Skyports Limited

ACP-2022-001 - UAS BVLOS in Segregated Airspace
(Ipswich and South East Suffolk)

Targeted Engagement with Aviation Stakeholders

Version 1.0 – Dated: 22 February 2022

Amendment record

Issue	Amendment	Date
1	Initial Issue	22/2/2022

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 For reference, a copy of this version and all superseded versions will be stored on a secure server.

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

Contents

1 Introduction

Skyports (the change sponsor) is seeking to establish a Temporary Danger Area (TDA) complex during notified periods to enable safe unmanned aircraft system (UAS) beyond visual line of sight (BVLOS) operations for 12 weeks, commencing on 11 August 2022 and ending on 3 November 2022. Skyports intends to transport medical goods, including but not limited to medical test kits (such as COVID 19), pathology samples (including dangerous goods in the form of blood samples), medicines and medical equipment by unmanned aircraft (UA) to and from multiple healthcare facilities in Ipswich and South East Suffolk.

This document describes the nature of the TDA and how the change may affect local aviation stakeholders.

1.1 About Skyports

Skyports develops, implements, and operates end-to-end drone deliveries overcoming inefficiencies with traditional transportation methods within the medical, e-commerce and logistics sectors.

2 Issues and Opportunities

2.1 Improving the NHS's logistic network for medical goods delivery

This project is jointly developed by the East Suffolk and North Essex NHS Foundation Trust and ERS Medical to trial a faster, more frequent and more ecofriendly means of medical delivery. In particular, they would like to explore the use of UAS to strengthen their existing healthcare services and logistic network, whilst reducing carbon footprint.

Skyports will operate UAS on behalf of ERS Medical, which provides the NHS with collection and delivery services – reducing delivery times and operating cost compared to the existing mode of transport (primarily ground vehicles). Skyports will carry samples (including Dangerous Goods UN3373, Biological Substances Category B) collected from local medical practices for analysis at pathology laboratories at Ipswich Hospital more quickly and more reliably than current road transport alternatives. Currently, samples are collected by the local NHS porter service and taken to the hospital at the end of rounds, which is slow and often leads to a degradation of sample quality due to lack of temperature control, meaning the tests are either conducted on poor quality samples and/or testing needs to be repeated.

With the delivery solution that Skyports is offering, patient care can be more keenly focused on the patient themselves, rather than on meeting the pre-set porter collection times. This level of improvement is transformational for the health system in the Ipswich area with potentially life-saving treatment able to be commenced earlier and/or non-essential treatment able to be avoided (e.g., unnecessary antibiotic treatments which are currently being prescribed before receipt of pathology results). Such a service would also serve to reduce testing times and speed up diagnoses for patients. Equitable healthcare for all can only be realised through increased connectivity with rural facilities.

As the NHS has been conducting routine tests, examinations, and procedures, this will place significant demands on its ability to manage business-as-usual and COVID-19 activities concurrently. The Skyports solution adds capacity when the NHS needs support the most.

2.2 Eco-friendliness

The use of electric UA to deliver and collect medical goods in Skyports' solution also reduces ground vehicle movements, which will contribute towards a reduction in carbon emissions, as the UK seeks to meet its Net Zero goal by 2050. It will further facilitate the NHS ambitious goal to be the world's first net zero national health service, aiming to reach net zero by 2040 for emissions the NHS controls directly and 2045 for emissions the NHS can influence as part of the NHS Carbon Footprint Plus, which would include road transport by ERS vehicles.

3 Requirement for airspace change

3.1 Segregated airspace and unmanned aircraft systems (UAS)

The legal constraints on flying operations, including UAS, within the UK airspace are contained within the Air Navigation Order (ANO). UAS do not have an automatic right to airspace if safety provision cannot be made or if such operations would have an unreasonably negative impact on other aviation stakeholders. To integrate with other aviation stakeholders, UAS operators must ensure that their aircraft can demonstrate an equivalent level of compliance with the rules and procedures that apply to manned aircraft.

Until UAS can comply with the requirements for flight in non-segregated airspace, BVLOS UAS flights outside permanently established segregated airspace may be accommodated through the establishment of segregated airspace on a temporary basis.

For flights within segregated airspace, while some restrictions may still apply, a UAS will generally be given freedom of operation within the bounds of the allocated airspace, subject to any agreed procedures and safety requirements. An authorisation to operate will consider the risks associated with any unintended excursion from the allocated airspace and it will also consider the possibility of airspace infringements. In addition, measures that may be put in place to enhance the safety of UAS activities will also be considered by the CAA during authorisation. For more information, see CAA CAP 722.

Temporary segregated airspace – a TDA – can only be requested and implemented once. Due consideration has been given to the possible positive and negative impacts of the ACP on other aviation stakeholders and the local community, which is the purpose of this document.

3.2 Regulatory process

Temporary segregated airspace is by its very nature not a permanent change to airspace; however, all change sponsors are under a statutory obligation to engage aviation stakeholders and any other relevant stakeholders by following the steps set out in the Airspace Change Process. For more information, see 20200721 – CAA Policy for the Establishment of Permanent and Temporary Danger Areas (a scaled down version of CAP1616).

As part of the regulatory requirements, Skyports will conduct a targeted aviation stakeholder engagement exercise, where feedback on safety and operational aspects of the airspace change proposal will be reviewed periodically, before submitting our finalised proposed airspace design proposals to the CAA for assessment, to ensure that all identified interested parties have had an opportunity to review the proposed changes and comment accordingly.

4 Proposed Routes and Airspace Change Design

4.1 Routing Overview

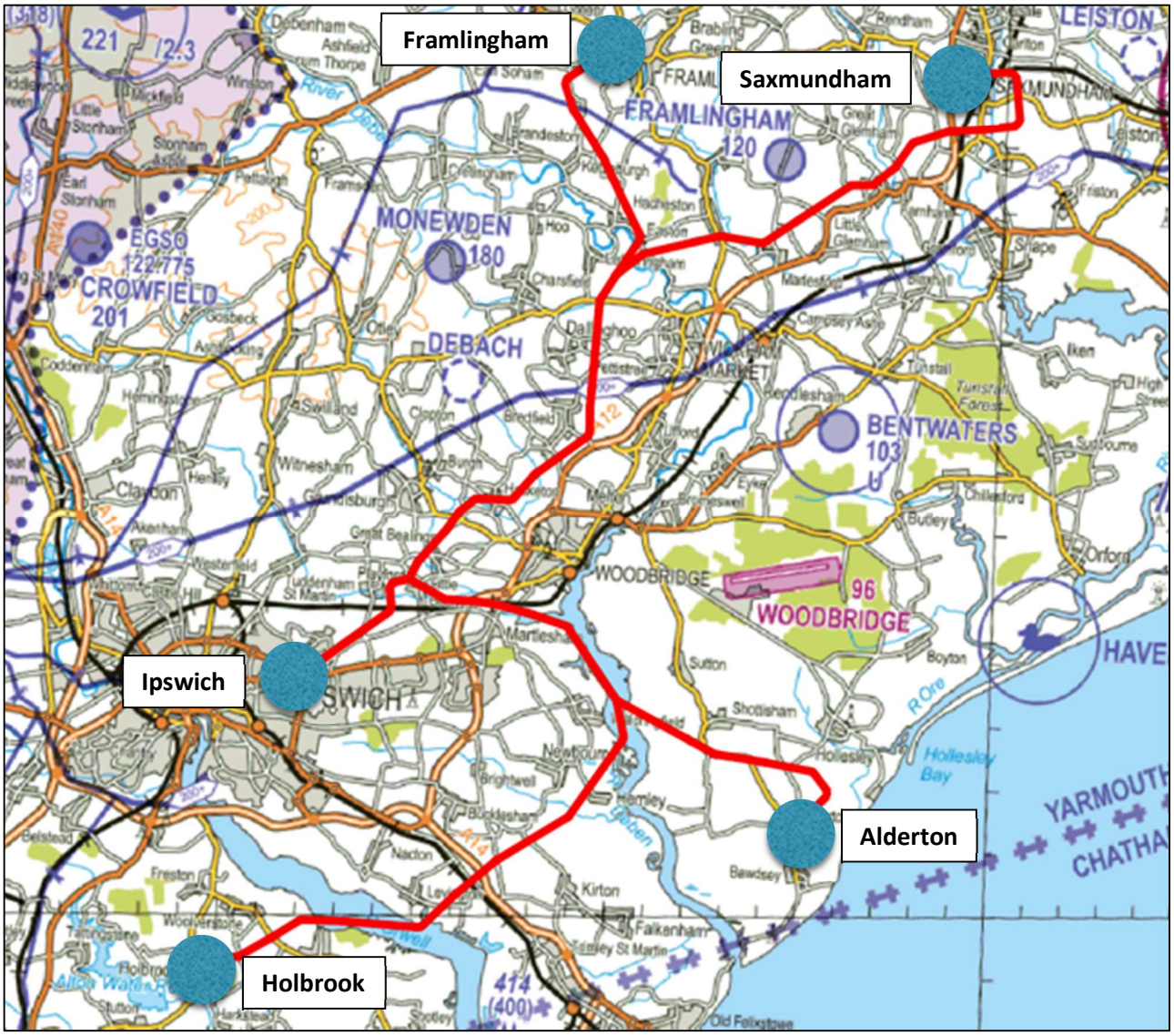

FIGURE 1: ROUTE OVERVIEW ON LOW-LEVEL VFR AIRSPACE CHART (1:250000)

4.2 Route details

Route	Distance (km)	Altitude (ft AGL)	Avg. cruise speed (kt)	Est. Time (mins)	% of Max Endurance (of 68 mins)	TDAs Required *(see Section 4.3, Fig. 2)*
Ipswich – Framlingham	24	360	55	18	26	A|B|C
Ipswich – Saxmundham	33	360	55	24	35	A|B|D
Ipswich – Alderton	20	360	55	15	22	A|E|F
Ipswich – Holbrook	28	360	55	20	29	A|E|G

4.3 Airspace Change Design

Skyports requires TDAs within which to safely execute its operations and present the following proposed airspace design to aviation stakeholders.

The TDA complex is broken into seven sections to facilitate the operation of a single route without activating all TDAs concurrently.

4.3.1 Top-down view of TDA Complex

FIGURE 2: TOP-DOWN VIEW OF TDA COMPLEX

Note: The kml file showing the TDA design is available upon request.

4.3.2 TDA A: Ipswich Departure

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.0763128	1.26172215	52° 04' 34.72" N	001° 15' 42.19" E	Lower: SFC Upper: 500 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.0574524	1.21056094	52° 03' 26.82" N	001° 12' 38.01" E		
3	52.0706332	1.19485611	52° 04' 14.27" N	001° 11' 41.48" E		
4	52.0853854	1.22851014	52° 05' 07.38" N	001° 13' 42.63" E		
5	52.094962	1.22771388	52° 05' 41.86" N	001° 13' 39.76" E		
6	52.1020024	1.24126905	52° 06' 07.20" N	001° 14' 28.56" E		
7	52.0923383	1.26930998	52° 05' 32.41" N	001° 16' 09.51" E		

4.3.3 TDA B: North Transit

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.1655321	1.31865298	52° 09' 55.91" N	001° 19' 07.15" E	Lower: SFC Upper: 550 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.160198	1.34439174	52° 09' 36.71" N	001° 20' 39.81" E		
3	52.1233254	1.34036364	52° 07' 23.97" N	001° 20' 25.30" E		
4	52.1112688	1.31310807	52° 06' 40.56" N	001° 18' 47.18" E		
5	52.1021264	1.30008358	52° 06' 07.65" N	001° 18' 00.30" E		
6	52.0923383	1.26930998	52° 05' 32.41" N	001° 16' 09.51" E		
7	52.1020024	1.24126905	52° 06' 07.20" N	001° 14' 28.56" E		
8	52.1189939	1.27435912	52° 07' 08.37" N	001° 16' 27.69" E		
9	52.1316363	1.31405019	52° 07' 53.89" N	001° 18' 50.58" E		

4.3.4 TDA C: Framlingham

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.160198	1.34439174	52° 09' 36.71" N	001° 20' 39.81" E	Lower: SFC Upper: 600 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.1655321	1.31865298	52° 09' 55.91" N	001° 19' 07.15" E		
3	52.1799434	1.33387076	52° 10' 47.79" N	001° 20' 01.93" E		
4	52.2092183	1.30797607	52° 12' 33.18" N	001° 18' 28.71" E		
5	52.2232949	1.3006692	52° 13' 23.86" N	001° 18' 02.40" E		
6	52.2340398	1.32541417	52° 14' 02.54" N	001° 19' 31.49" E		
7	52.2211707	1.34093164	52° 13' 16.21" N	001° 20' 27.35" E		
8	52.2170387	1.33177899	52° 13' 01.33" N	001° 19' 54.40" E		
9	52.2037361	1.34478271	52° 12' 13.44" N	001° 20' 41.21" E		
10	52.1787009	1.36434073	52° 10' 43.32" N	001° 21' 51.62" E		

4.3.5 TDA D: Saxmundham

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.2110941	1.45756461	52° 12' 39.93" N	001° 27' 27.23" E	Lower: SFC Upper: 600 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.2303555	1.49266917	52° 13' 49.27" N	001° 29' 33.60" E		
3	52.230394	1.52180809	52° 13' 49.41" N	001° 31' 18.50" E		
4	52.2015933	1.52589944	52° 12' 05.73" N	001° 31' 33.23" E		
5	52.1932869	1.48108593	52° 11' 35.83" N	001° 28' 51.90" E		
6	52.1695301	1.40473857	52° 10' 10.30" N	001° 24' 17.05" E		
7	52.1676029	1.35587981	52° 10' 03.37" N	001° 21' 21.16" E		
8	52.160198	1.34439174	52° 09' 36.71" N	001° 20' 39.81" E		
9	52.1655321	1.31865298	52° 09' 55.91" N	001° 19' 07.15" E		
10	52.1753165	1.32878557	52° 10' 31.13" N	001° 19' 43.62" E		
11	52.1824975	1.3442322	52° 10' 56.99" N	001° 20' 39.23" E		
12	52.1881252	1.38340915	52° 11' 17.25" N	001° 23' 00.27" E		
13	52.1864916	1.39871753	52° 11' 11.36" N	001° 23' 55.38" E		
14	52.201147	1.43541746	52° 12' 04.12" N	001° 26' 07.50" E		

4.3.6 TDA E: South Transit

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.0494378	1.32827998	52° 02' 57.97" N	001° 19' 41.80" E	Lower: SFC Upper: 500 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.0704185	1.30942103	52° 04' 13.50" N	001° 18' 33.91" E		
3	52.0747157	1.28733592	52° 04' 28.97" N	001° 17' 14.40" E		
4	52.0763128	1.26172215	52° 04' 34.72" N	001° 15' 42.19" E		
5	52.0923383	1.26930998	52° 05' 32.41" N	001° 16' 09.51" E		
6	52.0905959	1.29278198	52° 05' 26.14" N	001° 17' 34.01" E		
7	52.0839047	1.32643794	52° 05' 02.05" N	001° 19' 35.17" E		
8	52.063805	1.34837604	52° 03' 49.69" N	001° 20' 54.15" E		

4.3.7 TDA F: Alderton

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	52.0494378	1.32827998	52° 02' 57.97" N	001° 19' 41.80" E	Lower: SFC Upper: 500 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	52.063805	1.34837604	52° 03' 49.69" N	001° 20' 54.15" E		
3	52.0512914	1.38524284	52° 03' 04.64" N	001° 23' 06.87" E		
4	52.0462099	1.43031	52° 02' 46.35" N	001° 25' 49.11" E		
5	52.0321147	1.44790991	52° 01' 55.61" N	001° 26' 52.47" E		
6	52.018421	1.42377252	52° 01' 06.31" N	001° 25' 25.58" E		

4.3.8 TDA G: Holbrook

Identification and lateral limits						
	Area bounded by straight lines joining:					
WP	**Lat (N)**	**Lon (S)**	**Lat (N)**	**Lon (W)**	**Upper & lower limit**	**Remarks**
1	51.9820432	1.18075496	51° 58' 55.35" N	001° 10' 50.71" E	Lower: SFC Upper: 500 ft AMSL	Activity: UAS BVLOS Hours: When notified Sponsor: Skyports
2	51.9780306	1.16559148	51° 58' 40.91" N	001° 09' 56.12" E		
3	51.9908608	1.15002731	51° 59' 27.09" N	001° 09' 00.09" E		
4	51.9972775	1.16216061	51° 59' 50.19" N	001° 09' 43.77" E		
5	52.0079451	1.20019839	52° 00' 28.60" N	001° 12' 00.71" E		
6	52.0060028	1.25033116	52° 00' 21.60" N	001° 15' 01.19" E		
7	52.0220422	1.27981475	52° 01' 19.35" N	001° 16' 47.33" E		
8	52.0329729	1.30943259	52° 01' 58.70" N	001° 18' 33.95" E		
9	52.0494378	1.32827998	52° 02' 57.97" N	001° 19' 41.80" E		
10	52.063805	1.34837604	52° 03' 49.69" N	001° 20' 54.15" E		
11	52.0568588	1.36885009	52° 03' 24.69" N	001° 22' 07.86" E		
12	52.0208398	1.32778159	52° 01' 15.02" N	001° 19' 40.01" E		
13	51.9892574	1.25984878	51° 59' 21.32" N	001° 15' 35.45" E		
14	51.9915885	1.20714879	51° 59' 29.71" N	001° 12' 25.73" E		

4.4 Date and Time of TDA Activation

The TDAs will be activated between 11 August 2022 and 3 November 2022, on weekdays (Mon-Fri), and during daylight hours only.

Skyports envisages each TDA to be activated for up to 5 hours per day, typically within the window between 09:00 and 15:30 (e.g. 09:00 – 14:00, 10:30 – 15:30 etc.). The exact timings of the 5-hour activation on each day are subject to factors such as weather conditions and operational needs. Skyports will promulgate TDA activation schedule by NOTAM at least 24 hours in advance. Based on the NHS data, Skyports envisages operating at a minimum 10 flights per route activated.

4.5 Route planning and safety considerations

Route planning is performed in accordance with Skyports' Operations Manual. Routes are planned as per below:

- ✓ Avoid overflight of congested and urban areas;
- ✓ Avoid overflight of areas where uninvolved persons are likely to be present (e.g. footpaths, roads);
- ✓ Minimise overflight of environmentally sensitive areas (permission required if overflight is necessary);
- ✓ Ensure that the UA can cover the proposed route distance with a sufficient safety reserve remaining upon arrival;
- ✓ Ensure sufficient 4G signal exists to maintain primary C2 link throughout the duration of the flight;
- ✓ Ensure suitable diversion locations and RTH locations are available;
- ✓ Maintain altitude of < 400ft AGL;
- ✓ Account for terrain and winds;
- ✓ Ensure UA climb/descent rates are within OEM stipulated limitations.

4.6 Technical means to be used

Type	Swoop Kookaburra Mk III Hybrid – Powered Lift transitional platform (VTOL)
Max speed	68kt
Cruise speed	60kt
Max endurance	68 mins (forward flight limit at MTOW)
Max payload	3kg
MTOM/MTOW	17kg
Lighting	Navigational lights and a white strobe
Max. wind	27 kts (14 m/s) from any direction
Min. visibility	Min. 500m at Take-off and Landing Points. Flights will comply with visual meteorological conditions (VMC).
Precipitation	Moderate rainfall (2mm – 10mm per hour)
Cloud ceiling	No limitation
Min. / Max. Operating Temperature	0°C / +45°C
Electronic Conspicuity	The UA is fitted with ADS-B IN and OUT, which can process uncertified ADS-B signals, namely SIL/SID=0.

4.6.1 Horizontal Operating Volume

The horizontal operating volume of the Kookaburra Mk III UAS consists of the following:

- Flight geography
- Contingency buffer
- Ground risk buffer

The Kookaburra Mk III has two flight sectors (defined during route planning):

1) **Constrained Leg** (Figure 3): chosen when operating space is limited
    a. Flight Geography = 40m (20m either side of flight path) – UA cannot orbit or turn around
    b. Contingency buffer = 80m (40m either side of flight path)
    c. Ground risk buffer = 1:1 rule buffer beginning from the edge of the contingency buffer. Typically 120m (dependent on flight altitude)

2) **Unconstrained Leg** (Figure 4): chosen when operating space is larger

   a. Flight Geography = 960m (480m either side of flight path) – UA can orbit and turn around

   b. Contingency buffer = 1400m (700m either side)

   c. Ground risk buffer = 1:1 rule buffer beginning from the edge of the contingency buffer. Typically 120m (dependent on flight altitude)

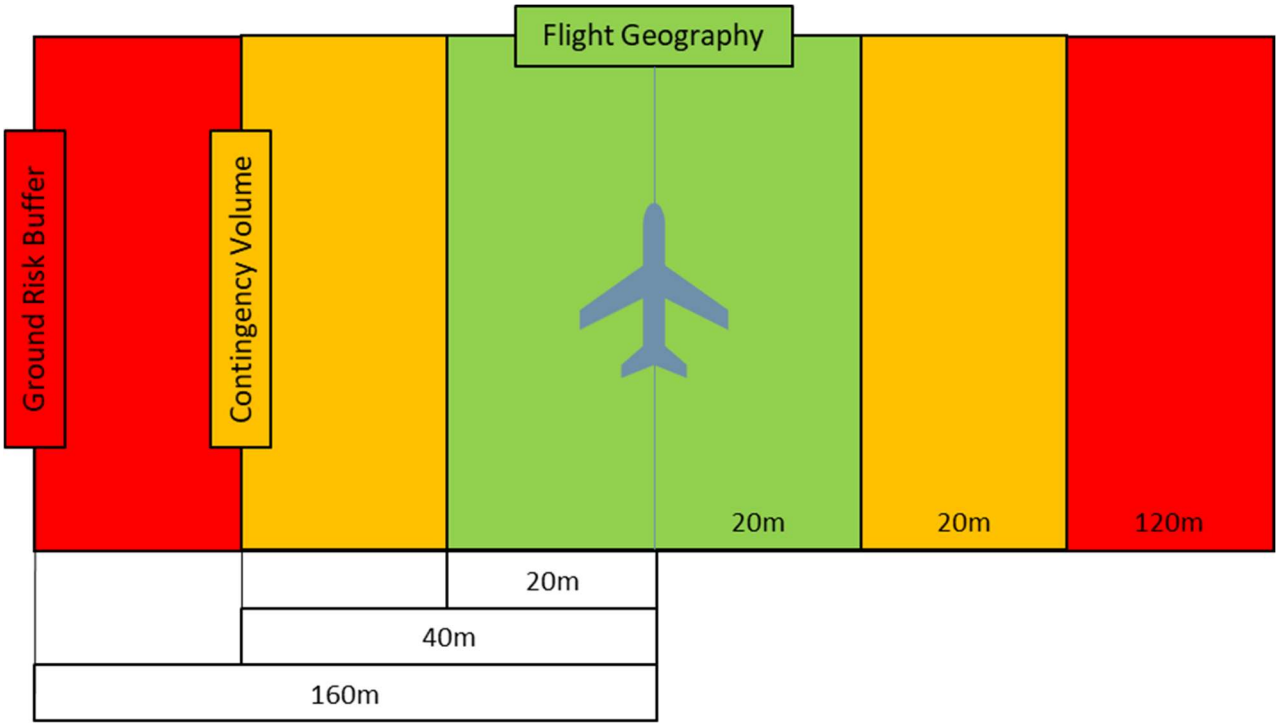

FIGURE 3: CONSTRAINED FLIGHT SECTOR (HORIZONTAL FLIGHT PROFILE)

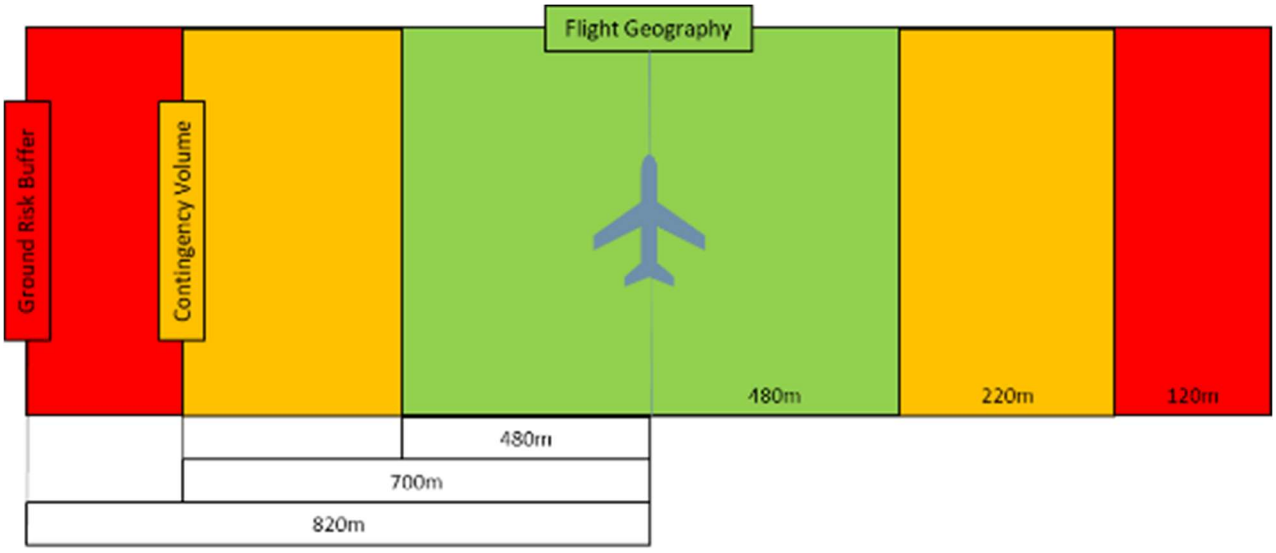

FIGURE 4: UNCONSTRAINED FLIGHT SECTOR (HORIZONTAL FLIGHT PROFILE)

4.6.2 Vertical Operating Volume

The vertical operating volume of the Kookaburra Mk III Unmanned Aircraft consists of the following:

- Flight geography: 12m above and below planned flight path.
- Contingency buffer: from ground surface below the planned flight path, extending to 30m above planned flight path.

4.7 Danger Area Activation Information Service (DAAIS)

Skyports will discuss with NATS (London Flight Information Service) the provision of a DAAIS to cover the area of operations, which will enable aircraft en-route to be able to contact Skyports and to be reminded of any active TDAs in the area.

5 Guidance on how to respond

5.1 Engagement period

This targeted stakeholder engagement period will take place between **Tuesday 22 February 2022** and **Tuesday 17 May 2022**.

5.2 Deadline for responses

All responses should be sent to Skyports **by 17:00 on Tuesday 17 May 2022**, when the stakeholder engagement period will close. To facilitate Skyports' review of responses, and allow sufficient time for Skyports to resolve any safety related issues, stakeholders are encouraged to submit any feedback, comments and/or suggestions as early as possible.

5.3 Responses

Stakeholders are welcome to provide feedback, comments and/or suggestions related to the safety and operational aspects of this airspace change proposal. Responses should be submitted directly to Skyports via email to airspacechange@skyports.net.

Please state clearly in the email:

- your name, contact information, and the organisation you are representing (if applicable);
- whether you i) **support** the proposal; ii) **oppose** the proposal; iii) **neither support nor oppose the proposal**; and/or iv) have any **constructive suggestions** for adaption of the proposals. Please provide a rationale for your position.

You may opt to remain anonymous if you wish to do so. However, your feedback will still be incorporated into the engagement summary report to be submitted to the CAA after the engagement period.

For questions related to the airspace change process and regulatory requirements, please contact the CAA direct.

6 Post-engagement

Skyports will upload all engagement material to the Airspace Change Portal retrospectively after Stage 4.

A post-engagement summary report, with feedback provided verbatim from stakeholders, will be provided to the CAA. Once the CAA has made a decision on the final airspace change design, Skyports will advise all stakeholders of the outcome.

6.1 Airspace deconfliction

Skyports will produce comprehensive and robust airspace deconfliction procedure via a Temporary Operating Instruction (TOI) that secures the approval of relevant aviation stakeholders that may need to enter the TDA once activated, e.g. emergency services, and commercial airplane/helicopter operators. Skyports will engage relevant aviation stakeholders separately on this document and secure their written approval before operating.

6.2 Continued Monitoring

While the TDA is in operation, Skyports will undertake regular engagement with aviation stakeholders via email (or phone) at the end of each day of active operations. Skyports will monitor any feedback received on the CAA Airspace Portal or received directly by email or phone, collate the feedback, and provide regular updates to the CAA when the TDA is activated and after it has been deactivated.

Appendix A: List of identified stakeholders

No.	Name	Type
1	Aircraft Owners and Pilots Association (AOPA)	Representative
2	Airfield Operators Group (AOG)	Representative
3	Airport Operators Association (AOA)	Representative
4	Airspace Change Organising Group (ACOG)	Representative
5	Airspace4All	Representative
6	Army Gliding Club (Anglia) (based at Wattisham Airfield)	Flying Club
7	Association of Remotely Piloted Aircraft Systems (ARPAS-UK)	Representative
8	Aviation Environment Federation (AEF)	Representative
9	Babcock International	HEMS
10	British Balloon and Airship Club	Representative
11	British Business Aviation and General Aviation Association	Representative
12	British Gliding Association (BGA)	Representative
13	British Hang Gliding and Paragliding Association (BHPA)	Representative
14	British Helicopter Association (BHA)	Representative
15	British Microlight Aircraft Association (BMAA)	Representative
16	British Model Flying Association (BMFA)	Representative
17	British Skydiving	Representative
18	Coastguard	HEMS
19	Crowfield	Airfield
20	East Anglian Air Ambulance (EAAA)	HEMS
21	Elmsett	Airfield
22	Essex & Suffolk Gliding Club	Flying Club
23	GAMA Aviation	HEMS
24	General Aviation Alliance (GAA)	Representative
25	General Aviation Safety Council (GASCo)	Representative
26	Great Oakley	Airfield
27	Helicopter Club of Great Britain (HCGB)	Representative
28	Heliair	Operator
29	Helicentre	Operator
30	Light Aircraft Association (LAA)	Representative
31	Maritime and Coastguard Agency	Emergency Services
32	Military Aviation Authority (MAA)	Representative
33	Ministry of Defence	Military
34	Monewden	Airfield
35	National Grid	Operator
36	National Police Air Service (NPAS)	Emergency Service
37	NATS	ANSP
38	PDG Helicopters	Operator
39	Rattlesden Gliding Club	Flying Club
40	Specialist Aviation Services	HEMS
41	Sloane Helicopter (Children's Air Ambulance)	HEMS
42	Wattisham	Airfield (Military)
43	Western Power	Operator
44	Woodbridge	Airfield (Military)

Note: Additional or self-identified stakeholders maybe added during the engagement exercise, as a consequence of stakeholders getting in touch. Names of private individuals will not be included but their feedback will be incorporated.

Appendix B: Referenced Documents

Document	Document Title	Version & Date	Source
DA/TDA Policy 20200721	CAA Policy for the Establishment of Permanent and Temporary Danger Areas	Version 1.0 21 July 2020	DA/TDA Policy 20200721
ANO 2016	The Air Navigation Order (ANO) 2016 and Regulations	Version 5.0 6 September 2021	CAP 203A00
CAP 1616	Airspace Change – Guidance on the regulatory process for changing the notified airspace design and planning and planned and permanent redistribution of air traffic, and on providing airspace information	Version 4.0 1 March 2021	CAP 1616
CAP 722	Unmanned Aircraft System Operations in UK Airspace – Guidance	Version 8 5 November 2020	CAP 722

Appendix C: Acronyms & Abbreviations

Abbreviation	Term
ACP	Airspace Change Proposal
ADS-B	Automatic Dependent Surveillance-Broadcast
AMSL	Above Mean Sea Level
AGL	Above Ground Level
ANO	Air Navigation Order
BVLOS	Beyond Visual Line of Sight
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DA	Danger Area
DAAIS	Danger Area Activity Information Services
DAATM	Defence Airspace and Air Traffic Management
GP	General Practitioner
HSCP	Heath and Social Care Partnership
KML	Keyhole Markup Language
LAT	Latitude
LONG	Longitude
NHS	National Health Service
MOD	Ministry of Defence
MTOW	Maximum Take-Off Weight
NOTAM	Notice to Airman
PPE	Personal Protective Equipment
SIL	Source Integrity Level
SFC	Surface
TDA	Temporary Danger Area
TOI	Temporary Operating Instruction
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
VMC	Visual Meteorological Conditions
VTOL	Vertical Take-off and Landing
WC	Well Clear

Appendix D: Glossary

Term	Definition
Aeronautical Information Publication	Long-term information essential to air navigation, including the detailed structure of UK airspace and flight procedures, which forms part of the UK Integrated Aeronautical Information Package. Sometimes informally known as the Air Pilot. Publication is the responsibility of the CAA but is carried out under licence by NATS. www.ais.org.uk.
Air navigation service provider	An organisation which operates the technical system, infrastructure, procedures, and rules of an air navigation service system, which may include air traffic control.
Airspace change proposal	A request (usually from an airport or air navigation service provider) for a permanent change to the design of UK airspace.
Airspace design	Together, the airspace structure and flight procedures
Airspace change process	The staged process an airspace change sponsor follows to submit an airspace change to the CAA for a decision. The process includes actions associated with implementation and post-implementation review, after the CAA or, where applicable Secretary of State, decision.
Airspace Modernisation Strategy	A co-ordinated strategy and plan for the use of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace, prepared and maintained by the CAA, incorporating the previous Future Airspace Strategy. It is a requirement of the Air Navigation Directions 2017. https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-ModernisationStrategy/For a-strategy/.
Airspace structure	Designated volumes of airspace within identified characteristics, including the equipment aircraft wanting to enter that airspace must carry and actions pilots must carry out before entering that airspace. The volumes of airspace are designed to ensure the safe and optimal operation of aircraft. Airspace structures consist of: a) controlled airspace, namely control zones, control areas, terminal control areas and airways; b) airspace restrictions, namely danger, restricted and prohibited areas; c) for a radio mandatory zones, transponder mandatory zones; d) other airspaces specified by the CAA when defining the airspace change process, such as, for example, flight information zones, aerodrome traffic zones, temporary segregated areas, temporary reserved areas or free-route airspace.
Beyond Visual Line of Sight (BVLOS)	An operation in which the remote pilot or observer does not use visual reference to the remotely piloted aircraft in the conduct of flight.

Consultation	Formal process seeking input into a decision, undertaken in line with the Gunning Principles, and government guidance.
Danger Area	Airspace within which activities dangerous to the flight of aircraft may exist at notified times.
Design principles	The principles encompassing the safety, environmental and operational criteria and the strategic policy objectives that the change sponsor seeks to achieve in developing the airspace change proposal. They are an opportunity to combine local context with technical considerations, and are therefore drawn up through discussion with affected stakeholders.
Engagement	Catch-all term for developing relationships with stakeholders, covering a variety of activities including but not limited to consultation, information provision, regular and one-off meetings and for a, workshops and town hall discussions.
Feedback	Informal response to engagement – change sponsors may be expected to seek feedback from stakeholders in addition to formally consulting them.
Military operations	Operations undertaken by military aircraft, or military aerodromes.
Overflight	For the purposes of airspace changes, overflight is defined according to the CAA's report, CAP 1498 which outlines a measurement based upon community perception. It does not portray noise impacts. www.caa.co.uk/cap1498.
Portal	The CAA's airspace change portal – an online portal containing details of all current and previous airspace changes: https://airspacechange.caa.co.uk.
Representative group	Stakeholder group that gathers together those with similar interests in a proposal. It could be at an industry level (for instance the Airport Operators Association), national level (for instance the Aviation Environment Federation) or local level (for instance HACAN).
Sponsor (or change sponsor)	An organisation that proposes, or sponsors, a change to the airspace design in accordance with the CAA's airspace change process.
Stakeholder	An interested third party in an airspace change or PPR proposal.
Statement of Need	The means by which the change sponsor sets out what airspace issue or opportunity it is seeking to address and what outcome it wishes to achieve, without specifying solutions, technical or otherwise.
Uncontrolled airspace	Airspace in which aircraft are able to fly freely through the airspace without being constrained by instructions in routeing or by air traffic control, unless they require an air traffic control service.
Unmanned aircraft system (UAS)	An Unmanned Aircraft System (UAS) comprises individual 'System Elements' consisting of the Unmanned Aircraft (UA) and any other System Elements necessary to enable flight, such as a Remote Pilot Station, Communication Link and Launch and Recovery Element. There may be multiple UAS, RPS or Launch and Recovery Elements within a UAS.