

**MINUTES OF ACP 2022-101 ASSESSMENT MEETING
HELD VIA TEAMS ON 16 MAR 2023**

16 Mar 23

CAA
CAELUS 2

Present	Appointment	Representing
	Airspace Change Account Manager	CAA
	Principal Airspace Regulator	CAA
	Airspace Regulator (Technical)	CAA
	Airspace Regulator (Environment)	CAA
	Airspace Regulator (Environment)	CAA
	Airspace Regulator (Engagement and Consultation)	CAA
	ATM Inspector	CAA
	Principal RPAS Technical Inspector	CAA
	RPAS Team	CAA
	Head of Aerodrome Strategy AGS Airports	CAELUS Consortium
	NHS Scotland	CAELUS Consortium
	CPC	CAELUS Consortium
	NATS (Acting GM ATS Glasgow)	CAELUS Consortium
	NATS (ATC Glasgow)	CAELUS Consortium
	Trax International Ltd	CAELUS Consortium
	Trax International Ltd	CAELUS Consortium
	Skyports Ltd	CAELUS Consortium
	Skyports Ltd	CAELUS Consortium

CAA Assessment Meeting (Airspace Trial) Opening Statement

CAA noted that the following Statement of Need, Agenda and Presentation Slides were 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. The CAA reinforced that the sponsor was required to provide a broad description of their proposed approach to meeting the CAA's CAP 1616 Airspace Trial 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.

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 airspace change process.

	ACTION
<p>Item 1 – Introduction</p> <p>All parties were introduced on the call and the opening statement was read by [redacted]. Trax agreed to share a copy of the draft minutes within 2 weeks to enable comment and agreement from the CAA before a copy of them were to be uploaded to the ACP Portal together with a copy of the slides presented.</p>	

<p>Item 2 – Statement of Need (discussion and review)</p> <p>It was confirmed that all parties had reviewed the Statement of Need for ACP 2022-101 as uploaded on the portal. ■ highlighted that CAELUS is a consortium led AGS Airports Ltd on behalf of NHS Scotland and funded by Innovate UK through the Industrial Strategy Challenge fund, Future Flight competition. This would deliver a Concept of Operations (CONOPS) to support integrated UAS operations through the validation of live flight operations. The Statement of Need highlights that CAELUS aims to transform patient experience within Scotland looking at a drone based network to help deliver urgent and dynamic medical requirements supporting real use cases. This ACP forms part of 5 ACP trial submissions to demonstrate a validated concept of operations around airspace structure and use that is scalable and sustainable</p> <p>■ asked about the requirement for a Temporary Change or a Trial submission and recommended that this ACP, given the length of activation and the duration of the activation would be better suited to a temporary change. The advice of the CAA was welcomed on this point and the recommendation would be taken forward with a further version of the DAP 1916 submitted reflecting the change. It was put forward to the CAA that the ACPs in their entirety formed a ‘trial’ for the CAELUS Consortium in that validation of the CONOPS was being sought in order to support BVLOS UAS integration and a use case for NHS Scotland. For these outcomes, trial objectives had been created and a trial plan for the applicability of the objectives to each of the ACP applications and the flights contained therein were being developed. Therefore, for CAELUS, these ACPs were trials albeit contained within a TSA/TDA as applicable with the relevant operating procedures and were therefore able to sit as a temporary change as opposed to a trial application, with the trial objectives internal to CAELUS.</p> <p>Action. An updated SoN to be submitted to reflect the change from a trial to a temporary change.</p> <p>Action. CAA to advise when the ACP Portal has been amended from Trial to Temporary Change to enable uploading of minutes and presentation.</p>	<p>Trax</p> <p>CAA</p>
<p>Item 3 – Issues or opportunities arising from proposed change</p> <p>■ expanding that the objective of CAELUS is to demonstrate a drone enabled network serving NHS Scotland and that this project has been running for some years through the Future Flight Competition. There are a number of work streams under the CAELUS project with only a few being relevant to this ACP; one of which is Airspace Integration with NATS as the Project Owner. NATS have created a CONOPS with a forecast for this use case, medical delivery by drones, out to 2040. The aim is to align some of the key concepts and to validate the same through flights within this ACP and the other ACPs under the Consortium.</p> <p>The profile for ACP 2022-101 was developed during CAELUS 1 with significant work undertaken although for various reasons the flight was not able to take place within that timeframe. CAELUS is unique in the sense that NHS Scotland are a full partner and providing input from all the health boards and Scottish Ambulance Services.</p> <p>■ emphasising that this is a key project for NHS Scotland. It is beyond simply demonstrating that product can be flown between locations, with other organisations having demonstrated similar; it is to see how technology can be developed to deliver services and change the patient journey. Removing the need to move a patient to tertiary environment, there should be the ability to deliver the treatment to the patient who can remain in their home environment whilst they are undertaking life changing treatment such as chemotherapy. Within ACP 2022-101 the location is a specific facility that services the whole of Scotland enabling such services such as transplants, orthopaedics, and specialist</p>	

care. There is significant excitement as to how this technology can transform to deliver a truly national service.

■ illustrating the route proposed for ACP 2022-101. The route is wholly contained within Glasgow CTR and ATZ. The proposed dimensions of the segregated airspace is a TSA comprising half of the Glasgow ATZ to the North West of the RWY centreline and with a ceiling of 1000ft AGL. The window of opportunity is 2 weeks, 23 May 2 Jun with 3 or 4 flights return across 3 flying days to allow for delay. Numerous relevant stakeholders were engaged during CAELUS 1; and during the initial programme of work the CAA advised that additional airspace would not be required. Shortly before the proposed flight the CAA advised that segregated airspace was required. It is noted that although the stakeholders will likely remain the same, there are subtle differences in terms of the UAV and with subtly different flight details proposed. Emergency service user requirements for deconfliction and short notice access have been discussed at length. These issues were resolved in CAELUS 1 with agreement and it is anticipated that a similar agreement will be reached. Once updated engagement material has been prepared the stakeholders will re-engaged.

■ questioned the rationale for the size and shape of the TSA, particularly to the West where no BVLOS activity is taking place. ■ explained that is a simple shape and design using the RWY as a visual reference point for any visiting aircraft. ■ confirmed that this was the rationale and added that it was already detailed on the RDP maps, a greater granularity of design will make it difficult to see what is selected on the radar screen. The RWY centreline is also a clear reference point and it fits in with current operating restrictions for other UAS movements in that area that may wish to take place. Originally the whole of the ATZ was proposed but that was reduced to the design presented. Finally, it is reflective of a known piece of airspace for local airspace users.

■ also questioned the rationale for the operating limits of the TSA. AA explained that the likely operating altitude was 400ft AGL for the RPAS transit. The upper limit of 1000ft relates to emergency services access requirements. There is a cloud base minima included in the operating procedures. ■ added that each BVLOS flight would only last a few minutes and estimated 6-8 mins worst case.

Item 4 – Process requirements

■ invited the CAA SMEs to outline the process requirements.

■ explained that the safety assurance of the operation will need to be assessed and question was asked as to the intention for integration. Currently regulation does not exist to permit integration so, going forward, dependent on the intent of CAELUS, the CAA would need to see the relevant safety case and the safety assurance work for Glasgow Airport.

Discussions were had during CAELUS 1 regarding next steps and it is evident that further development of approach has taken place. The CAA will support where possible but may only work within current regulation which does not provide for integration at this time.

What will be required is the Safety Case from NATS and the safety management assessment of the process. ■ has received the safety material from Skyports and is working to ensure that it aligns with safety work being undertaken by Glasgow and the TOI. ■ highlighted that there is a requirement for the TOI but that this is the output of the safety assurance work that is required for this operation. There is a great deal that has already been discussed within CAELUS 1 and advice given as to what is required and that extended work will need to be evidenced.

■ questioned what ACP 2022-101 will produce in support of the CONOPS. ■ explained that the final elements of the objectives and CONOPS are not yet finalised in terms of which objectives will be validated within this ACP but there will be aspects of UTM flight requests and approvals. The finalised list will be supplied to CAA as soon as available.

Action. CAELUS team to provide finalised objectives relating to validating airspace CONOPS

Trax

<p>█ highlighted that there is internal discussion regarding the requirement for the publication of an AIC for any approved airspace and the method by which this would be notified. There is a discussion as to whether this will be NATS GLA that would issue the NOTAM or whether this will be AR(U) as is normal. The principle responsible for AR(U) is in discussion with NATS as to what this process looks like and the CAA will provide feedback on the outcome once known. It is considered that an AIC will be appropriate as although the proposed airspace is structure contained within controlled █ it will enable more information to be published than can be via NOTAM for the structure and the activity contained therein. Whilst the LOAs proposed would provide sufficient reassurance that there were adequate procedures in place to ensure management of that particular airspace, it is important to note that this is Class D airspace. Consideration must be given to the possibility of operators seeking to cross the Zone who require additional information or for example, those looking to utilise a particular landing site within the particular area.</p> <p>Action. CAA to confirm necessary method of publication for any airspace approved.</p> <p>Further consideration needs to be given to the requirement for the co-ordinates to be reviewed by AR and for those coordinates to be published a part of the NOTAM. █ highlighted that this is supporting rationale for the shape of the proposed airspace in so far as co-ordinates for the ATZ may be used.</p> <p>The RPAS team confirmed that the OSC will be assessed against compliance with regulation. The RPAS team have not seen the documentation, although submitted, as of yet and so were unable to comment further on the specifics. Part of the OSC is to look at the ground risk and from an initial review of the mapped area the routing seems to alleviate some overflown population. The timeframe for consideration of an OSC is 3 – 6 months depending on the quality of the submission and any issues raised.</p> <p>█ discussed the stakeholders engaged with during CAELUS 1 and commented that although it consisted of a fairly small group of stakeholders it is not unreasonable given the scope of the ACP. The CAP 1616 requirement is to engage on the safety and operational viability of the ACP and to carry out targeted engagement with ANSPs, airspace users and airports. The usual expectation is that engagement will be carried out with all NATMAC members. Rationale needs to be included as to why any of those on the NATMAC list are not engaged with.</p> <p>Advice was given with regards to the length of engagement with 6 weeks being usual for a TDA that would be a reasonable starting point, but should the decision be taken to engage for a shorter time frame rationale needs to be provided as to why and the time period should be to enable the stakeholders to obtain the right information and to provide meaningful feedback. Where there has been engagement with stakeholders previously it should be made clear as to the aim of the ACP and any differences. Further explanation should be included in the event that the proposed dates may be subject to change as this may affect the responses. This will reduce the risk of needing to re-engage but this will be dependent on any delay incurred.</p> <p>Advice was given as to evidence that would need to be submitted, including copies of emails, details of meeting minutes, etc which will enable the CAA to assess the validity of the engagement. On completion of the engagement the CAA will need to receive a report summarizing the engagement activity including what was said by whom and what was done as a result. The list of stakeholders should also be included together with the rationale of targeting them, a rationale for the length of the engagement period and a summary of the engagement approach.</p> <p>Should the proposal be likely to affect 7000ft below over inhabited areas there is a requirement for a brief impact statement to be submitted and how relevant stakeholders will be informed should the ACP be approved. Alternatively a rationale should be submitted if it considered that this is not applicable.</p> <p>Advice was also given as to the requirement for the method for collating, monitoring and report complaints.</p>	<p>CAA</p>
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<p>■ set out the environmental assessment requirements as detailed in the Airspace Navigation Guidance 2017 para 2.13 and CAP 1616 Appendix B, specifically B81 to B85. As per the guidance there is a need to provide justification of the airspace change, confirmation of the effective period, details of the frequency of flights and typical altitudes. The sponsor should also provide a qualitative description of traffic patterns including the RPAS operations and any consequential impacts to other air traffic.</p> <p>For temporary changes there is no requirement for any environmental assessments other than noise. Typical noise levels in $L_{A_{Max}}$ at key locations identified and newly overflown below 7000ft., relating to both the RPAS operations and any other traffic rerouting as a consequence of the airspace change should be provided. The $L_{A_{Max}}$ noise level should be correlated with the frequency and altitude of the aircraft movements at key locations. Noise levels for take-off, landing and cruising phases of the RPAS should be provided, including a penalty of 10 dB to account for the specific tonal characteristics associated with the RPAS being used.</p> <p>The sponsor may be able to scope out or scale down the noise assessment requirements where it can be demonstrated that no key locations are newly overflown below 7000 ft. either by the drone operations, or by any aircraft rerouted as a result of the airspace change. Robust evidence to support this rationale must be provided as detailed in Paragraph B26 of CAP 1616. There is a requirement to inform any affected communities prior to the airspace change being implemented as this can assist in the mitigation of possible complaints.</p>	
<p>Item 5 – Provisional timescales*</p> <p>Post meeting conversation between ■ and ■ to discuss the requirements of the AIC and impact on timelines. The CAA will give confirmation when known however the earliest possible flight date would be 2 Jun in line with the AIRAC cycle if an AIC is required. A briefing sheet may be possible which would reduce the required timeline but this unlikely to be the preferred option. ■ will take the discussion to CAELUS to confirm the availability and requirements of all parties in order to achieve a submission in line with an anticipated first flight of 2 Jun.</p> <p>Action. CAELUS to confirm required flight dates to finalise provisional timescales.</p> <p><i>* The timeline agreed may become subject to change by the CAA. This is because the Secretary of State for Transport has directed the CAA to prioritise RNP Instrument Approach Procedures (IAPs) without an Approach Control proposals; this may impact Airspace Regulation resource and consequently timelines.</i></p>	<p>CAELUS</p>
<p>Item 6 – Next steps</p> <p>Copy of draft minutes to be submitted by 23 Mar to the CAA. Once agreed a suitably redacted version is to be uploaded by 30 Mar to the CAA ACP Portal.</p> <p>Action. Draft minutes to be provided to the CAA by 23 Mar.</p> <p>CAELUS asked the RPAS team for a discussion regarding the OSC timelines.</p>	<p>Trax</p>
<p>Item 7 – Any other business</p>	

ACTIONS ARISING FROM ACP 2022-101 ASSESSMENT MEETING

Subject	Name	Action	Deadline
Admin	Trax	An updated SoN to be submitted to reflect the change from a trial to a temporary change.	Complete
Admin	CAA	CAA to advise when the ACP Portal has been amended from Trial to Temporary Change to enable uploading of minutes and presentation.	Complete
Tech	CAA	CAA to confirm necessary method of publication for any airspace approved	ASAP
Tech	CAELUS	CAELUS to confirm required flight dates iot to finalise provisional timescales.	ASAP
Admin	Trax	Draft minutes to be provided to the CAA	23 Mar

AGS
ACP Sponsor