



ACP-2021-078

**Enabling Remotely Piloted Aircraft Operations
from RAF Fairford**

**Gateway Documentation:
Stage 2 – Develop & Assess**

Step 2A – Design Principle Evaluation

Introduction

This document forms part of Stage 2A of ACP-2021-078. The document aims to demonstrate to the CAA how the design options presented have responded to the Design Principles agreed at Stage 1B. This was achieved through the use of the feedback received from stakeholders as well as an internal review of each design option against the standardised format laid out in Appendix E of CAP 1616.

Design Principles

The Design Principles agreed at Stage 1 are as follows:

| Design Principle | | Priority |
|------------------|--|----------|
| a | Provide a safe environment for airspace users | 1 |
| b | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | 2 |
| c | Minimise the impact to other airspace users | 3 |
| d | Adhere to FUA principles and strategy | 3 |
| e | Where possible and practicable, accommodate the Airspace Modernisation Strategy | 4 |
| f | Endeavour to make the airspace as accessible as possible | 5 |
| g | Minimise the environmental impact of non-participating aircraft | 6 |

Design Options

The design options evaluated in this document are:

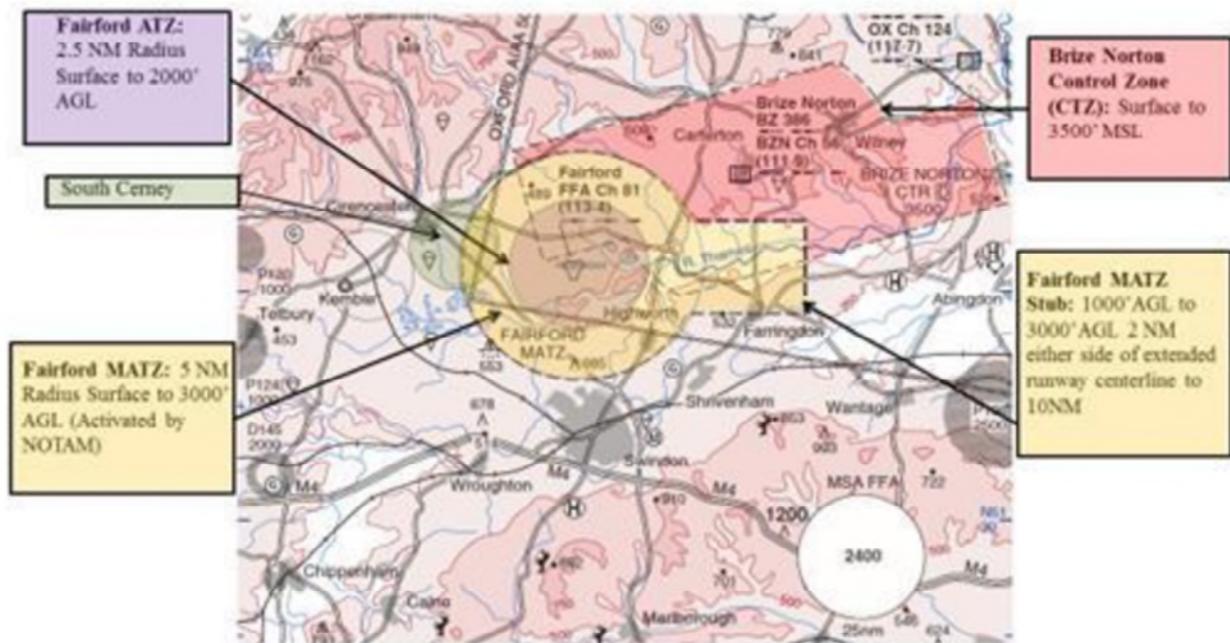
0. Do nothing
1. HALE Option 1 - Segmented Danger Areas
2. HALE Option 2 - Segmented Danger Areas
3. MALE Option 1 - Segmented Danger Areas
4. MALE Option 2 - Segmented Danger Areas
5. MALE Option 3 - Segmented Danger Areas
6. MALE Option 4 - Integration into Controlled Airspace

For the options proposing the creation of Danger Areas, the proposed airspace is expected to be activated approximately 2-3 times per week for approximately 3 hours per activation. In an effort to have as little impact as possible on other airspace users, all

activations will be between 1 hour after sunset and 1 hour before sunrise unless in extremis, which would be subject to case-by-case approval by the CAA. Each activation would be subject to a NOTAM at least 24 hours in advance.

These options were submitted to stakeholders via email and the airspace change portal. Additionally, stakeholders were asked to contact the Sponsor if their operations would be adversely impacted by the proposal. Stakeholders broadly agreed that Option 0 “Do Nothing” did not meet the Design Principles. Overall, most feedback indicated that HALE Options 1 and 2 and MALE Options 1-4 aligned with design principles. Outliers to this were primarily related to MALE Options 1 and 2 and their use of extended transit corridors and existing Danger Areas for transit. The proposed size/volume of airspace and compliance with the Flexible Use Airspace (FUA) was questioned by stakeholder. The change sponsor responded that the airspace design proposals for initial climb and descent were the minimum required for safe operations and to facilitate successful mission accomplishment but agreed that the use of existing Danger Areas for transit was not in compliance with FUA strategy. Other stakeholders stated that daylight activation periods would likely cause significant impact for other airspace users. Specific details of the engagement process are included in the Design Options Stakeholders Engagement document.

| Design Principle Evaluation | | OPTION NO: 0 | | |
|---|--|-----------------|----------------|------------|
| <i>Do Nothing</i> | | ACCEPT / REJECT | | |
| The Sponsor is currently unable to achieve the level of operation that is required as per the Statement of Need as RAF Fairford sits within Class G airspace. Even if integration were possible, there would still be a requirement for segregated airspace to link to controlled airspace. | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT MET | PARTIAL | MET |
| This design option would not facilitate a safe environment for beyond visual line of sight (BVLOS) operations in accordance with current regulation, which currently demands segregated airspace. It would also not provide a safe environment for other airspace users. | | | | |
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| The “do nothing” option would not provide an appropriate dedicated take-off and landing site meeting operational requirements of the RPAS or the segregated airspace currently required by regulations. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| The “do nothing” option would impose no impact on other airspace users. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| The “do nothing” option would impose no impact on FUA principles and strategy. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |
| A specific goal of the Airspace Modernisation Strategy (AMS) is to accommodate RPAS in UK airspace. Under the current regulatory framework, the “do nothing” option would not allow for RPAS accommodation at RAF Fairford. The AMS is further required to support delivery of Defence and Security objectives. The “do nothing” option does not meet this objective. This option would impose no impact on the other goals of the Airspace Modernisation Strategy. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
| The “do nothing” option would continue to allow the current level of airspace access for manned aircraft but it does not allow access for RPAS in its current configuration. | | | | |



RAF Fairford and Brize Norton Airspace

Option 0 Summary

Option 0 aimed to examine whether doing nothing would facilitate the operations of RPAS BVLOS at RAF Fairford in accordance with the Statement of Need.

The 'do nothing' option does not allow for BVLOS RPAS operations to occur at RAF Fairford and therefore does not align with Design Principles A, B, and F or the Statement of Need. It only partially aligns with Design Principles E and F. Stakeholder feedback agreed with this assessment and broadly indicated that Option 0 does not align with the established Design Principles.

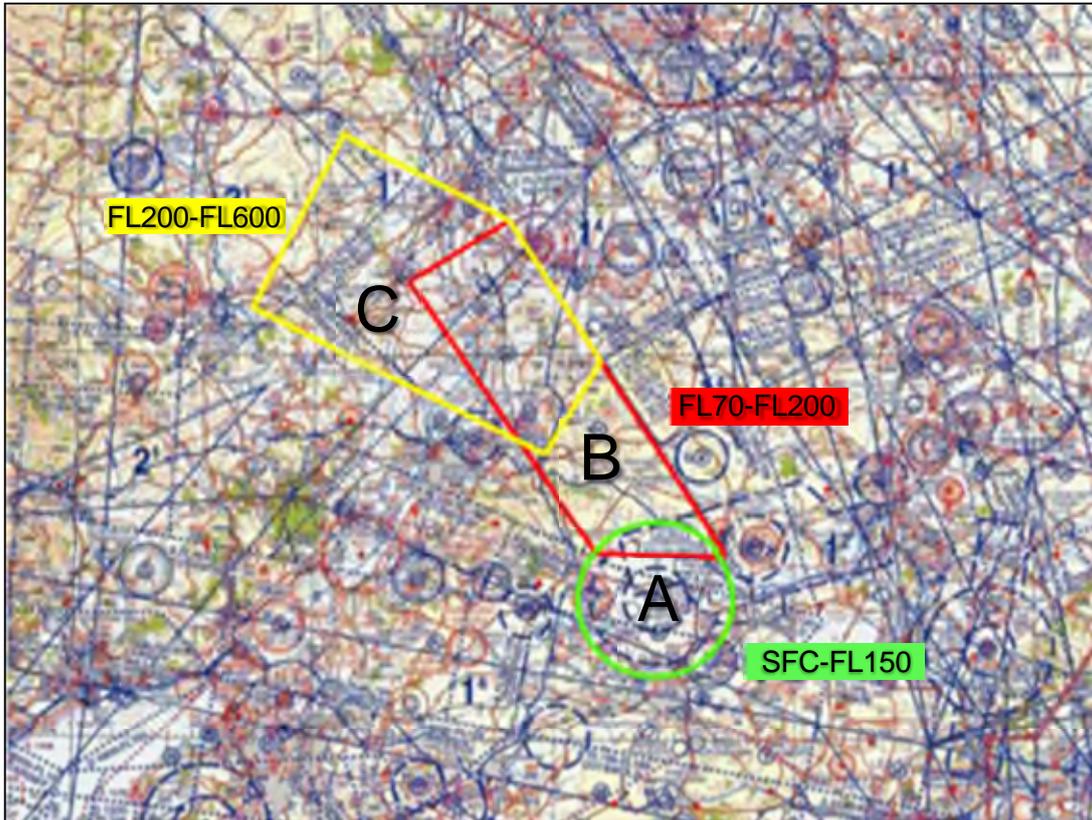
This option has been rejected but will be carried forward to serve as a baseline for the remaining options in Step 2B in accordance with the requirements of CAP 1616¹.

¹ p.41 para. 133

HALE Option 1

In this option, segment A is a 6NM radius centred on RAF Fairford from the surface to FL150. Segment B is an 8NM wide corridor that connects segment A to segment C. Segment B has an altitude of FL70-FL200. Segment C has an altitude of FL200- FL600.

HALE Option 1



| Design Principle Evaluation | | OPTION NO: 1 | | |
|---|---|-----------------|----------------|------------|
| <i>HALE Option 1</i> | | ACCEPT / REJECT | | |
| <i>Segmented Danger Areas</i> | | | | |
| <p>Danger Areas are currently the primary method of achieving segregated airspace which is currently required in the UK for operations of BVLOS RPAS without a CAA-approved Detect and Avoid (DAA) capability.</p> <p>Danger Areas in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACCS) or Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded.</p> | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT-MET | PARTIAL | MET |
| <p>This design option would facilitate a safe environment for BVLOS HALE RPAS operations in accordance with current regulation, which currently demands segregated airspace. It would also provide a safe environment for other airspace users.</p> | | | | |

| | | | | |
|--|--|----------------|----------------|------------|
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| This option meets the operational requirements of USAF HALE RPAS as well as the segregated airspace requirement of current regulations. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| Some impacts are expected in segment A if the altitude of SFC-FL150 prevents GAT flight planning through the higher portion of this segment. The proposed times, frequency of activation, and expectation of a DACS will reduce the overall impact to other airspace users but some impact can be expected. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |
| Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
| Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users. | | | | |

HALE Option 1 Summary

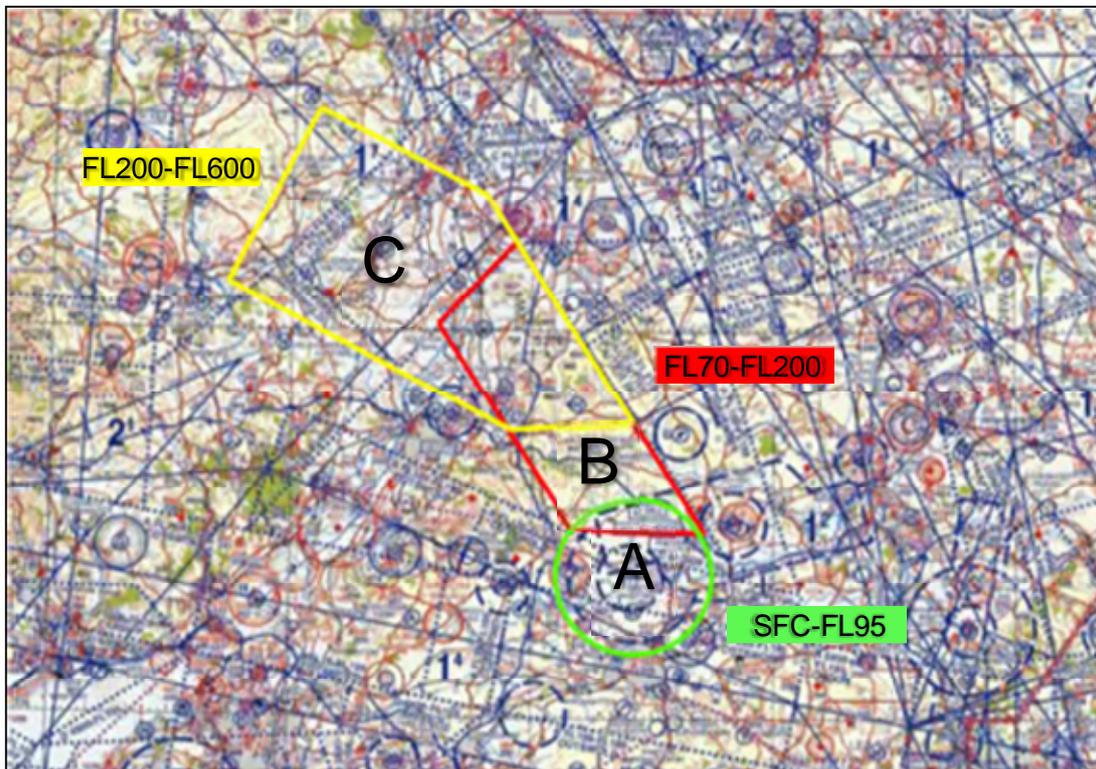
This design option was deemed to have met most, but not all, Design Principles. Some impacts to GAT flight planning are expected in segment A but due to the proposed activation times, frequency of activation, and expectation of a DACS, the overall impact to other users of the airspace is expected to be low. Stakeholder feedback indicated that HALE Option 1 generally aligned with the Design Principles.

This option will be further assessed at the Initial Options Appraisal at Step 2B.

HALE Option 2

In this option, segment A is a 6NM radius centred on RAF Fairford from the surface to FL95. In this option, segment B avoids Cotswold CTA 18 to the northwest. The altitude remains FL70-FL200. Segment C is slightly larger than HALE Option 1 and the altitude remains FL200-FL600.

HALE Option 2



| | | | | |
|--|---|---------------------|----------------|------------|
| Design Principle Evaluation | | OPTION NO: 2 | | |
| <i>HALE Option 2</i> | | ACCEPT / REJECT | | |
| <i>Segmented Danger Areas</i> | | | | |
| Danger Areas are currently the primary method of achieving segregated airspace which is currently required in the UK for operations of BVLOS RPAS without a CAA-approved Detect and Avoid (DAA) capability. | | | | |
| Danger Areas in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACS) or Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded. | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT MET | PARTIAL | MET |
| This design option would facilitate a safe environment for BVLOS HALE RPAS operations in accordance with current regulation, which currently demands segregated airspace. It would also provide a safe environment for other airspace | | | | |

| | | | | |
|--|--|----------------|----------------|------------|
| users. | | | | |
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| This option meets the operational requirements of USAF HALE RPAS as well as the segregated airspace requirement of current regulations. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| Some impacts may occur in segment A if the altitude of SFC-FL95 prevents GAT flight planning through this segment. Based on an initial evaluation of ADS-B data this impact is expected to be minimal. Overall, due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact on other airspace users. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |
| Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
| Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users. | | | | |

HALE Option 2 Summary

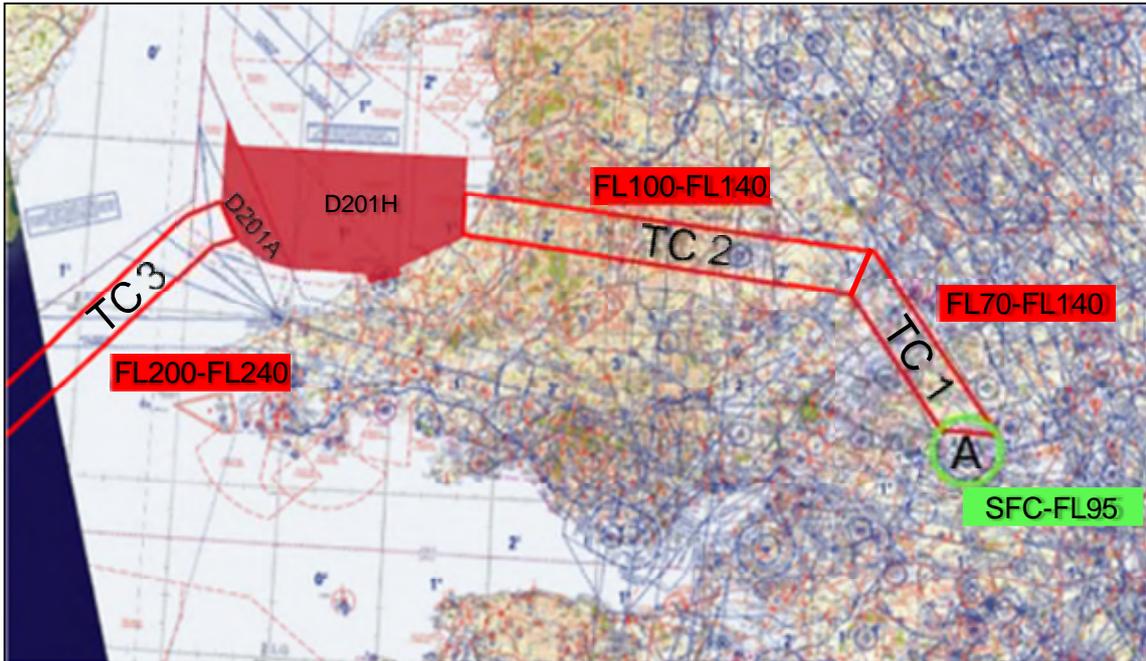
This design option was deemed to have met all Design Principles. It is very similar to HALE Option 1 but due to the lower ceiling of segment A, fewer impacts are expected to airspace users from FL95-FL150. Stakeholder feedback indicated that HALE Option 2 generally aligned with the Design Principles.

This option will be further assessed at the Initial Options Appraisal at Step 2B.

MALE Option 1

In this option, segment A is a 6NM radius centred on RAF Fairford from the surface to FL95. In order to facilitate a segregated transition out of UK airspace, an 8NM- wide transit corridor connects segment A to Danger Area D201 and then southwest to the edge of the FIR. This option segments the corridor into three with different altitudes.

MALE Option 1



| | | | | |
|--|---|---------------------|----------------|------------|
| Design Principle Evaluation | | OPTION NO: 3 | | |
| <i>MALE Option 1</i> | | ACCEPT / REJECT | | |
| <i>Segmented Danger Areas</i> | | | | |
| Danger Areas are currently the primary method of achieving segregated airspace which is currently required in the UK for operations of BVLOS RPAS without a CAA-approved Detect and Avoid (DAA) capability. | | | | |
| Danger Areas and transit corridors in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACs) or Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded. | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT-MET | PARTIAL | MET |
| This design option would facilitate a safe environment for BVLOS MALE RPAS operations in accordance with current regulation, which currently demands segregated airspace. It would also provide a safe environment for other airspace users. | | | | |

| | | | | |
|---|--|----------------|----------------|------------|
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| This option meets the operational requirements of USAF MALE RPAS as well as the segregated airspace requirement of current regulations. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| Some impacts may occur in segment A if the altitude of SFC-FL95 prevents GAT flight planning through this segment. Based on an initial evaluation of ADS-B data this impact is expected to be minimal. The activations of the transit corridors and EG D201 is expected to impose a moderate impact to other airspace users. The proposed times, frequency of activation, expectation of a DACS, and transit corridor altitudes, will minimize this impact somewhat but overall, this option is has been determined to not meet Design Principle C. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible. Despite this, the inclusion activating EG D201 to facilitate transit does not fully meet the FUA principles and strategy as this DA is larger than what is strictly required to facilitate MALE RPA transit. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |
| Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
| Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users. | | | | |

MALE Option 1 Summary

It was determined that this design option does not align with the Design Principles. Specifically, it did not meet Design Principle C and was assessed to only partially meet Design Principle D.

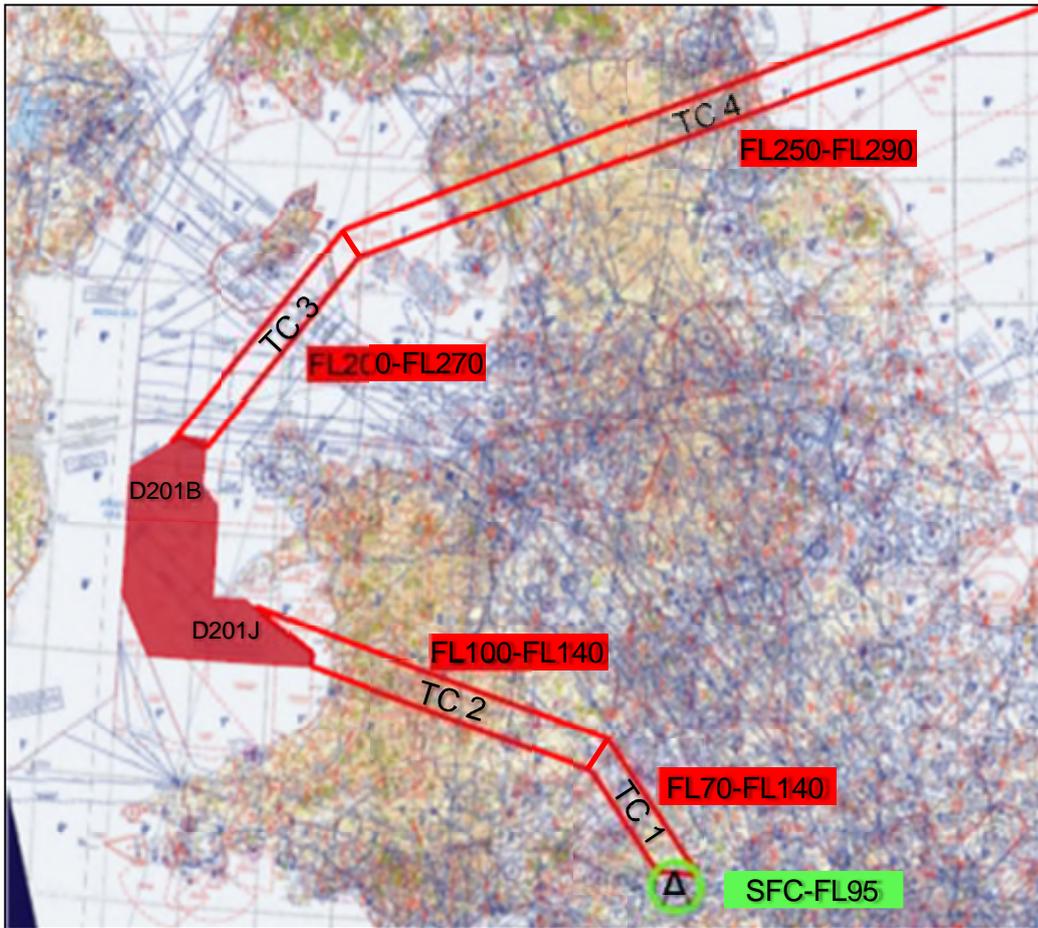
Stakeholders generally indicated that this option aligned with the Design Principles but some stakeholders felt that this option did not align with Design Principle C and D due to locations and altitudes of the transit corridors and the use of EG D201 for transit.

This option has been rejected and will not be carried forward to Step 2B. The Sponsor welcomes feedback on alternative location of transit corridors that would further minimize the impact to other airspace users.

MALE Option 2

In this option, segment A is a 6NM radius centred on RAF Fairford from the surface to FL95. In order to facilitate a segregated transition out of UK airspace, an eight nautical mile wide transit corridor connects segment A to Danger Area D201 and then northwest to the border of the Copenhagen FIR. This option segments the corridor into four with different altitudes, as needed, to minimise impacts to other airspace users.

MALE Option 2



| | |
|--|---------------------|
| Design Principle Evaluation | OPTION NO: 4 |
| <i>MALE Option 2</i> <i>Segmented Danger Areas</i> | ACCEPT / REJECT |
| <p>Danger Areas are currently the primary method of achieving segregated airspace which is currently required in the UK for operations of BVLOS RPAS without a CAA-approved Detect and Avoid (DAA) capability.</p> <p>Danger Areas and transit corridors in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACS) or</p> | |

| | | | | |
|---|--|----------------|----------------|------------|
| Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded. | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT MET | PARTIAL | MET |
| This design option would facilitate a safe environment for BVLOS MALE RPAS operations in accordance with current regulation, which currently demands segregated airspace. It would also provide a safe environment for other airspace users. | | | | |
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| This option meets the operational requirements of USAF MALE RPAS as well as the segregated airspace requirement of current regulations. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| Some impacts may occur in segment A if the altitude of SFC-FL95 prevents GAT flight planning through this segment. Based on an initial evaluation of ADS-B data this impact is expected to be minimal. The activations of the transit corridors and EG D201 is expected to impose a moderate impact to other airspace users. The proposed times, frequency of activation, expectation of a DACS, and transit corridor altitudes, will minimize this impact somewhat but overall, this option is has been determined to not meet Design Principle C. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible. Despite this, the inclusion activating EG D201 to facilitate transit does not fully meet the FUA principles and strategy as this DA is larger that what is strictly required to facilitate MALE RPA transit. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |
| Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
| Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users. | | | | |

MALE Option 2 Summary

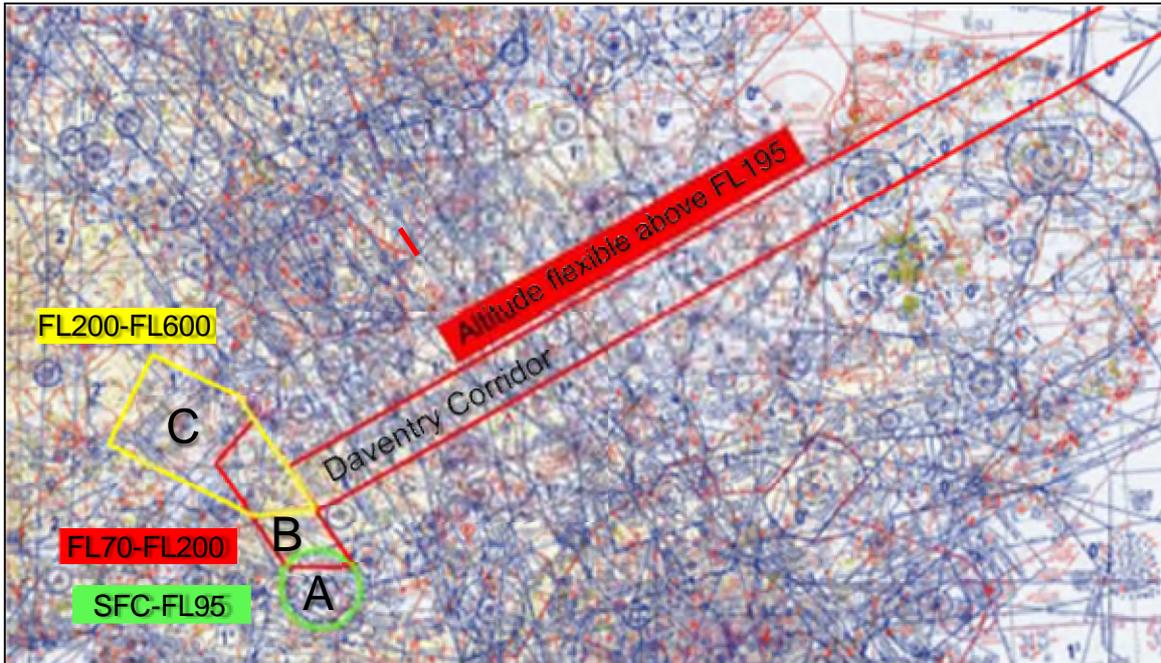
It was determined that this design option does not align with the Design Principles. Specifically, it did not meet Design Principle C and was assessed to only partially meet Design Principle D. Stakeholders generally indicated that this option aligned with the Design Principles but some felt that it did not align with Design Principle C and D due to the locations and altitudes of the transit corridors as well as the use of EG D201 for transit.

This option has been rejected and will not be carried forward to Step 2B. The Sponsor welcomes feedback on alternative location of transit corridors that would further minimize the impact to other airspace users.

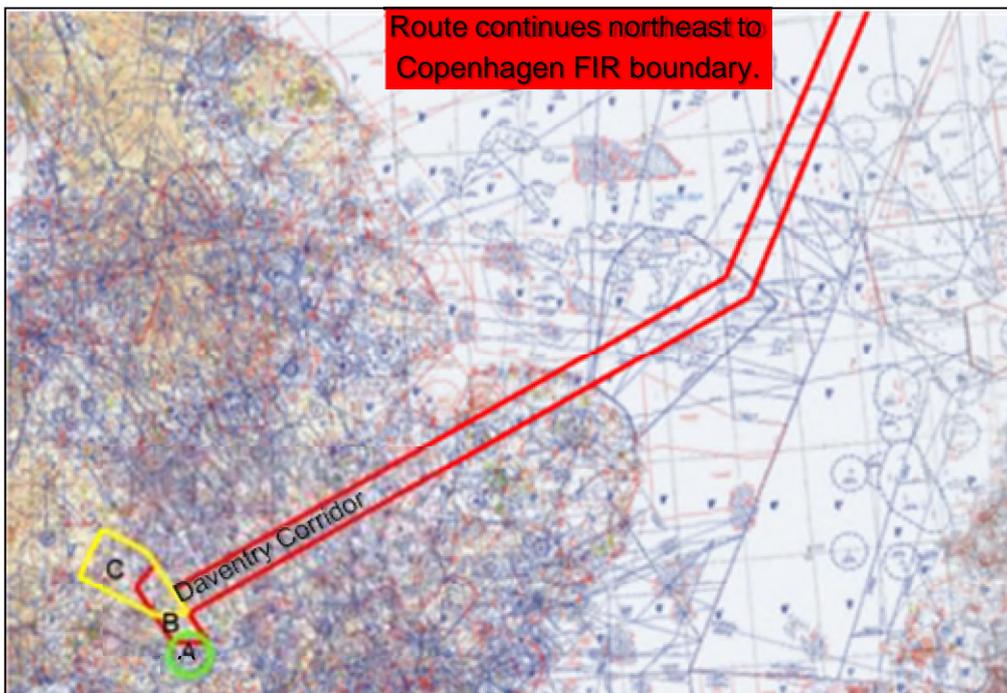
MALE Option 3

In this option, a west to east MALE corridor is paired with segments A, B, and C from HALE Option 2. This design allows MALE RPA to climb in segments A, B, and C then transition in airspace above the Daventry Corridor and then northeast to the border of the Copenhagen FIR. The reverse would apply for RPA inbound to RAF Fairford.

MALE Option 3



MALE Option 3



| | | | | |
|---|--|---------------------|--------------------|------------|
| Design Principle Evaluation | | OPTION NO: 5 | | |
| <i>MALE Option 3</i> <i>Segmented Danger Areas</i> | | ACCEPT / REJECT | | |
| <p>Danger Areas are currently the primary method of achieving segregated airspace which is currently required in the UK for operations of BVLOS RPAS without a CAA-approved Detect and Avoid (DAA) capability.</p> <p>Danger Areas and transit corridors in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACS) or Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded.</p> <p>This option differs from MALE Option 1 and 2 by including the Daventry Corridor as an alternative means to cross heavily used routes.</p> | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT MET | PARTIAL | MET |
| <p>This design option would facilitate a safe environment for BVLOS MALE RPAS operations in accordance with current regulation, which currently demands segregated airspace. It would also provide a safe environment for other airspace users.</p> | | | | |
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT MET | PARTIAL | MET |
| <p>This option meets the operational requirements of USAF MALE RPAS as well as the segregated airspace requirement of current regulations.</p> | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT MET | PARTIAL | MET |
| <p>The proposed times, frequency of activation, expectation of a DACS, and transit corridor altitudes will reduce the impact to other airspace users. Despite this, the location of the proposed transit corridor is heavily used and impacts to other airspace users are expected.</p> | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT MET | PARTIAL | MET |
| <p>As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible.</p> | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT MET | PARTIAL | MET |

Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable.

| | | | | |
|--------------------|--|----------------|----------------|------------|
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT MET | PARTIAL | MET |
|--------------------|--|----------------|----------------|------------|

Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users.

MALE Option 3 Summary

This design option was deemed to have met all Design Principles with acknowledgement that it only partially meets Design Principle C. It is important to note that the transit corridors identified are notional. Additionally, the proposed alignment with the Daventry Corridor is an attempt to recognise that there are existing procedures for OAT traffic to cross heavily used routes. The Sponsor welcomes feedback on alternative location of transit corridors or alternative existing corridors to facilitate MALE RPAS transit to the NE from RAF Fairford to transit in and out of UK airspace in order to further minimize the impact to other airspace users.

Stakeholders generally indicated that this option aligned with the Design Principles. Some feedback recommended considering the use of the Litchfield, Westcott, or Swindon corridors. Further engagement with NATS is required to explore alternative locations and altitudes for MALE transit corridors that best align with the Design Principles of this ACP. The Sponsor will assess this option in Step 2B.

This option will be further assessed at the Initial Options Appraisal at Step 2B.

MALE Option 4 – Integration in Controlled Airspace

Should integration of MALE RPA into controlled airspace be possible, MALE RPA operations would only require a segregated segment A in Class G airspace from SFC-FL95 or until reaching controlled airspace. From there, RPA would be able to enter controlled airspace via Cotswold CTA 7 or CTA 4. The option of integration for MALE RPA is being pursued but the Sponsor is currently unsure if this is a viable option due to a lack of Detect and Avoid (DAA) capability.

MALE Option 4



| | | | | |
|--|---|---------------------|----------------|------------|
| Design Principle Evaluation | | OPTION NO: 6 | | |
| <i>MALE Option 4 Integration</i> | | ACCEPT / REJECT | | |
| If a safety case can be made for the equivalency of MALE RPAS to manned aircraft, integration into controlled airspace may be feasible. | | | | |
| A single Danger Area in the vicinity of RAF Fairford could be activated by NOTAM only when required in order to best meet the established Design Principles. Additionally, services such as a Danger Area Crossing Service (DACS) or Danger Area Activity Information Service (DAAIS) would be employed to ensure GA traffic would not be unnecessarily impeded. Once in controlled airspace the MALE RPAS would transit to and from RAF Fairford via controlled airspace. | | | | |
| Design Principle A | Provide a safe environment for all airspace users | NOT MET | PARTIAL | MET |
| This design option would facilitate a safe environment for BVLOS MALE RPAS. Segregated airspace would still be required in the vicinity of RAF Fairford to connect to controlled airspace. This option would also provide a safe environment for other airspace users. | | | | |

| | | | | |
|--|--|----------------|----------------|------------|
| Design Principle B | Provide access to sufficient suitable airspace to enable efficient RPAS transition between the ground and medium/high-level transit routes | NOT-MET | PARTIAL | MET |
| This option meets the operational requirements of USAF MALE RPAS. | | | | |
| Design Principle C | Minimise the impact to other airspace users. | NOT-MET | PARTIAL | MET |
| Some impacts may occur in segment A if the altitude of SFC-FL95 prevents GAT flight planning through this segment. Based on an initial evaluation of ADS-B data this impact is expected to be minimal. The proposed times, frequency of activation, expectation of a DACS, and transit corridor altitudes will reduce the impact to other airspace users. If integration were possible, this option would greatly minimize the impact to other airspace users. | | | | |
| Design Principle D | Adhere to FUA principles and strategy. | NOT-MET | PARTIAL | MET |
| As per the principles of FUA, the size, shape, and proposed times of use of the airspace were developed to minimise impacts to other airspace users. In accordance with CAP 740 Appendix A, the airspace will be activated when needed and returned when no longer needed. Additionally, the expected availability of a DACS will permit use of this airspace by other civil and military airspace users where possible. | | | | |
| Design Principle E | Where possible and practicable, accommodate the Airspace Modernisation Strategy | NOT-MET | PARTIAL | MET |
| Accommodating RPAS is an aim of the Airspace Modernisation Strategy. The AMS is further required to support delivery of Defence and Security objectives. This option meets this objective. Due to the proposed times, frequency of activation, and expectation of a DACS, this option is expected to produce minimal impact to the other portions of the Airspace Modernisation Strategy. The Sponsor will continue to work closely with the CAA to ensure the Airspace Modernisation Strategy is accommodated where possible and practicable. | | | | |
| Design Principle F | Endeavour to make the airspace as accessible as possible | NOT-MET | PARTIAL | MET |
| Due to the proposed times, frequency of activation, and expectation of a DACS, this option should make the airspace as accessible as possible to other airspace users. | | | | |

MALE Option 4 Summary

This design option was deemed to have met all Design Principles and is contingent on an acceptable safety case demonstrating the equivalency of MALE RPAS with manned aircraft. The Sponsor is actively exploring the requirements of this safety case.

Stakeholders broadly agreed that, should MALE RPA integration into CAS be possible, this option aligns with all design principles. This was the preferred MALE Option among stakeholders. This option will be further assessed at the Initial Options Appraisal at Step 2B.