



BVLOS TRIAL IN NON- SEGREGATED AIRSPACE

*Trial Plan Part 1: Appendix B
Stakeholder Engagement Material*



WORKING TOWARDS BVLOS OPERATIONS IN NON-SEGREGATED AIRSPACE

*ENGAGEMENT ON THE ESTABLISHMENT OF A
TEMPORARY DANGER AREA*

ACP-2020-082



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Introduction

Project partners Trax International, uAvionix, Plane Finder and ANRA Technologies are working together with trial hosts the Goodwood Aviation Innovation Centre and trial participants Skyports on a project that aims to prove a concept of safe Beyond Visual Line of Sights (BVLoS) Un-manned Aerial System (UAS) operations alongside conventional traffic in non-segregated airspace.

We are aiming to demonstrate that Unmanned Air Vehicles (UAVs, sometimes referred to as drones), can be operated beyond the visual line of sight of the pilot in airspace where other manned aircraft can also be operating at the same time, through the provision of a 'detect' capability for the UAV pilot.

The project wishes to demonstrate the concept via a live airspace trial, which needs the permission of the Civil Aviation Authority (CAA).

The Project

This project aims to gradually demonstrate BVLoS operations in non-segregated (Class G) airspace are safe, can meet with regulatory approval and integrate seamlessly with manned aviation whilst still providing safe and efficient access to the airspace by all airspace users.

The end solution aims to provide UAS operators (and other equipped aircraft) with real-time, shared situational awareness of the airspace, enabling the remote operator to strategically and/or tactically detect and avoid other aircraft during BVLoS operations.

In order to develop the procedures and safety assurances to conduct a trial within a Transponder Mandatory Zone (TMZ¹), the project first needs to demonstrate it can operate the concept safely within segregated airspace i.e. within a Temporary Danger Area (TDA)².

On 24^h September 2020 the project submitted a Statement of Need to the CAA. An assessment meeting was held on 12^h November 2020 between the CAA and the project to discuss the plans and the appropriate course of action. The project is split into two distinct parts.

1. Part 1 will request the establishment of a TDA to enable development, testing and validation of the concept within the protection of segregated airspace. We are aiming to have the TDA in place from 11th April to 23rd September 2021. More information on this is contained within this document and this is what we are seeking your views on now.
2. Part 2 will request permission for a live trial within a TMZ. The project will request permission for this once they have the complete information of safety evidence and have consulted further with their stakeholders, such as yourselves. We expect this consultation to take place between May and June 2021 and we propose that the consultation will run for a period of 8 weeks. We welcome feedback on these proposed timescales now too.

¹ A TMZ is airspace of defined dimensions wherein the carriage and operation of pressure-altitude reporting transponders is mandatory.

² A TDA is defined as temporary "airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times."

The Statement of Need, minutes from the meetings with the CAA and the Trial Strategy are all available on the CAA Portal [here](#).

Provisional Timeline

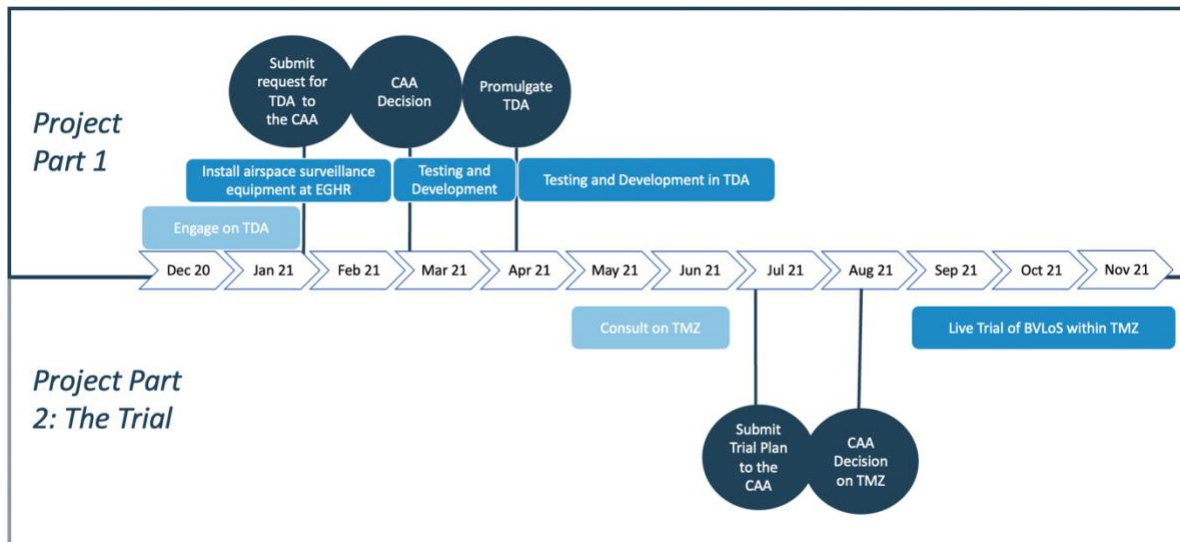


FIGURE 1: PROVISIONAL PROJECT TIMELINE

Purpose of this document

As this project is split into two parts, so is the interaction with stakeholders. The project plans to engage with stakeholders on each part, to ensure the project is best understood. This document is to provide you with our specific plans for the establishment of a TDA. It lets you know the proposed location, dimensions and proposed operating hours of the TDA and requests your feedback on our proposals. We have also included ‘Frequently Asked Questions’ and ‘Abbreviations’ sections, which we hope will answer any questions you may have.

For those stakeholders who would like to learn more on the technical aspects of the project, please read our Trial Strategy document, available on the [CAA Portal](#).

Project Part One - The TDA

Location

The operations are planned to be carried out in the vicinity of Goodwood aerodrome (EGHR) with UAV departures and arrivals at the aerodrome through appropriate procedures.

Goodwood is a busy aerodrome in uncontrolled (Class G) airspace serving a variety of fixed-wing and rotary aircraft. A Flight Information Service Officer FISO provides a Flight Information Service to aircraft on frequency within the Aerodrome Traffic Zone (ATZ) and over-sees operations to/from their 3 grass runways. The surrounding airspace is very busy with General Aviation including the Gliding Community.

Goodwood aerodrome welcome and support the project but it must not adversely negatively impact the Goodwood operation, their customers or local communities.



A TDA was previously established at Goodwood aerodrome between June and September 2020, surface – 2,000ft within a 5nm radius of the Aerodrome, under a separate application by the Goodwood Aviation Innovation Centre. The intention was for the TDA to be activated as required, but only between 0600-0800 UTC outside of normal aerodrome opening hours. However, due to the CV19 pandemic, the sponsor was unable to utilise the TDA. It was never activated.

Key Objectives of the TDA

In order to develop the operating procedures and protocols and to generate the safety assurances required to allow the CAA to grant permission for a trial within a TMZ, the project first needs the establishment of a TDA. This is to provide the segregated airspace protection for the development of those safety assurances.

The goal of the project is to make this concept transferrable to as many Unmanned Traffic Management (UTM) sectors as possible. The specifics of those sectors will vary depending on the services the UAV operator wants to deliver.

For this reason, we want to test several different UTM concepts to shape the operating procedures that we develop to fit as many scenarios as possible, all eventually without segregation from other airspace users. Such as:

- The airborne surveillance³ coverage, limitations and system accuracy
- The ability to safely operate UAVs in and out of Goodwood Aerodrome alongside conventional fixed and rotary wing traffic arriving and departing the aerodrome.
- UAV flights along a number of yet to be defined routes between the aerodrome and multiple take-off and landing sites within the TDA.
- Generic UAV exercises (e.g. simulated aerial surveys) within defined volumes of airspace.

In addition to these tasks, the overarching aim is to create, test and assure robust operating protocols and requirements for UAV operators to meet in order to be able to operate BVLoS within non-segregated airspace via the concept.

Note that any UAV operator will be able to operate within the TDA subject to having the necessary Operating Safety Case permissions from the CAA and the permission of the TDA operating authority.

TDA Proposal

The first phase is to establish a TDA around Goodwood Aerodrome (EGHR) outside the normal operating hours of the airport. This is to provide the project with initially segregated airspace, allowing safe operations to be developed.

Only UAV operators who have CAA approval will be permitted to fly BVLoS within the TDA. The flights would only take place over rural areas, avoiding overflight of both residential and commercial areas.

Goodwood is a unique location for the TDA in that it combines the benefits of manned aviation infrastructure with an adjoining estate where controlled ground access is possible when required.

³ This is surveillance of aircraft within the airspace, not surveillance of the ground.



FIGURE 2: MAPS OF PROPOSED TDA



Dimensions

It is proposed that the dimensions of the TDA will be the same as the original TDA established by the Goodwood Innovation Centre (between June-September 2020) although the availability of activation will change slightly.

Lateral Dimensions

A 5nm radius centred on the EGHR Aerodrome Reference Point (ARP):

N 50 51.57 W 000 45.55

See Figure 2 above.

Vertical Dimensions

Lower Limit: Surface

Upper Limit: 2000ft AMSL

When do we propose that the TDA will be active?

The proposed TDA would be available for activation from the 11th April until 23rd September 2021. The TDA would not be permanently active but would only be activated on an as-required basis and outside of the operating hours of Goodwood Aerodrome.

Activation of the TDA could take place between 0600 - 0900 and/or between 1700 and 2100 local, 7 days per week, with actual dates and times of activation promulgated by NOTAM. Activation of the TDA would take place a minimum of 24 hours in advance. In addition, if for any reason the aerodrome is closed to normal traffic during the day, we may activate the TDA between the hours of 0900-1700.

There will be specific dates where the TDA will be unavailable. These have currently been identified as:

Goodwood Members Meeting 15th – 16th May 2021

Goodwood Festival of Speed 8th – 11th July 2021

Goodwood Revival 17th – 19th Sept 2021

TDA's are normally only available for a maximum duration of 90 days however, you will note we are requesting availability for longer than this. To ensure minimal impact to the Goodwood operation, it is intended that the dimensions and hours of operation of the TDA will be outside the hours of Goodwood operations. The limited availability of the TDA drives the requirement for our request for a TDA availability of greater than the normal 90-day period. However, we commit not to activate the TDA for more than 90 days across the 5-month period.

Once again, the TDA will not be activated daily, only on an as-required basis and subject to the details in the following 'Other Airspace Users' section of this document.

Other Airspace Users

The proposed TDA airspace is wholly within Class G which is overlaid by:

- In the northern hemisphere of the TDA: Class E (CTA 9) associated with Farnborough Airport
- In the southern hemisphere of the TDA: Class A airspace with a Lower Limit of 6500 feet

The upper limit of the TDA is below the relevant Minimum Area Altitude⁴ for IFR traffic and does not infringe any airways or CTA therefore this traffic should not be affected. VFR GA traffic transiting the airspace could be affected during the activation hours although exposure would be mitigated by:

- The restricted timings of availability of the TDA
- The limited number of active days (no more than 90 days over the 5-month duration).

Traffic would need to avoid the TDA by transiting above the TDA or by diversion around it. VFR GA traffic operating into and out of EGHR before the ATZ operating hours could be affected during the TDA activation hours. Operators based at EGHR have a general out of hours flying permission that commences at 07:00 UTC or first light (whichever occurs later).

The aerodrome does from time to time restrict that permission already (where it may conflict with other aerodrome events or activities). Operators not based at EGHR require prior permission for out of hours operations and the aerodrome is able to manage those movements as required. Disruption to out of hours arrivals and departures would be mitigated by:

- the early morning and post 5pm timing,
- the limited number of active days,
- flexibility of activation timing to co-operate with on-site operators and aircraft owners. In response to an activation NOTAM, these users could advise The TDA Operating Authority (as per the section below) of their movement requirements, the Operating Authority would in turn liaise with the UAV operator in order to co-ordinate UAV flight timing that minimises disruption to these operators on the day.

The TDA would be promulgated via AIC and activated as and when required via NOTAM. The Goodwood Aerodrome manager would normally arrange the NOTAM with at least 24 hours' notice.

Any aircraft requiring to arrive or depart from Goodwood Aerodrome during the hours of TDA activation would be given priority over UAV operations, following co-ordination with the TDA Operating Authority.

TDA Operating Authority

The TDA operating authority will be the Goodwood Aerodrome. Contact details will be available in the Aeronautical Information Circular (AIC).

Goodwood Aerodrome's Flight Restriction Zone (FRZ) for UAVs, still exists regardless of TDA status. It is illegal to fly any drone at any time within the FRZ unless you have permission from Goodwood Aerodrome.

⁴ UK AIP ENR 6-81



Danger Area Activity Information Service (DAAIS)

During TDA activation, a Danger Area Activity Information Service (DAAIS) will be available from the Goodwood Aerodrome FISO on the Goodwood Information VHF frequency 122.455 and/or by phone. Contact details will be available in the Aeronautical Information Circular (AIC).

Community Considerations

Normally, to activate a TDA, engagement with community stakeholders is not required. However, as this is part of a longer-term project, we believe Goodwood Aerodrome's Local Consultative Committee will have an interest. We are also taking the opportunity to explore the public perception of drones and we therefore are inviting feedback on these matters.

We currently envisage that typically there may be up to 12 UAS movements on any one day comprising of 12 take-offs and 12 landings.

We don't yet know if there will be specific UAS routes in and around the area or if they will be flexible. However, in preparation for the testing, the project has mapped out all residential, built up or potentially populated areas within 5nm of Goodwood aerodrome and all the flight routes will be planned in such a way as to meet all safety requirements and applicable exemptions/permissions wherever relevant. In addition, this will help us to avoid overflight of any residences in a bid to mitigate any noise and/or nuisance aspects. Figure 3 below shows all of these areas identified within a 5nm radius of Goodwood aerodrome, which we intend to avoid overflying with any UAVs.



FIGURE 3: RESIDENTIAL AND BUILT UP AREAS WITHIN PROPOSED TDA

Goodwood aerodrome do not have any requirements to monitor noise levels. They have a Section 52 agreement with Chichester District Council the terms of which can be viewed on Goodwood’s website [here](#).

We do not expect the trial to affect the routes currently flown by conventional aircraft and helicopters below 7,000ft.

We expect that the noise from the drone operations to and from the aerodrome will be significantly quieter than that of the aircraft currently operating from the aerodrome. The main drone operator in the trial will be Skyports⁵ and their drone, shown below, has two modes of operation: mulitcopter mode and fixed wing mode.

⁵ There may be other drones which take part in the trial other than Skyports however, we expect Skyports to be the main participant.



Based on conservative estimates of the drone's speed, we estimate it will be in multicopter mode for around 18 seconds when taking off and landing; this is when the drone will climb or descend vertically and will take place on-airfield at Goodwood. We anticipate that typically there will be no more than 12 arrivals/departures in any single day, which equates to less than 8 minutes of noise. Beyond the aerodrome boundary, the drone will be in fixed wing mode, where it will be virtually imperceptible from the ground.

More information on this initial noise assessment can be found in our Trial Strategy document on the CAA Airspace Change portal [here](#).

The amount of noise information on UAVs is currently very limited. However, we plan to use the trial as an opportunity to measure noise levels produced by the UAVs that take part in the trial to help inform future engagement and the development of Regulatory policy.

The next section provides contact details to be used for any feedback on the noise experienced from our UAVs.



planefinder



Skyports

Your Feedback

We would like your feedback on:

- the proposed dimensions of the TDA, the proposed timings and your thoughts on the access arrangements,
- any safety concerns or any considerations that the operations may have on your existing operations
- any feedback you may have from a local community perspective
- the proposed length of our consultation on the TMZ (8 weeks in May/June 2021)

There is a frequently asked questions section to this document, however if you have any additional questions please get in touch.

How to ask questions and provide feedback

Please send any additional questions by email by 23rd Dec 2020 to goodwoodbvlos@traxinternational.co.uk.

Feedback deadlines

Please ensure that your feedback is returned by 15th January 2021.

Feedback during the TDA activation period

You can contact us on goodwoodbvlos@traxinternational.co.uk.

Next Steps

TDA

On conclusion of this engagement, the project will analyse the responses received and produce a report for the CAA. This, along with the finalised proposed design will be submitted to the CAA by 31st Jan 2021.

The CAA will, where possible, provide a decision within 28-days of receipt of the final proposed TDA design and associated documentation. Their decision will be published on the Airspace Change Portal.

TMZ

We will undertake a consultation later next year, regarding the specifics of the TMZ and the dates and times of activation. This will include details on access arrangements for any non-equipped aircraft wishing to arrive/depart Goodwood Aerodrome during TMZ activation.

Frequently Asked Questions

How can Search and Rescue operations ensure they are given priority when the TDA is active?

A Danger Area Activity Information Service (DAAIS) will be provided by Goodwood Aerodrome. SAR operations call either the DAAIS or the telephone number provided in the AIC for the operations to be suspended. In short notice cases, inbound or transiting aircraft should contact the DAAIS on the normal VHF frequency – **124.455**.

Why does the TDA have those proposed dimensions?

The size of the area needs to be large enough to accommodate a variety of different UAV tasks such as Point to Point flights or simulated aerial surveys. The number of residential and built-up areas within the vicinity of the aerodrome means we will be unable to operate in large swathes of the area whilst Beyond Visual Line of Sight. Finally, sourcing suitable locations together with the land owners' permission to take-off and land UAVs at those sites has meant that a 5nm radius has best met all of our requirements. This consultation to seek feedback on your requirements so we can also take those into account and mitigate any impacts.

How much notice will be given that the TDA will be active?

The TDA will be activated via the NOTAM system at least 24hrs in advance.

Can the TDA be deactivated if required?

In emergency situations the DAAIS or Air Ground Operator should be contacted via the phone or on the VHF frequency and the TDA will be deactivated as soon as practicable, depending on the location of the UAV. If you require the TDA to be deactivated to carry out normal operations, then please get in touch with the TDA Operating Authority at the earliest opportunity.

Is it safe to fly UAVs beyond the Visual Line of Sight?

Yes, BVLoS trials are becoming increasingly common in the UK although nearly all of those trials have involved the establishment of a TDA owing to the absence of a "detect and avoid" capability. This project aims to demonstrate a concept of providing UAV operators a "detect" capability to allow them to avoid other airspace users, without the requirement for a TDA.

Skyports, the main UAV operator in the trial is a safety-first operator. Safety is at the heart of everything they do. They continue to invest in the best drone technology as well as their people to ensure they maintain the highest safety standards at all times. Their drones are state-of-art, highly automated with extra safety features to provide added redundancy, and their remote pilots spend hours training and simulating missions on them so that they are operationally ready and fit-to-fly. An additional reason for their high safety standards is that they need to meet very high regulatory thresholds to operate beyond visual line of sight



(BVLOS) operations. Whether in the UK or elsewhere, they meet all the regulator's permission requirements and take pride in doing so.

Skyports works very closely with the UAV manufacturers and only operates those vehicles that have been through a robust test flight process and have gathered hundreds of take-off and landings. Skyports also operates their own test site where it trains its pilots and puts aircraft to their own additional test flight process.

The drone that Skyports is planning to use for the validation test flights has flown hundreds of humanitarian aid missions in harsh environments and has been purposefully developed to enable Beyond-Visual-Line-Of-Sight missions. The drone is highly automated with multiple on-board hardware and software redundancies which has resulted in its stellar overall safety record. The drone relies on a 4G and satcom connection for its command-and-control link ensuring that the pilot is aware of its location at all times.

Any UAV operator wishing to fly BVLoS needs specific approval from the CAA to do so. More information on that can be found on the CAA website here:

<https://www.caa.co.uk/Commercial-industry/Aircraft/Unmanned-aircraft/Small-drones/Permissions-and-exemptions-for-commercial-work-involving-small-unmanned-aircraft-and-drones/>



Abbreviations⁶

A

ACP – Airspace Change Proposal

ADS-B – Automatic Dependent Surveillance Broadcast

AFIS – Aerodrome Flight Information Service

AGL – Above ground Level

AIC – Aeronautical Information Publication

AIS – Aeronautical Information System

AMSL – Above Mean sea level

ANO – Air Navigation Order

ANSP – Air Navigation Service Provider

ATC – Air Traffic Control

ATM – Air Traffic Management

ATS – Air Traffic Service

ATSU – Air Traffic Service Unit

ATZ – Aerodrome Traffic Zone

B

BRLOS – Beyond radio line of sight

BVLOS – Beyond visual line of sight

C

CAA – Civil Aviation Authority

CAP – Civil Aviation Publication

ConOps – Concept of operations

CPL – Commercial Pilot Licence

D

DAAIS – Danger Area Activity Information Service

E

EC – Electronic Conspicuity

EVLOS – Extended visual line of sight

F

FISO – Flight Information Service Officers

FRZ – Flight Restriction Zone

N

NOTAM – Notice to Airmen

O

OSC – Operating Safety Case

P

PPL – Private Pilot Licence

R

RA(T) – Restricted Area (Temporary)

RF – Radio Frequency

RLOS – Radio line of sight

RPA – Remotely Piloted Aircraft

RPAS – Remotely Piloted Aircraft System

RT – Radiotelephony

T

TDA - Temporary Danger Area

TMZ – Transponder Mandatory Zone

U

UA – Unmanned Aircraft

UAS – Unmanned Aircraft System(s)

UTM – Unmanned Aircraft Systems (UAS) Traffic Management

V

VFR – Visual Flight Rules

VHF – Very High Frequency

VLOS – Visual line of sight

⁶ For a full list of abbreviations and a related Glossary of Terms see [CAP722D](#)

PROPOSED TEMPORARY DANGER AREA AT GOODWOOD AERODROME – APRIL-SEPTEMBER 2021

Goodwood BVLOS <goodwoodbvlos@traxinternational.co.uk>

Thu 10/12/2020 17:04

Bcc: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



Good Afternoon,

I am writing to you on behalf of a project which is funded by UK Research and Innovation with a specific focus on using Unmanned Aerial Vehicles (UAVs) to provide solutions to deal with CV19 or similar future occurrences. The project intends to gradually demonstrate that UAV Beyond Visual Line of Sight (BVLoS) operations in non-segregated airspace are safe, can meet with regulatory approval and integrate seamlessly with manned aviation, whilst still providing safe and efficient access to the airspace by all airspace users.

The project has made a formal request to the Civil Aviation Authority (CAA) to begin an airspace trial at Goodwood Aerodrome and details can be found under ACP-2020-082 on the CAA Portal [here](#).

For the first phase, the project is proposing a Temporary Danger Area (TDA) at Goodwood Aerodrome. This is to provide segregated airspace protection whilst the safety assurances for BVLOS operations in non-segregated airspace are developed. You may have been aware of, or contacted about, a previous TDA at the same location from June-September 2020. That TDA was never activated. The new TDA is proposed to be the same dimensions as the previous, however with some changes on availability.

Further details on this project, the proposed dimensions of the TDA and the proposed timings are in the attached PDF. There is also a section of 'Frequently Asked Questions' that may answer some of your initial queries.

As a member of NATMAC, we would like your feedback on the following aspects:

- The proposed dimensions of the TDA, the proposed timings and your thoughts on the access arrangements,
- Any safety concerns or considerations that that the operations may have on your existing operations
- The proposed length of our consultation on the second phase of this project – a Transponder Mandatory Zone (8 weeks in May/June 2021)

If you have any further questions, please get in touch by 23rd December 2020, this will allow us to respond to them prior to the feedback deadline. The deadline for feedback on the first phase of this project is 15th January 2021.

We look forward to hearing from you.

Kind Regards,

[Redacted Signature]

Mob: [Redacted]

Web: www.traxinternational.co.uk



PROPOSED TEMPORARY DANGER AREA AT GOODWOOD AERODROME– APRIL-SEPTEMBER 2021

Goodwood BVLOS <goodwoodbvlos@traxinternational.co.uk>

Thu 10/12/2020 17:05

Bcc:

📎 1 attachments (3 MB)

Stakeholder engagement for Goodwood TDA.pdf;

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We look forward to hearing from you.

Kind Regards,

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Web: www.traxinternational.co.uk



PROPOSED TEMPORARY DANGER AREA AT GOODWOOD AERODROME– APRIL-SEPTEMBER 2021

Goodwood BVLOS <goodwoodbvlos@traxinternational.co.uk>

Thu 10/12/2020 17:05

Bcc:

1 attachments (3 MB)

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For the first phase of this project, the consortium is proposing a Temporary Danger Area (TDA) in the airspace surrounding Goodwood Aerodrome. This is to provide segregated airspace protection whilst the safety assurances for BVLoS operations in non-segregated airspace are developed.

Further details on this project, the proposed dimensions of the TDA and the proposed timings are in the attached PDF. There is also a section of 'Frequently Asked Questions' that may answer some of your initial queries.

Usually, engagement on such an activity is limited to industry bodies however, we are aware that you may have concerns about noise impacts on local communities. We have put together a presentation (also attached), which aims to answer any questions or concerns you may have. As a local stakeholder, we would like your feedback on the following aspects:

- The proposed dimensions of the TDA and the proposed timings
- Any safety concerns or considerations
- Any feedback you may have from a local community perspective
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Web: www.traxinternational.co.uk

EMAIL TO ALL STAKEHOLDERS - DEADLINE REMINDER

PROPOSED TEMPORARY DANGER AREA AT GOODWOOD AERODROME– APRIL-SEPTEMBER2021 - FEEDBACK REMINDER

Goodwood BVLOS <goodwoodbvlos@traxinternational.co.uk>

Fri 08/01/2021 16:45

Bcc:

[REDACTED]

📎 attachments (625 KB)

Goodwood BVLOS_TDA Stakeholder Engagement_Doc_V1.0.pdf;

Good Afternoon,

A reminder that the deadline for feedback on this project is **Friday 15th January 2021**. If you have not already done so, or have any questions, please get in touch with the project at goodwoodbvlos@traxinternational.co.uk

A copy of the original email is below and attached is a copy of the engagement material.

Kind Regards,

[REDACTED]

EMAIL TO GOODWOOD GA

Important information

Flying School [REDACTED]

Mon 11/01/2021 17:12

📎 1 attachments (625 KB)

Goodwood BVLOS_TDA Stakeholder Engagement_Doc_V1.0.pdf;

Good evening,

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- The proposed dimensions of the TDA, the proposed timings and your thoughts on the access arrangements,
- Any safety concerns or considerations that the operations may have on your existing operations
- The proposed length of our consultation on the second phase of this project – a Transponder Mandatory Zone (8 weeks in May/June 2021)

The deadline for feedback on the first phase of this project is 22nd January 2021.

We look forward to hearing from you.

Kind regards,

[REDACTED]

GACC - UAV briefing meeting, 06 January 2021

[Redacted]

Fri 15/01/2021 11:29

To: [Redacted]

2 attachments (3 MB)

GACC_Trax_BriefingNotes_6Jan21_Draft V1.2.pdf; GACC_Engagement_Final.pptx;

Dear GACC Members,

Thank you very much for your time on the 6th January 2021 . If you have any more questions, please do get in touch with us at goodwoodbvlos@traxinternational.co.uk

Please find attached the presentation and meeting notes from the 6th January. For those of you who would like to read more information on the project our Trial Strategy can be found on the CAA's Airspace Change Portal [here](#). To answer the question regarding the Aerodrome Reference Point, this is below.

Goodwood Aerodrome Reference Point (ARP): N 50 51.57 W 000 45.55

Kind Regards,

[Redacted]

Mob: [Redacted]

Web: www.traxinternational.co.uk



[Redacted]

Goodwood, Chichester, West Sussex PO18 0PH

[Redacted]



Please consider the environment before printing this email

Drone Operations in the vicinity of Goodwood Aerodrome



Introduction

- This presentation is to inform you of an upcoming project at Goodwood Aerodrome.
- In this presentation we aim to let you know who we are, what the project involves and answer any questions you may have.



Introduction

- A consortium of UK companies, Trax, Planefinder, uAvionix and ANRA Technologies has been awarded UK Research and Innovation (UKRI) Funding because the technical solution proposed by the project was considered an essential enabler for a multitude of projects that would allow more effective recovery from existing and/or future CV19 impacts.
- The consortium is also working with the Goodwood Aviation Innovation Centre and Skyports, a drone operator.
- Goodwood Aerodrome have agreed to host the project. However, they have stated that it **must not** negatively impact the Goodwood operations, their customers or communities



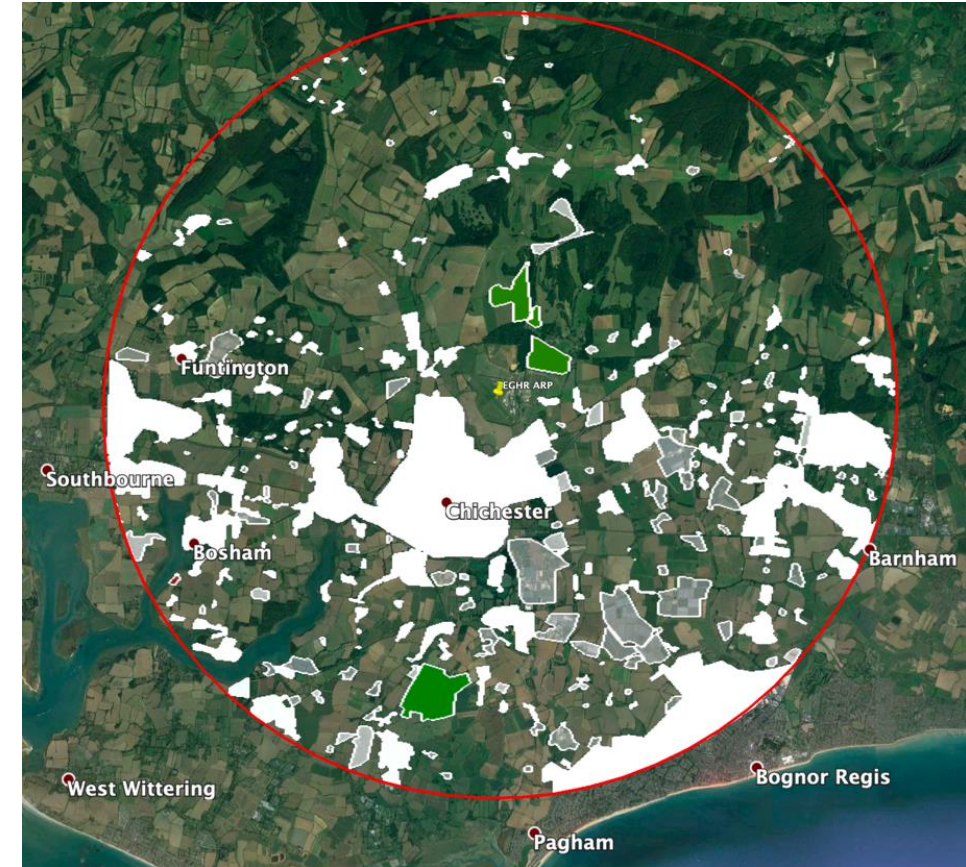
The Project – Phase One

- The project aims to gradually demonstrate drone operations that are Beyond Visual Line of Sight of the drone operator are safe and can meet with regulatory approval whilst still providing safe and efficient access to the airspace by all airspace users.
- To develop these procedures, the first phase is to request the establishment of some restricted airspace from the Civil Aviation Authority. This means we can ensure no other aircraft are in the airspace whilst we test the drone procedures.
- We must request the restricted airspace from the Civil Aviation Authority and follow the process they require.
- The restricted airspace we are proposing is in the same location as one previously established (but not used) by Goodwood Aviation Innovation Centre earlier this year.
- The restricted airspace itself has no impact to those on the ground and therefore we would not normally engage yourselves on this aspect.



Addressing Community Concerns

- Although engagement with community stakeholders is not usually required by the Civil Aviation Authority in order to establish restricted airspace, we believe that you may be interested in this project and what it means for your communities.
- We don't yet know if there will be specific routes for the drones or if they will be flexible, but we have mapped out ALL residential, built up or potentially populated areas (See image to the right).
- Flight routes will be planned in such a way to meet ALL safety requirements and we aim to avoid overflight of any residences by at least 150m laterally which will aim to mitigate any noise and/or nuisance aspects.
- We currently envisage there will be up to 12 drone movements in any one day that the restricted airspace is active. This would comprise of 12 take-offs and 12 landings.
- The restricted airspace will not be active every day.



Noise from the drones

- As a relatively new technology, there is very limited information publicly available about the noise created by drones.
- The main drone being used for this project has two modes of operation; multicopter and fixed wing mode. Multicopter is used for take-off and landing and fixed wing is used during flight.
- When in fixed wing mode and above 400ft, the main drone operator states that it is almost imperceptible from the ground.
- It is anticipated that the main drone will usually only operate in multicopter mode within the Goodwood Aerodrome boundary.
- We believe the limited noise from the drones together with the requirement to avoid all residential and populated areas will mean noise impacts should be negligible. However, we will provide contact details throughout the trial period to allow you to contact us about the trial.



Feedback

- We hope this presentation has informed you about our project and answered any concerns you may have.
- Your feedback on this project is important to us. We would like to know of any feedback you have from a local community perspective.
- Please email your feedback to by **15th January 2021** at goodwoodbvlos@traxinternational.co.uk



BVLOS OPERATIONS IN THE VICINITY OF GOODWOOD AERODROME

Notes from meeting with the Goodwood Aerodrome Consultative Committee

Held online on 6th January 2021

Attendees

Name	Representing
██████████	Chairman
██████████	Summersdale Residents Association
██████████	Goodwood Aerodrome, Air Traffic Services
██████████	Boxgrove Parish Council
██████████	Environmental Health Officer, Chichester District Council
██████████	Lavant Parish Council
██████████	West Sussex County Council
██████████	Westhampnett Parish Council
██████████	West Sussex County Council
██████████	Aviation Operations Manager Goodwood Aerodrome
██████████	Aviation Innovation Centre at Goodwood Aerodrome
██████████	Trax International (Project Consortium Member)
██████████	Trax International (Project Consortium Mem

Apologies

Name	Representing
██████████	Chichester City Council
██████████	Chichester City Council
██████████	WSSC planning
██████████	Singleton/Charlton PC
██████████	Rolls Royce Motor Cars

Purpose

An extraordinary meeting was set up to brief the GACC members about a project being hosted at Goodwood Aerodrome in 2021.

The innovative project was awarded funding by the UK Government in support of enabling Drone-led responses in the future to the CV19 pandemic, or similar.

The meeting was arranged to describe the aims of the project to the committee and to provide a communication channel for the committee to ask questions and send feedback about the proposed trial.

Discussion

The briefing opened with introductions and █████ explained the make-up of the consortium who would be carrying out the project. █████ also explained the current rules on operations of drones and briefly outlined the meaning of Beyond Visual Line of Sight (BVLOS).

█████ then presented slides to the committee which informed them of Phase One of the project and aimed to address any community concerns. Phase One of the project concerns the establishment of a Temporary Danger Area (TDA) and █████ provided background on the Civil Aviation Authority (CAA) requirements for stakeholder engagement.

■■ informed the committee that none of the drone flights will be operated over residential areas, only rural, and that there will be a limited number of take offs and landings.

During the discussion on noise, ■■ offered that Chichester District Council could be involved in taking noise measurements, as they have fully calibrated noise measuring equipment. This offer was gratefully received by ■■.

Concerns were voiced about early morning flights during the summer, as the aerodrome is close to a residential area so they may hear the take-off/landing. ■■ responded that the flights will not be every day of the week and the consortium has committed that during the length of the trial (5 months) the TDA will not be active for more than 90 days. ■■ informed the committee that all residential areas will be avoided, however, noise complaints can be made through the usual Goodwood Aerodrome noise complaints process and any issues raised will be looked into and mitigated where possible.

There were concerns raised about the terminology being used and that a 'Temporary Danger Area' may alarm local residents. The committee were informed that this is a regular term for airspace users and that by informing this committee and providing them with more details, they could assist in informing their local communities.

A committee member raised a point about single/small residential areas rather than just focussing on the larger ones and the South Downs National Park. ■■ responded that all dwellings will be avoided and that the AONB has been contacted as part of our engagement. It was also mentioned that there seems to be some drones flying in the local area, by residents who may not be sure about the regulations. ■■ suggested that parish councils could take information from the Goodwood Aerodrome website and repost it on their own websites to inform local communities.

Questions & Answers

Q. Is there any data on the sound output from the drones that will be used?

A. There is currently very little information/data on noise from drones. The drone manufacturer states that the maximum output during take-off/landing is around 70db but there is no data for horizontal flight noise yet. The drone operator states that the drone cannot be heard in flight however, the consortium has not verified this yet. More information on noise can be found in the project Trial Strategy [here](#).

The consortium will be working with the CAA to take noise measurements which may inform future policies.

Q. Are drones included in the statutory instruments on noise and nuisance?

A. The Environmental Protection Act 1990 exempts noise from aircraft as being a noise nuisance unless the aircraft are model aircraft. The drones in use in this trial are not categorised as model aircraft.

Q. What applications will drones be used for in the future?

A. There are a lots of areas drones can be utilised in, delivery, search and rescue, delivery, powerline & windfarm inspections, police surveillance, firefighter assistance and supplies for hospitals. DfT have estimated the unmanned aerodrome sector could be worth in the region of £42bn

Q. Will Goodwood become a centre for all of these drone services and where can I find out about the Goodwood Aviation Innovation Centre?

A. You can find out more about the Aviation Innovation Centre on their website [here](#).

The ambition is for Goodwood to become a centre to offer drone operators the facilities to test, trial and practice their drone operations, however they will still not operate over residential areas. It is not the intention that that the aerodrome becomes a commercial hub for drone operations in the south east of the UK.

Q. What equipment/telemetry will be installed and how will the drones be tracked?

A. The aim of this trial is to develop electronic conspicuity solutions to track the drones, which will all be fitted with a transmitter device. This will mean the drone is displayed on a map to the drone operator and the Flight Information Service Officer in the ATC tower. It is similar to, but not the same as radar. There will also be ground installations elsewhere, but these are unintrusive, small antennas, approximately 2ft long.

Q. Will the Goodwood airspace be increased from 2nm to 5nm and will this create any issues for tower at Goodwood?

A. No, the airspace surrounding Goodwood aerodrome (Aerodrome Traffic Zone) remains the same (2nm/2000ft). It is the Temporary Danger Area that is 5nm/2000ft, however that is only temporary and will not be permanently active during the trial period.

The FISO will still only be responsible for aircraft operating within the Aerodrome Traffic Zone.

Q. How big are the drones?

A. From wing tip to wing tip, approximately 1.5m

Q. Will the drones fly any proposed drone flight paths that avoid residential areas accurately or will they be free to deviate?

A. The drones will fly any designed flight paths very accurately and will not deviate from those flight paths without manual intervention by the drone pilot for reasons of safety only.

Q. Will this project impact on aerodrome operations?

A. Goodwood Aerodrome have been very clear that there should be no impact on the normal operations, it is a key part of the trial to ensure that airfield operations are not affected.

Q. Is there any impact on Goodwood Aerodrome's Planning Restrictions as a result of this trial.

A. No, the relatively low number of drone movements outside of Goodwood opening hours are not expected to form part of their

movement numbers. Drones do not come under the Section 52 Planning Agreement.

Q. Have the West Sussex Fire and Ambulance service been engaged about this trial as there could be benefits for them being involved.

A. Yes, the Kent, Surrey and Sussex air ambulance trusts have been engaged.

Outcomes

The committee asked for a copy of the presentation, which will be sent out following this meeting, along with a link to the Trial Strategy.

The committee requested an update at the March 2021 meeting, which the consortium will be happy to attend.

■ thanked Goodwood Aerodrome for setting up the meeting and for the GACC members for attending. An email would be sent out with the presentation, contact details and links to the trial strategy.

PROPOSED TEMPORARY DANGER AREA AT GOODWOOD AERODROME– APRIL-SEPTEMBER2021

Goodwood BVLOS <goodwoodbvlos@traxinternational.co.uk>

Thu 21/01/2021 08:43

Bcc: [REDACTED]

📎 1 attachments (625 KB)

Goodwood BVLOS_TDA Stakeholder Engagement_Doc_V1.0.pdf;

Good Morning,

Please accept our apologies for only just reaching out to you, your contact details were passed on to us yesterday. Our original engagement email (below) was distributed to the BMAA, BGA and several other aviation organisations, however in case it had not reached you, please see information below. Unfortunately, the deadline for feedback has now passed, however if you have any questions or concerns, please do get in touch. We would be happy to arrange an online meeting or call to discuss any issues you may have. I will also add you to our list of stakeholders, so you are included in all future correspondence.

I am writing to you on behalf of a project which is funded by UK Research and Innovation with a specific focus on using Unmanned Aerial Vehicles (UAVs) to provide solutions to deal with CV19 or similar future occurrences. The project intends to gradually demonstrate that UAV Beyond Visual Line of Sight (BVLoS) operations in non-segregated airspace are safe, can meet with regulatory approval and integrate seamlessly with manned aviation, whilst still providing safe and efficient access to the airspace by all airspace users.

The project has made a formal request to the Civil Aviation Authority (CAA) to begin an airspace trial at Goodwood Aerodrome and details can be found under ACP-2020-082 on the CAA Portal [here](#).

For the first phase of this project, the consortium is proposing a Temporary Danger Area (TDA) in the airspace surrounding Goodwood Aerodrome. This is to provide segregated airspace protection whilst the safety assurances for BVLoS operations in non-segregated airspace are developed.

Further details on this project, the proposed dimensions of the TDA and the proposed timings are in the attached PDF. There is also a section of 'Frequently Asked Questions' that may answer some of your initial queries.

As a local stakeholder, we would like your feedback on the following aspects:

- The proposed dimensions of the TDA and the proposed timings
- Any safety concerns or considerations
- Any feedback you may have from a local community perspective

Kind Regards,

[REDACTED]

Mob: 0 [REDACTED]

Web: www.traxinternational.co.uk

