

## CAA Decision Log

Airspace Change Proposal Title	Enabling T&E activity of Protector in UK airspace Spring/Summer 2024
Airspace Change Proposal Reference	ACP-2023-047
Change Sponsor	Ministry of Defence
AIS Submission Target Date	16/02/2024
CAA Decision Target Date	09/02/2024
<p><i>Instructions</i></p> <p>In providing a response to each question and/or status, the following colour coding should be used:</p> <ul style="list-style-type: none"> <li>COMPLIANT/NOT APPLICABLE</li> <li>NOT COMPLIANT/ACTION REQUIRED</li> <li>ISSUE/CONCERN TO HIGHLIGHT</li> </ul>	
<p><b>Executive Summary</b></p> <p>This ACP is for an airspace trial that seeks to confirm whether RAF Marham is a suitable diversion airfield for the large Remotely Piloted Air System (RPAS), Protector RG Mk1. Protector will be based at RAF Waddington where permanent segregated airspace has been established to enable its transit through Class G airspace into adjoining CAS for onward transit to operating and training areas. Protector test and evaluation operations are scheduled to start in late Spring 2024 prior to the platform formally entering service.</p> <p>The main objective of the trial is to establish whether RAF Marham is a suitable diversion airfield for Protector. Its use will also inform the development of ACP-2023-022, currently at Stage 1 of the CAP1616 process, which will seek to establish RAF Marham as the permanent diversion airfield for Protector. The Change Sponsor has defined four 'sub-objectives' and metrics to evaluate the operational suitability of the proposed TDA, the impact on other airspace users and associated operational procedures.</p> <p>The proposed TDA comprises a 5nm cylinder centred on RAF Marham which is divided into two vertical segments, the lower volume extending from SFC to FL105 and the upper volume from FL105 to FL195. The vertical division was introduced in response to feedback from aviation stakeholders and is intended to reduce the duration of impacts on other airspace users when Protector is within the airspace, see figures 1 and 2 below:</p>	



Figure 1 - RAF Marham TDA Design

The airspace trial is scheduled to run for 6 months, from 1 June to 30 November 2024. Up to 2 planned diversions will be conducted to RAF Marham, with each diversion to include an arrival and departure. The TDA at RAF Marham will be activated for the full duration of all Protector sorties from RAF Waddington, including when there are no planned diversions (i.e. TDA will be active but not necessarily utilised). This is to enable Protector to access RAF Marham as a diversion airfield should RAF Waddington become unavailable due to unforeseen circumstances.

The change sponsor anticipates that during the first 6 months, Protector will be flown during core flying hours, Monday to Friday, up to 3 times per week and may include some night flying. A DACS will be provided by RAF Marham ATC during TDA hours of activation.

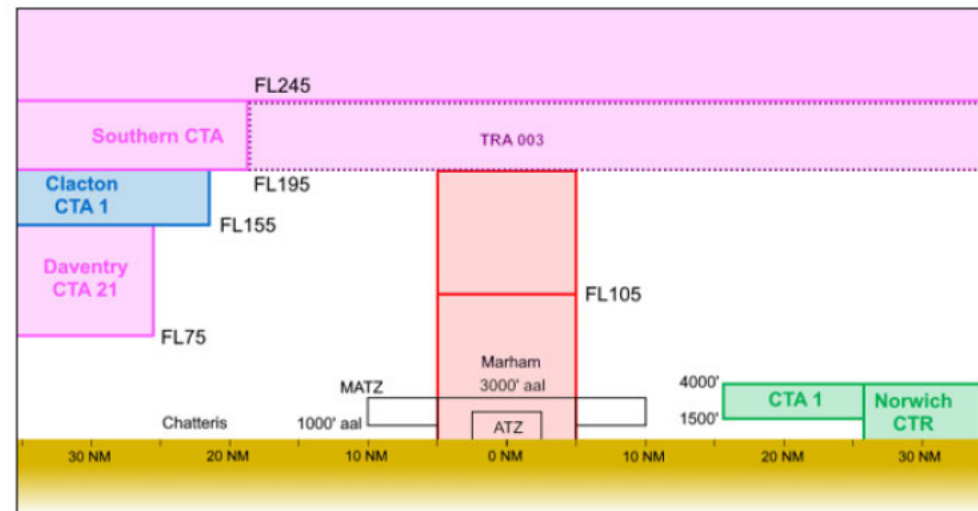


Figure 2 - RAF Marham SWNE² TDA Cross-section

## PART A – Airspace Change Process – GATEWAYS

A.1	Airspace Change Portal	
A.1.1	<a href="#">Airspace change proposal public view (caa.co.uk)</a>	
A.2	CAA SharePoint site	
A.2.1	<a href="#">Enabling T&amp;E activity of Protector in UK airspace Spring/Summer 2023 - Project - All Documents (sharepoint.com)</a>	
A.3	Stage 1 DEFINE Gateway	N/A
A.3.1	N/A	
A.4	Stage 2 DEVELOP AND ASSESS Gateway	N/A
A.4.1	N/A	
A.5	Stage 3 CONSULT Gateway	N/A
A.5.1	N/A	
A.6	Chronology	
A.6.1		
A.7	Are there any additional process requirements of the Civil Aviation Authority (Air Navigation) Directions 2023 (the “Air Navigation Directions”) and/or the Air Navigation Guidance 2017 which apply to this airspace change, and have they been complied with?	N
A.7.1	No.	
PART B – Airspace Change Process – STAGE 5		
B.1	Was a Public Evidence Session required for this proposal?	N/A
B.1.1	This airspace change proposal is for an airspace trial and is sponsored by the MOD, therefore, no public	

	evidence session was required.			
B.2	Were any requests made for this decision to be called-in by the Secretary of State?		N/A	
B.2.1	This airspace change proposal is for an airspace trial and is sponsored by the MOD, therefore, it is not in scope for call-in by the Secretary of State.			
B.3	Does the Secretary of State call-in criteria apply to this proposal?		N/A	
B.3.1	This airspace change proposal is for an airspace trial and is sponsored by the MOD, therefore, it is not in scope for call-in by the Secretary of State.			
B.4	Has the Secretary of State decided to call-in this proposal?		N/A	
B.4.1	This airspace change proposal is for an airspace trial and is sponsored by the MOD, therefore, it is not in scope for call-in by the Secretary of State.			
B.5	Approval Status for Subject Matter Expert (SME) Regulatory Assessments			
ATM Safety		NOT APPLICABLE	Environmental	RECOMMEND
Economic Assessment & Statement		NOT APPLICABLE	IFP	NOT APPLICABLE
Engagement / Consultation		RECOMMEND	Operational	RECOMMEND
B.5.1	The sponsor provided 4 LoAs in mature draft form that are yet to be finalised and signed. These LoAs must be finalised prior to the commencement of Protector flying operations from RAF Waddington that require RAF Marham to be used as a nominated diversion airfield. It is therefore considered appropriate that the ACP is approved for implementation-only at this stage, with approval for activation of the structures withheld pending completion of the 4 LoAs. An approval condition has been set that requires the sponsor to provide finalised versions of the 4 LoAs in order to gain approval to activate the TDAs by NOTAM.			



<b>B.6</b>	<b>Other Relevant Documents</b>		
Safety Buffer Policy Dispensation Application: Main submission document Appendix C	Safety Buffer Policy: <a href="#">Policy for the Establishment and Operation of Special Use Airspace</a>		
<b>B.7</b>	<p><b>Has the relevant legal and policy framework to the airspace change process been taken into account, including:</b></p> <ul style="list-style-type: none"> <li>• the Air Navigation Directions;</li> <li>• the Airspace Modernisation Strategy;</li> <li>• section 70 of the Transport Act 2000;</li> <li>• the Air Navigation Guidance 2017; and</li> <li>• CAP 1616 and associated publications?</li> </ul>		Yes
<b>B.8</b>	<p><b>CAA consideration of whether the proposal is in accordance with the Airspace Modernisation Strategy (Air Navigation Directions, direction 5(1)).</b></p> <p><u>NOTE:</u> the left column captures RAG status only and the right column captures the rationale – full details will be contained within the SME Regulatory Assessments. For more information on the AMS strategic objectives, see <i>Airspace Modernisation Strategy 2023-2040 Part 1: Strategic Objectives and Enablers</i> (<a href="#">CAP 1711</a>).</p>		
Safety	The AMS states that “Maintaining a high standard of safety has priority over all other ends to be achieved by airspace modernisation”. The sponsor has defined and proposed a suitable airspace structure to segregate the operation of the Protector RPAS from other airspace users in the class G airspace surrounding RAF Marham. The proposed airspace, utilised in accordance with the proposed air traffic management (ATM) processes detailed in the letters of agreement (LoAs), is considered appropriate to maintain the high standard of aviation safety in the area.		
Integration of diverse airspace	The AMS states that, as well as satisfying the requirements of existing users, airspace should also		

users	accommodate “new or rapidly developing users (such as remotely piloted aircraft systems...)” wherever possible. This airspace proposal is seeking to trial an airspace solution to enable the operation of the Protector RPAS, while also minimising the impact to existing airspace users.
Simplification of airspace system	This airspace change proposal requires the introduction of trial airspace structures to enable the segregation of Protector RPAS BVLOS operations from other airspace users, in order to maintain safety of aviation operations. The addition of the proposed structures is not a simplification of the airspace system and, therefore, this AMS strategic objective is not met.
Environmental sustainability	This airspace change proposal requires the introduction of trial airspace structures to enable the segregation of Protector RPAS BVLOS operations from other airspace users, in order to maintain safety of aviation operations. ATM processes will be employed to ensure access to the structures where possible; however, when occupied by Protector, segregation from other airspace users will be required which may result in a slightly increased environmental impact. Therefore, in order to maintain a high standard of aviation safety, this AMS strategic objective is not met.
<b>B.9</b>	<p><b>CAA consideration of factors material to our decision whether to approve the change (section 70, Transport Act 2000).</b></p> <p><u>NOTE:</u> the left column captures RAG status only and the right column captures a summary of the rationale – full details will be contained within the SME Regulatory Assessments.</p>
Maintain a high standard of safety in the provision of air traffic services section 70(1)(a)	<p>The purpose of the proposal is to introduce appropriate trial airspace structures to assess the suitability of RAF Marham as a diversion airfield for the Protector RPAS. The proposed temporary danger area (TDA) structures will ensure the safe BVLOS operation of Protector through segregation. Segregation of this activity is appropriate, proportionate and in accordance with CAA and MAA policy. The application includes the assertion that a danger area crossing service (DACS) will be provided at all times when the TDAs are active.</p> <p>The CAA notes that operation of the Protector RPAS requires segregation from other airspace users and, as such, any arrangements for the provision of a DACS must recognise this requirement. Therefore, at this stage, requests to cross active TDAs, within which the Protector RPAS is being operated, are not to be approved and operating procedures must reflect this position.</p>
Secure the most efficient use of airspace consistent with the safe operation of aircraft and	Through agreement with NATS, the Sponsor has confirmed that the proposed airspace structures have no impact on CAT in adjacent airspace. The impact to other airspace users has also been minimised through the establishment or amendment of LoAs, and through the commitment of the Sponsor to

the expeditious flow of air traffic section 70(2)(a)	always provide a DACS when the TDAs are active. Analysis of GA traffic operating in the vicinity, that may be impacted by the proposed airspace, has shown the traffic levels to be low and, therefore, the consequential impact is expected to be negligible.
Satisfy requirements of operators and owners of all classes of aircraft section 70(2)(b)	The Sponsor provided evidence of proactive engagement with potentially impacted stakeholders, which was used by the Sponsor to influence the proposal. This included amending the proposed design of the TDAs to reduce the likely impact to other airspace users in the event of Protector conducting a diversion to RAF Marham. In addition, the feedback received also influenced the amendments proposed to existing LoAs.
Take account of the interests of any other person (other than an operator or owner of an aircraft) in relation to the use of any particular airspace or the use of airspace generally section 70(2)(c)	The sponsor conducted engagement activity, targeted at aviation stakeholders, that is airspace users, air navigation service providers and airports, as required by CAP 1616. The sponsor demonstrated their willingness to be influenced by feedback by revising the airspace design. The sponsor has taken into account the interests of other airspace users in the drafting of Letters of Agreement (LoA) and procedures for Protector operations.
Take into account the Secretary of State's guidance relating to spaceflight activities section 70(2)(d)	Not applicable to this airspace change proposal.
Take into account the Secretary of State's guidance on environmental objectives section 70(2)(d)	<p>The CAA is required to take into account the Air Navigation Guidance 2017. In the Air Navigation Guidance 2017, the Government has set environmental objectives with respect to air navigation. These environmental objectives are 'designed to minimise the environmental impact of aviation within the context of supporting a strong and sustainable aviation sector.'</p> <p>The objectives are, in support of sustainable development, to:</p> <ul style="list-style-type: none"> <li>• limit and, where possible, reduce the number of people in the UK significantly affected by adverse impacts from aircraft noise;</li> <li>• ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions; and</li> <li>• minimise local air quality emissions and in particular ensure that the UK complies with its</li> </ul>



	<p>international obligations on air quality.</p> <p>The ACP is for an airspace trial to establish and trial a Temporary Danger Area (TDA) for a period of 6 months. For Military ACPs, environmental impacts that are a direct result of military aircraft or military operations (including civil aircraft carrying out military function under contract) are not required to be considered or assessed. However, consequential environmental impacts from other airspace users (i.e. civil aviation) that are a result of the proposed change must be assessed. In line with Government guidance, the CAA requires a trial sponsor to consider and undertake an assessment of the noise impacts of a trial. There is no requirement to assess any other environmental impacts (i.e. CO2, local air quality, tranquillity) as these are expected to be negligible for short term changes.</p> <p>The change sponsor has presented a rationale and supporting evidence to show that there will be a minimal impact on civil aircraft. This is estimated to be an average of less than 1 aircraft during a 10-hour flying window (based on peak traffic days) as a result of two planned diversion events and an estimate of two possible unplanned diversion events during the trial period. The Class G nature of surrounding local airspace makes it difficult to predict how aircraft will operate, and it was considered disproportionate to require submission of LAmx footprints in this case.</p> <p>The low volume of in-scope aircraft and the minimal operational use of the trial TDA at RAF Marham by Protector means that noise levels in excess of the 51 dB LAeq,16hr daytime Lowest Observed Adverse Effect Level (LOAEL) are unlikely to occur and therefore the change is unlikely to lead to an adverse impact on health and quality of life.</p>
Facilitate the integrated operation of air traffic services provided by or on behalf of the armed forces of the Crown and other air traffic services section 70(2)(e)	The Sponsor has provided mature draft copies of LoAs that define the cooperative ATM procedures that will be used to enable the integrated operation of Protector in CAS. This includes a LoA between NATS and 78 Sqn that defines the notification, coordination and communication procedures that will be applied to the operation of the vehicle.
Take account of the interests of national security section 70(2)(f)	This airspace change proposal has been developed to introduce the appropriate airspace structures required to enable the operation of the Protector RPAS BVLOS in UK airspace. In turn, this will facilitate the training of military Protector aircrews to be conducted in the UK, leading to the establishment and development of the operating capability of the air system. Therefore, the Sponsor considers the approval of this ACP to be in the interests of National Security.
Take account of any international obligations notified	No such international obligations have been notified to the CAA under section 70(2)(g) of Transport Act



to the CAA by the Secretary of State section 70(2)(g)		2000.
B.10	<p><b>Are there any other associated publications relevant to the proposal and, if so, have the requirements of those publications been met?</b></p> <p><u>NOTE:</u> associated publications include Airspace Policy Statements listed <a href="#">here</a>.</p>	Y
B.10.1	This airspace change proposal includes an application for dispensation from the requirements of the safety buffer policy ( <a href="#">Policy for the Establishment and Operation of Special Use Airspace</a> ). Specifically, dispensation from the vertical requirements of the policy is requested as the TDAs adjoin class C airspace above. The TDAs necessarily adjoin the CAS above to facilitate Protector's transition to / from that adjoining CAS. In mitigation, the sponsor offers that positive ATC management will be provided and ATM procedures have been developed for the operation. These procedures have been developed in collaboration with NATS and were agreed for the recently approved and implemented DAs at RAF Waddington for the operation of Protector.	
B.11	<p><b>Conclusions in respect of requirement to ensure that the amount of controlled airspace is the minimum required to maintain a high standard of air safety and, subject to overriding national security or defence requirements, that the needs of all airspace users is reflected on an equitable basis.</b></p> <p><u>NOTE:</u> this section only applies if the CAA is classifying or amending the classification of UK airspace.</p>	
B.11.1	N/A.	
PART C – Stage 5 Recommendation		
C.1	<b>Taking the above information into account, what is your recommendation to the decision-maker for this proposal?</b>	
C.1.1	<p><b>Tech Reg:</b></p> <p>From a technical perspective, it is recommended that this trial ACP is approved for implementation, with approval for activation initially withheld. A single condition has been proposed to ensure that the 4 existing LoAs requiring amendment to support the operation of the TDAs are complete prior to the first activation of the structures by NOTAM.</p> <p><b>Proposed Decision Recommendation 1:</b> It is recommended that a condition is set stating that the proposed TDAs are approved for notification-only at this stage, pending submission of the 4 agreed and completed LoAs described in the Trial Plan Submission document to CAA AR. On receipt and acceptance of the completed LoAs, CAA AR will provide the sponsor with</p>	

	<p>written confirmation that the structures have been approved for activation by NOTAM.</p> <p>The application for dispensation from the CAA SUA safety buffer policy is also supported and recommended for approval as requested. Noting that the policy is about to be replaced with an updated version, it is recommended that the decision maker ensure it is made clear to the sponsor under which policy the dispensation approval has been made and, as a result, exactly what agreement with NATS will be required to satisfy the applicable policy.</p> <p><b>Proposed Decision Recommendation 2:</b> It is recommended that the application for dispensation from the CAA Safety Buffer Policy is approved; clarification of which policy is extant at the time of decision should be provided, along with confirmation of the agreement with NATS that will be required to satisfy that policy.</p> <p><b>Engagement and Consultation:</b></p> <p>The sponsor conducted engagement activity, targeted at aviation stakeholders as required by CAP 1616, over a sufficient and proportionate timeframe of 6 weeks from 10 November 2023 to 22 December 2023. The sponsor demonstrated their willingness to be influenced by feedback by revising the airspace design to facilitate more expeditious air traffic management, to minimise impact on airspace users by reducing holding times and promoting Flexible Use Airspace (FUA) for both civil and military local airspace users. The sponsor also responded to stakeholder feedback in the drafting of Letters of Agreement (LoA) and draft procedures for Protector operations. As a result, it is concluded that meaningful engagement has been achieved.</p>	
<b>C.2</b>	<b>Are there any Recommendations and/or Conditions for the change sponsor to address prior to implementation (if approved)?</b>	<b>Yes</b>
<b>C.2.1</b>	<p><b>Engagement and Consultation</b></p> <p><b>Condition 1</b></p> <p>Finalise Letters of Agreement. A copy of the final versions must be provided to the CAA along with evidence of the agreement of all parties (either through signatures on the document or alternative information that confirms acceptance by all parties) prior to commencement of the Trial.</p> <p><b>Condition 2</b></p> <p>The sponsor should inform stakeholders of the decision (when published), likely impacts and what will happen next.</p>	

	<p><b>Condition 3</b></p> <p>The sponsor is required to collate, monitor, and report to the CAA on the level and contents of feedback received during the period of the Trial. The CAA expect reporting on the level and contents of any stakeholder feedback received on a fortnightly basis throughout the duration of the Trial (this should include nil returns). The sponsor should send these reports to the assigned Account Manager.</p> <p><b>Recommendation:</b> The sponsor has submitted Draft Procedures for Protector operations. It is recommended that a copy of the final version be provided to the CAA prior to commencement of the Trial.</p> <p><b>Tech Reg:</b></p> <p><b>Recommendation:</b> As a consequence of activation of the proposed TDA and its proximity to EGD208, the minor funnelling effect currently experienced between the RAF Marham MATZ and EGD208 could be increased. While this effect is expected to be minimal, it is recommended that LARS is made available at all times when the TDA is active in order to provide additional mitigation.</p> <p><b>Proposed Condition:</b> Finalised copies of the 4x LoAs should be provided to CAA Airspace Regulation prior to activation of the proposed TDAs.</p>	
<b>C.3</b>	<b>Are there any specific requirements in terms of the data to be collected by the change sponsor during the trial (if approved)?</b>	<b>Y</b>
<b>C.3.1</b>	<p><b>Tech Reg:</b></p> <ol style="list-style-type: none"> <li>1. All stakeholder feedback received pertaining to the trial airspace.</li> <li>2. Record of activation data for the TDAs, including publication details of NOTAM, time of activation, duration and intended activity.</li> <li>3. Record of occurrences of any airspace activation period that is subsequently unused, including duration of activation prior to cancellation and reasons for cancellation, ie weather, air system unserviceability, etc.</li> <li>4. Record of DACS requests, supported and unsupported, with reasoning if unsupported. <b>NB:</b> GA are currently only required to request entry into the ATZ, and can cross the MATZ without seeking approval if they remain clear of the ATZ. In the context of the airspace trial, the TDAs should only limit access when occupied by Protector. Therefore,</li> </ol>	



	<p>sufficient explanation of unsupported DACS requests, not attributable to the presence of Protector, will be required to justify the DACS refusal.</p> <p>5. Record of use of TDAs by Protector, including reason for use and whether a planned or unplanned use of the TDAs.</p> <p>6. Record of any and all inadvertent excursions from the TDAs by Protector.</p> <p>7. Record of any and all unauthorised incursions of the TDAs.</p> <p>8. Noting the approval for dispensation from the SARG SUA Safety Buffer Policy, a report will be required to indicate compliance with the dispensation criteria, to include detailed records of any and all deviations from the dispensation to the Safety Buffer Policy.</p>		
<b>C.4</b>	<b>Are any other consents and approvals needed in order to permit the intended operation (title and hyperlinks to be inserted)?</b>		
<b>C.5</b>	<b>Are there any other comments/observations for the decision maker?</b>		<b>NO</b>
<b>C.5.1</b>			

PART D – Draft Regulatory Decision – Comment (for Level 1 Airspace Change Proposal's only)			
D.1	Was a Draft Regulatory Decision published for this proposal?		N/A
D.2	Was any feedback received in relation to the Draft Regulatory Decision?		N/A
D.3	Has the Draft Regulatory Decision been amended in light of feedback received?		N/A
PART E – Final Regulatory Decision – Comment/Approval [Delete signatory rows below dependent on Decision Maker]			
Account Manager			29/02/2024
<b>Manager Airspace Regulation comments and regulatory decision:</b> This ACP is being used both to inform the development of an ongoing permanent change and to support trial flights for Protector demonstrating a clear requirement in the first instance. Significantly however the provision of the DACS, ensures that the impact to stakeholders will be minimised. Therefore subject to the conditions noted above I approve this ACP.			
Manager Airspace Regulation			29 Feb 2024