



EAGLE EYE INNOVATIONS (EEI)

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TDA Submission ACP-2023-078

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RELEASE CONTROL

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DOCUMENT SIGNOFF

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INTRODUCTION

1.1 COMPANY INTRODUCTION

Eagle Eye Innovations are the longest running Remotely Piloted Aircraft Systems (RPAS) training and consultancy organisation in the United Kingdom. With over 120 years of collective military experience and over 60,000 flying hours on a diverse array of crewed and uncrewed aviation, the team's proficiency extends across the entire spectrum of RPAS, encompassing sub-25kg aircraft to the MQ-9 Reaper and other Medium Altitude Long Endurance (MALE) platforms.

1.2 PROJECT INTRODUCTION

Eagle Eye Innovations have been contracted to develop the air safety and battlespace management plan for the MOD Project ACHERON which will offer the opportunity to assess Defence's All-Domain, Integrated Remote Autonomous Systems (RAS) capability potential. It will support, align, cohere, and integrate Military Front Line Command capability demonstrations and contribute to Joint Exercises, to prove the level to which RAS can communicate and collaborate across Domains. It will also provide evidence as to whether they can be supported by appropriate regulation and policy to inform Defence's Integrated Review 2025 for future RAS investment.

The exercise will be conducted across the UK at MOD sites including:

- RMB Chivenor
- Otterburn Training Area
- RAF Spadeadam

This documentation focuses on the single site of RMB Chivenor and the application for a Temporary Danger Area (ACP-2023-078) to enable a demonstration of multiple RPAS, Uncrewed Ground Vehicles and Uncrewed Surface Vessels in one simulated tactical arena. This will enable complementary technologies to feed a network of information and data to the battlespace managers across all 4 sites. The RPAS will be flying BVLOS most of the time. RPAS flying will be conducted by civilian contractors operating commercial platforms under CAA rules and will also include military units with government RPAS under Military Aviation Rules (MAA). Each RPAS will have its own supporting CAA Operational Authorisation (OA) through the submission of an Operating Safety Case (OSC)¹.

1.3 OBJECTIVES OF THIS DOCUMENT

This document outlines the final submission for the TDA, following engagement with the CAA and airspace users.

1.4 DESIGN CONSTRUCT

When designing the proposed TDA, EEI had the following considerations:

- The TDA will be managed via NOTAM.
- Request the minimum airspace required to safely conduct the exercise whilst reducing the impact on other air users.
- Keep the design of the TDA as simple as possible, to make it easy to communicate to others and negate the probability of error, for example when inputting as a geofence into the RPA autopilot.

¹ law CAP722A

- Divide the TDA into segments which will enable de-activation of unrequired airspace on an opportunity basis.

1.5 FEEDBACK AND ACTIONS FROM STAKEHOLDER ENGAGEMENT

EEl conducted extensive Stakeholder Engagement to understand the safety and operational viability of the proposed TDA and to ensure the minimum possible impact on other air users. The strategy for this engagement is outlined in the *“Stakeholder Engagement Plan – ACP-2023-078”*. The results of this engagement are included in the *“Summary of Stakeholder Engagement – ACP-2023-078”*. These documents have been submitted to the CAA by upload to the Airspace Change Portal.

Following the engagement, EEl will:

- Aim to provide a VHF frequency² as well as a telephone number to be contacted by local helicopter operators who require emergency access into the TDA.
 - Once allocated, the frequency will be published in the NOTAM.
- Be available for direct contact before and during operations if additional information is required or if a planned flight needs entry to the airspace.

National Police Air Service (NPAS) queried whether RPAS will be utilising high intensity lighting and electronic conspicuity methods. Not all RPAS will be fitted with these and **those that are, may not** have them activated due to exercise play.

In the event of an emergency recall the following actions **shall** take place:

- **All** RPAS will be recalled to RMB Chivenor or to land at the earliest opportunity in a suitably safe location.
- **All** RPAS fitted with high intensity lighting or electronic conspicuity **shall** illuminate appropriately.
- **All** RPAS will confirm safe on deck, and this will be relayed to the Emergency Services.

1.6 PROPOSED DESIGN AND OVERVIEW OF OPERATIONS.

This reflects the original TDA design within the stakeholder engagement plan and in accordance with application of the design construct laid out in Section 1.4 of this document and section 4 of the Stakeholder Material.

1.7 TDA OVERVIEW

- BLVOS flights will remain within the confines of the TDA described below.
- The proposed TDA will be surface to 4,000ft AMSL.
- The TDA will be in place from 03 -19 Jul 24.
- The proposed TDA will only be activated Mon-Fri.
- 03-05 July 1000Z-1500Z, 08-18th July 0900Z-1600Z, 19th July 0900Z-1200Z. Activated by NOTAM.
- RMB Chivenor will be the main launch and recovery airfield with RFA Stirling Castle being a potential offshore launch location.
- Contact details and means of communication will be promulgated by NOTAM.

² An Aeronautical ground station radio licence application form (OfW586a) will be submitted to Ofcom.

- TDA extends 10 Km x 4 km from Braunton Burrows Beach out to sea. Overall, this equates to approximately 54.8 KM² including Braunton Burrows, RMB Chivenor and limited areas of the Estuary (depicted below in figure 1).
- The TDA will be split into three segments to minimise the impact on other traffic. (depicted below in figure 2). If a segment is not being used it will not be activated.

The TDA is made up of straight lines joining the following points:

Point 1	510558N 0042215W
Point 2	510409N 0042215W
Point 3	510409N 0041306W
Point 4	510322N 0041118W
Point 5	510501N 0040810W
Point 6	510525N 0040812W
Point 7	510558N 0041050W

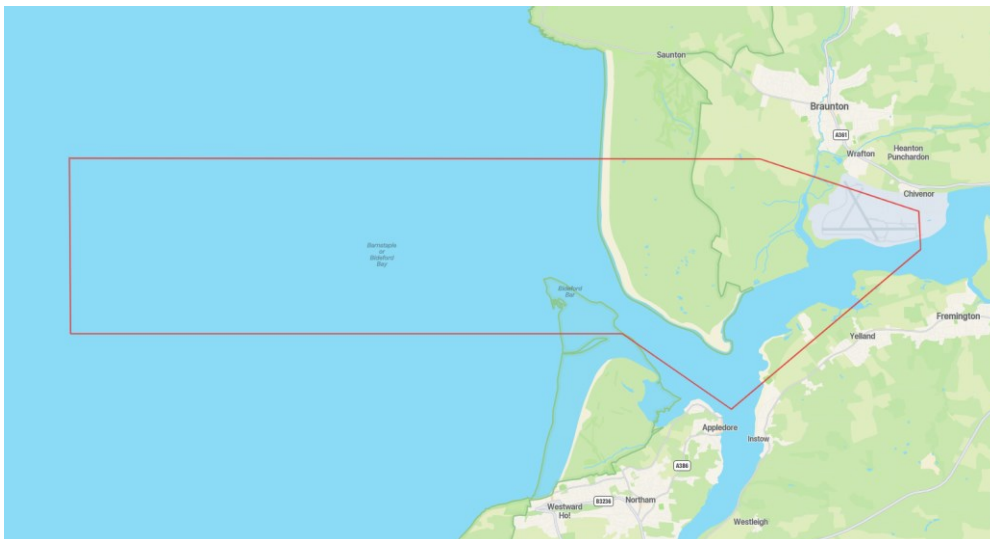


Figure 1 - Proposed TDA dimensions

The TDA will be split into three segments (all SFC-4000ft), details as follows;

- A - Sea/waterways
- B - Braunton Burrows
- C - Chivenor

A	B	C
510558N 0042215W	510559N 0041319W	510558N 0041050W
510559N 0041319W	510558N 0041050W	510525N 0040812W
510513N 0041319W	510407N 0041139W	510501N 0040810W
510435N 0041257W	510409N 0041306W	510504N 0041102W
510407N 0041139W	510435N 0041257W	
510424N 0041112W	510513N 0041319W	
510504N 0041102W		
510501N 0040810W		

510322N 0041118W		
510409N 0041306W		
510409N 0042215W		



Figure 2 - Proposed TDA sectors

1.7.1 Heights

- TDA: SFC – 4000FT AMSL.

1.7.2 Timings and Duration

- Mon-Fri only
- The TDA will be in place from 03 -19 Jul 24.
- The activation times will be as follows:

Date	Activation Times
03-05 July 24	1000z-1500z
08-12 July 24	0900Z-1600Z
15-18 July 24	0900Z-1600Z
19 Jul 24	0900z-1200z

1.7.3 Declared Active

- At the published time in the daily NOTAM.

1.7.4 Closed

- At the published time in the daily NOTAM.
- After last landing if daily objectives and sorties are met.

1.7.5 Notification

- The TDA shall be assumed to be active during the timings detailed within the AIC, or updated timings found within the daily NOTAM.
- EEI will inform any stakeholder who requests notification of any early closure of the TDA as well as publishing by NOTAM.
- Radio frequencies will be monitored continuously 15 minutes before the published activation time until 15 minutes after the TDA has been de-activated.

- Telephone numbers will be detailed on the NOTAM. Dedicated phones will be allocated to individuals to be monitored during normal working hours. Response may be possible outside of this timing.

1.7.6 Activity

Flights are planned within the TDA throughout the published times. The TDA will be subject to periods of intense aerial activity during the NOTAM times. There will be various and multiple types of RPAS operating throughout, conducting multiple flights in a day. Any deviation to the flying programme will be promulgated at least 24hrs in advance. RPAS will operate from RMB Chivenor, the beach at (BBTA) or from RFA Stirling Castle which will be operating offshore.

Several organisations are operating RPAS in the activity, each with their own UK CAA issued Operational Authorisation (OA) and Accountable Manager (AM) or MAA Letter of Endorsed Categorisation and Duty Holder. The following RPAS are known to be operating within the TDA:

Platform	Type	Maximum Take Off Weight	Operated By
DeltaQuad Evo	VTOL	6.2kg	Eagle Eye Innovations (EEI)
ISS Sensus M	VTOL	23kg	Jacobs
AeroVironment Puma	Fixed Wing (FW)	9kg	700 X Sqn, RN

1.8 WEATHER LIMITATIONS

The following operating limitations will apply to the airspace for it to be considered active however, more stringent limitation may be used by the RPAS operators.

Day/Night	Day Only (MCT - 30mins, ECT +30mins)
Visibility	>1000m (<2000m VLOS only)
Cloud base	BKN/OVC = >1000ft from lowest cloud base FEW/SKT = >500ft Vertically, 500m Horizontally, COCISS
Temperature	0 to 40 Deg C
Max Windspeed	At altitude: <50kts (26m/s) Surface: 40kts (21m/s)
Rain/moisture	Light to moderate exposure to rain (-RA/RA)
Thunderstorms	>15nm or if more restrictive, Enough time for a safe and unhurried landing

1.9 LOCAL AVIATION

A review of FlightRadar24 demonstrates negligible GA traffic (although it is accepted that non transponding traffic are not displayed) over the area of interest and it is therefore anticipated that there will be minimal changes to traffic patterns. It is also accepted that traffic levels may be higher in the generally favorable weather conditions encountered in July but not sufficiently that they are not manageable.

The general indicated transit altitude of commercial aviation is above the upper limit of the TDA and therefore the flight path should not be impeded. Local aerodromes, grass strips and HLS ivo the TDA were included in the stakeholder feedback. All traffic from these sites will be aware of the TDA through

NOTAM and will be in contact with EEI prior to and during the activation of the TDA if any of their operations are likely to be affected.

1.10 NOISE ASSESSMENT

As per CAP1616 Appendix B, 'environmental impacts that are a direct result of military aircraft or military operations (including civil aircraft carrying out military function under contract) are **not** required to be considered or assessed'. As well as the local aviation considerations in Section 1.9 of this document, the following was also considered:

- The TDA activation dates and times are specifically designed to minimise as much as possible the noise footprint to the local community, stakeholder groups and tourists to an acceptable level.
- Several different types of RPAS will operate within the TDA, mainly rotary, all with different noise profiles. Generally, the most audible part of the flight is the take-off and landing phase. The majority of which will take place at RMB Chivenor or within MOD land where there may be uninvolved persons. The aircraft will lift and transit to their relevant operating heights before proceeding on task. It is anticipated that the noise footprint will be of such a short time span, that any disturbance is negligible.
- Any traffic that may have to re-route due to the activation of the TDA is assessed to cause minimal impact to the local community due to the operating height.

1.11 EMERGENCY AIRSPACE ENTRY NOTIFICATION

Concurrent activity between RPAS and civilian aviation is not permitted within the TDA and there is to be no TDA crossing or procedural deconfliction service with non-exercise traffic. A Special Use Airspace (SUA) crossing service was considered but due to the lack of ATS providers and SQEP availability, it was not feasible. A SUA Activity Information Service is provided by London Information on 124.750MHz. London Information will provide the status of the TDA but will not grant access. EEI have ongoing communications with the CAA to establish if EEI can provide an Air Ground Communications Service (AGCS). All users of the equipment will have a Radio Operators Certificate of Competency (ROCC) and will have a relevant ground station license. If EEI are contacted and emergency access to the TDA is required, all exercise RPAS will be landed as soon as is safe to do so, to allow de-activation of the TDA with the following planned actions:

- On notification of emergency helicopter operations in the vicinity (<5km) or within the TDA, flying activity will cease and all RPAS will land as soon as practicable.
- The emergency helicopter can then choose to operate within or transit through.
- On completion of the Emergency Event the Exercise Control Air Safety Lead will confirm that RPAS operations can resume and relay to the Directing Staff.

At a minimum, a contact telephone number for the Air Safety Team (AST) will be provided in the NOTAM to allow communication for emergency reasons. To minimise the impact on local aviation, the TDA segments A, B and C will be deactivated as required.

1.12 OVERSIGHT OF RPA OPERATIONS

The ACHERON project team will provide an on-site AST specifically to manage Air Safety aspects of flying activity within the exercise area, with a nominated and SQEP Exercise Control Air Safety Lead. All flights will be planned through a dedicated Drone Desk account for all commercial and military participants and will be briefed to the exercise staff prior to flight. This will enable the ACHERON AST to monitor daily activity in a dynamic way, ensuring that flow and density levels are managed correctly. The ACHERON AST are exclusively ex-military and come from a range of aviation backgrounds and disciplines. The AST

reports directly into the higher command levels of the military and are responsible for the safe conduct of all activities under ACHERON. Air and Ground Risk will be assessed prior to operations commencing via all available resources (radio, phone, ADSB, binoculars, patrol, sea assets) and shall be declared safe by the AST prior to the TDA being activated and utilised.