

**For discussion  
on 24 June 2019**

**Legislative Council Panel on Economic Development**

**Legislative Proposal for Regulating the Operations of  
Small Unmanned Aircraft in Hong Kong**

**PURPOSE**

This paper seeks Members' views on the legislative proposal for regulating the operations of small unmanned aircraft ("SUA")<sup>1</sup> in Hong Kong.

**BACKGROUND**

2. To assist the Government in reviewing the existing statutory requirements and exploring ways to improve prevailing regulatory regime of unmanned aircraft systems ("UAS"), the Civil Aviation Department ("CAD") has commissioned a consultancy study on the regulation of UAS in March 2017. The objective is to safeguard public safety while facilitating the technological development and diversified uses of UAS.

3. At the meeting of the Legislative Council ("LegCo") Panel on Economic Development held on 12 December 2017, Members were briefed vide the LC Paper No. CB(4)325/17-18(03) on the key recommendations of the consultancy study for an enhanced UAS regulatory regime<sup>2</sup> and CAD's plan to conduct a public consultation to formulate the detailed proposal. Members generally welcomed an enhanced regulatory regime for UAS in Hong Kong and urged the Government to conduct a public consultation exercise to collect views from the public.

4. In April 2018, CAD published the consultancy report and launched a three-month public consultation on the directions for regulating UAS. To gauge views from the relevant stakeholders, CAD also held

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<sup>1</sup> SUA is a subset of UAS. For details, please refer to paragraph 7 below.

<sup>2</sup> The six key recommendations included the establishment of an UAS registration system, regulation of UAS operations by risk-based classification, development of training and assessment requirements, production of drone maps for UAS operators, prescribing insurance requirements for UAS, and conduct of further study on the regulation of indoor UAS operations.

various focus group meetings with concerned parties including recreational/commercial UAS operators, UAS manufacturers, unmanned/model aircraft associations, engineering and research organisations, insurance authority/association and media associations.

5. During the consultation period, a total of 147 written submissions were received. In general, the public and stakeholders are supportive towards an enhanced regulatory regime of UAS in Hong Kong, including the establishment of an UAS registration system, adoption of a risk-based classification of UAS operations, prescribing insurance requirements in respect of third party liability, and imposing additional requirements on UAS equipment and training and/or assessment of persons flying UAS. Respondents also welcome the publication of drone map to delineate restricted flying zones (“RFZs”). However, some respondents express concerns on privacy issues arising from UAS operations and market readiness of the equipment requirements. Some views also opine that certain operating conditions are too stringent and call for further review by the Government, in particular the minimal separation from people/buildings considering the densely populated environment in Hong Kong. A compendium of the submissions is published on CAD’s website [https://www.cad.gov.hk/english/uas\\_consultation\\_submissions.html](https://www.cad.gov.hk/english/uas_consultation_submissions.html).

6. Taking into account the recommendations of the consultancy study, views received during the public consultation and practices in other major jurisdictions, CAD proposes that legislative amendments should be made to provide an enhanced regulatory regime. Key areas of the proposed regulatory regime are described in the ensuing paragraphs.

## **KEY AREAS OF THE PROPOSED REGULATORY REGIME**

### **Proposal for a New Subsidiary Legislation under the Civil Aviation Ordinance (Cap. 448) to Govern SUA**

7. According to the International Civil Aviation Organization’s (“ICAO”) general classification of unmanned aviation, unmanned aircraft cover a broad spectrum. SUA, generally weighing 25 kilograms or less, is a subset of UAS and is commonly referred to as “drone”. Our proposal aims at regulating the operations of SUA within Hong Kong.

8. Under the existing legislative framework in Hong Kong, UAS are classified as aircraft and are governed, as far as aviation safety is concerned, by the civil aviation legislation under the purview of CAD,

namely the Air Navigation (Hong Kong) Order 1995 (Cap. 448C)<sup>3</sup>. The Air Transport (Licensing of Air Services) Regulations (Cap. 448A) requires that a person using an UAS for hire or reward must apply for a permit granted by the Director-General of Civil Aviation (“DGCA”) before flight and must abide by the terms and conditions of the permit issued.

9. The aforesaid civil aviation legislation is not specifically designed for UAS which is a relatively new product which is undergoing constant development, and many of the requirements mainly govern the operations of manned and larger civil aircraft. Hence, they may not be the most suitable instruments for the regulation of UAS particularly the smaller ones in Hong Kong. We therefore propose that a specific and self-contained<sup>4</sup> subsidiary legislation should be made by the Chief Executive in Council under Cap. 448 to govern SUA (“new SUA legislation”), which is intended to be defined as any power driven unmanned aircraft, weighing 25 kilograms or less including everything installed in, carried with or attached to the aircraft at the commencement of its flight.

10. Unmanned aircraft weighing above 25 kilograms<sup>5</sup> will continue to be subject to the existing provisions under Cap. 448C governing larger civil aircraft for the time being. ICAO is still in the process of developing new standards for regulating larger UAS operations. Based on current timetable of ICAO, the overall regulatory framework will only be available from 2024 onwards. CAD will keep in view the development and formulate regulatory requirements for such UAS with reference to the relevant international standards when they are available.

### **Risk-based Classification of SUA Operations**

11. In line with the guidance issued by ICAO and the recommendations of the consultancy study, we propose that SUA operations should be regulated under a risk-based approach and be classified according to the weight of the SUA and the operational risk level. The classification should be applied to all users alike, regardless of recreational or commercial purposes, as regulatory requirements should be

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<sup>3</sup> Article 48 of Cap. 448C provides that a person shall not recklessly or negligently cause or permit an aircraft to endanger any person or property.

<sup>4</sup> In devising the legislative proposals, CAD will take the opportunity to review other civil aviation-related legislation and clarify the consequential effects with the enactment of the new SUA legislation.

<sup>5</sup> According to the recommendations of consultancy study mentioned in paragraph 2 above, the use of unmanned aircraft weighing above 25 kilograms will be classified as Category C – “Regulated, Higher Risk” Operations and will not be covered in this legislative proposal.

based on risks posed to public safety but not based on purposes. The proposed classification of SUA operations are as follows –

- (a) **Category A – “Low-Risk” Operations:** “Category A” comprises sub-categories of “Category A1” (i.e. operations of SUA weighing 250 grams or less that are within the standard operating conditions) and “Category A2” (i.e. operations of SUA weighing more than 250 grams but not more than 7 kilograms that are within the standard operating conditions). We propose that prior permission from the CAD will not be required before flight.
- (b) **Category B – “Regulated, Low Risk” Operations:** “Category B” comprises operations of SUA weighing 7 kilograms or less that exceed the applicable standard operating conditions, and all operations of SUA weighing more than 7 kilograms but not more than 25 kilograms. Such operations should be subject to more stringent safety requirements. Prior permission from the CAD will be required before flight.

12. Different categories of SUA operations will be subject to corresponding regulatory requirements based on risk levels. In gist, Category A1 operations will be subject to requirements on standard operating conditions, RFZs, and the requirement that a person shall not recklessly or negligently cause or permit an SUA to endanger any person or property<sup>6</sup>. Category A2 operations will be subject to additional requirements apart from the above, including registration and labelling, equipment and insurance requirements. Lastly, Category B operations will be subject to even more stringent requirements depending on individual cases, and prior permission will need to be sought from CAD before flight. An overview of the proposed regulatory requirements is given in **Annex A**. The relevant details are described in the ensuing paragraphs.

## **Establishment of an SUA Registration System**

### Registration Requirements for SUA and Persons Flying SUA

13. To enhance safety awareness of SUA owners and persons flying SUA as well as enforceability of the regulatory requirements, we propose establishing a registration system under which –

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<sup>6</sup> A similar requirement is provided in the existing Article 48 in Cap. 448C.

- (a) SUA owners are required to register their SUA for Category A2 and/or B operations before commencement of flight.
- (b) Persons flying SUA under Category A2 and/or B operations are also required to be registered before commencement of flight.

14. In devising the proposed registration system, we have taken reference from the practices of major civil aviation authorities such as Australia, Canada, the Mainland China, the United Kingdom (“UK”) and the United States (“US”). For all these jurisdictions, a registration system is required for SUA weighing more than 250 grams and the SUA should be subject to the operating conditions specified by the respective civil aviation authorities for ensuring safe operations. By imposing registration requirements (and associated labelling requirements) and operating conditions based on risk levels, the proposal aims to strike a balance between protecting public safety and avoiding undue regulatory burden on the general public using SUA.

15. To facilitate the registration process, CAD will establish an electronic portal (in the form of a mobile application and a web portal). An SUA owner should be a natural person of at least 18 years of age<sup>7</sup>, or a body corporate<sup>8</sup>. A person flying SUA should be a natural person of at least 14 years of age<sup>9</sup>. For details, please refer to **Annex B**.

#### Labelling Requirements of SUA

16. After registration, SUA owners for Category A2 and/or B operations are required to display a unique registration mark on the SUA in accordance with the labelling format required by CAD. Persons flying SUA for Category A2 and/or B operations should also ensure that the registration mark is properly displayed on the SUA before flight. Considering the need for standardisation and ease of identification, we propose to adopt a standard format of label with unique registration mark. Details of the formatting requirements will be specified and promulgated by CAD from time to time. For details, please refer to **Annex C**.

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<sup>7</sup> The minimum age requirement of 18 years of age is set for SUA owners, similar to the registration of vehicles. Setting the minimum age at 18 years old will also facilitate SUA owners to enter into contractual agreements with insurers, and fulfil the insurance requirements.

<sup>8</sup> SUA owned by a body corporate should be registered by the person appointed by the body corporate.

<sup>9</sup> The minimum age requirement of 14 years of age for persons flying SUA is set taking reference to the minimum age requirement imposed by civil aviation authorities in Canada and the Mainland China. It is among the lowest of minimum age requirement of SUA operations in major jurisdictions, and will facilitate the use of SUA as far as practicable.

## Technical Requirements for the Safe Operations of SUA

### Training and Assessment Requirements

17. Suitable training helps ensure competency and improve safety awareness of persons flying SUA. While persons flying SUA for Category A2 and/or B operations are already required to go through safety information and know-how on safe SUA operations during the registration process as described in **Annex B**, we consider that additional and advanced training should be mandated for higher risk operations. As such, we propose that persons flying SUA for Category B operations should be required to undertake advanced training and assessment from a training organisation approved by CAD at their own cost. Upon successful application, CAD will issue a Certificate of Competency (“C of C”) to such person. Internationally, similar training and assessment requirements are imposed on the flying of SUA in Category B equivalent operations in Australia, Canada, the Mainland China, UK and US.

18. In order to facilitate persons who have already gone through the required training and assessment in other jurisdictions, CAD may consider the issue of C of C subject to the proof of competency provided, e.g. UAS qualification recognised by major civil aviation authorities. Such arrangement will provide an alternative and facilitating means to recognise qualified persons who could meet the required competency level, in particular at the initial stage of the new regulatory regime.

### Equipment Requirements

19. Appropriate equipment would enhance public safety, not only by providing essential safety features where necessary but also improving the safety awareness of persons flying SUA. Hence, we propose that all SUA for Category A2 and/or B operations should be equipped with basic capabilities of flight log (for recording basic flight parameters such as altitude, geographical location, speed, etc.) and geo-awareness (for providing information or alerts on airspace restrictions). For Category B operations, depending on the complexity and potential risks of individual operation, the SUA may be subject to additional equipment requirements imposed by CAD such as equipage of geo-fencing function (for limiting the SUA operating areas as specified) or fail-safe mechanism (for termination of flight). Details of the equipment requirements will be specified and promulgated by CAD from time to time in the light of latest technological development and prevailing operating environment. For details, please refer to **Annex D**.

20. Based on our discussion with stakeholders, majority of the SUA currently in the market should be able to comply with our proposed equipment requirements above. In addition, we propose to provide a grace period, tentatively around one year from commencement of the new SUA legislation, so that SUA (e.g. self-assembled SUA) which may not meet the required capabilities at the moment will also be given sufficient time to meet the requirements.

### Operating Conditions

21. Generally speaking, higher risk operations should be subject to more stringent operating conditions. Apart from equipment requirements, we propose that all Category A operations should be subject to standard operating conditions specified by CAD. If any SUA operations exceed the standard operating conditions during any part of the flight, such operations will be regarded as Category B operations and prior permission from the CAD will be required. Other operating conditions may be imposed in granting the permission as individual case may require. Internationally, it is common practice for civil aviation authorities including Australia, Canada, UK and US to impose standard operating conditions to ensure safe operations of SUA, and requirements to seek prior permission from civil aviation authorities to conduct flights that exceed standard operating conditions.

22. Generally speaking, standard operating conditions include but are not limited to, maximum flying altitude, maintaining visual line of sight (“VLOS”) with the SUA, time of operations, minimum lateral separation from uninvolved people/structures/vehicles/vessels, and maximum speed. Details of the standard operating conditions will be specified and promulgated by CAD from time to time, in the light of latest technological developments and prevailing operating environment. For details, please refer to **Annex E**.

### **Insurance Requirements**

23. In view of the potential risks that may be posed to third parties during SUA operations, we propose that insurance requirements in respect of third party liability for bodily injury and/or death should be imposed for SUA involving in Category A2 and/or B operations. The minimum coverage for Category A2 operations should be set at \$5 million, and for Category B operations, \$10 million or a higher amount as required by the CAD. The policy of insurance should be issued by an insurer authorised under the Insurance Ordinance (Cap. 41) as regulated by the Insurance

Authority (“IA”). The minimum coverage level of \$10 million for Category B operations is set taking reference to the Building Management (Third Party Risks Insurance) Regulation (Cap. 344B)<sup>10</sup>, and a lower level of \$5 million is set for Category A2 operations having regard to the lower risks involved.

24. In setting the insurance requirements, we are mindful of the availability of insurance products for SUA operations in Hong Kong. At present, persons flying SUA may insure for a particular SUA operation, or obtain a household plan with SUA as an insured item to cover their liability under general SUA operations. In order to understand the market readiness for insurance requirements upon enactment of the new SUA legislation, CAD has worked together with the IA and the Hong Kong Federation of Insurers (“HKFI”). Through an internal survey conducted by the HKFI, a number of insurers have expressed interest in providing relevant insurance products with flexible choices of coverage duration (including daily, weekly or annually). Subject to terms and conditions, existing products are available offering an annual premium of third party liability for bodily injury and/or death at several hundred dollars for Category A2 operations. For Category B operations, given the nature, complexity and thus risk level of operations vary, the premiums are also expected to vary accordingly. Generally speaking, premium for a single-day or weekly coverage is estimated to be in the region of several hundred dollars, while that for annual coverage is expected to be higher. We believe that as use of SUA continues to gain popularity, both in Hong Kong and worldwide, more insurance products with different terms and more competitive premium will continue to emerge.

### **Restricted Flying Zones**

25. SUA may pose risks to other aircraft operation. Hence, to safeguard aviation safety, certain airspace need to be restricted from flying of SUA except with prior permission by CAD. For instance, flying of SUA should not be allowed for airspace within or adjacent to aerodromes and heliports and associated flight paths so as to avoid affecting aircraft (including helicopter) operations therefrom.

26. In addition, having consulted relevant Government bureaux and departments, restriction on flying of SUA may also be required for some

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<sup>10</sup> Under Cap 344B, a compulsory insurance scheme is introduced with coverage of not less than \$10 million, in respect of the death, or bodily injury, or both, arising out of one event in case of personal injuries claims in relation to the common parts of the building (e.g. accidents involving fallen objects from the building).

public events from time to time. Examples are the Formula E races which involve a large gathering of spectators in a setting of high-speed race, for which the risks posed by SUA operations are relatively high and restriction of SUA flying must be imposed. Moreover, restriction on flying of SUA may also be required for emergency/security purposes. For instance, SUA operations (except authorised ones operated by emergency rescue personnel) may need to be restricted from areas in a fire scene or areas where search and rescue operations are underway. Prisons should also be free from unauthorised SUA operation to ensure their safe and secure operation. Headquarters as well as training and operational facilities of law enforcement agencies should be free from unauthorised SUA operation to safeguard confidentiality of operational details and sensitive information.

27. In the light of the above, we propose that the DGCA should be empowered to designate RFZs to restrict the flying of SUA under the new SUA legislation by reasons of aviation safety, emergency/security and/or the intended gathering or movement of a large number of persons. Such proposal is in line with international practice at which civil aviation authorities have the powers to restrict the flying of SUA to govern airspace usage<sup>11</sup>. CAD will also publish a map via the electronic portal to indicate the latest RFZs for reference by SUA operators.

### Indoor Operations

28. Internationally, SUA operating indoors usually refer to flights flying within buildings or outdoor areas where there is no possibility for the SUA to ‘escape’ into the open air (e.g. a ‘closed’ netted structure outdoor). Civil aviation authorities in UK and US have expressly stipulated that indoor SUA operations are not subject to their civil aviation regulations, considering that there should have no effect on flights by aircraft in the open air.

29. We agree that SUA operating indoors would not affect aviation safety. That said, they may still pose risks to persons and properties particularly where public access is allowed. Considering the need to protect third party, the vastly different operating environments of indoor venues, as well as the fact that property owners/managers have the

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<sup>11</sup> Taking UK as an example, it is specified in Article 239(1) of “The Air Navigation Order 2016” that “If the Secretary of State decides it is necessary in the public interest to restrict or prohibit flying by reason of—  
(a) the intended gathering or movement of a large number of persons;  
(b) the intended holding of an aircraft race or contest or of a flying display; or  
(c) national defence or any other reason affecting the public interest,  
the Secretary of State may make regulations prohibiting, restricting or imposing conditions on flights by aircraft...”.

responsibility and authority to protect the public accessing these venues, we propose that –

- (a) the new SUA legislation should not be applicable to indoor operations of SUA in domestic premises<sup>12</sup> (e.g. flat/apartment), except the requirement that a person should not recklessly or negligently cause or permit an SUA to endanger any person or property; and
- (b) indoor operations of SUA in non-domestic premises (e.g. shopping malls, concert halls, community centres, etc.) should be subject to registration and labelling requirements (paragraphs 13-16 above), as well as the insurance requirements with minimum coverage at \$5 million (paragraph 23 above). As with other non-SUA operations (e.g. performance events), property owners/managers may impose additional requirements for their own venues depending on the specific operating environment to ensure the safe operations of SUA and implement appropriate safety measures. CAD will also issue general safety guidelines on indoor SUA operations for reference by property owners/managers.

### **Applicability to Specific Operations**

30. In devising the legislative proposals, we have aimed to strike a balance between protecting public safety and facilitating development of SUA. SUA is an innovative and new development having tremendous potentials in both applications and technological advancement which will benefit the community at large and in turn Hong Kong. It is therefore of utmost importance that any legislation should not be unduly rigid and restrictive as to hinder SUA development or flourishing of innovative ideas. Flexibility has therefore been built in legislative proposals to cater for different types of SUA operation and the rapid development of SUA. Our proposals as set out above, which adopt a risk-based approach allowing general use for lower risk operations (i.e. Category A operation) and, with prior permission, higher risk operations (i.e. Category B operation), supplemented by detailed technical requirements to be specified and promulgated by CAD from time to time, should be able to achieve the objective.

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<sup>12</sup> Domestic premises means any premises used wholly or mainly for residential purposes and constituting a separate household unit.

31. Noting that there are concerns on applicability of the new SUA legislation to certain operations which have special needs, DGCA is proposed to be empowered to permit certain SUA operations / exempt SUA operations from the requirements on a case-by-case basis as he thinks fit provided that such permission / exemption is in line with the overarching policy objective to safeguard public safety. For examples, with a view to facilitating development/research/education related operations, drone racing, media reporting, etc., CAD will consider granting permission / exemption to these operations from the requirements on a case-by-case basis under the new SUA legislation.

### Government Operations/Tourists and Visitors

32. Given its resilience against heat and fire, accessibility to remote areas, and flexibility of unmanned operations which could be most useful in dangerous situations or other situations to enhance efficiency, SUA has played an increasing role in a wide range of government operations worldwide, including Hong Kong. Examples are search and rescue, land/building surveying, and utilities/power-line inspection. Public officers may also use Government-owned SUA for their duties. Identical with the general public, public officers using Government-owned SUA will also be legally obliged to follow the requirements on persons flying SUA (e.g. registration requirement, competency requirement for Category B operations, compliance with operating conditions as required by CAD) to ensure safe operation of SUA.

33. In terms of risks to the public, there should not be a differentiation between local residents or tourists/foreign visitors flying SUA in Hong Kong. We therefore consider that the new SUA legislation should also apply to tourists/foreign visitors. The same set of regulatory requirements will basically apply. Our proposed regime such as the use of user-friendly mobile application and web portal for registration purpose, should be able to accommodate the need of tourists/foreign visitors. CAD will consider effective means to disseminate information such as publicising the new requirements through travel information website, etc.

### **Enforcement**

34. To facilitate the discharge of enforcement duties, we propose that a police officer or any authorised person by the DGCA should have the authority to prevent an SUA from affecting public safety, among other relevant unauthorised actions, for examples by preventing an SUA from flying or causing an SUA to land; and inspecting documents and records

relating to an SUA. It will be an offence if a person refuses to produce documents and records of the SUA that he/she owns, upon request by a police officer or an authorised person; obstructs or impedes a police officer or an authorised person to exercise his/her power; or fails to comply with any direction given by a police or an authorised person without reasonable excuse.

## **Penalties**

35. Depending on the types and seriousness of the offences and circumstances of the cases, we propose that a range of regulatory actions may be taken ranging from warnings, suspension/revocation of registration certifications, variation/suspension/revocation of permissions, to prosecution in court. Upon successful prosecution, the maximum penalty could be a fine not exceeding level 3 (i.e. \$10,000) in the case of summary conviction; and a fine not exceeding level 6 (i.e. \$100,000) and/or imprisonment for a period of up to two years in the case of conviction on indictment.

## **Appeal Mechanism**

36. Any person aggrieved by a decision made by CAD under the new SUA legislation may lodge a request for review by a review committee independent of the original decision makers. We will put in place an administrative procedure for this purpose. To provide further safeguard, we propose that a statutory right of appeal to an independent Appeal Board should be provided for decisions made under the new SUA legislation.

## **Fees and Charges**

37. Under the “user-pays” principle, the costs of CAD in providing the registration and granting of permission services under the new SUA legislation should be recovered from the users through fees charged on registration or permissions granted. However, we would like to promote safe operation of SUA, and see merits in minimising the burden on users as far as possible at the initial stage of the new SUA legislation. The revenue involved will not be substantial, and is estimated at an annual average of \$1.5 million for the first three years. In light of the above, we propose not to charge fees related to registration, accreditation of training organisations, and grant of permissions for the first three years. We propose building in the charging of statutory fees on a cost-recovery basis

under the new regime, and will seek LegCo's approval in respect of the fee level and the commencement date after three years of implementation of the new regime.

## **INTERFACE WITH OTHER LEGISLATION/REGULATION**

38. Our legislative proposal made under Cap. 448 aims at protecting public safety, and is not meant to replace other legislative or regulatory requirements under the purview of other Government bureaux/departments or regulatory authorities. SUA owners or operators should still observe all such other requirements. Although these requirements are governed by other pieces of legislation/regulatory documents, we expect that our proposed registration and labelling requirements will help enhance traceability of the SUA owner and person flying SUA and in turn assist other Government bureaux/departments or regulatory authorities to enforce requirements under their respective purview.

39. One such area is privacy issues arising from the operations of SUA. Within the notion of privacy, personal data privacy is under the purview of and is regulated by the Privacy Commissioner for Personal Data ("PCPD"), which oversees the enforcement of the Personal Data (Privacy) Ordinance (Cap. 486) for protecting the personal data privacy rights of an individual<sup>13</sup>. Earlier on in March 2017, the PCPD already issued the revised "Guidance on CCTV Surveillance and Use of Drones" to provide guidance and recommendations on the proper use of drones from the perspective of protection of personal data privacy. In the light of calls for enhancement of the protection of personal data due to the increasingly popularity on the use of SUA (including drones) fitted with cameras, we have relayed the public views to the PCPD. With the introduction of the new SUA legislation, the traceability of SUA owners and persons flying SUA will be enhanced which will contribute to enforcement of Cap. 486. In addition, having discussed with the PCPD, CAD will include the privacy awareness information that the person flying SUA must go through during the registration process. PCPD will continue to enhance public awareness on personal data privacy issues including those during drone operations through publicity and educational effort.

40. Similarly, SUA owners or operators, when operating SUA, must also abide by the Telecommunications Ordinance (Cap. 106) ("TO") and

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<sup>13</sup> Other forms of privacy (e.g. territorial privacy or personal privacy) are not within the purview of the PCPD.

its subsidiary legislation in respect of the use of radio frequencies<sup>14</sup> and other telecommunications requirements which are under the purview of the Communications Authority (“CA”). Among other things, SUA operating within the frequency spectrum covered by the Exemption Order shall be able to withstand possible radio interference from any other legitimate telecommunications service or apparatus sharing the same band. In respect of intended radio interference to SUA which is a concern, under the TO, a person shall not knowingly, and without lawful excuse, use an apparatus, whether or not it is an apparatus for telecommunications, in a manner that causes direct or indirect harmful interference with any telecommunications service lawfully carried on, or other apparatus for telecommunications lawfully operated, in or outside Hong Kong. Any person contravenes the abovementioned provision shall be liable on summary conviction to a fine of \$50,000 and to imprisonment for 6 months. In this regard, radio jammers that aim to interfere or even block radiocommunications by emitting radio wave at operating frequencies same as that of the affected radio apparatus (including SUA) are not licensable under the TO and are strictly prohibited in Hong Kong. The Office of the Communications Authority (“OFCA”) being the executive arm of the CA will perform regular market surveillance against suspected selling of illegal apparatus. Any person selling, possessing or using such jammers will contravene the TO and OFCA will take the necessary enforcement actions accordingly.

41. It is also worth mentioning that in response to views from the public and LegCo Members on the identification of suitable venues for flying of SUA, CAD has been liaising with relevant Government departments owning/managing government venues such as the Agriculture, Fisheries and Conservation Department, the Leisure and Cultural Services Department, and the Water Supplies Department. With the enactment of the new SUA legislation which will enhance public safety, departments are generally positive towards appropriate use of SUA in their venues. As a first step, we have made good process of identifying potential venues that may be used as a pilot scheme for organising SUA activities. We aim to report more progress when introducing the new SUA legislation into LegCo.

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<sup>14</sup> Most SUA are now operating in the 2.4 GHz and 5.8 GHz bands as covered under the Telecommunications (Telecommunications Apparatus) (Exemption from Licensing) Order (Cap.106Z) (“the Exemption Order”). Under the Exemption Order, owners and operators of SUA do not need to hold a licence issued under the TO if they comply with the requirements in relation to the use of the relevant frequency spectrum as stipulated therein.

## **PUBLICITY AND EDUCATION**

42. Legislation apart, publicity and education are equally instrumental to promoting public awareness and reducing the enforcement burden. CAD will continue to work proactively to enhance public awareness on safe operation of SUA through different channels like television and radio, CAD's website, other relevant websites and publications. In parallel, CAD will continue to strengthen the collaboration with different stakeholders such as SUA organisations and manufacturers on safety promotion.

43. To facilitate easy and one-stop access to the requirements and responsibilities under the new SUA legislation, CAD is working on a safety requirements document which will set out all the detailed regulatory requirements and implementation arrangements (e.g. registration details/application procedures, labelling format, detailed equipment specifications, standard operating conditions for different categories SUA operations, etc.). The document will be published and available for public access, in tandem with the commencement of the new SUA legislation. Also, to encourage voluntary registration by SUA owners and persons flying SUA in advance, CAD is planning to launch the new electronic portal before the new SUA legislation is in force, so as to allow sufficient time for the public to adapt to the new regulatory regime.

## **NEXT STEP**

44. Subject to Members' views, we plan to submit the new SUA legislation to the LegCo for negative vetting in Q4 2019.

**Transport and Housing Bureau  
Civil Aviation Department  
June 2019**

## An Overview of the Proposed SUA Regulatory Requirements

Categorisation	Category A1 (≤ 250 g)	Category A2 (> 250 g to ≤ 7 kg)	Category B <sup>[Note 1]</sup> (> 7 kg to ≤ 25 kg)
<b>Registration and Labelling Requirements</b>			
Registration & labelling of SUA	✘	✓	✓
Registration of persons flying SUA	✘	✓	✓
<b>Training and Assessment Requirements</b>			
Training & assessment of persons flying SUA	✘	✘	✓
<b>Equipment Requirements</b>			
Basic (Flight log & Geo-awareness)	✘	✓	✓
Additional (e.g. geo-fencing, fail-safe mechanism)	✘	✘	As required by CAD
<b>Operating Conditions</b>			
Standard operating conditions to be specified by CAD	✓	✓	N/A [Note 2]
Prior permission from CAD for operations that exceed the standard operating conditions	N/A [Note 1]	N/A [Note 1]	✓
<b>Insurance Requirements</b>			
Insurance coverage for Third-party liability (bodily injury and/or death)	✘	✓	✓
Minimum coverage	✘	\$5 million	\$10 million, or a higher amount as required by CAD

Note 1: Those operations which exceed the respective operating conditions under Category A1/A2 during any part of the flight should be regarded as Category B operations and permission from CAD must be obtained prior to such operations.

Note 2: Operating conditions under Category B vary due to a wide range of operations involved.

## **Proposed Registration Requirements**

### Registration of SUA

- B.1 During the registration process, SUA owners should provide the information and supporting documents required by CAD (e.g. copy of HKID/passport, address proof, contact information and information of SUA). Upon successful application, CAD will issue a Certificate of Registration (“C of R”) with a unique registration mark assigned to each registered SUA. The C of R may be valid for a maximum period up to 5 years [Note 1], and may be renewed after expiry.

### Registration of Persons Flying SUA

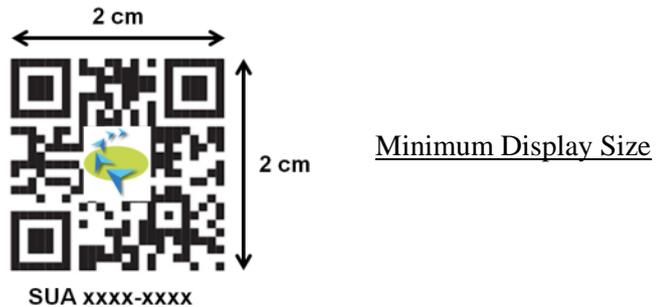
- B.2 During the registration process, persons flying SUA should provide the information and supporting documents required by CAD (e.g. copy of HKID/passport, address proof and contact information) and go through safety information on aviation knowledge and regulations, as well as know-how on safe SUA operations and privacy issues. Upon successful registration, CAD will issue a Registration Record of Person Flying SUA (“RPFS”) to the registered person. The RPFS may be valid for a maximum period up to 3 years [Note 2], and may be renewed after expiry.

Note 1: A maximum validity of 5 years is proposed, having considered the general nominal product life cycle of consumer-grade SUA.

Note 2: A maximum validity of 3 years is proposed, having considered the fast evolvement in international standards and local requirements for SUA operations. It will also enable persons flying SUA to refresh or get updated on the safety and privacy awareness information and other applicable requirements regularly and timely during the renewal process.

## Proposed Labelling Requirements for SUA

- C.1 The registration mark assigned shall be displayed on the registered SUA, with the QR code portion having a minimum size of 2 centimeters times 2 centimeters (2cm x 2cm), in a way that this information is readable at least when the SUA is on the ground (see Figure 1).



*Figure 1 – Illustration of registration mark*

- C.2 The registration mark must be made visible on the fuselage of an SUA and must be securely attached to the fuselage during any part of the flight.
- C.3 The registration mark should be displayed on an external surface of the SUA as far as reasonably practicable, in a way that does not affect the safe operations. If the size of the SUA does not allow the registration mark to be displayed in a visible way on the fuselage, a registration mark attached inside the battery compartment is acceptable if the compartment is accessible without the use of tools.

## Proposed Equipment Requirements for SUA

D.1 A grace period, tentatively around one year from commencement of the new SUA legislation, will be provided. Following that date, the SUA owner shall ensure that the SUA is installed with the required equipment for the following types of SUA before its flight in Hong Kong:

- (a) SUA **weighing more than 250 grams**; or
- (b) SUA weighing at or less than 250 grams but involving in **operations requiring permissions granted by the DGCA**.

In essence, SUA involving in **Category A2** and/or **B** operations will be required to meet the **equipment requirements specified in paragraphs D.2, D.3 and D.4 (as applicable)** below, unless otherwise specified in writing by the DGCA.

D.2 **Flight log** – A system capable of recording by reference to a time scale the data required such as identification of the SUA, geographical location, altitude, ground speed, heading and horizontal dilution of precision, using internal or external memory available onboard or remotely from the SUA.

D.3 **Geo-awareness** – A system capable of loading and updating data or information on airspace restrictions, and giving out warning alert when potential breach of airspace restrictions is detected. Such equipment requirement is intended to improve the situational awareness of the person flying SUA, by alerting them on potential breach of airspace restrictions before entering a restricted flying zone.

D.4 **Additional equipment may be required for Category B** operations depending on the complexity and potential risks of the operations. Examples are:

- (a) **Geo-fencing** – An automatic limitation of the airspace an SUA can enter. A system used for avoidance of specific area(s), or confinement in a given area.
- (b) **Fail-safe mechanism** (also known as **flight termination system**) – The incorporation of an appropriate mechanism on the SUA that, on activation, terminates the flight of the SUA, such as an automatically activated return-to-home function when the command and control link is lost or battery is low.

## Proposed Standard Operating Conditions for Category A1 and A2 Operations

Operating Conditions	Category A1 ( $\leq 250$ g)	Category A2 ( $> 250$ g to $\leq 7$ kg)	
<b>Time of operations</b>	Daylight only		
<b>Maximum flying altitude</b> [Above Ground Level (AGL)]	30 m (approximately 100 ft)	90 m (approximately 300 ft)	
<b>Minimum lateral separation from uninvolved people / structures / vehicles / vessels</b>	10 m	10 m	30 m
<b>Maximum speed</b>	20 km/hr	20 km/hr	50 km/hr
<b>Maximum distance from person flying SUA</b>	50 m	500 m	
<b>Maintain full-time visual line of sight</b>	Required		
<b>Flying within Restricted Flying Zones</b>	Prohibited		

Note 1: Those operations which exceed the respective operating conditions under Category A1/A2 during any part of the flight should be regarded as Category B operations and permission from CAD must be obtained prior to such operations.

Note 2: Details of the standard operating conditions will be specified and promulgated by CAD from time to time, in the light of latest technological developments and prevailing operating environment.