ACP 2021-088

Stage 2A – Develop Airspace

Change Options

21 December 2022

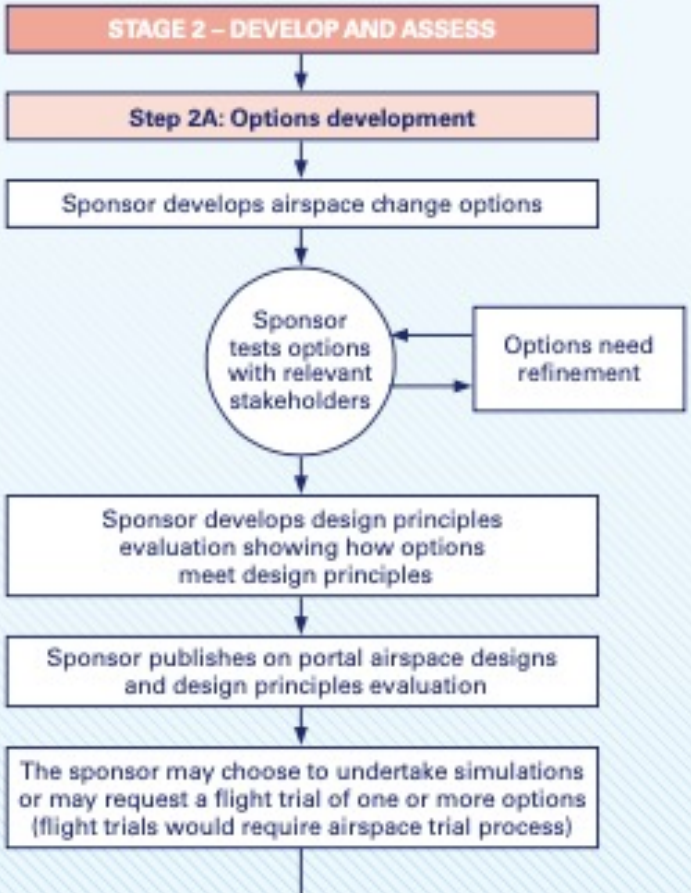
Contents

Introduction

- ACP-008-2021 is sponsored by Bristow on behalf of the Maritime and Coastguard Agency (MCA).
- The ACP aims to deliver a suitable airspace construct, to enable Uncrewed Aircraft Systems (UAS) operations to support HM Coastguard and the wider UK Government response to small boat crossings of the English Channel.
- Stage 1 – Design Principles, was successfully passed at the CAA gateway on the 25 Nov 22.
- We have now entered Stage 2 during which the initial airspace change design options are developed.

Introduction...

- CAP 1616



We are here

Introduction...

CAP 1616: Stage 2 – Develop & Assess

Stage 2A – Options Development. (CAP1616, dated Mar 21, Pg 39, Para 125), requires the change sponsor to:

- develop a first comprehensive list of options, to the extent that a list is possible, that address the Statement of Need and that align with the design principles from Stage 1.
- preliminarily test these with the same stakeholders it engaged with in Step 1B to ensure that they are satisfied that the design options are aligned with the design principles and that the change sponsor has properly understood and accounted for stakeholder concerns specifically related to the design options.
- produces a design principal evaluation that sets out how its design options have responded to the design principles.

Introduction...

Purpose

- Progress against Stage 2A – Options Development. (CAP1616, dated Mar 21, Pg 39, Para 125):
  - We have developed a first comprehensive list of options, to the extent that a list is possible, that address the Statement of Need and that align with the design principles from Stage 1.

- Next Step against Stage 2A – Options Development.
  - We would like to preliminarily test these options with you to ensure that you are satisfied that the design options are aligned with the design principles and that we as the change sponsor have understood and accounted for your concerns specifically related to the design options.

  - We would welcome your feedback on each of the design options set out within this presentation and have included a feedback form to aid this, though we are happy to receive feedback in any appropriate formats. Any feedback can be returned to: airspacechangeproposal@bhlgroup.com

Constraints and Assumptions

- UAS activity within the English Channel is directed by the Maritime and Coastguard Agency (MCA), and the Home Office. The purpose of which is to identify all small boats in the Dover Strait to ensure that they are interdicted and triaged for Safety of Life at Sea (SOLAS) responses; collect evidential footage of criminality to support the criminal justice process; and to ensure that law enforcement activity can be conducted safely.

- The UAS activity is likely to continue at current levels for the foreseeable future, due to the ongoing operational requirements of the migrant response, on which the statement of need is based.

- UK Government operational requirement until 2027 and therefore perceived lifespan until 2027.

- The lateral dimensions of TDA D098 are deemed appropriate and necessary for the airspace volume required to enable Government directed UAS activity, to meet the statement of need.
  - The Eastern lateral boundary of TDA D098 runs along the international airspace boundary and therefore remains extant.

- The vertical dimensions of TDA D098 are deemed appropriate and necessary for any airspace volume required to enable Government directed UAS activity, to meet the statement of need. These are based on technical sensor and command and control limitations of the UAS being operated with a small safety buffer. Therefore, any reduction of these ceilings is likely to preclude the use of one of the UAS platforms, which would not meet the statement of need.

- The continued extension of TDA D098 is non-viable due to CAA regulatory and policy requirements.

Constraints and Assumptions

- The airspace baseline is that of the airspace environment pre-Temporary Danger Area (TDA) D098, which is based on Class G airspace (described in detail within Option 0 – Baseline).
  - 2019 used to inform the airspace baseline, as it provided the most recent year where air traffic was not effected by Covid 19.

- No detect and avoid capability has been approved by the CAA to enable a non-segregated airspace (Class G) option; therefore, non-segregated airspace options cannot be considered due to regulatory and policy constraints.

- At the current time the requirement is for a segregated airspace environment to enable Beyond Visual Line of Sight UAS operations. We continue to explore and consider novel airspace management solutions, such as Transponder Mandated Zones (TMZ) and Electronic Conspicuity (EC) solutions; however, as these are not currently approved by CAA regulatory and policy frameworks, these have been ruled out as non-viable within the timeframe of this ACP process.

Constraints and Assumptions

- Novel concepts constraints such as a Transponder Mandated Zone (TMZ) were considered as an option, as suggested by several stakeholders in Stage 1. However, a TMZ construct was ruled out as it is currently unviable within the current CAA regulation and airspace policy:
  - Para 2.1.2 of CAP 722 Beyond visual line of sight operations (BVLOS) states: Unmanned aircraft intended for BVLOS operations will require either:
    - *A block of airspace to operate in which the unmanned aircraft is 'segregated' from other aircraft - because other aircraft are not permitted to enter this airspace block, the unmanned aircraft can operate without the risk of collision, or the need for other collision avoidance capabilities; or*
    - *A technical capability which has been accepted as being at least equivalent to the ability of a pilot of a manned aircraft to 'see and avoid' potential conflictions. This is referred to as a Detect and Avoid (DAA) capability. Further details regarding DAA can be found at 3.6; Note: Any DAA capability would be expected to ensure compliance with Regulation (EU) 923/2012 the Standardised European Rules of the Air (SERA) chapter 2 (avoidance of collisions), as adjusted by Rule 8 of the Rules of the Air Regulations 2015 (Rules for avoiding aerial collisions);*
  - No CAA approved detect and avoid capability that complies with Regulation (EU) 923/2012 the Standardised European Rules of the Air (SERA) chapter 2 (avoidance of collisions), as adjusted by Rule 8 of the Rules of the Air Regulations 2015 (Rules for avoiding aerial collisions), current exists nor forecast within the lifespan of this ACP. **TMZ is therefore deemed unviable and cannot be progressed.**

Statement of Need

- An Airspace Change Proposal to facilitate long-term UAS Beyond Visual Line Of Sight (BVLOS) operations in the vicinity of the English Channel. Routine HM Coastguard patrols are required to support Search and Rescue taskings in the region as a result of the increasing demand on emergency services responding to migrant crossings.
- As part of UK Government's response, The Department for Transport (DfT) has been requested to expand routine situational awareness (SA) patrols of the English Channel due to the increased levels of migrant crossings which regularly result in Search and Rescue operations responding to multiple '999' calls. Based on the intelligence from the UAS, His Majesty's Coastguard (HMCG) decision makers can ascertain the scale and accurate location of an incident and mobilise the appropriate assets to attend.
- Deploying Bristow's UAV for SA patrols and safety overwatch in the English Channel and provides operational staff at HM Coastguard with vital intelligence, which can be shared with other emergency services, UK Gov departments and local organisations, to ensure effective deployment of air, sea and ground resources. This also preserves UK SAR helicopter (SAR(H) assets to be used for their primary life-saving rescue function.
- Due to the enduring nature of this requirement, a viable solution to replace the current English Channel temporary danger area (TDA) complex is needed to continue to support the UK's response to the current migrant issue.
- The statement of need can be found: http://airspacechange.caa.co.uk/PublicProposalArea?pID-418

Defined Design Principles (6)

Priority	Category (CAP1616)	Design Principle
1	Safety	Maintain or enhance current levels of safety.
2	Operational / Technical	Consider the requirements of all potential users.
3	Operational / Economic	Minimise the impact on other airspace users.
4	Policy / regulatory	Comply with UAS regulatory framework.
5	Operational / Technical	Operating area to be located over the sea.
6	Environmental / Operational	Minimise the noise and environmental impact on areas affected by the proposed change.

List of Options

The following airspace change design options may provide suitable airspace volumes that meet the requirements set out within the Statement of Need v2 (ACP-088-2021, dated 28 Jan 22).

- Option 0 – Baseline / Do nothing.
- Option 1 – Permanent Danger Area.
- Option 2 – Permanent Danger Area with an access corridor.

List of Options

Considered Options	Description
Option 0 – Baseline / Do nothing.	The airspace environment that existed prior to the existence of the Temporary Danger Area (TDA) complex D098, based on Class G airspace.
Option 1 – Permanent Danger Area.	The transition of the current Temporary Danger Area (TDA) into a permanent Danger Area with a variety of airspace management constructs: 1A – DAAIS only. 1B – DAAIS and DACS.
Option 2 – Permanent Danger Area with an access corridor.	The transition of the current Temporary Danger Area (TDA) into a permanent Danger Area with an "open" corridor to enable transit of other air users.

Option 0 - Airspace Baseline / Do Nothing

- Description:
  - The baseline of the airspace construct to be used for this airspace change proposal is the airspace environment that existed prior to the existence of the Temporary Danger Area (TDA) complex D098.
  - A series of Controlled Airspace (CTA) structures are in existence (slide 19) with the lowest starting at Flight Level 5500ft. Below this is Class G airspace which is the focus of this ACP.
  - This airspace environment has been defined as Class G airspace, the Dungeness Restricted Area of over Dungeness Power Station, Dover Port Restricted Flying Zone, and the Lydd and Hythe Ranges Danger Areas.
  - It is this airspace environment that will form the baseline to be used to assess the impacts of the airspace options moving forward into Stage 2B.
  - It does not include the TDA D098 complex that has been in existence for approximately 2 years and has been extended on a rolling basis at the discretion of the CAA to meet UK Government requirements.

- Scope & Size:
  - No Temporary Danger Area.

Option 0 - Airspace Baseline / Do Nothing

- Airspace management:
  - Class G airspace requirements only.
  - No option to utilise novel technology as part of this proposal, such as a Detect and Avoid / See and Avoid capability, that is approved by the CAA.

- Usage
  - 2019 used to inform the airspace baseline, as it provided the most recent year where air traffic was not affected by Covid 19.
  - Air traffic within Class G is unpredictable in nature due to its unmonitored status and the freedom for air users to use it unconstrained. However, we have sought to capture the air traffic using a variety of sources.
  - It is estimated by extrapolation that 844 movements to/from foreign airfields arriving/departing from Lydd out of the [non-local] 6095 movements (these exclude local flights and touch-and go) to/from 247 different international and domestic aerodromes. By comparison, the annual total of all movements at Lydd including the local flights/circuit training etc. will be just under 29,000 for 2022.

Option 0 - Airspace Baseline / Do Nothing

- Regarding non-landing transits/overflights through the Lydd Airport Airspace and receiving a service from Lydd APP, the annual total for 2019 was 2245. If we therefore estimate that for the NW/SE transits to/from UK to N France and thereby crossing the ACP area of interest would be 50% of the total circa. 1123. The 2022 total figure is likely to be just above 2000, which equates to a 10% drop in GA transits, despite the Airport's movements/activity increasing by over 9% over the same period.

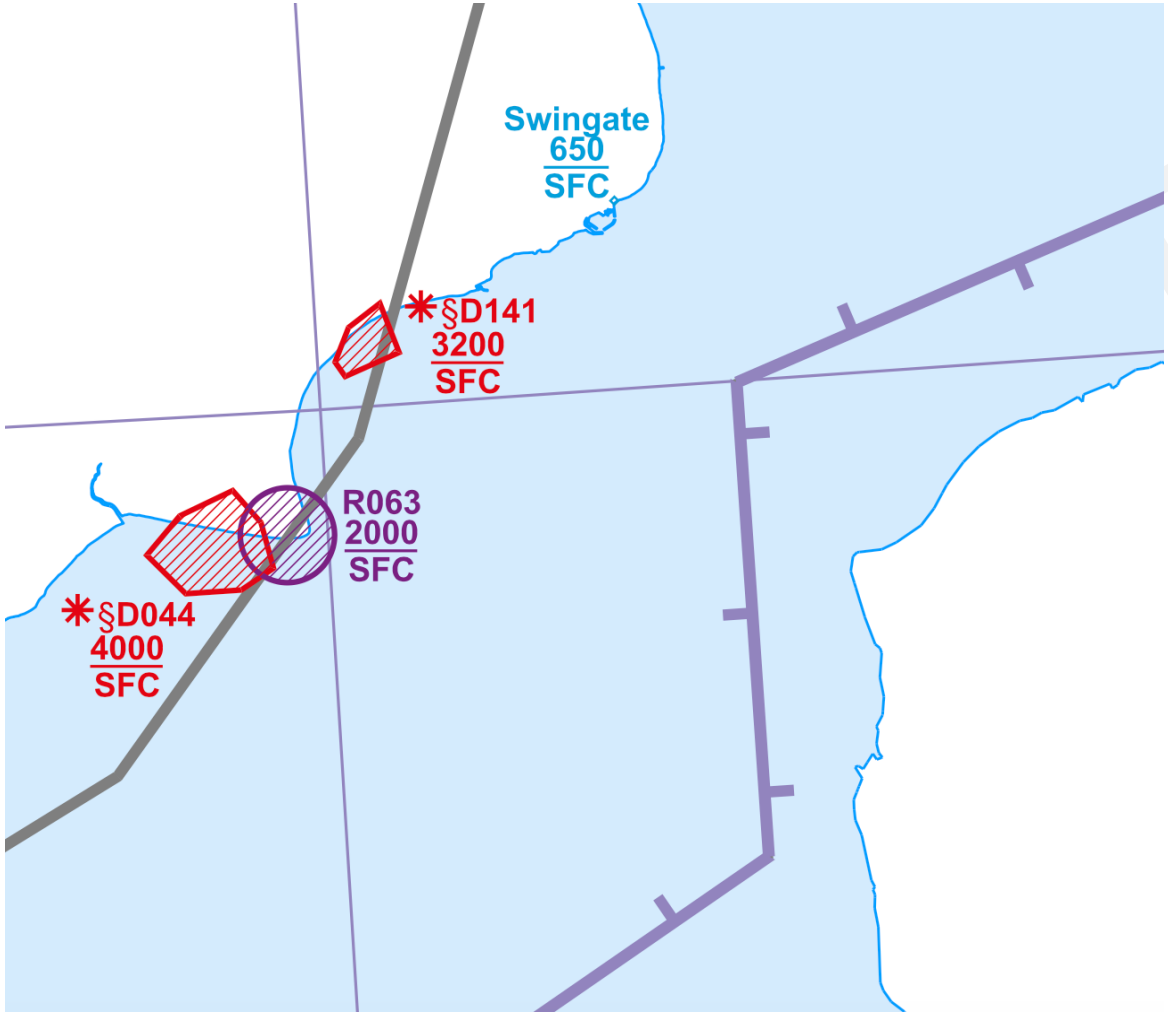
- The estimated total number of General Aviation (GA) flights crossing the English Channel GA and working Lydd APP is approx. 1844pa. This figure does not include the drones and SAR(H), AW159 and other Govt sponsored assets in the TDAs. NB this figure does not include traffic working London FIR.

- The bulk of the transits occur between 1000 and 1700L, (limited as they are by the opening and closing times of their base aerodromes) and in the summer, most go across at 2000-5500ft, with only a handful of (mainly) light helicopters wanting lower. Lydd Airport arrivals and departures from/to the SE seem to just about manage to clear the 1500ft TDA ceiling without having to do an overhead departure or unusual join.

Option 0 - Airspace Baseline / Do Nothing

- Since the existence of the TDA, Lydd Airport have had no emergency traffic needing descent into the TDA and only a couple of infringements.
- Outside of Lydd operating hours (0830-1900) there is very little cross-channel GA activity.
- General Aviation traffic would most likely route directly from their point of departure to their point of destination, using either VFR or IFR methods dependent on prevailing conditions and their operating approvals.

Option 0 - Airspace Baseline / Do Nothing: General Geographical Representation

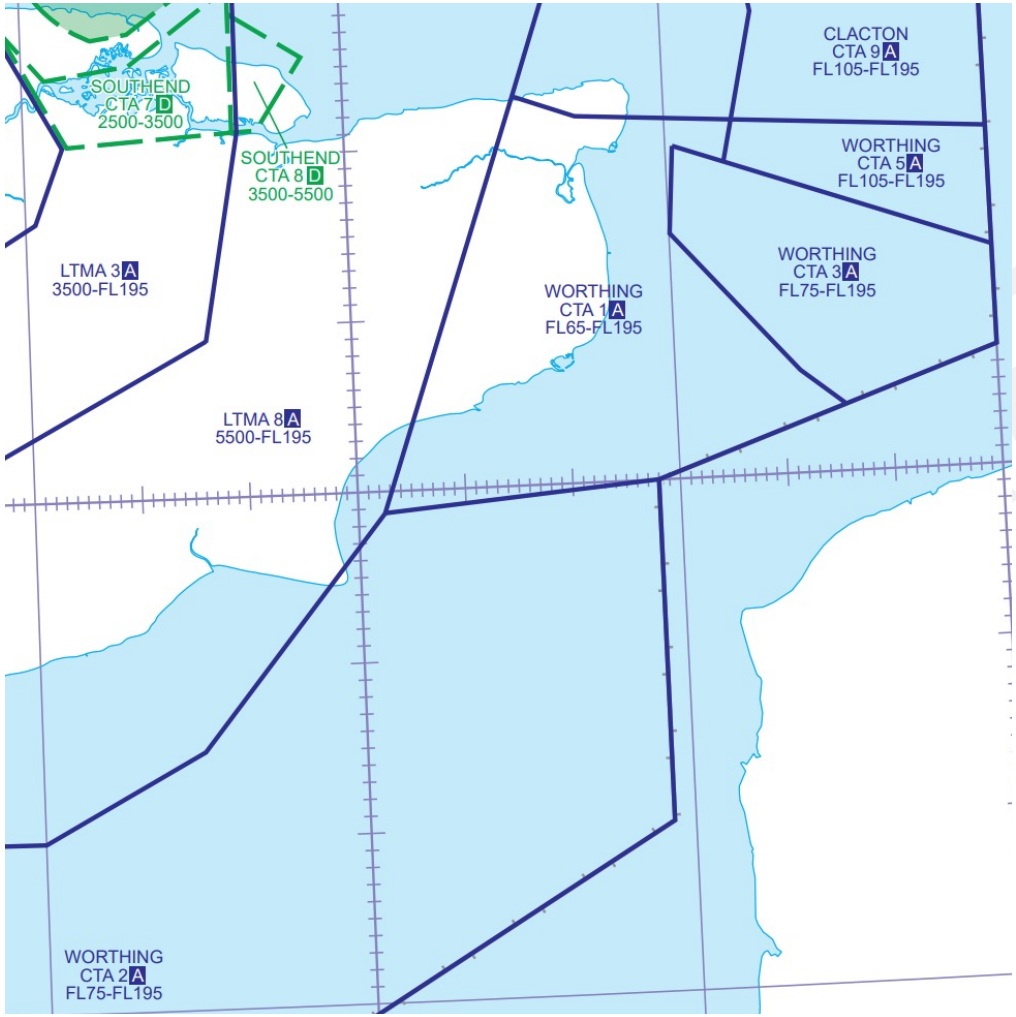


- Class G airspace below CTAs.
- International boundary with EU - Purple.
- Danger Areas – Red.
  - Lydd Ranges
  - Hythe Ranges
- Restricted Area - Purple Circle.
  - Dungeness Power Station.
- Restricted Area - light blue.
  - Dover Port

Bristow

TARGET ZERO

Option 0 - Airspace Baseline / Do Nothing: Airspace Representation



- Controlled Areas (CTA) with Class G below.

Option 0 - Airspace Baseline / Do Nothing: SWOT

	Helpful (to achieving objective)	Harmful (to achieving objective)
Internal (Organisation)	**Strengths** • Provides free access and use of airspace with little / no restrictions. (Class G).	**Weaknesses** • Class G airspace would prevent UAS meeting the operational need and therefore the statement of need. • Option inherently unsafe due to lack of the existence of a CAA approved DAA capability. • Additional environmental impact due to manned asset use for UAS tasking.
External (environment)	**Opportunities**	**Threats** • UAS operating in airspace volume does not have a DAA capability, therefore cannot comply with collision and detection requirements of Class G airspace. • Does not align with UK UAS Regulatory Framework, as BVLoS UAS cannot operate outside of segregate airspace.

Option 0 - Airspace Baseline / Do Nothing – Alignment with Design Principles

Priority	Design Principle	Alignment	
1	Maintain or enhance current levels of safety.	UAS operating within airspace does not have a DAA capability that is certified by the CAA and can ensure safety of all air users. As such operation of UAS within Class G airspace would be unsafe, due to no collision detection and avoidance from UAS.	X
2	Consider the requirements of all potential users.	By converting the TDA into Class G, this would not meet the requirements of the UAS operators conducting searches and Safety of Life at Sea (SOLAS) tasking as part of the HMG small boat response. This is due to risk to life tasking taking priority over other air user traffic, and aerial searching requires a segregated volume of airspace, due to the defined flight profiles required, and the high workload of the operators involved.	X
3	Minimise the impact on other airspace users.	Class G airspace would eliminate the impact on other airspace users, but would also prevent activities to meet the statement of need.	✓

Option 0 - Airspace Baseline / Do Nothing: Alignment with Design Principles

Priority	Design Principle	Alignment	
4	Comply with UAS regulatory framework.	Current UK UAS regulation restrict BVLOS UAS operation to DAs. This option therefore does not align with UK Regulatory Framework.	X
5	Operating area to be located over the sea.	This airspace change option is entirely over the sea within the English Channel and is therefore aligned with this Design Principle.	–
6	Minimise the noise and environmental impact on areas affected by the proposed change.	The use of UAS in preference to manned aviation to meet the requirements of the UK HMG small boat response, vastly reduces the environmental impact, due to the use of smaller aircraft and the corresponding smaller quantities of fuel expended.	–

Option 0 - Airspace Baseline / Do Nothing: UAS Regulation and Policy

Para 2.1.3 of CAP 722 Beyond visual line of sight operations, states:

- Operation of an unmanned aircraft beyond a distance where the remote pilot is able to respond to or avoid other airspace users by direct visual means (i.e. the remote pilot's observation of the unmanned aircraft) is considered to be a BVLOS operation.

- Unmanned aircraft intended for BVLOS operations will require either:
  - A **technical** capability which has been accepted as being at least equivalent to the ability of a pilot of a manned aircraft to 'see and avoid' potential conflictions. This is referred to as a Detect and Avoid (DAA) capability. Further details regarding DAA can be found at 3.6.

    Note:

    - *Any DAA capability would be expected to comply with Regulation (EU) 923/2012 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018: The Standardised European Rules of the Air (SERA) chapter 2 (avoidance of collisions), as adjusted by Rule 8 of the Rules of the Air Regulations 2015 (Rules for avoiding aerial collisions);*

Option 0 - Airspace Baseline / Do Nothing: UAS Regulation and Policy

or

- *An **operational** mitigation, which reduces the likelihood of encountering another aircraft to an acceptable level, which may be achieved either using airspace segregation, or another suitable method of ensuring such segregation.*

- No CAA approved detect and avoid capability that complies with Regulation (EU) 923/2012 the Standardised European Rules of the Air (SERA) chapter 2 (avoidance of collisions), as adjusted by Rule 8 of the Rules of the Air Regulations 2015 (Rules for avoiding aerial collisions), current exists nor forecast within the lifespan of this ACP. **This option is therefore unviable and cannot be continued.**

Design Option 1A – Permanent Danger Area with DAAIS

Description:

- TDA complex D098 transitioned into a permanent Danger Area, with DAAIS.
- Permanent Danger Area rather than Temporary.

Scope & Size:

- Geographic extent - The same lateral and vertical dimensions as TDA D098 complex (see next slide).

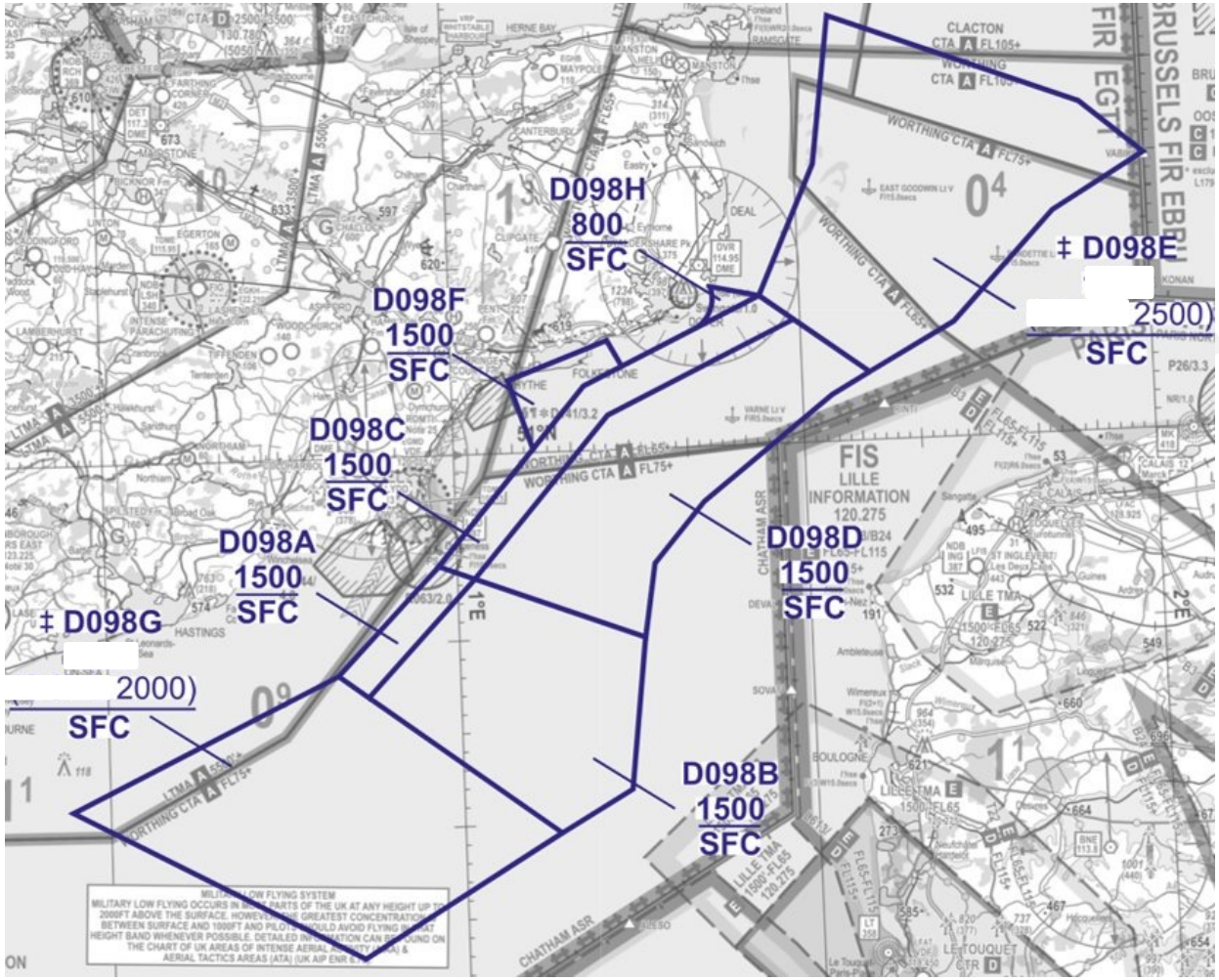
Airspace management:

- Danger Area segregating UAS from other air users.
- Danger Area Activity Information Service (DAAIS) provided by London Information when the DA is active.
- No Danger Area Crossing Service (DACS).
- Internal deconfliction agreement for TDA users only.
- Danger area inactive when not required.
- Danger area reverted to pre-existing airspace (baseline) should no operational requirement exist.

Activation:

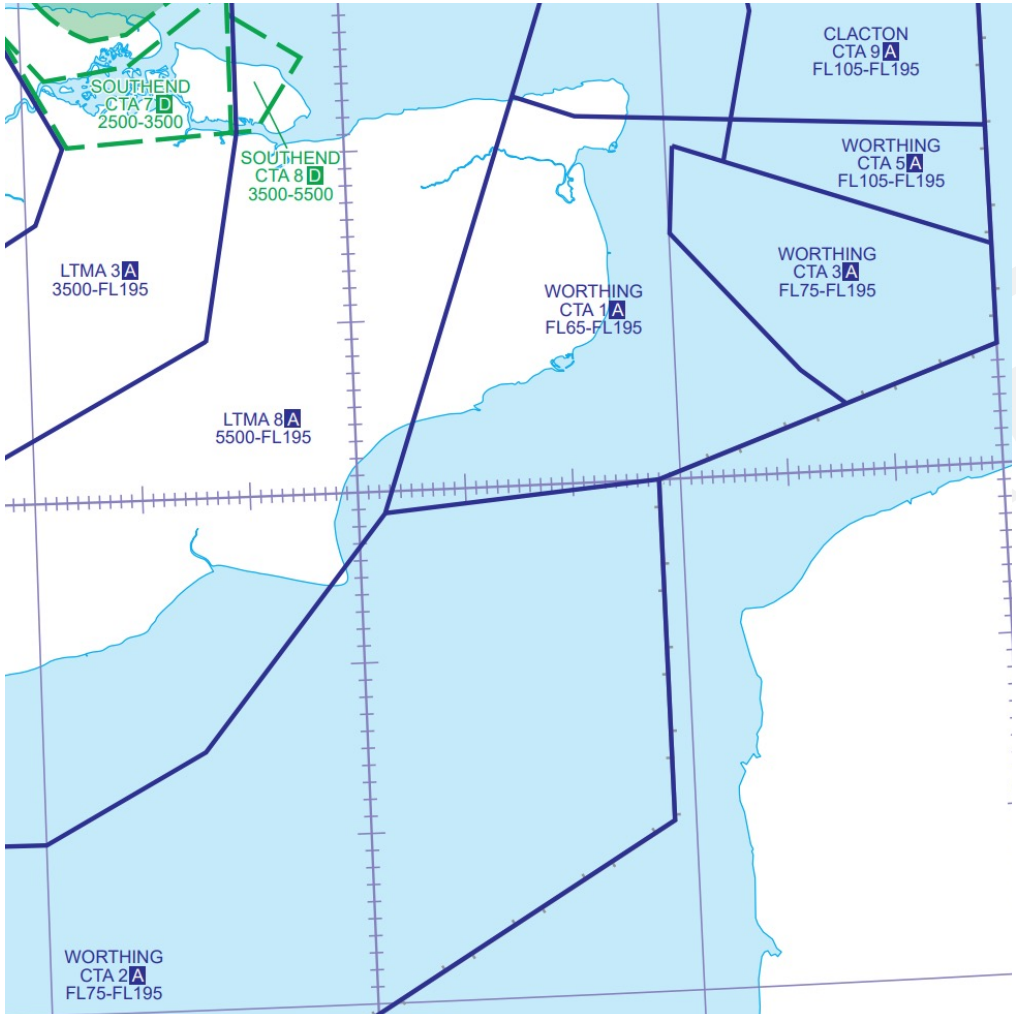
- Up to 365 days per year.

Design Option 1A - Permanent Danger Area with DAAIS: General Geographical Representation



- Class G
  airspace below CTAs.
- International boundary with EU runs along eastern edge of TDA complex (purple)
- Danger Areas – Grey.
  - Lydd Ranges
  - Hythe Ranges
- Restricted Area - Grey.
  - Dungeness
    Power Station.
- Restricted Area - Grey.
  - Dover Port

Design Option 1A - Permanent Danger Area with DAAIS: Airspace Representation



- Controlled Areas (CTA) with Class G below.

Design Option 1A – SWOT

	Helpful (to achieving objective)	Harmful (to achieving objective)
Internal (Organisation)	**Strengths** • Meets the statement of need. • Minimal impact on environment given the impact of manned alternatives for delivering operational requirement. • Complies with CAA UAS regulations, for safe operations by segregating airspace. • Complies with CAA airspace regulations, by creating permanent Danger Area rather than continually extending Temporary Danger Area.	**Weaknesses** • Impacts other air users' requirements. • Segregates a significant quantity of airspace from Surface to 1500/2000/2500 ft. • Continues to restrict airspace access for General Aviation wishing to operate in the English Channel.
External (environment)	**Opportunities** • Transparent CAP 1616 process, and appropriate engagement and consultation with stakeholders.	**Threats** • Continues to restrict airspace access for General Aviation wishing to operate in the English Channel. • Internal deconfliction for TDA users only. • Airspace Management.

Design Option 1A – Alignment with Design Principles

Priority	Design Principle	Alignment	
1	Maintain or enhance current levels of safety.	This option maintains the current levels of safety, by the use of a DA to segregate UAS from other air users.	✓
2	Consider the requirements of all potential users.	As this option is based on the historical TDA established by the UK Government, this didn't consider the requirements off all potential users. Therefore, by default, neither will the transition to a DA without completing the full CAP1616.	X
3	Minimise the impact on other airspace users.	Significant impact on General Aviation users who wish to transit the English Channel, at altitudes less than 1500ft i.e. under visual flight rules where visibility is reduced below 1500ft.	X

Design Option 1A – Alignment with Design Principles

Priority	Design Principle	Alignment	
4	Comply with UAS regulatory framework.	This option complies with existing UAS regulatory framework and airspace policy, due to establishing a permanent Danger Area to segregate UAS from other air users.	✓
5	Operating area to be located over the sea.	This airspace change option is entirely over the sea within the English Channel and is therefore aligned with this Design Principle.	–
6	Minimise the noise and environmental impact on areas affected by the proposed change.	The use of UAS in preference to manned aviation to meet the requirements of the UK HMG small boat response, vastly reduces the environmental impact, due to the use of smaller aircraft and the corresponding smaller quantities of fuel expended.	–

Design Option 1A – Stakeholder Feedback

We are looking for feedback and wish to understand how this option may impact you.

Item	Question	Feedback
1	Do you agree with the initial assessment against the agreed Design Principles? If not please provide details?	
2	How would this option impact you?	
3	Do you have any alternative airspace construct suggestions that will meet the statement of need and align with Design Principles?	
4	Do you have any alternative airspace management suggestions that can be considered that will meet the statement of need and Design Principles?	
5	Free Text	

Design Option 1B – Danger Area with DAAIS and DACS

Description:

- TDA complex D098 transitioned into a permanent Danger Area, with DAAIS and DACS.
- Permanent Danger Area rather than Temporary.

Scope & Size:

- Geographic extent - The same lateral and vertical dimensions as TDA D098 complex (see next slide).

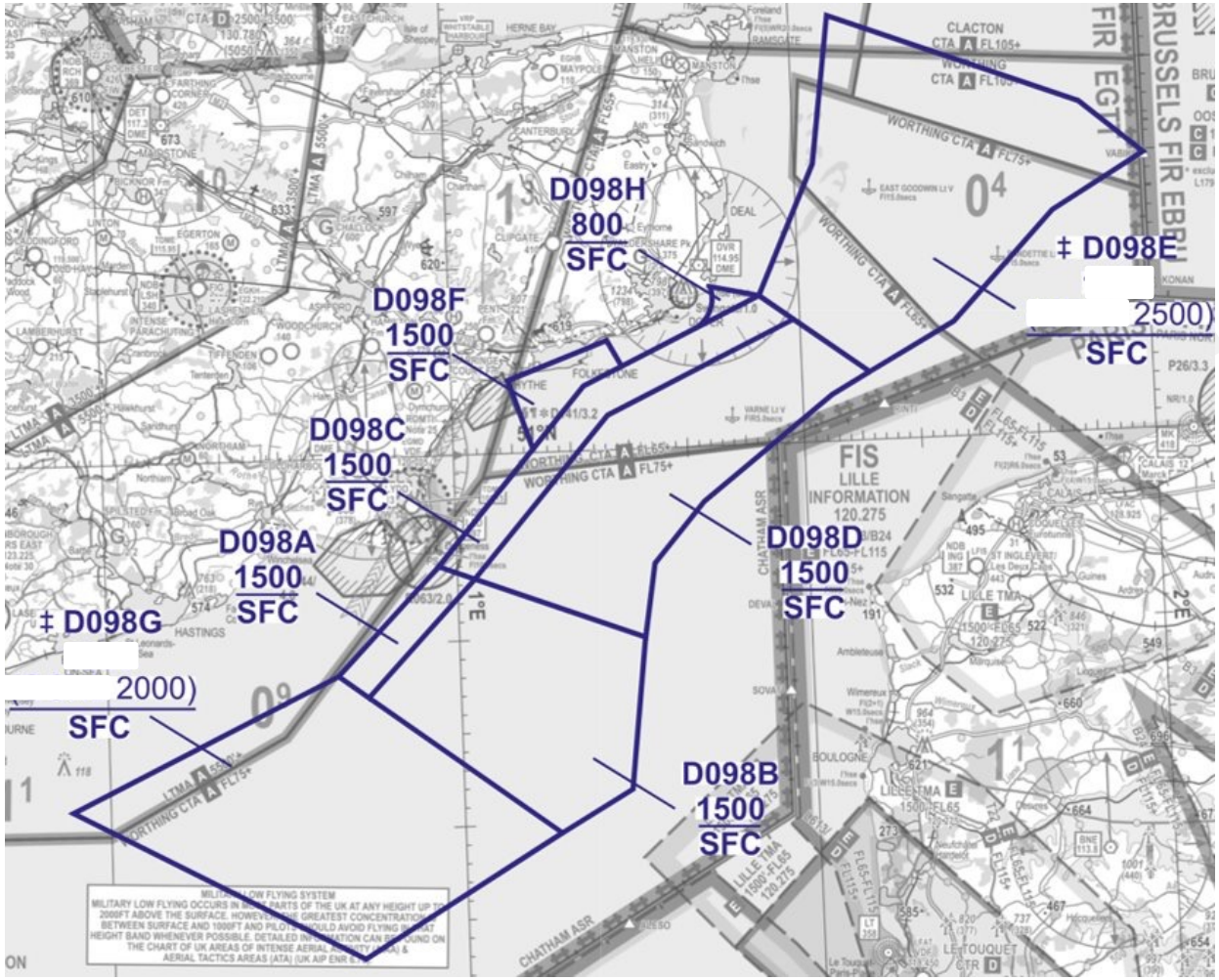
Airspace management:

- Danger Area segregating UAS from other air users.
- Danger Area Activity Information Service (DAAIS) provided by London Information when the DA is active.
- Danger Area Crossing Service (DACS) provided during air traffic service provider opening hours and DA active.
- Internal deconfliction agreement for TDA users only.
- Danger Area inactive when not required.
- Danger Area reverted to pre-existing airspace (baseline) should no operational requirement exist.

Activation:

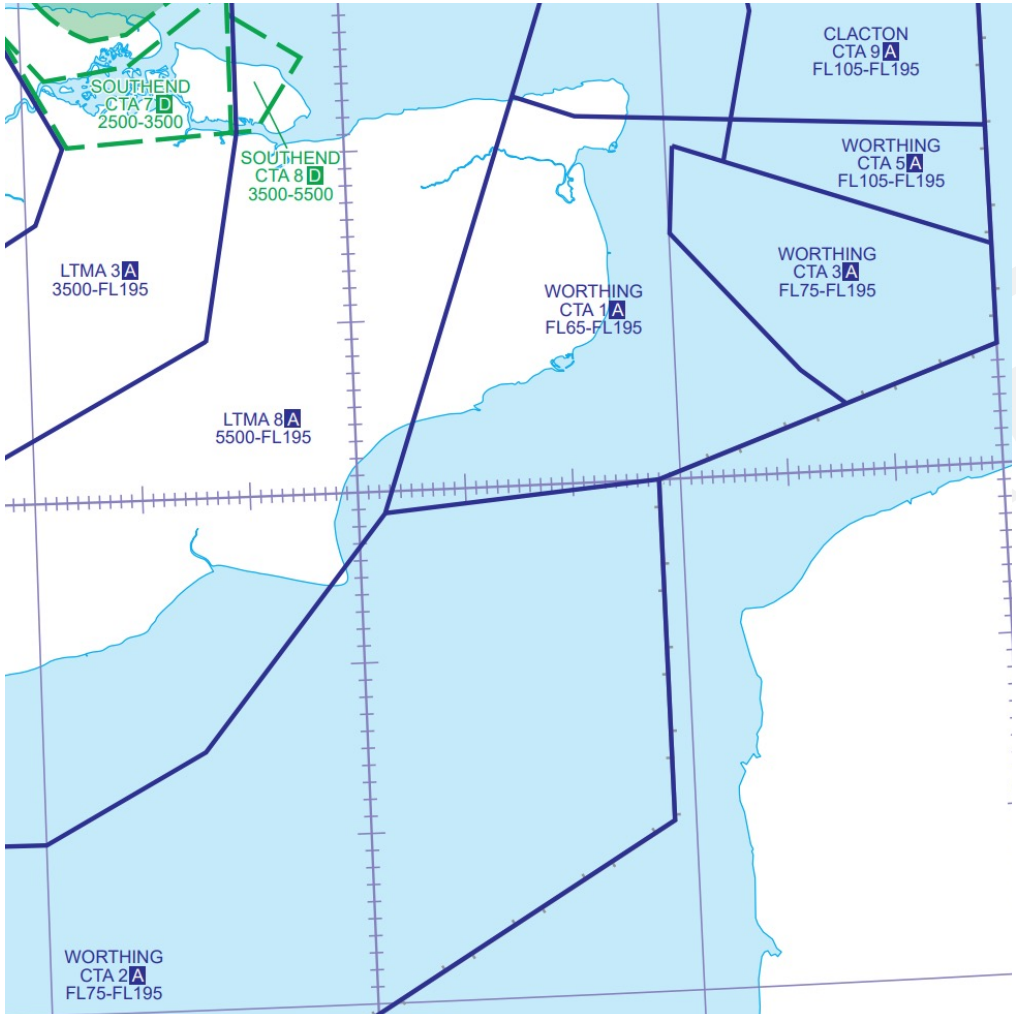
- Up to 365 days per year.

Design Option 1B - Danger Area with DAAIS and DACS: General Geographical Representation



- Class G airspace below CTAs.
- International boundary with EU runs along eastern edge of TDA complex (purple)
- Danger Areas – Grey.
  - Lydd Ranges
  - Hythe Ranges
- Restricted Area - Grey.
  - Dungeness Power Station.
- Restricted Area - Grey.
  - Dover Port

Design Option 1B - Danger Area with DAAIS and DACS: Airspace Representation



- Controlled Areas (CTA) with Class G below.

Design Option 1B – SWOT

	Helpful (to achieving objective)	Harmful (to achieving objective)
Internal (Organisation)	**Strengths** • Meets the statement of need. • Considers other airspace users' requirements, by providing a method to cross the Danger Area when active. • Minimal impact on environment given the impact of manned alternatives for delivering operational requirement. • Complies with CAA UAS regulations, for safe operations by segregating airspace.	**Weaknesses** • Segregates a significant quantity of airspace from Surface to 1500/2000/2500 ft.
External (environment)	**Opportunities** • Provides a route for General Aviation to cross the English Channel, enabling wider Airspace Access when the DA is active. • Provides a certified air traffic control function during opening hours. • Transparent CAP 1616 process, and appropriate engagement and consultation with stakeholders. • Increased air safety.	**Threats** • Continues to restrict airspace access for General Aviation wishing to operate in the English Channel.

Design Option 1B – Alignment with Design Principles

Priority	Design Principle	Alignment	
1	Maintain or enhance current levels of safety.	This option enhances the current levels of safety, by the use of a DA with DACS and DAAIS to manage safe crossings and movements within the active DA.	✓
2	Consider the requirements of all potential users.	The current volume of airspace (D098) currently meets the requirements for all potential users (UAS) when active.	✓
3	Minimise the impact on other airspace users.	Transitioning from a TDA to a DA, and enabling the transit of the DA via a DACS, this helps minimise the impact on other air users.	✓

Design Option 1B – Alignment with Design Principles

Priority	Design Principle	Alignment	
4	Comply with UAS regulatory framework.	This option complies with existing UAS regulatory framework and airspace policy, due to establishing a permanent Danger Area to segregate UAS from other air users.	✓
5	Operating area to be located over the sea.	This airspace change option is entirely over the sea within the English Channel and is therefore aligned with this Design Principle.	–
6	Minimise the noise and environmental impact on areas affected by the proposed change.	The use of UAS in preference to manned aviation to meet the requirements of the UK HMG small boat response, vastly reduces the environmental impact, due to the use of smaller aircraft and the corresponding smaller quantities of fuel expended.	–

Design Option 1B – Stakeholder Feedback

We are looking for feedback and wish to understand how this option may impact you.

Item	Question	Feedback
1	Do you agree with the initial assessment against the agreed Design Principles? If not please provide details?	
2	How would this option impact you?	
3	Do you have any alternative airspace construct suggestions that will meet the statement of need and align with Design Principles?	
4	Do you have any alternative airspace management suggestions that can be considered that will meet the statement of need and Design Principles?	
5	Free Text	

Design Option 2 – Danger Area with Corridor

- Description:
  - TDA complex D098 transitioned into a permanent Danger Area, with Class G corridor to allow aircraft to route through the Danger Area.
  - Permanent Danger Area rather than temporary.

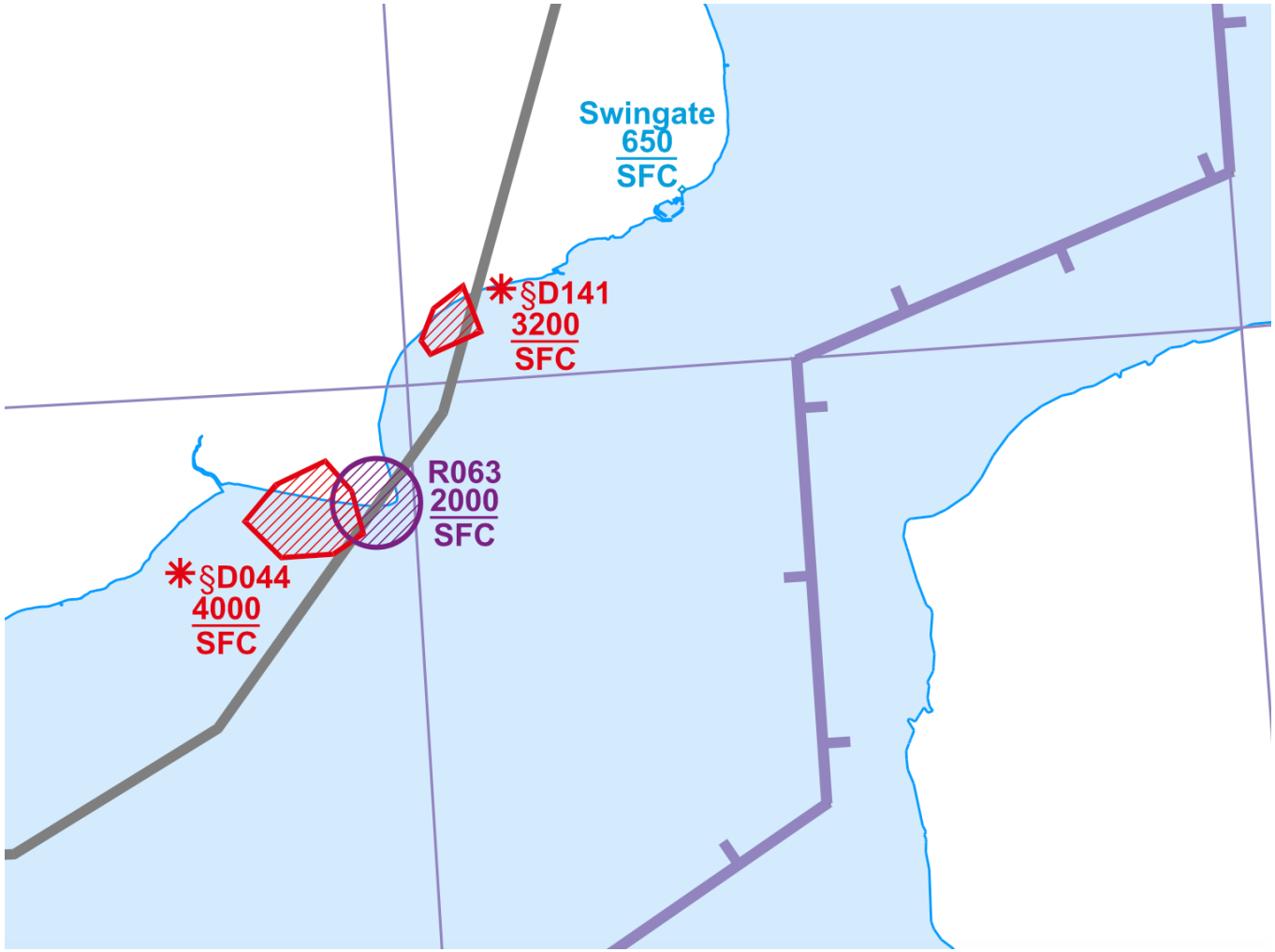
- Scope & Size:
  - Geographic extent - The same lateral dimensions as TDA D098 complex (see next slide).
  - Ceiling of 2500ft AMSL across the Danger Area, to facilitate corridor from Surface to 1500ft.

- Airspace Management:
  - Danger Area segregating UAS from other air users.
  - Danger Area Activity Information Service (DAAIS) provided by London Information when the DA is active.
  - Danger area inactive when not required.
  - Danger area reverted to pre-existing airspace (baseline) should no operational requirement exist.

Activation:

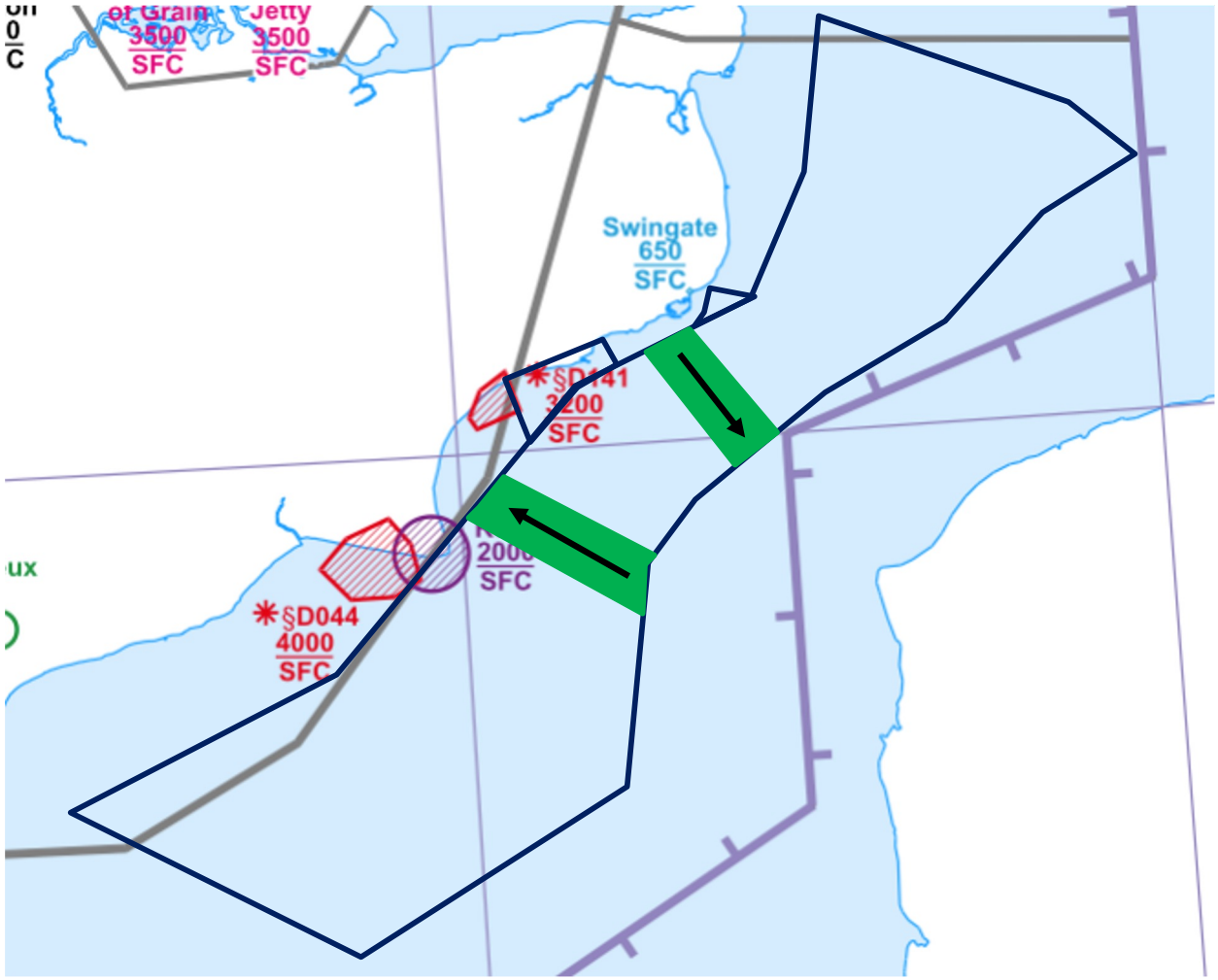
- Up to 365 days per year.

Design Option 2 - Airspace Baseline / Do Nothing: General Geographical Representation



- Class G airspace below CTAs.
- International boundary with EU - Purple.
- Danger Areas – Red.
  - Lydd Ranges
  - Hythe Ranges
- Restricted Area - Purple Circle.
  - Dungeness Power Station.
- Restricted Area - light blue.
  - Dover Port

Design Option 2 – Airspace Representation



- Two one way corridors within Danger Area complex to allow routing across – Green.
- DA complex of D008 D ceiling increased to 2500ft to enable corridor from SFC to 1500ft.
- Doesn't interfere with CTAs.

Design Option 2 – SWOT

	Helpful (to achieving objective)	Harmful (to achieving objective)
Internal (Organisation)	**Strengths** • Considers other airspace users requirements. • Minimal impact on environment given the impact of manned alternatives for delivering operational requirement. • Complies with CAA UAS regulations, for safe operations by segregating airspace.	**Weaknesses** • Likely to reduce safety, due to funnelling of air users by the airspace construct. • Requires low level flight. • Impacts UAS operational delivery. UAS unable to operate in Class G • Doesn't meet statement of need or considers requirements of other UAS operators. • Likely increased negative environmental impact due to extended routing of air traffic over land. • Volume of airspace will increase due to elevated ceilings of D098 to 2500ft.
External (environment)	**Opportunities** • Provides a standardised way to route across the English Chanel at low level without ATC approval. • Transparent CAP 1616 process, and appropriate engagement and consultation with stakeholders.	**Threats** • Continues to restrict airspace access for General Aviation wishing to operate in the English Channel. • Potential channelling of air traffic. • Additional complexity of airspace construct. • More complicated NOTAMs. • Potential for General Aviation traffic to have to fly at lower altitudes to cross the channel.

Design Option 2 – Alignment with Design Principles

Priority	Design Principle	Alignment	
1	Maintain or enhance current levels of safety.	This option is likely to reduce the current levels of safety, due to the high probability of air users being funnelled as they transit through the corridor.	X
2	Consider the requirements of all potential users.	The volume of airspace is not aligned to the current airspace volume (D098) and therefore does not meet the requirements for all potential UAS users.	X
3	Minimise the impact on other airspace users.	Establishing a DA with a corridor to enable the transit of other air users through the segregated airspace, helps minimise the impact on other air users.	✓

Design Option 2 – Alignment with Design Principles

Priority	Design Principle	Alignment	
4	Comply with UAS regulatory framework.	This option complies with existing UAS regulatory and airspace policy, due to establishing a permanent Danger Area to segregate UAS from other air users.	✓
5	Operating area to be located over the sea.	This airspace change option is entirely over the sea within the English Channel and is therefore aligned with this Design Principle.	–
6	Minimise the noise and environmental impact on areas affected by the proposed change.	The use of UAS in preference to manned aviation to meet the requirements of the UK HMG small boat response, vastly reduces the environmental impact, due to the use of smaller aircraft and the corresponding smaller quantities of fuel expended.	–

Design Option 2 – Stakeholder Feedback

We are looking for feedback and wish to understand how this option may impact you.

Item	Question	Feedback
1	Do you agree with the initial assessment against the agreed Design Principles? If not please provide details?	
2	How would this option impact you?	
3	Do you have any alternative airspace construct suggestions that will meet the statement of need and align with Design Principles?	
4	Do you have any alternative airspace management suggestions that can be considered that will meet the statement of need and Design Principles?	
5	Free Text	

Summary

- Three options have been developed for initial consideration as part of ACP-2021-088.
- Options 1B, 2 appear to provide viable options to minimise the impact on stakeholders whilst providing appropriate airspace to enable the delivery of UAS operations that meet the Statement of Need.
- Feedback from stakeholders will help refine the options, prior to their evaluation against the design principles, which will be published on the airspace change portal.

Next Steps

- Stage 2A: Airspace Design Evaluation against Design Principles. (17 to 30 Jan 23).

- Stage 2A: Publish Evaluation on the CAA ACP Portal. (30 Jan 23).

- *Stage 2B: Options Appraisal (30 Jan to 10 Feb 23).*
  - *Each possible option, even if there is only one, is assessed to understand the impact, both positive and negative. The change sponsor carries out the options appraisal against requirements set by the CAA in an iterative approach: the Initial appraisal is the first of three appraisal phases. These are uploaded to the ACP online portal.*

- *Stage 2: CAA Develop and Assess Gateway (28 April 23).*

- *Stage 3: Consultation (June – Aug 23).*

Points of Contact

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