



20<sup>th</sup> July 2020

## **AIRSPACE CHANGE PROPOSAL ACP-2019-58 LLANBEDR AERODROME DANGER AREA – SUMMARY OF DESIGN OPTIONS AND INITIAL APPRAISAL**

Thank you for your input to date on our Airspace Change Proposal, ACP-2019-58, Llanbedr Aerodrome Danger Area. The purpose of this note is to summarise the conclusions and recommendations from the recent engagement and outline the next steps.

Firstly, we'd like to recap how the recent engagement fits into the overall Civil Aviation Authority (CAA) CAP161 Airspace Change Process (ACP). We have now completed the development of the design principles and design options under Stages 1 and 2, respectively, and submitted these documents to the CAA for a combined Stage 1 and 2 Gateway Review on 31<sup>st</sup> July. This will be followed by Stage 3, a full and formal public consultation during Autumn 2020 that will be undertaken in line with the Gunning principles and Government guidance. This may result in a further refinement of the design at Stage 4 before submission to the CAA for a final decision (Stage 5). Implementation at Stage 6 is currently anticipated in Summer 2021 and a final review at Stage 7 will be conducted 12 months later.

The current status of the Llanbedr Danger Area ACP and all of the formal documentation that has been submitted to support the proposal can be accessed via the CAA's online portal:

<https://airspacechange.caa.co.uk/PublicProposalArea?pid=193>

The purpose of CAP1616 is to avoid “solutionising” and to impose a structured process that delivers, following representations made by stakeholders, a considered and balanced airspace design and implementation. We have held a number of targeted stakeholder meetings to date to stimulate a two-way dialogue on the initial requirements and also sent out a questionnaire to over 200 stakeholders and interested parties. Following the initial questionnaires stakeholders were subsequently requested to comment further on a number of proposed design options.

The key findings from the development of the design principles, design options and initial appraisal of those options are summarized below:

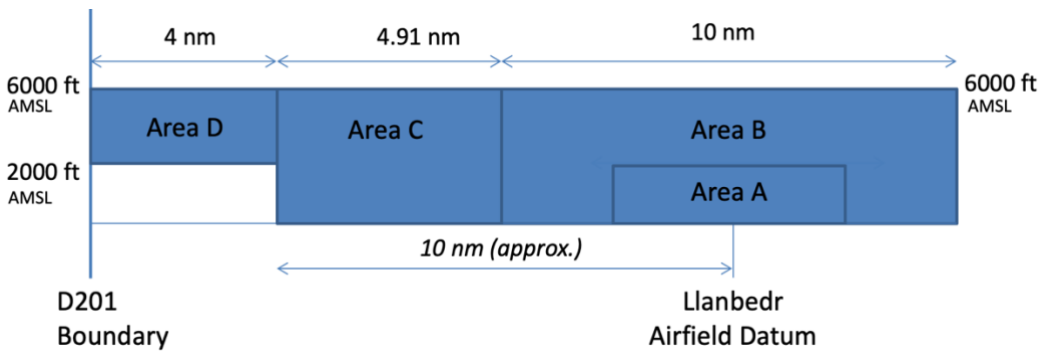
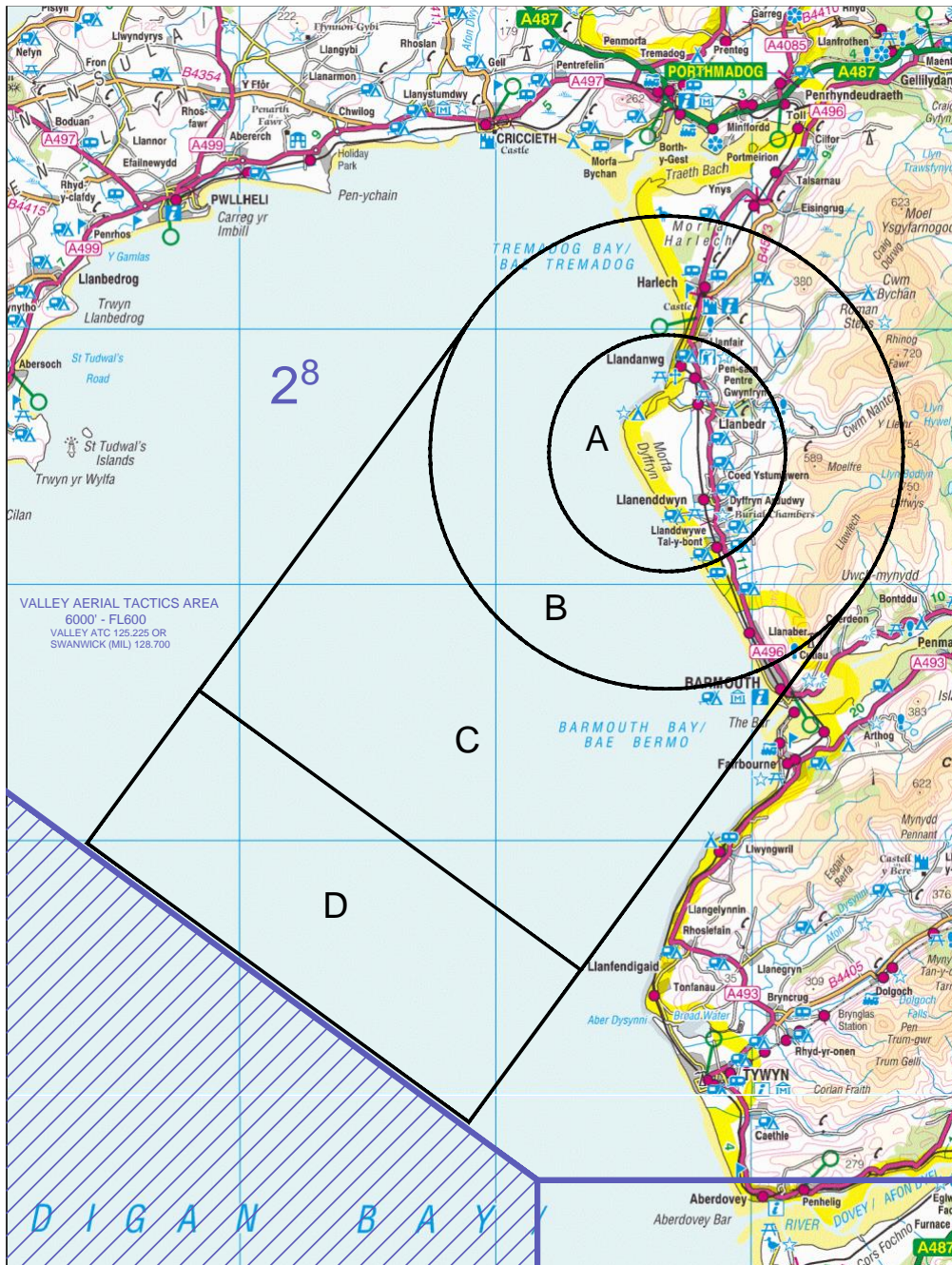
1. We have prepared two design options for the Danger Area (DA) as shown in Figure 1 and 2. In both cases, the design provides an area of segregated airspace local to Llanbedr Aerodrome for flight testing of novel aerospace systems (examples of which are shown in Figure 3a-f) together with an air corridor that will link Llanbedr Aerodrome with the existing Danger Area D201;
2. Option #1 describes a baseline for the DA airspace change based on the Temporary Danger Area (TDA) that was originally consulted on, approved and promulgated in 2014. Option #2 is a further refinement of this TDA based on feedback received as part of the two-way engagement process on the Design Principles;
3. As far as possible, the shape of both DA options has been designed to be easy to interpret and implement and the size has been designed to accommodate a range of different novel aerospace systems;
4. The majority of responses have been positive and have been received both from the aerospace/aviation community who are seeking to make use of the permanent Danger Area to enhance their products and services and also from the local community who can see the benefit that this business would bring to the regional economy;

5. The few neutral/negative responses raised issues and questions relating to two principle factors, (i) the impact of segregation on the flexible use of airspace for other aviation operators, and (ii) the potential noise/general nuisance impact on non-aviation leisure activities in and around Snowdonia National Park;
6. Generally, Option #1 was considered to be easier to interpret and to provide greater flexibility for operators using the DA, whereas Option #2 was considered to be more complex but offered more advantages in terms of flexible use of airspace for other aviation activities;
7. Snowdonia Aerospace has further assessed the impacts of Options #1 and #2 against a “do nothing” option (*i.e.* continuing under a Temporary Danger Area);
8. The assessment has highlighted a strong economic case for the implementation of a permanent Danger Area on the basis that it will (a) significantly enhance the UK flight test capability in environmentally-friendly aircraft and electric technologies in accordance with the 2018 Aerospace Industrial Strategy, and (b) generate jobs and related economic benefit in local communities;
9. The number of novel aerospace system flight movements at Llanbedr is expected to double, but the numbers are relatively small (approximately 100 days of Danger Area activation per year and up to 200 flights per year on average), the vast majority of operations ( approximately 90%) will be over the aerodrome or out over the sea and the vehicle size (the majority less than 150kg) and propulsion type (50%+ electric) mean that any noise and environmental impact is expected to be negligible;
10. The estimate of approximately 100 days of Danger Area activation per year translates to 2 days per week on average, with operations above 2000ft likely only 33% of this time. It is therefore considered that there is sufficient capacity and scope to accommodate all local flying activities safely, including military training and general aviation. Appropriate air traffic management principles have already been identified to ensure spatial and temporal deconfliction across all elements of the Danger Area;
11. The Danger Area is only one element of a multi-faceted Operating Safety Case (OSC) that any drone operator will need to submit to the CAA for approval before any flight within the DA will be allowed. The OSC will describe where, when and how the drone will operate and will be expected to show that all built-up/sensitive areas will be avoided and that appropriate geo-fencing mechanisms are built into the autopilot to ensure that not only is this achieved, but that the drone will be constrained within the DA at all times.
12. We are sympathetic to the needs of other stakeholders and we believe a mutually satisfactory compromise on the issues raised in (5) is very easily achievable. An action was identified for continued engagement to further refine the details and operating procedures such that Letters of Agreement can be established with these stakeholders.

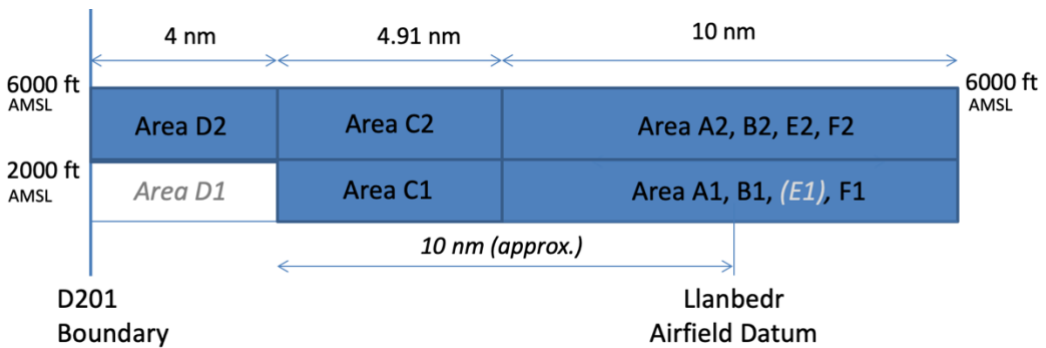
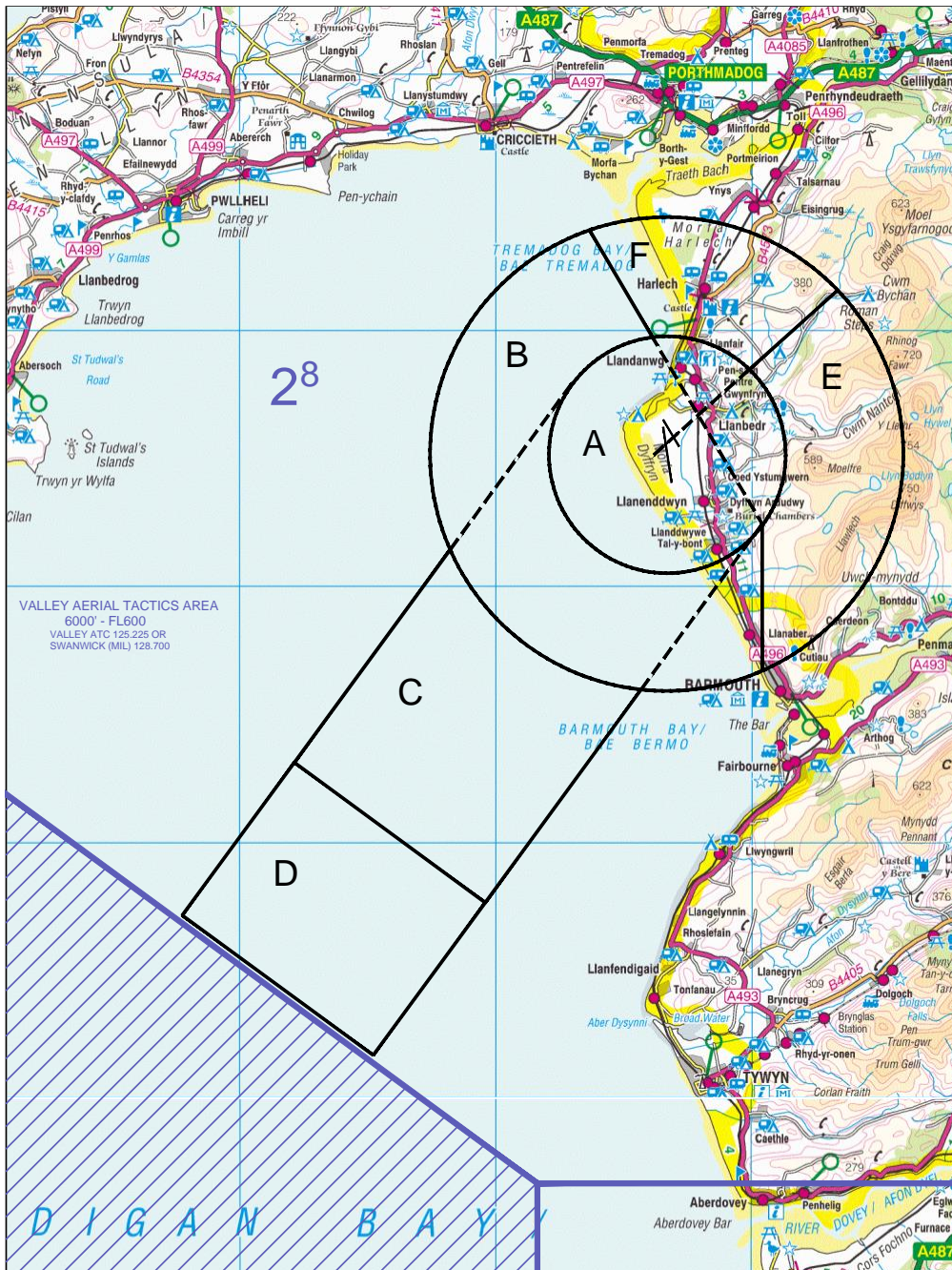
*In parallel with this note we will also be writing back to respondents who raised specific questions to provide a more detailed explanation of our analysis as it relates to their interests.*

On the basis of the safety, operational, environmental and economic considerations, we have recommended that the CAA consider the Llanbedr DA airspace change proposal favourably.

We are conscious that the overtly technical nature of the engagement to date is a necessary consequence of where we are in the ACP design process, but we remain open to comment and opportunities for further general engagement and consultation will be available at Stage 3. We will also further consider how consultation materials are developed to suit a range of audiences, including how technical information will be communicated in an accessible way to non-aviation stakeholders.



**Figure 1 – Draft airspace design Option #1 for ACP-2019-58, Llanbedr Danger Area (DA)**



**Figure 2 – Draft airspace design Option #2 for ACP-2019-58, Llanbedr Danger Area (DA)**



**Fig. 3a** – Penguin B drone used to explore the potential for aeromedical delivery



**Fig. 3b** – Vertical Aerospace electric Urban Air Mobility (UAM) vehicle



**Fig. 3c** – Scheibel S100 Camcopter used to explore the potential for search/rescue drones



**Fig. 3d** – Astigan solar-powered high altitude, long endurance (HALE) vehicle



**Fig. 3e** – C-Astral Bramor used to explore the potential for mapping and surveying drones



**Fig. 3f** – The view of Cardigan Bay from the B2Space near-space testing balloon