



FPV UK response to
CAA CAP2569: Call For Input: Review of UK UAS Regulations

Version 1.0

27/08/2023

Purpose of this document

On 9th August 2023 the CAA published a 'Call for Input' document and response form on its website: <https://consultations.caa.co.uk/rpas/call-for-input-review-of-uk-uas-regulations/>

This Call for Input seeks views from the UAS community on opportunities to improve regulation of UAS, to ensure it is fit for the future. Feedback will be used by CAA, in addition to other evidence and analysis, to inform a future consultation on the changes we propose to progress.

The Call For Input closes on 7th September 2023.

This represents an important opportunity for you, and the drone community as a whole, to have a say in the future of UAS regulations in the UK.

Please read the CAA document and respond, using the web based form, with your thoughts on each topic.

The following pages contain FPV UK's response which you may be interested to read before you submit your own reply to the CAA. However, it is important that you complete the CAA response in your own words. Identical copy and pasted responses are normally ignored by the CAA.

In many cases the CAA's response form is too prescriptive. The Call For Input document asks a long question, with multiple points within it. But the response form only allows a single multiple choice response.

Format

In the following pages you will find the CAA preamble in black italics, the associated questions in non-italic black, followed by FPV UK's response in blue.

Where the CAA's response form requires a response from a bullet point list, our selection is included first. Followed by the rationale for our answer.

CAA Preamble:

Policy Objectives

Stakeholder feedback provided to CAA has identified challenges with the regulatory framework for operational requirements. The key challenges identified by stakeholders are:

- *Operational requirements, and particularly the system of categorisations, subcategorisations and exclusions, are complex and challenging for some users to understand. This creates a barrier to users complying with regulations and operating UAS safely and securely.*
- *The thresholds for certain operational requirements are not suitable for the evolving security and safety risks from UAS, resulting in some risks not being robustly mitigated.*
- *Restrictions for how UAS manufactured before 2026 (before implementation of product standards) can be used could be excessively burdensome for some UAS users. This could cause unintended consequences, such as UAS owners selling or disposing of their UAS earlier than they otherwise would.*
- *The approach to authorisations and risk-assessments in the 'Specific' category is inefficient and time-consuming, which is creating a barrier to market participation for commercial UAS operators.*

Question 1: Do you agree with the challenges with operational requirements identified by stakeholders, and why?

- Operational requirements, and particularly the system of categorisations, subcategorisations and exclusions, are complex and challenging for some users to understand. This creates a barrier to users complying with regulations and operating UAS safely and securely.

Definitely agree.

It is our view that the overall structure of the regulations (Open, Specific, Certified) is fine. The subcategories relevant to most drone flyers - namely the Open category and the A1, A2 and A3 subcategories are suitable. However, the subcategory names are not intuitive, and the separate C product classification types adds further unnecessary complexity.

In our following answers we propose new names and a much more simple concept for operational and product requirements.

Our Open category infographic (fpv.uk/openinfog) is very useful for explaining the current operational and product requirements in a graphical format. The CAA should

use a similar format to explain the operational requirements - particularly if they are changed in future.

- The thresholds for certain operational requirements are not suitable for the evolving security and safety risks from UAS, resulting in some risks not being robustly mitigated.

It is very difficult to comment on this point, because the CAA has not been clear in the point it is making.

We will presume that this is referring to sub-250g drones; which since the Open category rules were drafted, have evolved from mostly quite basic aircraft into very capable, well-equipped, camera drones. This type probably makes up the majority of the UK fleet.

The internationally-aligned logic which dictated that sub-250g aircraft posed an acceptable level of risk to aviation and people on the ground* is still sound and no extra restrictions should be imposed on sub-250g aircraft.

* Such as this study which defines sub-250g drones as 'harmless' - <https://journals.sagepub.com/doi/pdf/10.1177/1756829317691991>).

Furthermore, there is no evidence to suggest that the risk posed by sub-250g has changed / become unacceptable. I.e. there have not been widespread injuries to the public or mid-air-collisions involving sub-250g drones

- Restrictions for how UAS manufactured before 2026 (before implementation of product standards) can be used could be excessively burdensome for some UAS users. This could cause unintended consequences, such as UAS owners selling or disposing of their UAS earlier than they otherwise would.

We agree with the assertion made. The 2026 cliff edge is likely to prevent people buying drones as it approaches. This would be an unintended and undesirable consequence.

UAS purchased before the 2026 deadline should be allowed to continue with the same operational limitations indefinitely. I.e. to the end of their lives. (The product life cycle of drones is relatively short, so this is likely to be around 3 years in most cases).

This approach would be in line with road vehicle regulations. E.g. vehicles that were purchased before the legal requirement for seat belts came into force, do not require seat belts to drive on the public road today.

There are numerous other examples, such as front number plates on motorcycles, black and silver number plates on pre-1973 vehicles, etc. And when the sale of internal combustion powered vehicles is no longer allowed in the UK, existing cars on the road will still be allowed to drive as around as normal.

Question 2: Should CAA adopt the following policy objectives for operational requirements and why? Mitigate safety and security risks; User-centric; Enforceable; Growth enabling; Scalable. Please describe any other objectives we should consider.

- Mitigate safety and security risks – The regulations protect flyers, operators, aviation and the general public from harm caused by misuse of UAS.

Yes, to an extent.

Safety should be the number one priority of the national aviation regulator. However, the CAA should use a light touch and regulations should be risk based - based on real evidence. And in no way based on unproven/unreliable airprox data.

The CAA does not elaborate on the security aspects of its question.

- User-centric - The users of regulation can identify, access and understand the regulation.

Yes, to an extent.

If the rules are very complex and hard to understand, compliance will be lower than it might otherwise be.

Graphical representations of the rules (such as our infographic fpv.uk/openinfog) significantly helps with explaining the regulations.

- Enforceable – The regulation enables enforcement bodies to take action to ensure compliance with the regulation.

Yes, to an extent.

- Growth enabling – The regulation enables the UAS sector to grow through reducing barriers to market participation and supporting innovation.

Definitely, yes.

The CAA should reduce barriers to participation as much as practicable.

- Scalable – Regulation is suitable to be adopted at the expected scale of the sector in the future.

Definitely, yes.

The drone industry is predicted to grow substantially. The rules must enable that growth.

Question 3: Do you value international alignment in operational requirements, and why?

No, to an extent.

At the present time international alignment of the rules for UAS Operators has one slight advantage. It is easy for someone familiar with the UK rules, to understand the EU rules. Because they are the same.

However, the operational requirements are relatively complex and hard to remember, and so that doesn't apply to many people! Furthermore, any UK UAS flyer must register separately in an EU country (getting a second Operator ID), take an EU country competency test (getting a second Flyer ID) which is a significant burden.

It was hoped that by this stage, the UK would have an agreement in place with the EU to allow bilateral recognition of UK Operator IDs and Flyer IDs (proof of competency) in the EU countries, and vice versa. However this has not been forthcoming, and does not appear to be on the horizon.

Therefore there appears to be no real benefit to international harmonisation in terms of operational requirements.

If the UK is able to improve its operational requirements then this should be seriously considered. We have suggested improvements to the UK's operational and product requirements in our following answers.

Opportunities

Categorisations

Today, regulatory requirements for UAS users are organised in a system of categories ('Open', 'Specific' and 'Certified') and sub-categories (A1, A2 and A3 within the 'Open' Category). However, this approach is often cited by stakeholders as a cause of confusion, which creates a barrier to compliance.

We are exploring opportunities to make the framework of operational categorisations simpler for users, aiming to remove barriers to compliance and safe/secure operation of UAS. In particular, we are focusing on how to improve the regulatory framework for flyers operating in the 'Open' category (such as recreational or less frequent flyers), who are less likely to fully engage with the regulations before operating a UAS.

We expect that naming the categories in a more intuitive way will help make the regulations easier for users to understand and navigate (Opportunity 1: Re-name operational categories). Alternative approaches could include naming the categories in relation to the complexity of operation (e.g. 'basic' or 'advanced'), or risk level (e.g. 'low risk' or 'high risk'). This would mitigate feedback from stakeholders that the naming scheme for operational categorisations is unintuitive

We are also considering more opportunities to simplify how operational requirements are organised and presented (Opportunity 2: Simplify operational categorisations). Potential alternative models include:

- *Replacing the 'Open' category sub-categories with a single set of operational requirements, with some graduation of requirements for higher risk operations*
- *Combining A1 and A3 sub-categories into a single sub-category.*

Whilst simplification may make the regulations easier to understand, we are also mindful of not increasing the regulatory burden on users, and ensuring benefits are proportionate to the cost of change.

In addition, we are also considering whether the current regulatory framework for model aircraft users will continue to be effective in the future (Opportunity 3: Update model aircraft regulation). Specifically, we are considering whether requirements for model aircraft operations within the 'Open' category (excluding operations taking place under an Article 16 authorisation) are appropriate or whether an alternative approach, such as a dedicated sub-category, is required. We are also considering opportunities to clarify the definition of model aircraft. This aims to ensure regulation for model aircraft users is proportionate to risks, and simple to navigate.

Question 4: Should CAA re-name operational categories and sub-categories (Opportunity 1) and why?

Definitely, yes.

We propose a simple system of operational and product requirements as follows. (Note, this proposal includes no class rating of drones, etc):

Very Light (A0) = Sub-250g.

Light (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Medium (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavy (A3) = Sub-25kg.

Or, alternatively:

Featherweight (A0) = Sub-250g.

Lightweight (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Middleweight (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavyweight (A3) = Sub-25kg.

Model aircraft should be excluded from these regulations. Therefore any improvement to how a model aircraft is defined is worth considering.

Question 5: Should CAA simplify how operational requirements are categorised (Opportunity 2) and why?

Definitely no.

It seems inevitable that merging A1, A2 and A3 would remove the permissive elements of the A1 category afforded to very lightweight (sub-250g/C0) drones, the A2 category for those with extra training (namely the A2 CofC) and A1/T for those with sub-500g drones and an A2 CofC, or C1 drones.

There is no evidence to suggest that this degradation of permissions is required.

We propose removing the separate class rating of drones, and simply having joint operational and product requirements as follows:

Very Light (A0) = Sub-250g.

Light (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Medium (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavy (A3) = Sub-25kg.

These weight thresholds should be harmonised with the EU and internationally. So that drones sold internationally fit the UK requirements.

Question 6: Should CAA update how model aircraft operations are regulated (Opportunity 3) and why?

Yes, to an extent.

Model aircraft should be excluded from these regulations entirely.

Failing that, a separate subcategory for model aircraft may be worth considering.

Exclusions

At present, users of 'toy' UAS and <250g UAS are exempt from some regulatory requirements. However, feedback from stakeholders suggests this is a source of confusion

and misunderstanding, which in turn can lead to non-compliance. We are considering how to simplify the approach to exclusions from operational requirements, whilst ensuring mitigations are proportionate (Opportunity 4: Simplify operational exclusions).

Specifically, some stakeholders find that the definition of 'toy' is prone to misunderstanding. This makes it harder for users to know how to comply, and to operate their UAS safely and securely. We are considering whether an alternative approach for exclusions may be simpler for users. Options include exempting UAS based on weight or other metrics, or by improving the definition of 'toy'. This could be simpler for consumers to understand and result in increased levels of compliance from 'toy' and non-'toy' UAS users.

We are also evaluating whether exclusions for users of UAS weighing below 250g remain appropriate. This reflects the increasing capability of these UAS and the risks they pose – such as from entering restricted airspace, or unlawfully collecting personal and sensitive data. However, we also recognise the need to take a proportionate approach to mitigating risks. We welcome evidence from stakeholders on whether 250g remains an appropriate threshold, and the costs and benefits to different stakeholders from alternative approaches.

Question 7: Should CAA simplify exclusions from operational requirements (Opportunity 4) and why? Please describe any alternative exclusions that should be considered.

Yes, to an extent.

It is understandable that the definition of a toy ('products designed or intended (whether or not exclusively) for use in play by children under 14 years old') can cause confusion in this context.

However, it is sensible that children's toys are excluded from the regulations. If an easier to understand definition of a toy can be arrived at, then this is worth consideration.

All UAS under 250g should be excluded from the regulations.

The 250g threshold remains suitable. This is the internationally defined and recognised mass below which a drone is considered to present an acceptably low risk (or, to be 'harmless' - <https://journals.sagepub.com/doi/pdf/10.1177/1756829317691991>). Therefore UAS with a mass of less than 250g should be allowed to continue to operate as they do now.

Transitional arrangements

As described in the following chapter, manufacturers will need to ensure UAS are safe and secure by design from 2026 onwards. Article 20 of UK Regulation (EU) 2019/947 sets out operational requirements for UAS manufactured before 2026 without class-marks, such that, from 2026:

- *UAS without class marks weighing less than 250g can be used in the A1 and A3 sub-category.*

- UAS without class marks weighing less than 25kg can only be used in the A3 sub-category.

This aims to mitigate safety and security risks from UAS manufactured without technical mitigations, whilst still allowing these UAS to be used after 2026.

However, this may have unintended consequences for users who bought UAS before 2026 intended to be used in A1 or A2 category. These users would either be restricted in their activities or forced to replace their UAS earlier than they otherwise would. We are considering options to support UAS users who buy UAS before 2026 without class marks, mitigating some of the impacts of these transitional arrangements (Opportunity 5: Support users of non-class marked UAS).

These opportunities include extending the transition period from which legacy UAS can be used in certain operational sub-categories. Further requirements could need to be placed on users who wish to operate legacy UAS in these categories. However, we anticipate that requirements will still need to facilitate safe usage of UAS, whilst promoting uptake of UAS that are safe and secure by design.

Question 8: Should CAA change transitional arrangements for users of UAS without class marks (Opportunity 5) and why?

Definitely yes.

This potential cliff edge may discourage people from buying drones before the 2026 deadline. This would be an undesirable unintended consequence.

UAS purchased before the 2026 deadline should be allowed to continue with the same operational limitations indefinitely. I.e. to the end of their useful lives. (Drone product life cycles are relatively short, so this is unlikely to be more than 3 or so years in most cases).

The operator of a pre-2026 drone could prove its age using their sales receipt, the manufacture date on the drone and/or its serial number. Clearly for drones which are not in production in 2026, no proof would be required.

This is in line with road vehicle regulations. E.g. vehicles that were purchased before the legal requirement for seat belts came into force, do not require seat belts to drive on the public road today. There are numerous other examples, such as front number plates on motorcycles, metal black and silver number plates on pre-1973 vehicles, etc.

Product Requirements

Existing Regulation

Today, the most significant safety and security risks are primarily mitigated through actions taken by UAS users. In the future, UAS should be safe and secure by design. This will

prevent unsafe or insecure UAS operations from taking place and make it easier for UAS users to fly responsibly.

In practice, this will require regulatory requirements that set minimum technical characteristics on some UAS. This could include preventing UAS from flying in restricted airspace without permission, or requiring UAS to communicate ID data during flight, amongst others.

Other than general product safety requirements, no UAS-specific regulations have been implemented in the UK that set requirements on manufacturers or other economic operators. However, from 2026, UAS manufacturers will be required to adopt manufacturing standards that require UAS to be safe and secure by design. The regulatory framework for standards adoption is set out in the UK Regulation (EU) 2019/9453 , referred to as the ‘Delegated Regulation’.

This regulatory framework, based on retained EU legislation, is referred to as ‘class marking’. These regulations set out requirements for 7 different classes of UAS (summarised below). They also include regulations to enable the system for standards adoption to work effectively – including requirements for testing, certification and market surveillance. As described in the prior chapter, the UK Regulation (EU) 2019/947 (the Implementing Regulation) also sets requirements on UAS users that will limit what class of UAS can be used in certain operational categories.

UK Regulation (EU) 2019/945: <https://www.legislation.gov.uk/eur/2019/945/contents>

This chapter considers the regulation that applies to UAS products primarily applied to UAS manufacturers and other operators in the UAS supply chain. It describes the current regulatory framework in place today, the objectives we’re using to inform future policy development, feedback from stakeholders on the effectiveness of regulation, and opportunities to improve regulation. These opportunities cover the class- marking system itself, exclusions, Remote ID, geo-awareness and user guidance.

Stakeholder Feedback

Over the coming years, CAA will need to work with manufacturers and other stakeholders to enable adoption of product requirements. These activities will include establishing a Market Surveillance Authority, appointing Conformity Assessment Bodies, designating technical standards and publishing supporting guidance.

In advance of implementation, stakeholders have provided feedback on potential challenges with the regulatory framework for product requirements. The challenges identified by stakeholders can be summarised as:

- *The complexity of the class marking framework will create barriers to manufacturers participating in the market.*

- *The class marking framework is likely to be confusing for end users, due to the number of product classes and the complex interactions between classes and operational requirements.*
- *The thresholds between classes and exclusions from certain requirements leads to some safety and security risks not being fully mitigated.*
- *Some regulatory requirements are not as effective as they could be in mitigating safety and security risks.*
- *Users are not communicated adequate information at point-of-purchase or product set-up on how to use their UAS safely and securely.*

Question 9: Do you agree with the issues identified by stakeholders relating to product requirements, and why?

Somewhat agree.

Establishing a Market Surveillance Authority, appointing Conformity Assessment Bodies, designating technical standards and publishing supporting guidance is a serious undertaking. The initial, and ongoing, costs of all of this will be significant.

These significant costs will be passed on to the UAS operator in one way or another. (Perhaps through an increased registration fee, and/or through increased costs for manufacturers to comply, which will increase the retail price of a drone).

It may also put some manufacturers off from participating in the UK market. To our detriment.

We propose a simple system of operational and product requirements as follows. (Note, this proposal includes no class rating of drones, etc):

Very Light (A0) = Sub-250g.

Light (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Medium (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavy (A3) = Sub-25kg.

Or, alternatively:

Featherweight (A0) = Sub-250g.

Lightweight (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Middleweight (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavyweight (A3) = Sub-25kg.

The weight thresholds should align internationally so that drones designed for other markets can be used in the UK. It is unrealistic to expect manufacturers to produce special versions just for the UK market - and it is undesirable.

We agree that guidance for new pilots at the point of sale, for commercial off the shelf drones, would be beneficial. This must not adversely affect the homebuilt / own design model aircraft and drones however.

Policy Objectives

The following section sets out potential opportunities which could help address these challenges. In developing these opportunities, we have sought to deliver the following objectives:

- *Mitigates safety and security risks – The regulations protect flyers, operators, aviation and the general public from harm caused by misuse of UAS.*
- *User-centric – The regulations enable users to make informed purchasing decisions, understand how to operate a UAS safely, and make it easier to comply.*
- *Growth enabling – The regulation enables industry-participants to grow, through reducing barriers to market participation and supporting innovation.*
- *Scalable – Regulation is suitable to be adopted at the expected scale of the sector in the future.*
- *Internationally aligned – The regulations enable manufacturers to operate across multiple geographies without unnecessary burdens.*

Question 10: Should CAA adopt policy objectives for product requirements, and why? Mitigates safety and security risks; User-centric; Growth enabling; Scalable; Internationally aligned. Please describe any other objectives we should consider.

- *Mitigates safety and security risks*
Yes, to an extent.
- *User-centric*
Definitely, yes.
- *Growth enabling*
Definitely, yes.
- *Scalable*
Definitely, yes.
- *Internationally aligned*
Definitely, yes.

Safety must be the top priority for the UK aviation regulator. This must be proportionate to the real risk picture. And in no way based on unproven/unreliable airprox data.

It is important that the operator and remote pilot of a drone is able to fully understand the regulations so that they can make informed purchasing decisions and fly within the rules.

The sector is expected to grow and so the regulations must be able to accommodate, and facilitate this growth.

Product requirements (in particular mass delineations) should continue to be internationally aligned, to ensure that manufacturers can sell their products in the UK. It is unrealistic to expect manufacturers to develop special models for the UK market - and also undesirable.

Class Marking

As described in the 'Context' section, the UK Regulation (EU) 2019/945 requires manufacturers to adopt technical standards from 2026, using a system of 'class marking'. We are considering how to implement the class marking framework (or other similar approaches), to effectively mitigate risks, to make it easier for users to comply, and to reduce barriers to market participation (Opportunity 8: Implement manufacturer standards).

We are considering opportunities to simplify the class marking framework, to improve how it works for manufacturers and users. Specifically, we are considering the impact of replacing the 5 classes intended to be used in the 'Open' Category with a smaller number of classes - for example, consolidating classes C1, C2 and C3 into a single class. When combined with a label indicating product weight, this may be simpler for users to understand, facilitating increased compliance. We expect this could still be delivered through using international standards, ensuring that manufacturers aren't unduly burdened by divergences from the EU approach.

In addition, we are considering how to help users understand whether a UAS is safe and secure by design. To deliver this, we are considering implementing an CAA backed labelling scheme for some UAS, to complement the class marking framework (Opportunity 9: Implement product labelling scheme). In practice, this scheme could allow UAS with a C1-C3 class mark (or equivalent) to have a CAA-backed label that is easily recognisable to users.

This could help users make informed purchasing decisions and have confidence in the safety of their UAS. In addition, this could make it easier for UAS users to understand the interactions between class marking and operational requirements, and to comply. However, we would need to consider the cost and impact to CAA and manufacturers of such a scheme, before progressing with implementation.

Question 11: Should CAA implement manufacturer standards (Opportunity 8) and why?

Definitely, no.

Establishing a Market Surveillance Authority, appointing Conformity Assessment Bodies, designating technical standards and publishing supporting guidance is a serious undertaking. The initial, and ongoing, costs of all of this will be significant.

These significant costs will be passed on to the UAS operator in one way or another. (Perhaps through an increased registration fee, and/or through increased costs for manufacturers to comply, which will increase the retail price of a drone).

And for what?

The fact is that drones on the market are safe by design. And, they will incorporate extra safety features (such as 'low speed mode') in the future, to comply with international regulations.

For example, drones available on the market already have, or will naturally evolve to have: low battery fail safe functionality, loss of data link fail safe functionality, flashing lights, etc. Likewise, sub-4kg drones will have <3 m/s low speed mode, to comply with the EU's C2 class marking.

There is really no need for the UK to also test for these things. They can simply be specified in the operator requirements.

We propose a simple system of operational and product requirements as follows:

Very Light (A0) = Sub-250g.

Light (A1) = Legacy sub-500g and sub-900g with Low Batt/Datalink/Flashing light.

Medium (A2) = Legacy sub-2kg and sub-4kg with <3 m/s low speed mode and Low Batt/Datalink/Flashing light.

Heavy (A3) = Sub-25kg.

The weight thresholds between each subcategory should be aligned with international standards. So that drones can be designed to meet the EU and UK market requirements.

Question 12: Should CAA implement a product labelling scheme (Opportunity 9) and why?

No, to an extent.

Product/point of sale labelling which allows purchasers of off the shelf drones to make informed decisions would be a welcome thing. However, the devil is in the details.

How will this work in practice? What will a manufacturer have to do to be assigned a product label for their product? Presumably there would be several types/levels of product label.

The proposal seems to be that these product labels would exist in addition to class ratings. Wouldn't they add another level of complexity - on top of the operational requirements (A1-A3) and, product requirements (C0-C4)?

Inevitably such a scheme will be funded by the UAS operator one way or another. Either through higher drone prices, or increased CAA registration fees.

Exclusions

In the current regulation, UAS weighing less than 250g or classified as 'toys' would not be required to meet some product requirements, such as Remote ID and geoawareness. However, this approach may not fully address the risks presented by some of these UAS.

For example, some UAS that meet this criterion could still be used to infringe controlled or restricted airspace, or to collect private or sensitive data without consent. In addition, the current approach to exclusions may be a source of confusion for users when making purchasing decisions, or when understanding what type of UAS can be used in different operational categories.

To address these risks, we are considering whether the approach to product exclusions for certain UAS remains appropriate (Opportunity 10: Change product exclusions). Alternative approaches could involve extending some requirements, such as Remote ID and geo-awareness, to UAS below 250g with cameras. In addition, we could replace the exclusion for 'toy' UAS with a criterion based purely on weight, to avoid ambiguity for users. However, we recognise that some exclusions are likely to be proportionate – for example, for very small UAS without cameras.

The optimal approach taken would be dependent on what other changes to class marking are progressed, as discussed in the prior section. In our decision making, we will consider how to mitigate risks effectively and proportionately, whilst enabling international alignment where valuable to do so.

Question 13: Should CAA simplify exclusions from product requirements (Opportunity 10) and why?

Definitely no.

The internationally recognised 250g threshold, below which the risks of drone flying are currently considered acceptably low (or 'harmless') are still sound. There is no evidence to suggest that sub-250g UAS pose an unacceptable risk to safety of people on the ground, or aircraft.

Remote ID is not required for any UAS.

The sub-250g exclusions should continue.

It is important that toy aircraft be excluded from the regulations. If this can be achieved with simpler wording, then this may be acceptable.

Remote ID

Despite current UAS regulation, some UAS are used unlawfully for smuggling, harassment, and infringement of sensitive sites. The police currently have a limited ability to identify the person responsible for a UAS's operation at the time of an incident. In the future, technology will enable UAS to transmit operator and flight data during flight. This technology, called Remote ID, could allow police to identify malicious and/or incompetent operators, both in real-time and historically – leading to re-education, fines, or convictions.

In addition, the data provided by Remote ID will enable the CAA to be more effective as a regulator, by providing data on how UAS are used in practice. The data provided by Remote ID will improve the CAA's understanding of the sector and enable the CAA to develop policy that specifically targets the risks presented by UAS.

UK Regulation (EU) 2019/945 sets out a requirement to implement Remote ID in the UK by January 2026, through manufacturer requirements and operational requirements. We are exploring how Remote ID could be implemented in the UK (Opportunity 11: Implement Remote ID).

Remote ID requires UAS to transmit the operator's registration number, serial number, position, altitude, route, speed and take-off point. This data would be readable through a mobile phone near to the UAS (e.g. via WiFi/Bluetooth, referred to as 'direct' Remote ID). Data would also be passed to a database over a network (referred to as 'network' Remote ID). This would provide visibility in real-time and create a historical record.

We are exploring implementing a hybrid approach to Remote ID (i.e. both 'direct' and 'network') for UAS. This could be applied to UAS in the 'open' category that are above 250g or have a camera (potentially excluding some UAS, such as model aircraft), and to UAS in the 'specific' category. We are considering opportunities to add Remote ID functionality to some legacy UAS, via remote upgrade or add-on modules, with an appropriate transition period. This would aim to robustly mitigate safety and security risks from UAS, whilst managing impacts to UAS users.

We expect Remote ID to transform how security risks from UAS are mitigated. However, Remote ID is not part of the Airspace Modernisation Space to enable UAS to integrate into airspace. We anticipate that other complementary technologies, such as Electronic Conspicuity, will be also required in some circumstances.

Question 14: Should CAA implement Remote ID (Opportunity 11) and why?

Definitely, no.

Remote ID would require huge investment in infrastructure and systems in the UK. This cost would no doubt be passed on to UAS Operators in one way or another (perhaps through the registration fee).

It would also require significant investment from drone manufacturers. And finally it would involve very significant, and disproportionate, cost to operators of legacy drones and potentially model aircraft flyers too.

The fact is that those intent on using a drone for nefarious purposes will not activate remote ID, and they certainly will not retrofit a remote ID module to a legacy drone. It is almost inevitable that any remote ID functionality will be defeated/disabled by 'hackers' (those who like to 'tinker' with how electronic products work).

Spooing could also be employed by those intent on using their drone without being traced. Or, they could simply build a drone from components.

Furthermore, the Police already successfully track and trace criminals who use drones using existing detection systems. Likewise, the CAA already has access to this data which allows it to *understand the sector*, etc.

Geo-Awareness

Regulations exist today to prohibit UAS flying in airspace restriction zones, including airspace above aerodromes, prisons, and high-security buildings. However, in the future, UAS should be manufactured with mitigations in place that make it easier for users to comply with these restrictions. This could include functionality on UAS controllers that alert users when they are flying in restricted airspace ('geoawareness'), or that prevent UAS from entering restricted airspace altogether ('geofencing'). Whilst some UAS have this functionality today, stakeholder feedback has identified limitations in how this functionality is implemented in practice.

The current class marking requirements, due to be implemented from 2026, contain requirements for some UAS intended for use in the 'Open' category to have 'geoawareness' functionality. We intend to work towards implementing this requirement (Opportunity 12: Implement geo-awareness).

We are also considering further opportunities to help prevent UAS from deliberately or inadvertently flying in restricted airspace, making it easier for users to comply. Specifically, we are considering opportunities:

- *To provide further policy and guidance relating to how aeronautical data relevant to UAS is obtained and used by UAS manufacturers and flyers.*
- *To strengthen requirements on manufacturers to limit UAS flying in restricted airspace, using 'geo-fencing' functionality or similar.*
- *To improve user understanding of the regulations regarding restricted airspace.*

In addition, CAA and government are working together with our stakeholders to improve how airspace restriction zones are managed, with several actions set out in the Airspace Modernisation Strategy.

Question 15: Should CAA implement geo-awareness (Opportunity 12) and why?

Yes, to an extent.

Geofencing has been a part of COTS (consumer off the shelf) drones for many years and some pilots (incorrectly) rely on the geofencing/geo-awareness built into their drone to keep them from flying in unsuitable locations.

In some cases, this geofencing is incorrect. The 'no fly zones' on the drone/app, don't match the actual UK FRZs, etc. Therefore in some cases the drone will allow flight in an area that it shouldn't, and the operator may be unaware that they are contravening the rules.

The CAA should require that geofencing data be accurate - and provide suitable data to the manufacturers to facilitate this.

Furthermore, there must be a provision to allow geofencing to be overridden where the remote pilot has permission to operate in that area. Permission to fly in an FRZ should not be unreasonably withheld by the ATSU (air traffic services unit) in question. Perhaps ATC could provide a code to the permitted drone pilot, which would then disable geofencing for that drone for that FRZ for the permitted period. (DJI does have an override system for their drones, perhaps this could be finessed as above).

It is very important that model aircraft, including home built drones, should be excluded from any geofencing requirement. Such aircraft don't usually have GPS onboard and therefore could not meet a geo-awareness requirement without a very significant burden being added.

User Guidance

UK Regulation (EU) 2019/945 includes requirements for manufacturers to provide an information notice to users at the point-of-purchase, as made available by the CAA. In practice, this information notice could be a leaflet describing the safety and security mitigations users should carry out when operating an UAS. In addition, flyers and operators are expected to have the necessary competency qualifications, such as the Flyer ID, before operating a UAS.

We expect there are opportunities to improve how user guidance is communicated to users at the point-of-purchase or whilst using the UAS, promoting responsible UAS operation. These opportunities include:

- *Requiring manufacturers to convey safety and security guidance to users during product set-up or pre-flight, via the controller or other interface (Opportunity 13: Improve user guidance).*
- *Requiring manufacturers to validate Flyer or Operator ID during product set-up or pre-flight, to ensure flyers/operators have the appropriate registration and training before flying. If a consumer is unable to provide this information, this could result in a notification to users and/or limitations on how the UAS could be used (Opportunity 14: Introduce user validation requirements).*

For both opportunities, we would need to consider the potential costs and impacts to manufacturers, the effectiveness of different approaches, and the proportionality of any controls placed on UAS users

Question 16: Should CAA introduce requirements for manufacturers to provide user guidance during product set-up or pre-flight, via the controller or other interface (Opportunity 13) and why?

Yes, to an extent.

Some level of guidance on first use of a commercial off the shelf drone is a good idea. This is already included with most consumer drones.

It is imperative that any new requirements exclude unmanned aircraft (including model aircraft and home built drones) which do not have integrated controllers with screens and apps, etc. I.e. a simple model aircraft does not include any screen or app and therefore could not meet any such requirement.

Question 17: Should CAA introduce user validation requirements on manufacturers (Opportunity 14) and why?

Definitely, no.

Whilst providing guidance material to new drone flyers is proportionate, having manufacturers build systems, specific to the UK, for validating Operator IDs and Flyer IDs would be too onerous.

Creating a real time check of Operator ID and Flyer IDs from the UAS would be a very significant undertaking for both the CAA and the drone manufacturers. There is presently no API available from the UK CAA to check Operator ID and Flyer IDs. (We requested this throughout the operator registration project process, but it was never built).

There would be a significant cost to both the CAA and the manufacturers to create such functionality and run it. This cost would undoubtedly be passed on to the drone operator in one way or another.

It would require the drone be connected to the internet, which it may not be.

It is the operator who must comply with the UK rules. Not the manufacturer.

Likewise a car manufacturer does not have a requirement to verify your driving licence before you drive a new car.

Other Opportunities

Policy and Guidance Documents

For regulation to be most effective, requirements should be organised, presented and communicated clearly. Today, regulatory requirements contained primarily in UK Regulation (EU) 2019/945 and UK Regulation (EU) 2019/947 are supported by other sources of information, such as CAA website, the Drone Code, the CAP 722 document series and supporting Acceptable Means of Compliance (AMC) and Guidance Material (GM).

Some stakeholders have provided feedback that the complexity of the policy and guidance document structure forms a barrier to users understanding how to comply. We are considering opportunities to improve policy and guidance documents maintained by the CAA (Opportunity 15: Update policy and guidance document structure).

These opportunities would aim to make documents more suited to their users, and to minimise potential for duplication, interdependency, and contradiction. In turn, this should make it easier for users to comply with the regulations, whilst also delivering benefits for CAA, government and the police.

The opportunities we are considering include:

- *Combining UK Regulation (EU) 2019/945 and UK Regulation (EU) 2019/947 – removing the significant interdependency between the two regulations.*
- *Replacing the CAP 722 series with extended AMC and GM – removing the duplication between these two documents and clarifying the legal status of non- legislative guidance.*
- *Introducing a new user-friendly ‘SkyWay’ Code – creating a new user friendly document, modelled on the SkyWay Code used in aviation⁶, that collates all the relevant regulatory requirements for different user groups.*

4.4 The optimal set of changes would be impacted by other opportunities set out in this document. For example, the costs of combining UK Regulation (EU) 2019/945 and UK Regulation (EU) 2019/947 may only be justified if making significant changes to these regulations. We welcome stakeholder views on whether the benefits of these opportunities would justify the cost of change to CAA and the UAS community.

Question 18: Should CAA simplify policy and guidance document structure (Opportunity 15) and why?

[Definitely, yes.](#)

[The current array of documents is extremely unwieldy and unnecessarily complex. There are several versions of CAP722, plus AMC and GM documents. \(Not to mention the actual legislation being found in the ANO 2016, ANO 2020 amendments, the implementing regulation 2019/947, the delegated regulation 2019/945, the police powers act 1997, the Air](#)

Traffic Management act amendments, the data protection act, etc).

Previously there were two articles in the ANO which governed unmanned aircraft flying. These fitted on one side of A4 paper and were easy to understand.

The CAA guidance should be vastly simplified. And infographics like the FPV UK Open Category infographic (fpv.uk/openinfog) and the FPV UK Article 16 infographic (fpv.uk/article16) should be used to explain the rules in an easy to understand and digest format.

Other Opportunities

This Call for Input has set out 15 potential opportunities to improve UAS regulation, where we are seeking views from stakeholders. However, there are several other areas where CAA is working to improve UAS regulation. These include:

- *Enabling the police to issue Fixed Penalty Notices for certain breaches of regulations, supported by improved guidance for enforcement.*
- *Promoting the uptake of Electronic Conspicuity and Detect and Avoid technology.*
- *Implementing a new framework for assessing and validating flightworthiness of UAS in the 'specific' category.*
- *Developing new policy frameworks for operation of UAS within the 'certified' category.*
- *Supporting the development of policy for UAS Traffic Management.*

In addition, the Department for Transport has previously consulted on several potential improvements in their publication titled 'Future of transport regulatory review: future of flight'.

This includes potential changes relating to alcohol limits and insurance.

Beyond these opportunities, we welcome views from stakeholders on what other improvements to the UAS regulatory framework should be considered.

Question 19: What other opportunities to improve UAS regulation, beyond those described in this Call for Input, would you like to see progressed?

- [Inclusion of drones with autonomous modes within the association's Article 16 Operational Authorisations. This can be achieved by simply changing the definition of 'model aircraft' in section 7.1-9 of the OAs as follows: 'An unmanned aircraft used for sporting and recreational purposes, flown by direct control inputs made by the remote pilot without any autonomous capability other than for flight stabilisation purposes.'](#)

[There is no evidence to suggest that using an automated mode, whilst maintaining VLOS, introduces any higher level of risk to safety than flying with direct control inputs. It is possible that the risk is actually reduced.](#)

- The regulation should enable the flying of sub-250g drones in one's own garden using FPV. Where the air volume is shielded by features such as the house, trees, etc (forming non-navigable airspace / an atypical air environment). And access by uninvolved people is controlled (i.e. there is a fence/hedge/gate).
- The current publication of unproven airprox reports allegedly involving UAS is extremely damaging to the UK drone industry and the aviation sector as a whole.

UKAB processes airprox reports based entirely on unreliable eyewitness reports. This is due to their misinterpretation of the out-of-date ICAO legislation.

And UKAB gives each report a 'risk rating' and 'risk statement' such as 'A' and **'Risk: The Board considered that the pilot's overall account of the incident portrayed a situation where providence had played a major part in the incident and/or a definite risk of collision had existed.'** which gives the entirely unproven, and (by UKAB and CAA's own admission, **uninvestigated**), report a veneer of authenticity that it does not deserve.

The media then publish sensationalist stories based on this faulty information, with phrases like *'The UK Airprox Board, the body responsible for investigating near misses in the UK, reports that a definite risk of collision existed'*.

CAA should clarify that the ICAO definition requires two aircraft to be unequivocally present, for an airprox to exist. CAA and UKAB should then use the national drone detection dataset to confirm the presence of both aircraft in question, and only then publish an airprox report involving a drone. Otherwise the report can only ever be of an 'Unknown Object'.