Summary of Stakeholder Engagement ACP-2021-002 - TDA Extension

Version 1.0 of this document was created in support of the application for a TDA extension that was shared with stakeholders on 05/11/2021. To that end, further engagement with targeted stakeholders was required to ensure that the potential impacts of a TDA extension were fully understood, acknowledged and mitigated with local aviation users.

This document details the stakeholders engaged as part of the request for a TDA extension, it details the duration, lists of engaged stakeholders and summary of their responses. The evidence of engagement is included along with an analysis of the responses and a conclusion on the TDA extension request.

On submission of this report ACP-2021-002 EG D096B has been activated on 5 occasions to support BVLOS operations including testing of the activation process and initial flights with a smaller electric VTOL UAV. We have had no feedback to date, although this is as expected given the level of activation.

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1. Introduction

The following evidence was published by SkyLift UAV and its partners for this trial Apian Aero and NHS IOW trust in support of a TDA extension for ACP-2021-002:

5 Nov 2021

Dear Stakeholder,

We would like to request a 2 month extension to ACP-2021-002 which currently expires on 23rd November 2021.

First of all, thank you for the help you've already provided us in researching the value of drone delivery of chemotherapy to cancer patients.

Apian is a medical drone startup founded by NHS doctors in training with support from the NHS Clinical Entrepreneur Programme. We work on behalf of the NHS to operationalise drone technology and research the impact it has on patient health outcomes and staff wellbeing. For this project, we selected Skylift UAV Limited to be our drone operator partners and they've done a fantastic job thus far. With the deadline approaching, the TDA has only been activated 5 times and was limited in scope due to mandatory unscheduled refurbishment of Portsmouth Queen Alexandra Hospital helipad, one of our landing sites. As a result, the NHS has yet to gather the vibration impact data required to sign off on the delivery of live chemotherapy to real patients. We're writing to you to ask that you give us a little more time to conduct this worthwhile research. This will be the first time chemotherapy has ever been delivered by drone and the unique characteristics of this proprietary designed platform have taken longer than expected to build. This is our fault, no one else's, but world firsts don't come easy.

Whilst the NHS can use as much data as we can provide, we're very aware of the disruption a TDA can cause other airspace users and would therefore prefer to extend the TDA for the minimum amount of time necessary so as to limit its impact on you. Before we submit a formal application to the CAA, we wanted to ask if we could count on your kind support? Please call or email me directly if you have any questions, I am at your service.

The next page contains a letter from the Chief Pharmacist of Isle of Wight NHS Trust explaining why this work is so important and thanking you for your support of it.

Yours gratefully,

5 Nov 2021

To whom it may concern,

Support for Isle of Wight NHS Trust and partners to complete research of chemotherapy delivery by Drone

For the past year, together with colleagues at Portsmouth University Hospitals NHS Trust, we've been researching the potential benefits of using drones to deliver chemotherapy and are finally in position to carry out the actual flights across the Solent to test the vibration impact on medicines in their real-world environment.

To ensure patient safety, we must gather enough evidence over a suitable period of time. We need 2 months of concurrent operations to achieve. The TDA (temporary danger area) expires on 23 November, we request an extension to the TDA to ensure that we have enough time to carry out extensive testing on the most commonly used monoclonal antibody drugs. Without an extension to the TDA we can only certify a small fraction of the most commonly used monoclonal antibody drugs. A period of less than 2 months will reduce the number of data points gathered to 1 month, in most instances this is unhelpful for trend analysis. Therefore 2 months will provide enough operational procedure validation, spanning several staff shift variations, which is necessary for pharmacy team resource consideration. It will also provide more opportunities for Air Ambulance/HM Coastguard procedure integration and allow us to better determine the long-term economic sustainability of a drone delivery service.

Although there are now several published articles regarding the transport of drugs in drones, none demonstrate what the effect of this new mode of transport has on the stability of chemotherapy and immunotherapy products. In the month of October 2021, we transported via hovercraft a combination of over 200 chemotherapy and immunotherapies. It is therefore of vital importance that we have enough time to complete stability studies of these products by drone. An extension will ensure we secure robust scientific evidence.

Moving items by drone across the Solent can ensure we receive a great range of prescribed chemotherapy drugs in a more timely and efficient manner. The Pharmacy Department and the wider Isle of Wight NHS Trust are extremely grateful to you for the part you play in helping us best serve our patients.

2. Stakeholder Engagement Approach

All stakeholders engaged during this extension proposal have been previously engaged in the design of ACP-2021-002 on numerous occasions, This document supports the methodology and approach described in 'Airspace Change Proposal ACP-2021-002 Summary of Stakeholder Engagement and Final Proposal' V2.0 dated 03/06/2021 in which the final design of the TDA was agreed.

Advice was sought from the CAA Airspace team, target stakeholders were engaged on 05/11/2021 and were asked to provide responses by 1700 hours on 19/11/2021, allowing 2 weeks to provide feedback on the extension proposal.

Skylift UAV sent selected stakeholders, by e-mail where possible, the engagement material as per section 1. Where e-mail addresses were not available, phone calls were made, and attempts to obtain e-mail addresses were made so that the engagement material could be sent on.

The engagement material was uploaded to the CAA Airspace Change Portal so that any potential stakeholders that were missed had the opportunity to make their views known.

Table 1 provides a list of all stakeholders that were contacted, whether they responded, and confirmation that their response has been closed. For clarity, those stakeholders that responded have been highlighted.

Stakeholder	Date sent	Response	Open/Closed
Stakeholder 1	5/11/2021	17/11/2021	Closed
Stakeholder 2	5/11/2021	12/11/2021	Closed
Stakeholder 3	5/11/2021		
Stakeholder 4	5/11/2021	5/11/2021	Closed
Stakeholder 5	5/11/2021	5/11/2021	Closed
Stakeholder 6	5/11/2021	5/11/2021	Closed
Stakeholder 7	5/11/2021		
Stakeholder 8	5/11/2021		
Stakeholder 9	5/11/2021		
Stakeholder 10	5/11/2021		
Stakeholder 11	5/11/2021	16/11/2021	Closed
Stakeholder 12	5/11/2021		
Stakeholder 13	5/11/2021		
Stakeholder 14	5/11/2021	6/11/2021	Closed
Stakeholder 15	5/11/2021	19/11/2021	Closed

Stakeholder 16	5/11/2021	12/11/2021	Closed
Stakeholder 17	5/11/2021		
Stakeholder 18	5/11/2021	N/a	Retired – Via AW
Stakeholder 19	5/11/2021		
Stakeholder 20	5/11/2021		

3. Stakeholder Evidence, Feedback and Conclusion

3.1 Engagement material

The following is the text of the email that was sent out to all stakeholders on 05/11/2021 with attached supporting statements (in section 1) from our customers Apian and Isle of Wight (IOW) NHS Trust:

Dear Stakeholder, Many thanks to those who have supported and provided feedback for ACP-2021-002. We have, however, since been asked by Apian and the NHS IOW Trust to extend our trial beyond the current 90 days permitted for a temporary airspace arrangement. Please find attached letters of support containing further information on the benefits of a TDA extension from both our customer Apian and NHS IOW trust. Extending the trial supports greater research and data gathering to support future viability of the service and the benefit it can provide to patients on the IOW.

Please note that if the extension is approved TDA EG D096 sections B, C and D will be activated during the period, Section A will not be activated at any time.

A link the to ACP is provided below:

https://airspacechange.caa.co.uk/PublicProposalArea?pID=335

This proposal and extension has been discussed with the CAA airspace team and the remaining details of the airspace proposal remain unchanged. We have agreed a targeted engagement period of 2 weeks, ending on 19/11/21. We would be happy to work with you to resolve any concerns you have before this date should you wish to provide feedback.

The Airspace Change Portal will be updated in the next 24 hours and will contain the letters of support from our customer Apian and the Isle of Wight NHS Trust for this extension request.

We would appreciate your feedback on the proposed extension and would like to thank you in advance for taking the time to respond. Please provide all of your feedback to info@skyliftuav.co.uk by 1700 hours on Friday 19th November 2021.

Many thanks for your support.

3.2 Summary of Feedback

SkyLift UAV received feedback from 10 of the targeted stakeholders. Eight of the stakeholders were either supportive of the proposed extension or had no objection to it. Two stakeholders opposed the proposal. The key elements of feedback are highlighted below:

SkyLift UAV received feedback on the design of Section A of the TDA with regards to using AGL / AMSL for the vertical limit. The current CAA requirement is to show vertical limits of the TDA in AMSL, we have complied with this requirement. This feedback has been shared on a number of occasions during the design of the TDA for the trial.

SkyLift UAV received general feedback during the engagement which does not relate to the airspace change and focuses on the use of TDAs and airspace in general, BVLOS operations, Detect and avoid systems and other drone based medical trials. This feedback is not discussed in this report.

3.3 Analysis of Responses and Conclusion

Skylift UAV appreciates the feedback provided by stakeholders. Each response was analysed carefully to ensure a proposed extension to ACP-2021-002 can be managed with minimal impact to local aviation users.

SkyLift UAV proposes to activate sections B, C and D of the TDAs if an extension is granted, Section A will not be activated. The trial has been adjusted to accommodate the unscheduled closure of the QA helipad therefore section A will not be activated. The trial outcome can be achieved with BVLOS operations from Thorney Island Baker Barracks to St Mary Hospital, Isle of Wight.

SkyLift UAV will activate sections B, C and D of the TDAs for periods of no longer than 4 hours each day. This will typically be during afternoon hours and supports the current manufacturing schedule of the treatments required by the IOW NHS trust. The activation times are likely to be as follows: Monday - Thursday 14:00- 18:00 local and Friday 10.30 - 14.30 local.

SkyLift UAV will comply with the LOA in place with TRAX International ACP-2020-082, this ensures that both the TRAX International and SkyLift TDAs cannot be activated on the same day when both ACPs are still active. If the TRAX International TDA has completed, SkyLift will activate its TDA in line with the above paragraphs.

The letters of agreement that have been drawn up by Skylift UAV Ltd and, jointly, Chichester and District Model Aero club (CADMAC) and Thorney Island Microlight Club (TIMC) to

specify deconfliction procedures within the TDAs remain in place if the TDA is extended. This has been acknowledged as part of the stakeholder feedback process and all issued LOAs will be extended.

Skylift UAV will give priority to emergency services aircraft requiring access to active TDAs. While HM Coastguard and the National Police Air Service were content with the information that will be provided by the TDA activation NOTAM, Hampshire and Isle of Wight Air Ambulance required a more detailed arrangement. To that end, Skylift UAV have signed an LOA with Babcock Onshore, the Air Ambulance operators, to specify deconfliction procedures within the TDAs, this will continue if an extension is agreed.

4. Summary and Justification for Extension

The Isle of Wight NHS Trust's Pharmacy Manufacturing Unit (PMU) was decommissioned in July 2020. It has since been dependent on the mainland for the supply of its chemotherapy which must be delivered by ground courier to Portsmouth, then by ferry or hovercraft to the Isle of Wight, then by taxi to St Mary's Hospital. Disruptions to these services, including cancellations, delays and changing timetables complicate deliveries, leading to treatment delays and additional pressure on staff. It currently can take up to 3 or even 4 hours to transport chemotherapy from the nearest PMU at Portsmouth Hospitals University NHS Trust to St Mary's. Reducing this to a reliable, 30 minute flight will be transformative, making available to patients chemotherapy previously unobtainable on account of their short shelf lives, avoid unnecessary patient journeys to the mainland, minimise treatment delays and save staff time.

Due to the short shelf lives, chemotherapy is currently manufactured and delivered by the PMU as bespoke doses a day in advance, before the patient has been clinically assessed and confirmed to be physically able to receive treatment. When a patient's health deteriorates such that they are unable to receive chemotherapy, their treatment is delayed and their dose is wasted. An on-demand drone delivery service will allow for a sequential process where manufacturing is only started after a positive patient assessment, enabling the PMU to deliver to St Mary's on the day of the patient's treatment. As some of these medicines cost several thousands of pounds per dose, this will save the NHS costs and bring care closer to patient homes, opening up the possibility for the provision of other treatments on the island such as potentially life-saving, clinical trial chemotherapy which have particularly short shelf lives.

Apian is not a drone company, it is a medical drone startup founded by NHS doctors in training with support from the NHS Clinical Entrepreneurs Programme. We work on behalf of the NHS to operationalise drone technology and research the impact it has on patient health outcomes and staff well-being. We are familiar with the various NHS drone related projects taking place across the country and couldn't agree more with the feedback for better coordination of activities. This is Apian's directive and starting with the Solent, we are collaborating with NHS England, NHS Cancer Programme, NHS Greener Team and NHS Blood & Transplant, along with ten NHS Trusts to unify their healthcare needs, forming the basis for a single NHS-wide ACP.

As delivering chemotherapy by drone will be a world-first, the Medicines and Healthcare products Regulatory Agency (MHRA) requires evidence from real-world tests demonstrating chemotherapy is not negatively impacted by drone flight (vibration and temperature). This requires flying chemotherapy across the Solent and not simply within VLOS limits. In partnership with Southampton University and King's College London, we have begun researching the impact of drone flight on redundant chemotherapy and have shared initial results with Portsmouth Hospitals University NHS Trust's PMU on 09/11/21. Analysis showed no negative impact of hover flight on the first medication, Bevacizumab, to be tested. Now we need to test the impact of transitional BVLOS flights from the PMU to St Mary's for the NHS and MHRA to approve the freight of chemotherapy by drone.

We need 2 months of real-world operations to ensure patient safety and inform NHS standards and best practice guidelines. This provides the time needed to research the benefit of on-demand drone delivery to cancer patients, gathering enough data to gain reliable results and perform trend analysis. Working as best as we can within constrained NHS resources, 2 months provides the absolute minimum time required to validate operational procedures and test integration into the hospital environment, enabling the Isle of Wight NHS Trust to determine the long-term feasibility and sustainability of a drone delivery service.

Although there are now several published articles regarding the transport of medicines in drones, none demonstrate what the effect of this new mode of transport has on the stability of chemotherapy and immunotherapy products. In the month of October 2021, the Isle of Wight NHS Trust transported, via hovercraft, a combination of over 200 chemotherapy and immunotherapies. It is therefore of vital importance that the NHS has the 2 months it needs to complete stability studies of these products by drone. An extension will ensure we secure robust scientific evidence.

If you would like to talk to the NHS and Apian further on our TDA extension request and why less than 2 months is not sufficient, we would happily do so.

5. Extension of current temporary airspace arrangement

1. From 31/01/2022 through to 31/03/22, a Remotely Piloted Aircraft System (RPAS) will operate between Baker Barracks, Emsworth and St Mary's Hospital in Newport, Isle of Wight to carry out operational flights for the purpose of transporting essential medical goods between the healthcare sites in direct support of the NHS and UK Government response to the COVID-19 pandemic. As the RPAS will be operating Beyond Visual Line of Sight, a Temporary Danger Area (TDA) complex will be established to facilitate the safe operation of the RPAS.
2. The TDA complex is sponsored by Skylift UAV Limited in accordance with Airspace Change reference ACP-2021-002.
3. The TDA complex will consist of 4 Danger Areas to facilitate the route between the healthcare sites. A chart of the area is included within this Aeronautical Information Circular.
4. Only the Danger Areas required for each flight or series of flights will be activated to minimise impact to other air users.
5. The required TDAs will be notified for activation no less than 24 hours prior to the planned flights.

REQUIRED TEMPORARY DANGER AREAS WILL BE NOTIFIED BY NOTAM

6. EG DxxxA. When required from 31/01/2022 through to 31/03/22, a Temporary Danger Area is established within the area bounded by straight lines joining successively the following points –
a. 50°51'30"N 001°05'00"W
b. 50°51'30"N 001°00'30"W
c. 50°50'10"N 000°56'50"W
d. 50°49'20"N 000°57'40"W
e. 50°50'40"N 001°01'20"W
f. 50°50'40"N 001°05'00"W
7. Within EG DxxxA, Pre-Flight Information will be available from Skylift UAV via telephone number 0330 053 7600, which will be manned from 30 minutes before until 30 minutes after the notified activation period. When notified as active, requests for access to the TDA by emergency services aircraft shall be made by calling this number. Access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended.
8. The Temporary Danger Area EG DxxxA is established between Surface and 750 FT AMSL.
9. EG DxxxB. When required from 31/01/2022 through to 31/03/22, a Temporary Danger Area is established within the area bounded by straight lines joining successively the following points –
a. 50°50'10"N 000°56'50"W
b. 50°49'10"N 000°54'40"W
c. 50°46'10"N 000°55'40"W
d. 50°46'00"N 000°57'00"W
e. 50°46'50"N 000°57'30"W
f. 50°49'20"N 000°57'40"W
10. Within EG DxxxB, Pre-Flight Information will be available from Skylift UAV via telephone number 0330 053 7600, which will be manned from 30 minutes before until 30 minutes after the notified activation period. When notified as active, requests for access to the TDA by emergency services aircraft shall be made by calling this number. Access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended.
11. The Temporary Danger Area EG DxxxB is established between Surface and 650 FT AMSL.
12. EG DxxxC. When required from 31/01/2022 through to 31/03/22, a Temporary Danger Area is established within the area bounded by straight lines joining successively the following points –
a. 50°46'00"N 000°57'00"W
13
b. 50°44'20"N 001°12'30"W
c. 50°45'00"N 001°14'10"W
d. 50°46'50"N 000°57'30"W
13. Within EG DxxxC, Pre-Flight Information will be available from Skylift UAV via telephone number 0330 053 7600, which will be manned from 30 minutes before until 30 minutes after the notified activation period. When notified as active, requests for access to the TDA by emergency services aircraft shall be made by calling this number. Access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended.
14. The Temporary Danger Area EG DxxxC is established between Surface and 400 FT AMSL.
15. EG DxxxD. When required from 31/01/2022 through to 31/03/22, a Temporary Danger Area is established within the area bounded by straight lines joining successively the following points –
a. 50°44'20"N 001°12'30"W
b. 50°44'00"N 001°14'10"W

c. 50°41'50"N 001°15'50"W
d. 50°42'10"N 001°17'00"W
e. 50°44'30"N 001°15'20"W
f. 50°45'00"N 001°14'10"W

16. Within EG DxxxD, Pre-Flight Information will be available from Skylift UAV via telephone number 0330 053 7600, which will be manned from 30 minutes before until 30 minutes after the notified activation period. When notified as active, requests for access to the TDA by emergency services aircraft shall be made by calling this number. Access to the TDA by emergency services aircraft will always be given priority over RPAS operations, which will be immediately suspended.

17. The Temporary Danger Area EG DxxxD is established between Surface and 750 FT AMSL.

18. Further enquiries can be made to Airspace Regulation (Utilisation), Safety and Airspace Regulation Group, Civil Aviation Authority on telephone number 01293 983880.

<TDA EG DxxxA, TDA EG DxxxB, TDA EG DxxxC and TDA EG DxxxD to be charted by NATS>

6. Appendix 1: Stakeholder Responses

Stakeholder 1 Response – Ministry of Defence DAATM

Good Afternoon,

The MOD would like to thank Skylift for the engagement regarding the extension of the TDA in the subject line.

The MOD have no objections to the extension of the TDA, providing that the current access and activation agreements and protocols remain in place.

Please do not hesitate to contact me if you require any further information.

Stakeholder 2 Response - NPAS

We have no objection to the proposed extension.

Best regards

Stakeholder 4 Response – Southampton Airport

Good afternoon.

No comments from Southampton International Airport.

Stakeholder 5 Response – Baker Barracks MoD

I've provided a response via DAATM – no issues

Stakeholder 6 Response – Babcock International Group – UK aviation Chief Pilot

Hi there,

As the Aviation provider for both the HIOWAA and TVAA Charitys we do not have any objection to the 2 month extension of this activity as long as the previous TDA LOA and agreed procedures between ourselves and Skylift UAV remain extant.

I note the fact that Section A will not be activated.

Stakeholder 11 Response – Private Individual

Dear Sponsor

Please find my Response to your request to CAA for a 2 month extension to your TDA.

As you will see, I will not support your request and encourage the CAA to reject it. In my opinion (and in my experience as an ex-RAF aviation trials manager) your first trial appears not to have been clearly defined, planned and carried out; the extension request then appears to be an attempt to overcome these deficiencies with a number of added aims eg vibration resistance.

I am not at all opposed to improving NHS logistics but ACPs like this one are not, I believe, the way to proceed.

I appreciate that this will not be the Feedback you wanted, but thank you for the abbreviated opportunity to provide it.

Dear Sponsor

ACP-2021-002 EXTENSION

I am extraordinarily disappointed that you should seek an extension to your Trial and am completely opposed to that extension for the following reasons.
1. Original SON. The original SON was about the timely delivery of chemotherapy drugs to cancer patients - “3-hour travel time”, “Travel disruption”, “Reducing the delivery time”, etc are all phrases taken from your SON
2. .
In particular, the sentence “Faster, on-demand delivery of chemotherapy drugs to St Mary’s Hospital would achieve the project's goals” makes the trial aims quite clear.
Yet, now the focus seems to be on some sort of ill-defined resilience to vibration which is not only not mentioned at all – even obliquely in the SON – but could readily be achieved using mechanical vibration platforms.
Indeed, I’m also curious as to how drugs have been tested for vibration when carried in helos,
have they all been subject to live helo testing? I doubt it.
3. Two-Month Extension. The request for a 2-month extension would create a precedent for all TDAs which would make a mockery of the CAA ACP process. The increase is some 66% of the original approval and there is no justification given other than an ill-defined statement of “mandatory unscheduled refurbishment” of the helipad. The word ‘refurbishment’ (to me and I suggest most people) suggests that it was or should have been planned. Moreover, a well-designed trial would have considered a contingency – an alternate
site – for such an important element of the trial.
Once the scale of the problem at the helipad was known why was the Trial and associated

TDA not suspended? Those of us who plan our routes some days in advance could then have
taken advantage of the release of 'our' Class G airspace and might have been better disposed
to supporting the extension.
4. Helipad Unavailable. Furthermore, the ill-defined statement begs an additional question – if the helipad was unavailable for a small RPAS how did the helo continue to operate into and out of the Portsmouth hospital? Or did that operation cease for the duration?
A well-informed 3rd party tells me that this helipad work has, indeed, been planned for some months, in which case the stated rationale for the extension is disingenuous.
5. Vibration Testing. In addition to the option of using mechanical vibration-testing platforms the testing of drugs could easily have been achieved using an RPAS racetrack based on the IoW helipad. If the issue is only vibration testing then either VLOS operations (or in the extreme) a much, much smaller TDA will suffice.
Surely not every drug needs vibration testing? If every drug does need testing isn't there a very strong case for the long-term use of an existing permanent Danger Area and a nationwide NHS trial?

6. Admin Support. The letter of support from the Chief Pharmacist would be laughable in other circumstances since it focuses at least as much on administrative matters as on drug
vibration resistance.
5a. NHS HR Procedure Validation. The phrase "operational procedure validation, spanning several staff shift variations, which is necessary for pharmacy team resource consideration" reflects essentially an HR function which is certainly NOT what an RPAS & TDA trial should be about. The Highways Agency and its contractors do not close roads to determine what shift patterns and people it needs to carry out road maintenance.
5b. Procedure Integration. TDA operations are by definition segregated from other airspace users, like HM Coastguard. So how will the extension help with "procedure integration" with HM Coastguard, etc. Procedures like this should be - and in segregated airspace can ONLY be - designed outside of the Trial.
Administrative tasks like those outlined in the 2nd letter, inc the HR tasks, offer nothing to support a TDA or an extension of an existing one. Admin tasks like this should be conducted outside of the flying trial.
7. Plethora of 'NHS' TDAs. More broadly than this one TDA I have considerable concern about the plethora of TDAs ostensibly 'wanted' by the NHS. It is more likely that various RPAS companies having gained funding from UKRI are o0fferint temporary services to individual NHS Trusts with a view top gaining NHS support and robust real-world data.
This has 2 ill-effects that seem nowhere to be taken into account:
7a. Duplication of Effort. The various GA organisations and the CAA must respond to and deal with multiple ACPs when a single NHS-wide ACP would be far more effective.
7b. Inefficient Use of Class G Airspace. Multiple TDAs all for the dame or extremely similar purposes is an inefficient use of the limited resource that is Class G airspace.
Both effects provide arguments that deny support for any of these ACPs.

8. Detect & Avoid (DAA). Whether the trial is successful or not the key issue of DAA will remain. Even when suitable technology is developed there is no reason to assume that it will be applicable to/suitable for the RPAS system to be used in this trial. Until suitable technology is available trials like these have such limited value that they cannot justify the disruption to Class G airspace.
9. Engagement Timescale. Finally, I am extremely disappointed that this proposal merits a very truncated engagement timescale. The obvious conclusion I can draw is that this
is an attempt to avoid or limit scrutiny, and that is unacceptable.

SkyLift UAV response to Stakeholder 11

Thanks for providing feedback, SkyLift UAV acknowledges your opinion to provide feedback on the reasons for the trial extension and supporting technologies to BVLOS operations. Your feedback will be published in the stakeholder summary report submitted to the CAA and on the ACP portal.

As you know all feedback needs to be made public as part of the stakeholder feedback process, so, please see my response to a couple of comments in your feedback.

Point 4 - SkyLift UAV refutes this comment, detailed planning and design of the TDA and UAV routing was carried out prior to knowledge of a planned refurbishment of the QA helipad. The planned refurbishment of the helipad has moved on several occasions after the TDA and OSC had been submitted. It was agreed that Skylift UAV would focus operations on Thorney Island Bakers Barracks and IOW trust, St Marys in the absence of the QA helipad being unavailable.

Point 9 - SkyLift UAV refutes this comment, this ACP process is in place to allow stakeholder feedback on the TDA extension, It is not an attempt to avoid or limit scrutiny, this oversight is provided by the CAA airspace team in conjunction with the feedback from our engagement period.

Thank you for taking the time to respond.

Stakeholder 14 – BMAA airspace group

Dear Sponsor,

Response to Engagement under ACP-2021-002 – 2 month Extension to TDA EG D096

1. The BMAA fully support efforts to reduce waiting times for all NHS patients using new technology, providing that can be done with the safety of all other airspace users and those on the ground assured and that the vehicles themselves are not being tested for safety in what otherwise would be busy Class G airspace. That should be done in existing areas of segregated airspace established for experimental use. Clearly the safety of NHS facilities, staff and products are paramount also.
2. This TDA extension request has been discussed with the Thorney Island Microlight Club (TIMC), who use Thorney Island as a flying base. There is already a Letter Of Agreement (LOA) in place between the Club and Skylift UAV. Providing that LOA is extended to cover any TDA extension the Club should be able to continue operating. During the winter the Club are only usually permitted, by the operator of the airfield, to fly from Thorney Island on Friday afternoons and weekends so, if Skylift can continue to avoid those days and times it would be appreciated.
3. Subject to the TDA remaining at 400ft above ground / sea level there should be no significant impact on local BMAA flying members' operations.

We do have concerns over other aspects of this extended trial TDA:

4. The non-availability of the helipad at Portsmouth Queen Alexandra Hospital does not seem to be unscheduled in that we understand a major construction project is being carried out where the helipad existed. This was surely planned for some considerable time. This then would seem to negate part of the original SON in proving transport times between hospitals.
5. It is now stated that vibration testing of medication needs to be trialled. That can surely be undertaken with VLOS operations with no requirement for a TDA.
6. Endurance of the now-preferred UAV can surely also be undertaken VLOS.
7. There is no mention in the new statements regarding development or demonstration of technology to enable future safe operation of UAVs in non-segregated or Class G airspace. However, we understand that visual and other sensor technology is being trialled within this project. In order for this technology to enable future and continued operation of this transport task for the NHS such technology needs to be approved by the CAA. The CAA have stated previously that TDAs are not a medium nor long-term solution to the use of UAVs operating BVLOS. We therefore have to ask what this requirement for a TDA is doing to further the long-term use of UAVs for the NHS that the already-completed NHS trials TDAs in other areas of Britain have not already done?
8. Whilst the use of UAVs to improve logistics for the NHS is a very worthwhile and supported aim, the technology and operational procedures currently seem to be immature. As such it would be preferable for those aspects to be developed and proven in existing DAs that have been establish for such experimental operations. Once the technology is proven and safe then logistics trials are surely the follow-on step, rather than the precursor. Otherwise, the requirement for another TDA seems to be more for convenience and commercial development reasons.
9. We feel that the SON should be transparently revised giving full details of what will be tested and include a formal plan for trials, giving a proposed and realistic time-

scale. Without that there seems no practical way to understand whether a 2-month extension is justified nor whether, towards the end of that period, an additional extension will be requested.

10. Covid disruption to alternative means of transport is no longer an issue, as in the original SON. Whilst timely ordering of chemotherapy drugs during covid disruption was a justification for direct hospital-to-hospital trials by UAV this has not been carried out and can no longer be done due to the non-availability of a suitable operating site at Portsmouth. As described above, this is also not a possibility after the end of this TDA, unless approved Detect and Avoid technology is also trialled. St Mary's hospital, Newport will remain dependant on its current arrangements and transport links. It seems the cart is before the horse and time and money would be better employed developing, demonstrating and approving the necessary safety technology first. Much as we would all like to see the efficiencies alluded to it is better to be realistic and practical first. This same issue is being seen in several other duplicated ACPs in different areas of the country. Time and money are clearly being wasted by this duplication and its high time the NHS, would-be UAV suppliers and the CAA coordinated valid trials in existing DAs with a concrete plan to develop the necessary technology to enable a long-term solution, rather than teasing various NHS Trusts with logistics that cannot yet be employed medium- to-long term. This TDA is doing nothing towards that and we consequently see little justification.
11. We appreciate that people working in the vital medical profession are not familiar with the complexities of safe airspace. However, operating current-technology Remotely Piloted Air Systems in any airspace can be a hazardous activity, with implications for other airspace users, shipping and those on the ground and thus currently requires segregated airspace approved by the CAA. The proliferation of such segregated airspace can involve 'funnelling' other air traffic into choke points and thus have consequent safety risks, which must all be taken into account. Britain's skies are already very rigorously regulated with complex areas of controlled and restricted airspace. Thus, we believe the way forward for RPAS involves developing and approving technology that safely enables their integration into this complex dimension. The sooner that technology is demonstrated and approved the sooner the benefits of their use can be utilised. We feel, and support, that all efforts of funding and time should be devoted to that end.

SkyLift UAV Response to Stakeholder 14

Thanks for your detailed feedback, SkyLift UAV acknowledges your opinion to provide feedback on the reasons for the trial extension and the available technologies to support BVLOS operation, however I will respond on the key elements impacting the ACP and other Aviation users. Your response will be captured as part of the stakeholder responses and feedback.

Points 2 and 3 - I can confirm that SkyLift will adhere to the current LOA in place if a TDA extension is agreed, SkyLift UAV intends to operate flights and activate the TDA for periods of no longer than 4 hours. There will be no changes to the TDA design if an extension is approved only that section A will not be activated at any time for BVLOS operations.

Point 4 - SkyLift UAV conducted site visits and detailed planning of operations and routing from QA helipad, Site works on the helipad were not agreed or known about at the time of the TDA design and initial planning. They have been delayed and

moved on several occasions, as with any trial we have had to be agile and manage the problem with the NHS trusts and our operations.

Point 9 - If an extension is agreed the normal activation days and times will be shared with all stakeholders (Mon-Thu 1400-1800 and Fri 1030-1430), I understand your concerns with regards to additional extensions post this proposal, we will be clear on the duration of an extension and operational hours in our summary with the aim being to continue to have minimal impact to local aviation users.

Your other feedback is noted and the responses will form part of the stakeholder summary provided to the CAA airspace team and on the ACP portal.

Thanks again for taking the time to respond and discuss directly with us.

Stakeholder 15 – Thorney Island Microlite Club (TIMC)

Many thanks for your communication about the TDA extension, for which I am responding on behalf of Thorney Island Microlight Club (TIMC).

As you are aware, there is a three party agreement in place (Skylift, CADMAC, and TIMC) to permit deconflicted operations when the Skylift Danger Area is activated. Providing this is still in force for the period of extension, we have no objections to this extra period of time.

We would point out that the opportunity to really test joint operations has not been tested to any great extent, as the amount of Skylift activity has been so limited. We would therefore need to feed back and make appropriate adjustments to the Letter of Agreement in the event that any unforeseen operational issues are encountered (we do not anticipate any at this stage).

We also note that the scope and objectives of operations differ in the extension request, compared with the original proposal. It therefore raises the question as to whether a further time extension will be requested in due course, in order to fulfil the original objectives outlined.

SkyLift UAV Response to Stakeholder 15

Thanks for your response, please find our feedback to your points raised. We have had detailed discussions with Adrian in this stakeholder engagement period.

1. The LOA will remain in place if the TDA extension is granted, no changes are required.

2. We agree with this feedback - our operations are focused in order to have limited impact on TIMC and this will remain the focus if the TDA is extended. We are always open to feedback during our operations and if the LOA is required to be updated then we will support this. We believe the current LOA is suitable for the planned operations.

3. Feedback Acknowledged - all feedback is shared within the stakeholder summary.

Thanks for taking the time to respond.

Stakeholder 16 – Private Individual

Thanks for your email.
Given that the initial TDA proposal was issued in early 2021, I would hope that there has been significant advancement in development/certification of an autonomous Detect and Avoid system for your drones since then. This should negate any requirement for a TDA, as with a certified autonomous Detect and Avoid system drones should be free to operate in class G below 400ft AGL without my TDA. I believe any extension should be subject to your drone company proving evidence of real progress in this field for your drones and an agreed timetable with the CAA to introduce drones with this capability.

I note that in the final TDA design the ceiling of area A was lowered to 750ft AMSL, which is some progress, however we still have the problem that this area extends all the way to Thorney Island over the sea, where the ceiling should be 400ft AGL/AMSL.
It has been confirmed that danger areas can be expressed As xxxft AGL as is widely done in France and permitted under ICAO rules, so I'm not sure why the U.K. CAA have a problem with this. Thus either area A should be changed to be 400ft AGL, or if it needs to be AMSL for some other reason, area A should only comprise the area over land north of the A27 and the rest of Area A become part of area B with a ceiling of 400ft AMSL.

The original trial was for transportation of drugs to the IOW in a more timely mannner, although you only compared it to a ferry service, rather than the much quicker and more frequent hovercraft service which has actually been used.
However it seems now the extension is being requested, not to enable drugs to be delivered more quickly to patients on the IOW, but for vibration data to be gathered for analysis by the NHS as part of their approval of drug transportation.
While this data is obviously necessary for approval, I don't see why this requires the flight of the drone in a BVLOS state. This data should be able to be obtained by flying the drone around visually in a small area for the required time, thus no TDA required, just take the drone to where the drugs are loaded and fly it around in circles for an hour and land back where you started.
I also wonder why a test rig cannot be used, this is what is done when testing equipment fitted to certified aircraft, there is a vibration specification that needs to be met and the test rig is able to input all such vibrations to the equipment. Surely if vibration in any form of transport has a significant effect on the drugs, then there needs to be a spectrum of maximum vibrations established and then each transportation method tested to be within this specification.
It seems a rather haphazard method of testing for you to just do a number of flights with the drugs and then analyse the results at the end, which are then only valid for that specific drone with that particular drug in the condition seen on those days. If you re-design the drone such that it's vibration characteristic change, you have to do all the tests again!

In conclusion I don't believe the TDA is necessary for the test data you require and I think there ought to be a proper specification and test program applicable to all forms of transport for drugs, then test to that, rather than this "try and see" method.

Best regards

SkyLift UAV Response to Stakeholder 16

Thanks for your feedback. SkyLift UAV acknowledges your opinion to provide feedback on the reasons for the trial extension and the available technologies to support BVLOS flights, however, I will respond to address the Feedback on the TDA design.

With regards to your feedback on the TDA design, especially section A at 750 FT AMSL which was reduced after initial stakeholder feedback, this feedback will be included in the engagement report I provide to the CAA at the end of the period. Skylift UAV would prefer to specify TDA vertical limits as AGL. However, the CAA requires vertical TDA limits to be specified as AMSL and the highest ground on the flight route has to be taken into account when specifying the upper limit. This is why the Airspace design for the TDA had 4 sections, so that those sections covering lower ground can have a reduced upper limit.

Finally, Section A of the TDA will not be activated if the extension is agreed, the operations will be focused and supported using sections B, C and D.

I hope this clarifies our efforts and provides feedback on your concern.

Kind regards,

SkyLift UAV Response to Stakeholder 18 - BMAA

This address is no longer valid, Stakeholder 14 provided a response from the BMAA