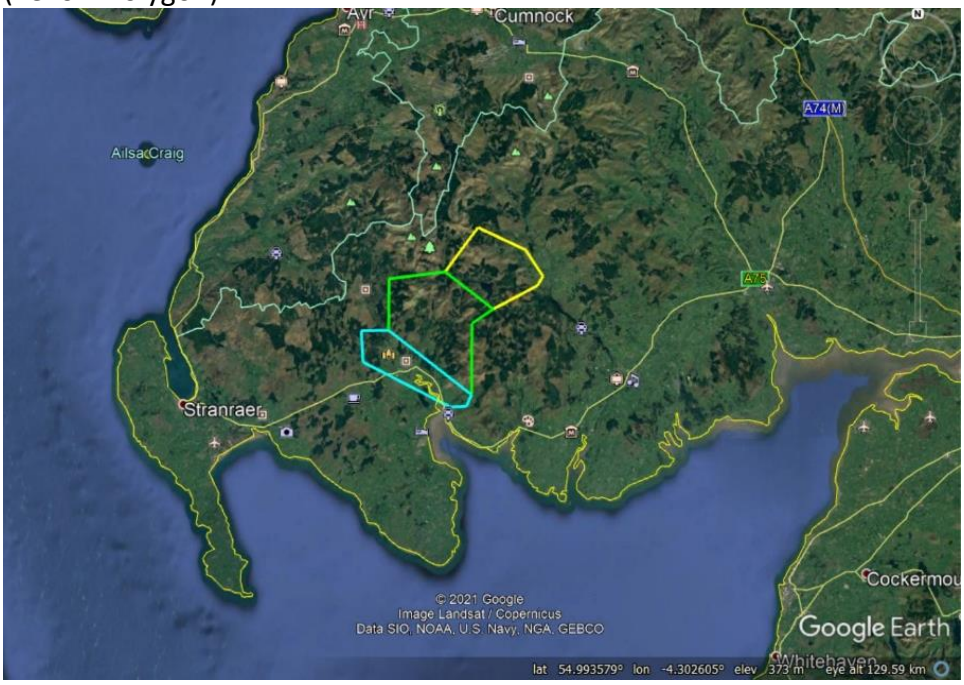
Following consultation, the original proposed TDA (Orange Polygon) has been reduced in size and split into three areas which UAVE propose will be notified by NOTAM's on a daily basis meaning only airspace required for the days UAV flights will be active.



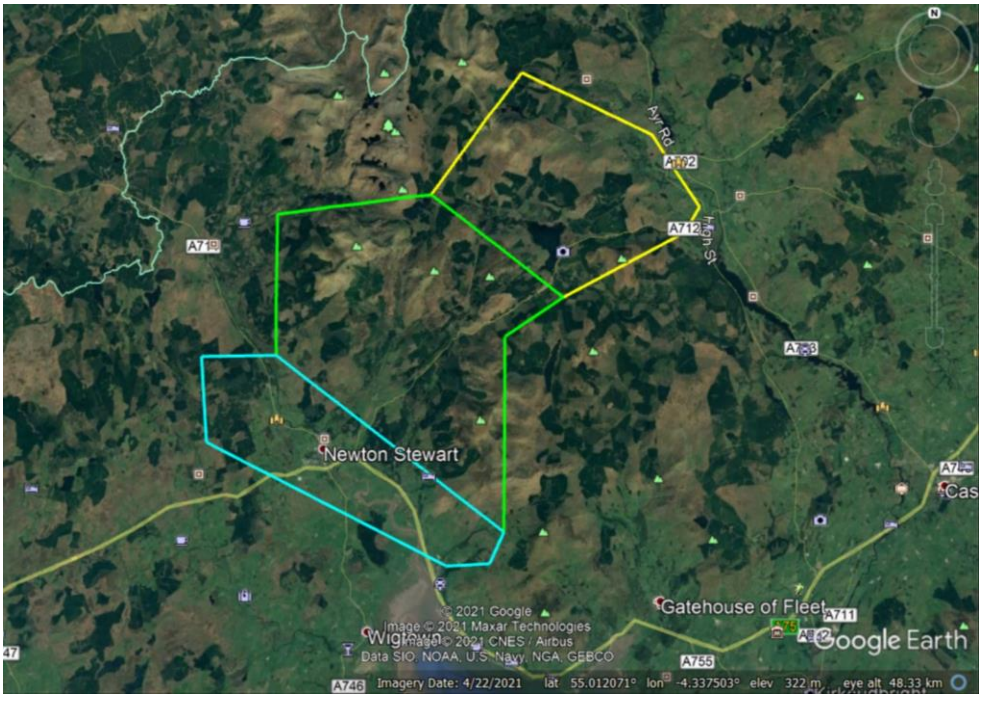
Comparison of original proposed TDA (Light Orange Polygon) with revised TDA A B & C.

This smaller revised area now does not cover Loch Enoch, Loch Trool, Loch Valley or Loch Grannoch, leaving these areas open to other airspace users.

The revised TDA comprises three areas TDA A (Blue Polygon), TDA B (Green Polygon) & TDA C (Yellow Polygon).



Revised TDA Area – Blue, Green and Yellow Polygons



Revised TDA Area – Blue, Green and Yellow Polygons

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.

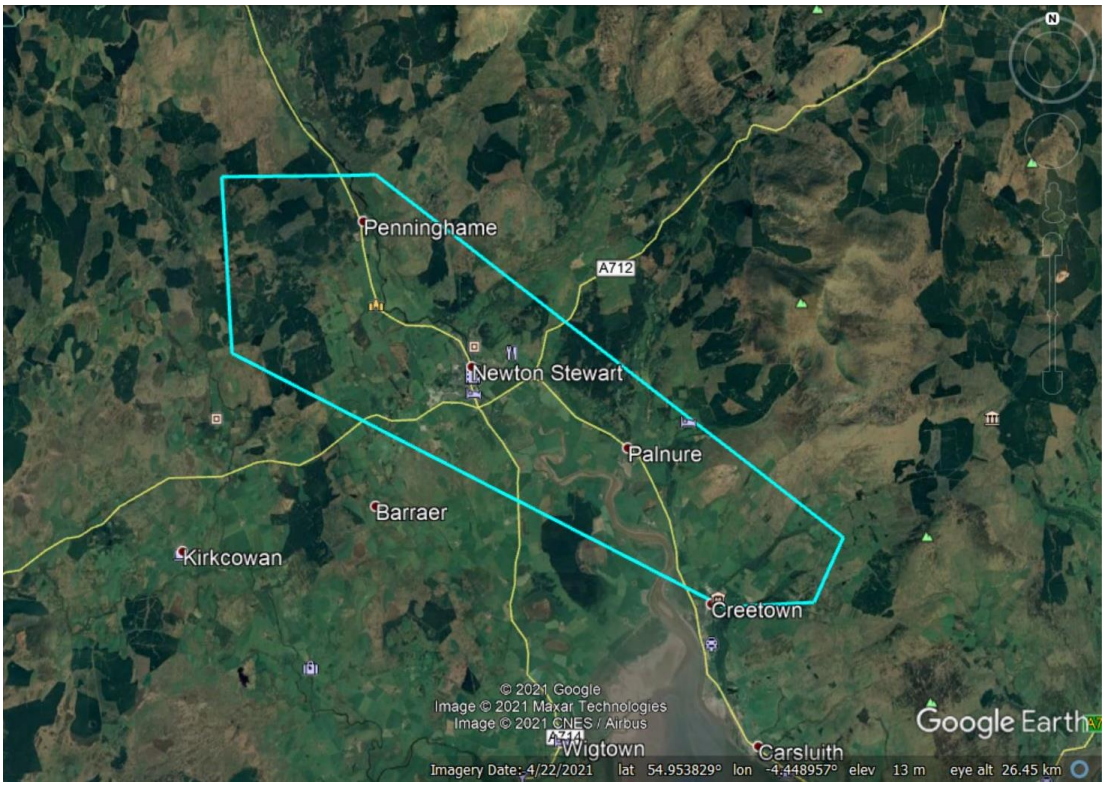
The table below provides the maximum height of the surface within the proposed TDA A, B and C areas.

TDA	Max Ground Level, ft AMSL	TDA Ceiling Height, ft AMSL
A	700	1700
B	2400	3400
C	2400	3400

TDA A has been designed to encompass the low relief part of the survey area to enable a lower TDA ceiling height of 1700ft AMSL to be set 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.

TDA A



Map of TDA A – Blue Polygon

TDA A		
Point	Lat	Long
1	54.9181	-4.32287
2	55.0078	-4.52461
3	55.0072	-4.59103
4	54.9636	-4.58669
5	54.9008	-4.37437
6	54.9021	-4.33551
1	54.9181	-4.32287

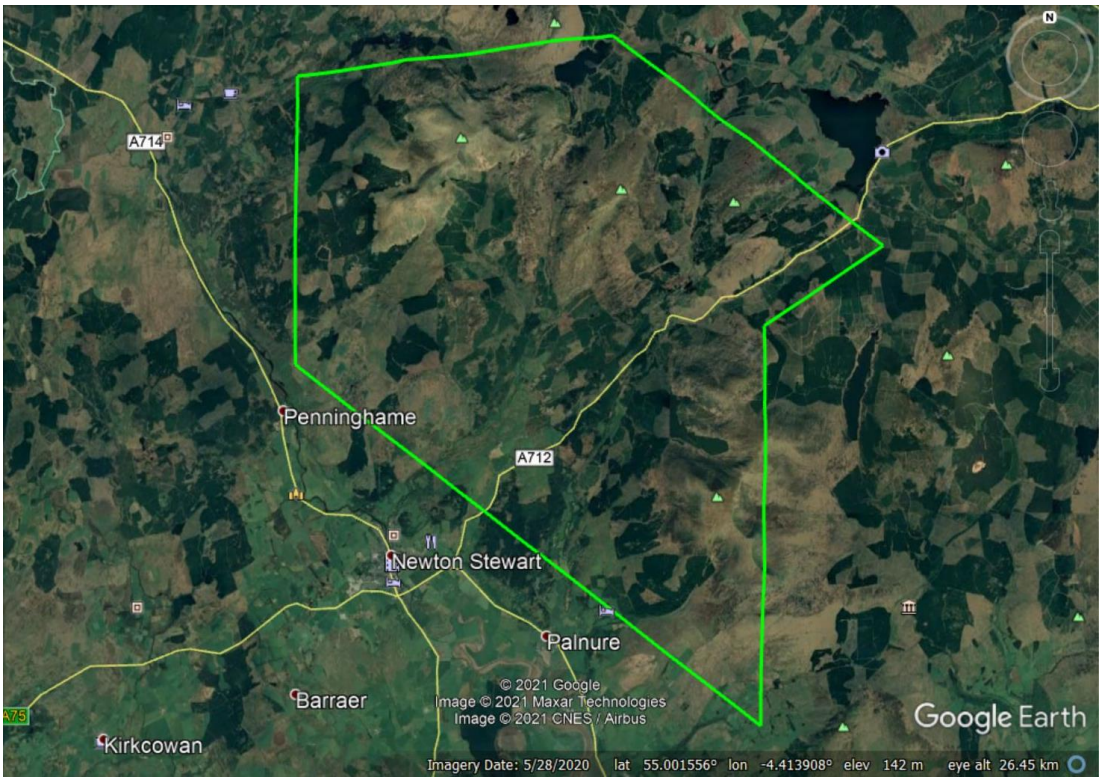
TDA Ceiling Height: 1,700ft AMSL

This equates (using the area coordinates shown above) to a total surface footprint of 88.4 sq km. The volume of airspace requested from surface is 1000ft which equates to a volume of 26.9 cubic kilometres. If the volume is calculated from average mean sea level (AMSL) then the volume is 45.8 cubic kilometres of airspace within the TDA.

Details of the required hours of operation:

Time: Monday – Friday (inc. public holidays): 09.00-17.00 hrs GMT (Prestwick ATC hours)
Duration: 90 days from date of NOTAM approval.

TDA B



Map of TDA B – Green Polygon

TDA B		
Point	Lat	Long
1	55.0078	-4.52461
2	54.9181	-4.32287
3	55.0173	-4.32165
4	55.0371	-4.26981
5	55.0891	-4.38677
6	55.0794	-4.5237
1	55.0078	-4.52461

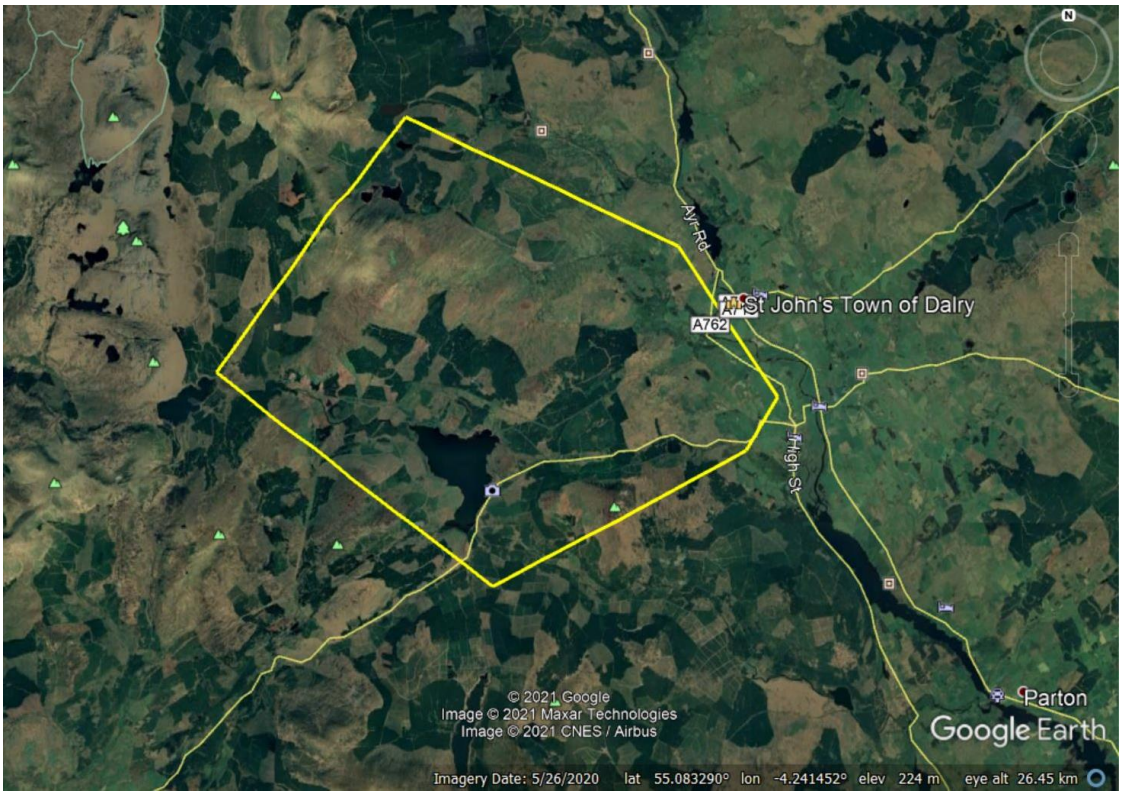
TDA Ceiling Height: 3,400ft AMSL

This equates (using the area coordinates shown above) to a total surface footprint of 178 sq km. The volume of airspace requested from surface is 1000ft which equates to a volume of 54.2 cubic kilometres. If the volume is calculated from average mean sea level (AMSL) then the volume is 184.4 cubic kilometres of airspace within the TDA.

Details of the required hours of operation:

Time: Monday – Friday (inc. public holidays): 09.00-17.00 hrs GMT (Prestwick ATC hours)
Duration: 90 days from date of NOTAM approval.

TDA C



Map of TDA C – Yellow Polygon

TDA C		
Point	Lat	Long
1	55.1195	-4.19048
2	55.1507	-4.3062
3	55.0891	-4.38677
4	55.0371	-4.26981
5	55.0698	-4.1618
6	55.08278	-4.14828
1	55.1195	-4.19048

TDA Ceiling Height: 3,400ft AMSL

This equates (using the area coordinates shown above) to a total surface footprint of 109 sq km. The volume of airspace requested from surface is 1000ft which equates to a volume of 33.2 cubic kilometres. If the volume is calculated from average mean sea level (AMSL) then the volume is 112.9 cubic kilometres of airspace within the TDA.

Details of the required hours of operation:

Time: Monday – Friday (inc. public holidays): 09.00-17.00 hrs GMT (Prestwick ATC hours)
Duration: 90 days from date of NOTAM approval.

8 Stakeholders

8.1 Civil Aviation Authority

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

8.2 Local airspace stakeholders

Stakeholder	Type of Organisation	Response (Informal)	Response (Formal)	Result in Design Change (Y/N)
Babcock International	Aviation Service Provider	Yes - Written	Yes – Written	No
Bristow (SAR)	Aviation Service Provider	Yes	Yes - Written	No
Castle Kennedy Airfield	GA Airfield Operator	Yes written	Yes – Written	No
Dumfries & District Gliding Club	Sport Gliding Airfield Operator	Yes – written & phone	Yes written	No
Gamma Aviation	Aviation Service Provider	Yes – Written	Yes – Written and Phone	No
Glen Swinton Farm	GA Airfield	Yes -written & phone	Yes -written	Yes
Glasgow Prestwick Airport	GA Airfield /ATC Service Provider	Yes -Written	Yes -Written	No
Maritime and Coastguard Agency	Aviation Service Provider	Yes – Written and Phone	Yes – Written and Phone	No
Ministry of Defence	Military	Yes – Written and Phone	Yes – Written	No
Police Scotland	Law Enforcement	Yes written & phone	Yes – Written	No
Police Scotland ASU	Aviation Service Provider	Yes – Written	Yes – Written	No
Scotia Seaplanes	Aviation Service Provider	Yes – Written &phone	Yes – Written	Yes
Scottish Air Ambulance	Emergency service provider	Yes -Written	Yes -Written	No
Scottish Charity Air Ambulance	Emergency Service Provider	Yes -Written	Yes -Written	No
West Freugh (MOD)	Military Airfield Operator	Yes -Written	Yes -Written	No
West Scotland LAA	GA Operator Association	Yes -Written	Yes -Written	Yes

8.3 **Other Stakeholders Contacted**

ARPAS	UAV Association	Yes-Written	Yes -Phone	No
BGA	UK Gliding Governing Body	Yes Written	Yes – Written	No
BMFA	UAV Governing Body	Yes Written	Yes phone	No

9 Appendices

Appendix A: Babcock International Group

On 2021-03-25 16:49, xxxxxx wrote:

Dear xxxxx,

Thanks for this update. My reply of 29th Oct 2020 remains valid for the un-paused ACP-2020-049-TDA process.

Best regards,

xxxxxxx

xxxxxxxxxx | Regional Managing Pilot (Scotland)
UK Aviation | Aviation
Babcock International Group
xxxxxxx Road | GLASGOW | xxxxxxx
Tel: +44141xxxxxxx | xxxxxxxxx@babcockinternational.com
www.babcockinternational.com

Dear xxxxxx,

Many thanks for this information, and for this consultation.

The ambulance and Police aircraft operated by us could require access to this airspace in response to tasking by the Scottish Ambulance Service or Police Scotland. I note that Prestwick ATC would be providing a DACS/DAAIS which would suit our purposes provided that it is understood that such tasking would take priority and that your drone operations would be suspended for the duration of our missions within the TDA.

Experience tells me that two way VHF comms with Prestwick won't be possible for aircraft flying low level within the proposed TDA, but VHF comms would be possible en route when inbound from the north, where our aircraft are based, and we also have means of calling landlines from our aircraft as a fall-back option.

So in summary, I don't anticipate your proposal causing any difficulty for our flying operations provided we have your assurance that we would be given priority over drone operations when tasked into the TDA by the emergency services.

I can't help you with an SP Energy Helicopter Unit contact I'm afraid, we're not acquainted; otherwise your stakeholder list looks comprehensive. I hope the project goes well.

Best regards,

xxxxxxx

xxxxxxxxx| Regional Managing Pilot (Scotland)
UK Aviation | Aviation
Babcock International Group
xxxxxxx Road | GLASGOW | xxxxxxx
Tel: +44141 xxxxxxxx | xxxxxxx@babcockinternational.com
www.babcockinternational.com

Appendix B: Bristow (SAR)

RE: Commercial Drone Survey in West Scotland - CAA Stakeholders Agreement

From xxxxxxxxxx@bristowgroup.com> on 2021-06-25 10:26
Details Plain text
Hi xxxxxxx

I think there are a few factors here. Firstly I would request you email the base every day, preferably the day before, with your planned flying activity. I also ask that a direct line is made available to the UK ARCC so that they can contact you immediately if we have to fly through the area as they are our tasking authority.

We also need a very robust system for ensuring the drone can be landed quickly in the event of SAR operations in the area. We will not fly through an area until the drone is on the ground. The area is only 20 mins from Prestwick if we are having to start the aircraft from base, if already airborne this can be reduced to needing entry within 5-10 mins. Obviously if we can't fly through the area as the drone is airborne then we have to route around, potentially delaying our response to any time critical casualty.

Whilst I have no direct objections with the proposals, it's open airspace after all, I simply ask that consideration be given to how it may impact on UK airborne emergency service response times and what you can do to mitigate that impact. The area of the proposed TDA can be busy for us, particularly at the time of year you propose, so robust systems must be set in place.

Can you please confirm the air ambulance and police have been informed (operating from Glasgow).

xxxxxx

xxxxxxxxx| **UK SAR Deputy Flight Operations Manager & Chief Pilot Prestwick SAR Base** | Prestwick International Airport, Prestwick| email: xxxxxx@bristowgroup.com | Direct: xxxxx | Mob: xxxxxxxx |

Confidence in flight. Worldwide.

Appendix C: British Gliding Association

RE: ACP-2020-049: Commercial Drone Survey in West Scotland - CAA Stakeholders Targeted Engagement

From xxxxxxxx@gliding.co.uk> on 2021-06-08 13:05
Details
Thanks. Although this is unlikely to impact gliding operations in the round, we strongly suggest you engage with the Dumfries Gliding Club. Xxxxxx might be a good contact xxxxxxx@aol.com
Kind regards
xxxxxxxx
British Gliding Association

Appendix D: Castle Kennedy Airfield

On 2020-05-11 13:28, Castle Kennedy Airfield wrote:
Thank you for your enquiry.
Sadly Castle Kennedy probably has not had ATC since Silver City Airline departed in 1950's!
We currently have a reasonable runway of 600 metres, and nearby a large hanger from WW2, as the only service we can offer. If you are NE of Newton Stewart you will be approx 30 miles away, and Scottish info, or even Prestwick approach will be more relevant.
However if you let me know approx dates you are operating we can include a warning, verbal, in our briefing for pilots wanting PPR.
xxxxxx
Sent from my iPad

Appendix E: Dumfries & District Gliding Club

On 2021-05-14 11:38,xxxxxxx.com wrote:

Hi xxxxxxx,

I have discussed your reply with my colleagues, and we have a few questions:

1. The duration is from Monday to Friday every week, will this be required, or do you intend to only notify days which are required. As we imagine the drone will have restrictions on flying conditions, will unsuitable days be cleared for other users?
2. As this TDA covers a BGA turning point which is used by pilots from remote clubs doing badge flights, and the TDA cover the town, can the southern edge be moved to north of Newton Stewart to clear the A75 roundabout to allow access to the turning point and give a route west avoiding having to cross Wigtown Bay?
3. The upper level of the TDA is well above the levels used frequently by gliders who have no ability to climb on demand. Is this to clear the higher ground to the north? If this is the case can the upper level be changed to AGL or at least stepped down over lower terrain?
4. If a conventional aircraft was used for this operation a TDA would not be required. This inconvenience to other airspace users is to allow financial savings for the prospector who will make profit from mining. Can we be advised what other scenarios have been considered and why this particular restriction has been decided on?

Regards,

Xxxxxxxxx

Dumfries and District Gliding Club

Appendix F: Gamma Aviation

Re: Commercial Drone Survey in West Scotland - ACP-2020-049: CAA Targeted Stakeholder Engagement: 2021 Update

From xxxxxxxxxx@gamaaviation.com> on 2021-04-29 18:36
Details Plain text
xxxxxxx,

Thank you for your email and we are happy with your measures you have put in place which are in line with our operational requirements in case we need to transit or land within your TDA.

When you have finalized everything regarding your drone operations can you please send me the latest ACP just a week or two before you go live, than I will brief all our crew members accordingly.

Many thanks,

Kind regards,

xxxxxxxxxx

Get Outlook for iOS

xxxxxxxxx: Base Manager
xxxxxxxxxxx, Glasgow Airport, Paisley, Renfrewshire,xxxxxxx GB

Your mission, our passion.
gamaaviation.com

Appendix G: Glasgow Prestwick Airport/ATC/Services

On 2021-06-30 12:49, xxxxxxx wrote:

xxxxxxxxx,

I can formally confirm that Glasgow Prestwick ATC are prepared to support your survey flight programme as previously intimated.

Kind regards,

XXXXXXX

xxxxxxx,

Many thanks for the supplementary information you have provided.

As this will be subject to the Non-Standard Flight (NSF) Notification Process which involves NATS and the CAA and does not appear to encroach on Prestwick's Controlled Airspace we will support the trial as would normally be the case for unusual activities in Class G Airspace.

This would consist of providing a Flight information service to affected Aircraft which would include the status and information on any established Temporary Danger Area.

Once you have concluded the required process with the CAA please send us a copy of any Approval documents you receive along with full details on the dates, times & dimensions of any associated Temporary Airspace.

I hope that this is suitable for your requirements.

Please don't hesitate to contact me if you have any further questions.

Kind Regards,

xxxxxxxxxx

Glasgow Prestwick Airport Ltd.
xxxxxxxxx
Scotland
United Kingdom

xxxxxxx
Senior Air Traffic Control Officer
Glasgow Prestwick Airport Ltd.

T:01292 xxxxxxxxxx

xxxxxxxxx@glasgowprestwick.com
www.glasgowprestwick.com

Appendix H: Glen Swinton Farm

RE: ACP-2020-049: Commercial Drone Survey in West Scotland - CAA Stakeholders Targeted Engagement

From xxxxxxxxxx@glenswinton.co.uk> on 2021-06-25 11:48

Details
Dear xxxxxxx,

Thank you for your email and stakeholder consultation document dated 13 May 2021 which I received yesterday.

Your consultation document states at paragraph 3 of the introduction:

"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."

Please could you provide some background/elaboration to the Assessment Meeting Minutes published on 10 August 2020:

1. Who proposed, and who agreed, that "a Temporary Danger Area (TDA) would be required"?

2. On what basis did they agree this?

3. Did they make and consider a formal written risk assessment?

4. Does their risk assessment (formal or otherwise) take into account "knock-on" effects outside the proposed TDA (in the same way that civil engineers consider knock-on effects of any partial closure of a transport network)?

5. What alternatives to a TDA did they consider, and why were those alternatives rejected?

6. What effect did the initial decision to ignore local stakeholders such as Scotia Seaplanes and Glenswinton aerodrome have on the conclusion that a TDA "would be required"?

7. Given that much of the airspace concerned has no VHF and/or ATC radar cover, to what extent was difficulty of monitoring or enforcing compliance with a TDA taken into account?

If you could kindly answer the above questions, I will respond as soon as practicable. However, time is now rather short for meaningful consultation and response by the end of this month.

Kind regards,
xxxxxxxx.

--
Glenswinton, Scotland
Tel: 01644xxxxxx Fax: 01644 xxxxxx
Aerodrome info: www.glenswinton.co.uk
Email: xxxxxxxxx or call/text xxxxxxx

Appendix J: Maritime & Coastguard Agency

RE: ACP 2020-049: UAVE Ltd: TDA Application un-paused: Targeted Engagement: MCA

From xxxxxxxxxxxx@mcga.gov.uk> on 2021-06-23 15:39
Details Plain text

Hello again xxxxxxx,

Having look at the attached documents I have a couple of questions:

1. I note that the A-B timing is 24 minutes, and that the proposed area is only about 15 minutes flying time for a SAR aircraft from Prestwick, added to the 15 minute aircraft readiness state, we need to ensure that there is a robust system in place to ensure that the drone lands expeditiously in the event of a SAR tasking.

1. The SAR aircraft will not enter the TDA until the operator has confirmed that the drone is on the ground. We will need to ensure that there is a direct line between the ARCC and the GOS that is dedicated to the purpose.

1. It would be preferable that the operator communicate a daily flying plan to both the ARCC and Prestwick SAR base by email.

The detail you will need is;

ARCC –

Email: xxxxxxxxx@hmcg.gov.uk
Telephone: xxxxxxx

Prestwick SAR Base: xxxxxxx@bristowgroup.com

Regards

xxxxxxx

Appendix K: Ministry of Defence

RE: Commercial Drone Survey in West Scotland : CAA: ACP2020-049: Targeted Stakeholders Engagement

From xxxxxxxxx Sqn Ldr (DAATM-AirspaceOpsSO2) xxxxxxxxx@mod.gov.uk> on 2021-04-29 16:57
Details

Hixxxxxxx,

I am well thanks, hope you are too?

Having reviewed the updated information I can confirm that the MOD have no objections to your proposal. The points raised in my previous response are still valid, but the fact that the activity is activated by NOTAM and there are operational contact details as well as a DAAIS frequency, are suitable mitigations from a MOD point of view. We would still like as much notice as possible to be able to add the TDA to RAF(U) Swanwick's radar maps as per my previous correspondence.

If you need anything else then please let me know.

Regards

xxxxxxx

xxxxxx| Sqn Ldr | xxxxxx Airspace Operations | Defence Airspace and Air Traffic Management |
xxxxx| xxxxxxx Crawley West Sussex xxxxxx| Civilian Telephone: +44 (0) xxxxx| Skype: +44 (0) xxxxxxx| E-Mail: xxxxxxx@mod.gov.uk

Appendix L: Police Scotland

RE: UAS survey Police Scotland Consulation :UAVE Ltd : ACP2020-049: Un-paused [OFFICIAL]

From xxxxxxxx@scotland.pnn.police.uk> on 2021-04-06 13:46
Details Plain text

OFFICIAL

Hello xxxxxx,

Apologies for the late reply but good to hear you will be re-starting flights later this year.

Have the operations changed in any way? Do you want to send through the consulation documents? We now have a small team to deal with avaition matters and it would be good for them to see the aircraft and the proposals and we will inform local police commanders once dates are confirmed.

If you could please use xxxxxxxx@scotland.pnn.police.uk as the email address in future as that is our public folder.

Regards,

Xxxxx

xxxxxxx
Sergeant xxxxx
Aviation Authorities Liaison Officer /
Air Accident and Incident Advisor

Police Scotland,
Aviation Safety and Security Unit,
xxxxxxxxx,
GLASGOW,
xxxxxxxx,
UNITED KINGDOM.

Direct : +44 (0)xxxxxxxxxx
Mobile : +44 (0)xxxxxxxxxx
ISSI : xxxxxxxx

xxxxxxxxxxx
Website : http://www.scotland.police.uk/

RE: UAS survey Police Scotland Targeted Engagement :UAVE Ltd : ACP2020-049: Un-paused [OFFICIAL]

From xxxxxxxxxx@scotland.pnn.police.uk> on 2021-04-27 15:57
Details Plain text

OFFICIAL

Hi xxxxxxxxx,

Thanks for the updated info. One of the team will look through it and may contact you to ask a couple of questions given they weren't party to our conversations last year.

Regards,

xxxxxxx

xxxxxxxx
Sergeant xxxxxxx
Aviation Authorities Liaison Officer /
Air Accident and Incident Advisor

Police Scotland,
Aviation Safety and Security Unit,
xxxxxxxxx,
GLASGOW,
xxxxxxxx,
UNITED KINGDOM.

Direct : +44 (0)xxxxxxxxxx
Mobile : +44 (0)xxxxxxxxxx
ISSI : xxxxxxxxxx

e-mail : xxxxxxxx@scotland.pnn.police.uk
: xxxxxx@scotland.pnn.police.uk

OFFICIAL

Hello xxxxxxxxx,

Thank you for providing the Application for Temporary Danger Area - Newton Stewart Geophysical Survey document dated 8th July 2020.

Could you confirm if the aircraft will be transponding its position during flight? Reply: Yes, the aircraft will be fitted with a transponder. Although it is Class G airspace will it still transpond? Reply: YES. How is it's position relayed to other aircraft and how would you know if there was a conflict? Reply: The aircrafts position will be tracked by Prestwick ATC & any conflict will initially be managed by Prestwick ATC, with the UAVE Ltd being advised by Prestwick ATC should any unresolved potential airspace conflict be developing in real-time.

I understand Prestwick ATC will be providing a flight information service to aircraft but what are the communication links between Prestick ATC and your pilot should an aircraft fail to respond or enter the TDA, for example the Police Helicopter or HEMS? Reply: The primary communication link from Prestwick ATC to the UAVE Flight Crew (x 2 pilots & I support person) will be via 3G/4G mobile phone coverage/handset, the Flight Crew also have an AirBand Transceiver which will programmed to Preswick ATC, should the 3G/4G phone network fail or the AirBand radio be unable to maintain a communications link with Prestwick, there is be a local BT land-line very close to the aircrafts operating site at Newton Stewart. Comms will be available from this land-line (Landowners Premises at Newton Stewart) via 2-way PMR446 hand-portables used by both the land-owner/deputy & the UAVE flight crew to enable emergency back-up comms. Have NATS at Prestwick been informed as they also provide FIS to air users? Reply: Yes, they are one of the stakeholders that UAVE Ltd are in discussion with at this time. As you will no doubt be aware, many G.A. pilots do not subscribe to these services so other communication methods will be vital. Our concern is deconfliction between your aircraft and both manned and unmanned aircraft that could be legally sharing the airspace. As you know a NOTAM does not prohibit other aircraft from entering the airspace.

Are the MOD/RAF aware of the flights given their proximity to Luce Bay and West Freugh Airfield?Reply: Yes both the RAF (via DAATM - Airspace Consultation) & West Freugh Airfield (MOD-Babcock-Qinetig) are in direct consultation with UAVE Ltd.

How long does each flight last? How many flights per day? Reply: We are working on using available daylight hours from 09.00-17.00 hrs - Monday-Friday, the aircrafts duration & number of flights are not finalised, however the Prion MK3 would be capable of 2 flights of 4 hours duration each working day (with a suitable safety fuel reserve) if required to carry out the survey flights required.

From your plans, is the take off and landing site are one and the same? Reply: Yes What is the rate of climb of the aircraft? Reply: Depending on the air density, the initial rate of climb at 40kg MOTOW is: 200ft/minute when flown at WWA, Aberporth. The plans show a take off vector towards the town of Newton Stewart and a distance of approx 1000m from the main

arterial route east/west - the A75. Reply: Depending on the wind direction, the aircraft will be launched & then after take-off & at a safe altitude, turned away from the A75. It will then orbit the operating base to both gain height & for post take-off & climb-out checks to take place by the flight crew to ensure that the aircraft is performing correctly before departing on its assigned flight path/survey task. There is the main town beyond and how much flying will take place above the town? No flights will be planned to overfly Newton Stewart or any other village or town below the overfly route. What height will the aircraft be at when above the town? Reply: The aircraft will not overfly the town (Newton Stewart) or any other town or village either on

departure or return flight paths. The planned flight altitudes when on mission will be typically 75M-150M above the surface.

With regard to the Prion Mk3 UAV, your website provides lots of information but there area couple of other queries. I am part of a cadre of officers that have been trained by the AAIB and Cranfield University to provide health and safety advice to first responders from all services at the locus of an air accident. We would then attend and assist with any subsequent investigation around evidence gathering, scene recording and specialist knowledge. A hazard sheet for the aircraft around construction materials (MMMF etc), fuel type and volume, kinetic systems, hydraulic systems etc would assist greatly should there be an incident. Reply: Please see Hazard Sheet attached as requested.

What is the aircrafts operational parameters regarding wind speed/rain etc. Reply: Max Operating wind speed 20 knots, no flight in rain/icing conditions/cloud. What is the actual maximum mass of the aircraft with payload - is it 30kg all in or 45kg of aircraft and payload? Reply: Approx 40kg MTOW with the equipment payload to carry out the mission required.It might just be me not getting it! Is there a parachute recovery system in case of failure. Reply: No and if not what is the aircrafts likely descent rate and kinetic energy at ground level? Reply: Unpowered: Approx 1 in 7 glide angle & 1164 Joules velocity. From my knowledge of these systems, am I wrong in saying that it is autonomous with human back up at any point during the flight? Reply: You are correct, apart from using the term autominous, we & the CAA use the term automated , the aircraft can be flown both manually by the manual pilot & in automated flight mode by the 2nd pilot (ground Station Operator) What redundancies are there such as RTH, controlled landing, any other emergency/secondary landing sites should the primary site become inoperative? Reply: The Prion MK3 aircraft's autopilot can be programmed to provide various emergency/failsafe modes which include RTH & return to land/orbit to await new command/other profiles. UAVE Ltd have secondary TOLP within the local Newton Stewart area should the primary operating site become compromised. What are the procedures should another aircraft threaten the flight - holding pattern, return to home, land? Reply: Various emergency flight profiles are available should such a scenario develop, at any time in flight, in an emergency the 2 pilots have an option at any time to command an engine kill switch to shut down the engine & terminate the flight.

Lastly, have you taken into account wildlife in the area? I have spoken to our liaison officer who mentioned various birds of prey in the area but this appears to be outside nesting times and he has no apparent concerns but it may be better to check with the relevant authorities. Reply: Yes, we have taken the wildlife & raptors into our project planning, Forestry Scotland have only permitted flights between September-December as January-August is the bird nesting season.

Apologies for all the questions Jeremy but with this new and emerging sector of BVLOS operations taking place in Scotland, it is good to get reassurance around the flights. This is not the first BVLOS ops we have consulted on, the health care flights in Oban for example, and we are keen to support the plans but have other considerations for the wider public and aviation community. Reply: No need to apologise Iain, we are are contacting all prime stakeholders for their views & welcome any questions or further clarifications at this stage of our application.

Thanks,

xxxxxxx

xxxxxxxx
Police Constable xxxxxx

Appendix M: Police Scotland ASU

RE: UAVE Ltd: ACP 2020-049 Now Live: UAS survey Police Scotland Consulation :Forwarded to Police Scotland ASU [OFFICIAL]

From xxxxxxxxx@scotland.pnn.police.uk> on 2021-03-24 12:17
Details Plain text

OFFICIAL

Thanks xxxxxxx.

From: xxxxxxx @uave.co.uk
Sent: 24 March 2021 11:49
To: xxxxxxxxx
Cc: OSDAirSupport; xxxxxxxxxxxxxxxxx
Subject: Re: UAVE Ltd: ACP 2020-049 Now Live: UAS survey Police Scotland Consulation :Forwarded to Police Scotland ASU [OFFICIAL]

Hi xxxxxxx,

I trust you, your associates & all @ Police Scotland are keeping safe & well.

I am touching base with you to advise you that UAVE Ltd have contacted the CAA to un-pause their ACP-2020-049 - TDA process, with a view to re-starting their UAV Flying Ops Project for later this year.

I will of course update you on this process & formally write to advise you that the 6 week stake-holder consultation is re-starting today.

Please contact me with any questions or concerns that you or your colleagues may have over this proposed activity which is slated to commence in Aug-Sept 2021.

Kind Regards,

Xxxxxxx

xxxxxxxx (Contractor Flight Ops)

UAVE Ltd

Xxxxxxxxxx

www.uave.co.uk

Appendix N: Scotia Seaplanes

Scotia Seaplanes Ltd - Response to ACP-2020-049 (Newton Stewart) I appreciate the opportunity to comment on this proposal. I initially contacted UAVE Ltd on 21st January 2021, when I discovered this ACP by accident. At the time, the application had been paused with the proposal suggesting 2 week period in August 2021. I also advised UAVE Ltd of two airfield operators (Glen Swinton and Castle Kennedy) sited within 10nm of the TDA edge, these were marked on aeronautical charts yet UAVE Ltd had failed to spot them or contact them on their previous stakeholder engagement in summer 2020. The next correspondence I received from UAVE Ltd was on 4 May 21 to say that their application had been "un-suspended" (in March 2021) and was now proposed for a 2-3 week period between SeptOct 2021. I have since read on the CAA Portal that the period has been increased yet again to cover three months from 1 st September to the end of November 2021. I had delayed submitting my response as was awaiting answers from UAVE Ltd to several technical questions concerning EC capabilities and proposed daily scan size. To date, disappointingly, I have received no response. Therefore, I can wait no longer. I have had extensive dealings with other drone operators and Drone TDAs in the West of Scotland in recent months, and it has taken an inordinate amount of time, energy and effort to illicit both responses and respect for GA operations from these operators. I have even conducted Detect and Avoid trials with one of the operators, in a spirit of co-operation to try and progress and develop understanding between GA and the drone community. I had hoped that this might have signalled a more co-operative and respectful attitude for any future sharing of airspace. Our Operation We are a commercial Declared Training Organisation (DTO), registered with the CAA, based at Prestwick Airport and have been operating successfully in this area since 2010. We conduct seaplane training for the UK and EASA SEP(sea) ratings, adventure flight and filming operations in and around Prestwick, Loch Doon and the Galloway Hills. We have numerous clients who come from the UK and all over the world, to fly and experience the unique environment and learning experience that this area has to offer. We are the only seaplane training and adventure facility in Scotland. Our flying season is concentrated in the summer period (particularly mid-April to the end of October) with occasional currency and maintenance flights between November and March. Earned revenue from flying is our sole source of income, and this has been severely constrained during the Covid lockdowns – we are now looking to recuperate a lost year of business, and already, 2021 is looking to be our busiest year so far. All our flights are conducted under Visual Flight Rules (VFR) at low-level, below 1000' agl, are tactically dependent on both the weather and wind direction on the day, and the syllabus and client requirements. We may be looking for a loch with 'glassy' water, a high elevation, a constrained valley, or one to practice 'beaching' or mooring. All six lochs located inside the TDA are essential to our operation.The effect of the TDA on our Business and Clients. The proposed TDA covers 450sqKm, up to 4500ft amsl – this is as big as the Control Zones around many major airports. It stretches right across our operating area, and if the TDA is permitted, will prohibit our operations south of Loch Doon and around The Merrick, closing off Loch Enoch, Loch Dee, Loch Trool, Loch Valley, Clatteringshaws and Loch Grannoch. This will severely curtail our tactical freedom and lead to a loss of experience for our clients. Alternative lochs are much further away to the north (Loch Lomond, Loch Awe), which would involve more transit time – on a 4 day course this could easily amount to an additional 2 hrs of "fresh-air flying", costing the client an extra £700, and generating unnecessary CO2 emissions. These additional costs could detrimentally affect our prospectus and potentially lose business, which I cannot accept. UAVE Ltd will gain a commercial advantage, yet we are expected to suffer a loss? The loss of one days flying could result in the order of £1000-£2000 of lost revenue. This is without taking into account any potential loss for local accommodation and hospitality providers around Prestwick Airport, where our clients and their families usually stay. Electronic Conspicuity. As an operator I have invested heavily in avionics and electronic conspicuity, including Mode S, ADSB and FLARM, together with associated detection

displays. In co-operation with Skyports, I also successfully trialled an ADSB detection setup (Skyecho2 and Skydemon) with their Kookaburra drones. This gave me confidence and experience that in certain circumstances, the mixed use of single drones and light aircraft, with suitable detection, could indeed be feasible and permitted. I note that the drone UAVE Ltd propose to use is a Prion Mk3. This model has been in use since 2008, which I would suggest has given ample opportunity for the operator to design and fit some form of Electronic Conspicuity (either ADSB-out or indeed ADSB-in) to assist in detecting potential conflictions. I have asked UAVE Ltd if they are fitted with ADSB, but have received no response. I would consider it wholly unacceptable, that whilst I continually upgrade and invest in my aircraft's ADSB/DAA capability, I may never-the-less be excluded from my normal operating areas simply because a commercial drone operator has not similarly invested and does not perform to the same operational standards. This is illogical, and sends a very poor mixed message to the wider GA and drone communities. TDA size and scope It is recognised that the use of TDAs to segregate BVLOS drones from existing airspace users, is a very blunt instrument and not a viable long-term solution. CAA Policy 20200721 For the Establishment of Permanent and Temporary Danger Areas - states that "The vertical and lateral dimensions and the operating hours of a notified DA/TDA shall be the minimum practicable necessary to enable the tasks to be undertaken within it, subject to the need to avoid over-complication of airspace structures and any environmental considerations" These are fine words and sentiments, but alas however, do nothing to address the inconvenience or the loss of business and facility suffered by GA, for another operator's commercial gain. I have also asked UAVE Ltd how much of the 450sqKm they would expect to be surveying per day. It seems wholly unreasonable to block off the entire area if daily operations for example are only concentrated in 10% of the block. To date I have received no response.UAVE Ltd in their June 2021 newsletter highlight an innovative survey which shows the Prion Mk3 has the capability of operating successfully at low-level from 75-150ft agl, and in a clearly defined small area. A 70minute/75km flight survey pattern was successfully conducted within the boundaries of Aberporth airfield in a very small (3sqKm) area. This leads me to question the need for a daily closure of 450sqKM for up to 3 months – it certainly does not appear to be of "the minimum practicable necessary". Airspace sharing compromise. I propose several innovative courses of action which could provide a much more flexible, efficient and less clumsy closure. After all, as the RAF teaches, "flexibility is the key to air power". 1- Before granting of any TDA, and being permitted to get airborne, the drone operator must ensure that the Prion Mk3 has a functioning and serviceable ADSB-out unit that is positively detected by airborne detection (such as SkyEcho) or ground relay such as Flightradar24. This may involve the drone operator siting temporary ADSB relays to supplement the OGN/ADSB network, or providing a real-time webpage showing the live location of the drone operations. 2- Individual operators, operating under a Letter of Agreement should be permitted to enter the TDA in agreed locations and the drone operator guarantees to remain clear of these. I would naturally expect Scotia Seaplanes to negotiate an LoA permitting access to the TDA so that we may continue operations. 3- The TDA should be divided into smaller blocks. This could minimise the closure of the four north-western lochs when drone operations are in the other 80% of the area. 4- If other airspace users, with suitable ADSB detection, can see exactly where the drone operations are, they should be permitted to take their own visual avoidance and transit through the TDA. 5- Drone operations could be conducted at night, or delayed until after the end of October when the GA training season is over. General comments on the TDA affect for other GA The proposed TDA area cuts across several low-level bad weather routes from the south (the A714 to Girvan, the A713, Clatteringshaws-Loch Doon, and Loch Ken-Loch Doon). These are frequently used by many General Aviation aircraft transiting to Prestwick, Oban and the west coast of Scotland. These aircraft will operate from clubs right across the UK and beyond who may or may not be aware of the size, scope or movable dates of this ACP proposal. The TDA also impinges on LFA20T, part of the military UK Low-Flying System, which is in daily use by the RAF, USAF and other NATO forces. This area is also normally constrained by the proximity of the D402/403 complex (Luce Bay) and D405 (Dundrennan) which are frequently active. These Danger Areas already severely constrain flight from the south, forcing flights to descend early, funnelling traffic into a 20nm gap or forcing them to re-route over sea or around the coast. This proposed TDA would restrict flexibility even further, creating 5nm and 10nm choke points to the west and east. With the rapidly changeable weather we experience in and around the mountains, a loss of flexibility for weather avoidance is a major safety issue. Telephoning your operator may not be possible as mobile reception in the mountains is patchy at best –it is also not possible when airborne or when we are operating at low-level in the mountains. Likewise the provision of DAAIS, that you allude to, is dependent on VHF coverage for either Scottish Info 119.875 (who do not have a radar display) or Prestwick Approach 129.450 who do have a radar display, but do not detect ADSB and are highly unlikely to see any other traffic below 3000ft. Emergency procedures. What procedures are in place should there be a loss of signal or control that

might take the drone outside the TDA? (I am sure we are all familiar with the recent AAIB report concerning the 'Rogue' drone at Goodwood in 2019?) Weather I do not see any indication of what weather limitations you would operate to. Other drone operators established criteria, for example they would not operate if the cloud-base (4 oktas or more) was below 1500ft amsl. Mountain weather can be very localised and change quickly. Can the drone detect any unplanned cloud or fog ahead and avoid it? Conclusion We recognise that drone operations can assist in providing services and are generally supportive of future UAV operation, but we feel this process must not be conducted to the exclusion or detriment of existing airspace users. Segregated airspace is not the answer. We also recognise that UAVE Ltd has a legitimate commercial focus, but that this conflicts directly with the established commercial practices of Scotia Seaplanes Ltd. Taking all these factors into consideration I feel this ACP does nothing to resolve the detect and avoid issue (which should now be a main focus), nor is the size of this TDA proportionate to the task required. I regretfully have to OBJECT to the proposals for ACP-2020-049 as they stand. I would, however, be happy to engage with revised proposals, which respectfully takes account of all current users' needs, including those of Scotia Seaplanes Ltd. xxxxxx xxxxxxxxx Owner/Operator Scotia Seaplanes Ltd xxxx@scotlandonfloats.com 23rd June 2021

Appendix: O: West Freugh Quinetiq/MoD

RE: UC MOD West Freugh: ACP2020-049: UAVE Ltd: Unmanned Survey: Newton Stewart

From xxxxxxxx@qinetiq.com> on 2021-07-01 11:03
Details Plain text
Hi xxxxxx,

Thanks for the phone call earlier in the week and the copy of the application.

'Jamming' activities are planned during the window of operating you have indicated. I would suggest that we do a daily check in to see if there is any potential conflict in the operations. Number to call on the day is xxxxxxxxx or xxxxxxxx.

Kind Regards,
xxxxxxx
xxxxxxxxxxxxx
Trainee Trials Planner/TCO

M xxxxxxxxx
D xxxxxxxxxx
xxxxxxxxxx@QinetiQ.com

www.QinetiQ.com | Our blog | LinkedIn | Twitter

Appendix: P: West Scotland Strut LAA

Subject:ACP-2020-049 - UAVE Ltd
Date:2021-06-29 10:08
From:strut coordinator <xxxxxxxx@gmail.com>
To:xxxxxxxx@uave.co.uk
Copy:xxxxxxxx, xxxx@yyss.net

The West of Scotland Strut of the LAA recognise and welcome the potential economic benefits that may flow from the proposed activity covered by this ACP and are thus supportive in principle. However the details are such that this is a formal objection to the granting of the ACP as it currently is proposed and as some of the details in the ACP appear to be unnecessary with the potential to significantly impact upon general aviation in the region and nationally.

The blanket nature of the application in requiring a TDA at all, the extent of geographical coverage and the requested period require modification in the interests of acceptability and inter operability with other airspace users.

The consultation process appears somewhat deficient in that, once again, the applicant appears not to have consulted an aeronautical chart from which the presence of Glen Swinton Aerodrome would have been apparent, the owner of which was only latterly made aware of the ACP. Although the number of movements there are limited, the geographical extent and duration of the application have the potential to impact upon their operation. Other options, discussed later, would have mitigated the impact significantly.

The upper limit altitude applied for is excessive for the lower lying ground within the zone and arises from the methodology, altitude above MSL, applied and some high ground within the ACP boundaries coupled with the block application. Regular convergence between the typical 3000ft cloudbase and the TDA altitude is liable to create a total block for light aircraft wishing to transit the TDA area and which may include those visiting or transiting the area nationally as well as locally.

The operator UAVE has published separately material reviewing a recent similar activity in Wales and in which the aeromagnetic survey was carried out at altitudes from 150ft down to 75Ft. AGL which if adopted here would significantly reduce the above impact. Low flying rules / need to avoid habitation is of course to be taken into account but the area is sparsely populated and so survey lines can presumably be arranged to suit.

The operation of the entire area from 9 to 5 Monday to Friday for a period of three months is apparently unnecessary and confirmed by UAVE in correspondence suggesting that, apart from unforeseen delays, the survey will be completed in a "few weeks" Thus, as with others ACPs' of this type, an application of a more reasonably estimated initial period, with a window to extend if required, would be more appropriate.

The justification for the operation to be carried out in daylight has not been made and so if night time operation were possible almost all impact on general aviation would be removed.

Sub division of the area into logical / manageable zones, potentially by altitude of operation for terrain clearance, may further benefit for instance Glen Swinton Aerodrome as well as the Seaplane Training Operator Scotia Seaplanes who use a significant number of the lochs for training purposes according to prevailing weather conditions. They would then be able to avoid the active areas as notified by notam.

UAVE have in correspondence indicated that the UAV will be "fitted with a transponder" but omitted further details such as whether or not it has ADSB and not responded to the suggestion that detect and avoid technology is now available. Of these only detect and avoid is likely to be in any way reliable due to the poor / non existent radar and radio coverage at lower altitudes in the area in question. Thus any possibility of meaningful information being available from the managing facility at Prestwick ATC is unlikely should anyone, air ambulance included, require a crossing service. There is no mention of a telephone contact service being provided for such instances.

Further general aviation aircraft, although many more are voluntarily carrying ADSB devices, are not required to do so, nor are they required to have a transponder so that expecting them to receive an undefined transponder signal from the UAV is not an appropriate mitigation measure. In addition others transiting or operating in the area and thus potentially impacted may include:-

- **Air Ambulance**
- **Coast Guard**
- **Air Sea Rescue**
- **Military Aircraft and Helicopters**

- **Police Helicopter**
- **General aviation transiting north south overland**

It appears from UAVE responses that the TDA application is based upon a simplified approach of drawing a box on a non aeronautical map, minimal operation cost for the operators without regard for others commercial and proper recognition of their safety. Further it appears to have been drawn up without a full impact assessment and without proper consultation as required in CAP1616. It is thus far from a detailed design that encompasses all relevant factors and available opportunities.

West of Scotland Strut are not aware of the consideration given or motivation in making the decision for a TDA and whether or not the operation is risk assessed under CAP722 ? Had that been done and with the above points as minimum, we believe that a more detailed design, giving full consideration to all stakeholders contributions and potentially employing available technology, would have been possible. We therefore suggest that, in support of the survey objectives, that this should now be carried out and consulted fully, prior to the grant of a modified ACP.

We remain as usual happy to contribute positively to the further development of a suitable and workable ACP.

Appendix: Q: Forestry Land Scotland

Fwd: Forestry Land Scotland - Raptor Nesting dates confirmation required

From xxxxxxxxxx@uave.co.uk> on 2021-04-20 12:17
Details Plain text
xxxxxxxxx,

See below confirmation of 1st September date for earliest flights at Newton Stewart.

best regards,

xxxxxxxxx
Begin forwarded message:

From: xxxxxxx @xxxxxx.co.uk>
Date: 20 April 2021 at 11:14:12 BST
To: xxxxxxxxx @uave.co.uk>
Subject: RE: Forestry Land Scotland - Raptor Nesting dates confirmation required

Hi xxxxxxxx,

FLS have confirmed that 1st September is the start of the window for drone flying over their land.

Kind regards, xxxxxxxx