

Minutes of ACP-2024-056
Amazon Prime Air: Darlington and Surrounding Areas TRA / TMZ for BVLOS Drone Delivery Services
Assessment Meeting held via Teams on 27th February 2025

Present	Appointment	Representing
	UK Head of Airworthiness and Certification	Amazon Prime Air
	Head of Certification and Regulation EU & UK	Amazon Prime Air
	Certification and Regulatory Affairs Specialist	Amazon Prime Air
	Airspace Change Specialist	NATS (on behalf of Amazon Prime Air)
	New Airspace Users	NATS (on behalf of Amazon Prime Air)
	Compliance and Operational Support Manager	Teesside International Airport
	Head of Air Traffic Services	Teesside International Airport
	Operations Director	Teesside International Airport
	Head of Air Traffic Services	Air Traffic Control Services Ltd
	Safety manager	Air Traffic Control Services Ltd
	Assigned Airspace Change Account Manager	CAA
	Assigned Technical Regulator	CAA
	Assigned Environmental Regulator	CAA
	Assigned Engagement and Consultation Specialist	CAA
	Assigned ATS Inspector	CAA
	Principal Inspector ATM	CAA
	ATS Inspector Engineering	CAA
	Principal Airspace Regulator	CAA
	Principal Inspector RPAS	CAA
	Innovation Services Principal	CAA
	Innovation Services Specialist	CAA
	Observing Airspace Regulator - Technical	CAA
	Observing Airspace Regulator - Technical	CAA
	Observing Airspace Regulator - Technical	CAA

CAA Assessment Meeting Opening Statement

CAA noted that the Amazon Prime Air Assessment Meeting Presentation was received in advance of the Assessment Meeting and confirmed that the documents must be published by the sponsor, together with minutes of the meeting, on the Airspace Change Portal page. CAA explained the purpose of the meeting and confirmed that the meeting was an Assessment Meeting and not a Gateway. The CAA reinforced that the sponsor was required to provide a broad description of their proposed approach to meeting the CAA's CAP 1616 requirements, but the CAA was not deciding whether the proposed approach met the detailed requirements of the CAA's process at this stage. The purpose of the Assessment Meeting (set out in detail in CAP 1616) was broadly:

- for the Sponsor to present and discuss their Statement of Need,
- to enable the CAA to consider whether the proposal concerned falls within the scope of the formal airspace change process, including determining whether the proposal falls within the scope of a pre-scaled ACP process/Level 3,
- to enable the CAA to consider the appropriate provisional Level to assign to the change proposal.

Additionally, the sponsor was required to provide information on how it intended to proceed to fulfil the requirements of the airspace change process and to provide information on timescales. Lastly, the sponsor was required to provide information on how it intended to meet the engagement requirements of the various stages of the airspace change process.

The following minutes should be read alongside the Assessment Meeting presentation.

ITEM	ACTION
Item 1 – Introduction Introductions completed.	N/A
Item 2 – Statement of Need (discussion and review) Statement of Need (SoN) reviewed.	N/A
Item 3 – Background Overview of Amazon Prime Air provided and discussion regarding the Amazon Prime Air activities within the US, including how long they have been operating and their level of integration. Background information on the proposed operation including flight distance and height. <ul style="list-style-type: none"> CAA noted that the SUA policy has some design principles which might be worth reviewing as part of the design process in terms of uniform shapes; heights of airspace volumes in the proximity etc to make the TRA as flyable as possible. CAA's normal advice is 200ft between an aircraft and TRA which is worth considering during the design phase and considering other airspace volumes in the area. Amazon Prime Air may wish to consider sectorising the TRA. There will be a minimum drone operating height, but this will vary depending on the typography of the area to avoid obstacles. The current airspace in the surrounding area including Teesside International Airport's FRZ and CTR; Class G airspace; and Danger or Restricted Areas. <ul style="list-style-type: none"> There is no intention of flying south-east from the operations centre due to the proximity to the Teesside FRZ. Specific routes and activities will be decided based on the orders being delivered within that flight. Amazon Prime Air as used ADS-B traffic information within the proposed TRA volume during January, April, July and October 2023 to help characterise the airspace. Amazon Prime Air has installed an ADS-B receiver at their facility to gather live data over the following months and to further characterise the airspace. <ul style="list-style-type: none"> No current plans to do live noise assessments during the trial. Amazon Prime Air has already gathered substantial noise data from the tests in US and can share with CAA environmental teams. 	N/A
Item 4 – Issues and Opportunities arising from proposed change High level summary of opportunities was presented: environmental (green technologies); integration; policy; and technology. <ul style="list-style-type: none"> Discussion about integration – question whether the Amazon Prime Air drone will be operating in the TRA whilst other aircraft are in the TRA. The current plan is for the drone to return to the base if a crewed aircraft is predicted to enter volume. If the drone is currently at the base, no further flights will be permitted until the area is clear. Teesside ATC will provide overall management of the TRA, more specifically Amazon Prime Air will provide tactical management and Teesside ATC doing strategic management. The drone includes onboard detect and avoid (DAA) capabilities which, if triggered, will perform collision avoidance manoeuvres (this capability has been tested with the FAA). Amazon Prime Air notes that the DAA system is the last resort of the 3-layered safety approach which in the first place includes airspace characterisation and ADS-B-in monitoring. DAA technology on the drone will be assessed by the CAA RPAS team. Amazon Prime Air is not looking for concurrent aircraft operations within this ACP. Original proposal for the Sandbox was to have multiple aircraft, but the scale has been reduced. Notably, the Amazon Prime Air system is capable to operate multiple aircraft, based on demand. CAA note that this proposal sounds like segregation of the Amazon Prime Air drone whilst allowing other aircraft to operate in the airspace, rather than integration of more than one aircraft. Amazon Prime Air clarified that this approach had been chosen based on initial discussions with the CAA. 	N/A

<p>High level summary of issues was presented for this demonstration: shared access to airspace; environmental (noise); and environmental (European sites).</p> <ul style="list-style-type: none"> • Discussion on noise impacts - CAP1616g requires submission of L_{ASmax} noise footprints that illustrate the loudest and most frequent types of participating aircraft and other aircraft consequentially impacted as a result of the airspace change proposal (paragraph 4.17). CAP 1616i (chapter 11) also provides guidance on the assessment of noise impacts from RPAS including the requirement to incorporate a +10dB tone correction for multi-rotor drones. CAP2506 can also be referenced in respect of noise measurements from eVTOL aircraft assessment. Landing / take-off will be at the Amazon Prime Air base which is in a built-up industrial area. During the drop-off the duration of low-level flights is only a very short timeframe (under 1-minutes). Both minimises the noise impact during those phases of flight. CAA will require information on the criteria used to identify No Fly Zones / No Land Zones e.g. ground risk/noise mitigation. • CAA noted that UK farmers have raised concerns about noise from drones impacting livestock. (This was mentioned in relation to drones landing as an avoidance procedure should this not be restricted to the operating base). • A Habitats Regulations Assessment is required for airspace change proposals which are likely to have a significant effect - either alone or in combination with other plans or projects - on European sites (ref. paragraph 4.21 – 4.23 CAP1616g). 	
<p>Item 5 – Process requirements</p> <p>Explanation of current ideas for both formal and informal engagement. As per CAP1616g, formal engagement will be targeted at aviation and local stakeholders. This is in addition to the informal engagement already progressing.</p> <ul style="list-style-type: none"> • Discussion on stakeholders – It is the sponsor’s responsibility to provide a rationale for stakeholders which are to be engaged with at stage 3. Any NATMAC members who are not engaged with should also be justified CAA noted additional stakeholders to be considered (GA sites to the north, airfields, airlines, other local clubs and the British Model Flying Association, as this representative body is no longer a NATMAC member). • Discussion on engagement strategy. This can be shared with the CAA in advance of the engagement period and there is a template for the strategy in Appendix B of CAP1616f that can be used as a starting point – CAA UK noted that the noise assessment needs to be considered for the stakeholder engagement strategy. • The stakeholder engagement (including stakeholder identification, strategy, duration, material(s), method and recording) will be carried out in line with Chapter 5 of CAP1616g. • Post engagement, effective engagement will need to be demonstrated as part of the stage 4 submission. Any feedback that has been received will need to be taken into account. This is all detailed in paragraph 6.29 of CAP1616g. <p>If the TRA is implemented, the sponsor will be required to collate, monitor and report back to the CAA on a fortnightly basis on the level and content of feedback from stakeholders throughout the duration of the TRA. This is outlined in paragraphs 8.10 to 8.15 of CAP1616g.</p> <p>Proposal for a TRA and TMZ to be managed by Teesside ATC.</p> <ul style="list-style-type: none"> • Discussion on the TMZ - The broadcast capability of the drone is not yet confirmed. Discussion around electronic conspicuity is ongoing with the CAA. Reminder that the TMZ will apply to all aircraft. • Discussion on ATC management - Amazon Prime Air will work with Teesside ATC to make sure any required mitigations will be in place to make sure their operation has as little impact on stakeholders as possible. Teesside ATC expressed that more information and regulatory guidance is needed regarding responsibilities and risks within the operations; where the drones operate in different classes of airspace; and other users operating in neighbouring Class G. Ultimately Teesside ATC and Amazon Prime Air must complete a sufficient hazard identification (HazID); state who is responsible for what activities; and what happens in unplanned situations. CAP2533 should also be reviewed. Expectation is that ANSP is responsible for the entirety of the TRA airspace. There is a requirement for a basic service to be provided to all users, including the drone operator. 	<p>N/A</p>

<p>Item 6 – Provisional timeline Provision timeline presented to the CAA.</p> <ul style="list-style-type: none"> CAA noted that the time between the decision being made, and the AIC publication has to be sufficient for training, infrastructure changes, etc. All procedures and safety assurance information from Teesside ATC will need to be submitted at / before the ACP submission providing a minimum of 30 days' notice for approval of any documentation such as LOAs, TOIs, and training plans, etc. <p>Post Meeting Notes by the CAA ACP Account Manager:</p> <p>10/3/25 - The sponsor proposed the following initial timeline –</p> <ul style="list-style-type: none"> CAA engagement review period: 14/4/2025 to 29/04/2025 (accounts for Good Friday and Easter Monday) ACP submission: 29/8/2025 CAA decision: 26/9/2025 AIC submission: 3/10/2025 AIC publication: 13/11/2025 TRA Implementation: No sooner than 08/12/2024 <p>The CAA analysed the proposed initial timeline, and it was agreed by the CAA that a decision period of 6 weeks is needed for this ACP due to the complexity. As such, the sponsor was requested to extend the decision period to 6 weeks, advising the CAA how it could accommodate this (submit earlier or implement later).</p> <p>12/3/25 - The sponsor confirmed by email that a delay to implementation would be agreeable, and the CAA has accepted the timeline with the amendments shown below –</p> <ul style="list-style-type: none"> HRA Submission – provisionally submitted to the CAA already CAA engagement review period - 14/4/2025 to 29/04/2025 ACP submission to CAA - 29/8/2025 CAA decision - 10/10/2025 (AMEND) AIC submission - 31/10/2025 (AMEND) AIC publication - 11/12/2025 (AMEND) <p><i>* When the sponsor submits their gateway materials for each Gateway at the agreed submission deadline, the period between this and the gateway decision will be an analysis by the CAA Airspace Regulatory team (Airspace Regulation) of the documentation submitted, for the purposes of making a recommendation to the CAA Gateway decision maker(s). In conducting the gateway assessment, the CAA is assessing the process employed and its compliance with the guidance stipulated within CAP 1616. It is not an assessment of the merits of the submission itself, which is reviewed at Stage 5 – Decision. We may request documentation from the sponsor that is referred to in the gateway submission but has not been provided as part of the Gateway submission materials. We may also request the sponsor to provide information by way of clarification relating to statements or assumptions made in the submission. Any further information sought by Airspace Regulation at this stage is for clarificatory purposes and is only for determining compliance with the CAP 1616 process.</i></p> <p><i>In any instance where a sponsor has not met the requirements of the process, we will inform them after the gateway decision and advise of next steps.</i></p>	<p>Update timeline for CAA gateway and AIC date</p>
<p>Item 7 – Next steps High level discussion on next steps.</p>	
<p>Item 8 – Any other business</p> <ul style="list-style-type: none"> CAA requested clarification on meteorological limitations for the on-board DAA capability. Amazon Prime Air have included all environmental/operational limitations within the operating manuals which will be subject to RPAS Sector team assessment. Discussion was held on how Teesside would be able to monitor drone positions. Amazon Prime Air noted that it sees Electronic Conspicuity (EC) as a key enabler for routine BVLOS operations. Amazon Prime Air to follow up with a more detailed strategy but noted that this is subject to further discussion as part of the Sandbox activities and CAA Policy teams. 	

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| <ul style="list-style-type: none">• CAA noted that Amazon Prime Air should consider how the proposed operating procedure (landing or not operating the drone to allow other airspace users to pass) fits into the overall accommodation and integration goals of trials and therefore is applicable for CAP1616g.• [REDACTED] inquired about a point of contact at CAA for “CAP2616 BVLOS Sandbox Trials” questions. | |
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It should be noted that the design and operating procedures discussed within the Assessment Meeting Presentation and these minutes are in their infancy, and subject to change, but described as currently envisaged.

Actions Arising from ACP-2024-056 Assessment Meeting

Subject	Responsible Organisation	Action	Deadline
Timeline	Amazon Prime Air / NATS	Update timeline for CAA gateway and AIC date	Prior to publication of minutes
Meeting Minutes	Amazon Prime Air / NATS	Send draft meeting minutes to CAA for review prior to publication via ACP Portal	6 th March 2025
Stakeholder Engagement	Amazon Prime Air	Finalise Stakeholder engagement plan and associated material and return to CAA for review	Prior to formal engagement

Amazon Prime Air
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