

**Opening Remarks by Mr. Han Kok Juan
Director-General, Civil Aviation Authority of Singapore
Meeting of Asia-Pacific Regulators
on Advanced Air Mobility and Unmanned Aircraft Systems –
Regulators-Industry Engagement Meeting
The Grand Ballroom, JW Marriott Hotel Singapore South Beach
9 November 2023, 1645H**

Collaborating to Leverage Technology Safely and Effectively

Friends and Colleagues,

1. Thank you for joining me for the Meeting of Asia-Pacific Regulators on Advanced Air Mobility and Unmanned Aircraft Systems (AAM and UAS) - Regulators-Industry Engagement Meeting. Gathered here in Singapore today are representatives from over 17 Asia-Pacific civil aviation authorities and 24 private sector institutes and companies. The strong participation in this inaugural meeting underscores a shared desire for collaboration amongst regulators and between regulators and industry within the Asia-Pacific region to leverage AAM and UAS safely and effectively.
2. In the last few years, we have seen rapid advancement in AAM and UAS technology. Air taxis and drones will transform the way we work, move and live. Regulators and regulation need to keep pace with technology to reap its full benefits while ensuring security and public and aviation safety. This is challenging, given the novelty of the

technology, the speed of development and adoption, and resource constraints and competing priorities.

3. To illustrate, in Singapore, the Civil Aviation Authority of Singapore (CAAS) manages about 380,000 air traffic movements into and out of Singapore Changi and Seletar Airport a year. To ensure aviation safety, CAAS exercises oversight over 14,000 personnel, 220 aircraft and over 200 companies. AAM and UAS, while important and growing, will always be a fraction of this. But to perform our role as a civil aviation authority competently, we need to build up a full-service team with the requisite capabilities to assure public and aviation safety. If we were to grow and resource this on our own, we will take longer. The regulatory cost to be borne by users and industry will likely be prohibitive.
4. To leverage AAM and UAS safely and effectively, collaboration amongst regulators and between regulators and industry, to pool expertise and resources and to identify and mitigate risks, is not a good to have but an absolute necessity.
5. The setting up of the EU-Asia Symposium last year, co-organised by the European Union Aviation Safety Agency (EASA) and CAAS, and funded by the European Commission, is a useful first step. It provides a platform for regulators and the industry to come together to exchange notes and share best practices. We held the inaugural symposium last year, attracting 140 participants. CAAS thanks EASA for the partnership. We are convening the second symposium this week to further exchanges on the development of regulations for

AAM and UAS to safely integrate drones and air taxis into our aviation systems.

6. We will now take this one step further, in response to recent developments and in anticipation of future needs. In the area of AAM, a few civil aviation authorities (CAAs) have either certified air taxis or are in the process of doing so. Last month, the Civil Aviation Authority of China (CAAC) issued the first Type Certificate to EHang on its EH216 aircraft. My CAAC counterparts share with me that EHang is but one of many companies in China now developing such technologies. The EASA is working on the certification of the Volocopter aircraft in time for the Paris Olympics next year. The Federal Aviation Administration (FAA) is in the process of certifying the Joby aircraft. We expect demand for certification to grow as Airbus, Archer, AutoFlight, Eve, SkyDrive, Supernal, Vertical, and Wisk, amongst many others, work towards commercialisation in the coming years.
7. Besides CAAC, EASA, FAA and perhaps a few others, most CAAs, because they are not regulators for States of Design, will not need to certify air taxis but we would still need to understand how these air taxis are certified and how risks are mitigated and take these into account in our regulatory requirements, to be able to subsequently accept them for entry into service as States of Registry, States of the Operator and/or States of the Aerodrome.
8. In the area of UAS, many countries have already introduced drone operations and some very extensively, in both rural and urban settings. CAAS recently conducted a survey of CAAs in the Asia-

Pacific region and most CAAs surveyed identified beyond visual line of sight (BVLOS) operations as the area they find most challenging to regulate. We also identified five use cases to focus on – infrastructure inspection, recreational and sports activities, surveillance and security, delivery and logistics, and aerial photography and videography – where CAAs could benefit from the sharing of approaches and technical requirements to build capability.

9. In response to these, CAAS is initiating this week an inaugural meeting of regulators in the Asia-Pacific region on AAM and UAS. The meeting provides a platform for regulators to come together to achieve three “A”s: first, raise awareness of new technologies and regulatory approaches and practices, second, facilitate alignment on approaches and practices, and third, support adoption of policies and regulations. We will work towards developing a set of reference materials which regulators can consider, adapt and use to facilitate the commercial operations of advanced air mobility and implementation of complex UAS operations.
10. I am happy that 17 CAAs from the Asia-Pacific region participated in our inaugural meeting just now. Also participating in the meeting as observers are Mr Ma Tao, the Regional Director of the International Civil Aviation Organization (ICAO) Asia and Pacific Office and senior representatives from EASA, FAA and the International Air Transport Association (IATA). At the meeting, we agreed to work on eight areas of priority through eight workstreams.
11. For AAM, we have identified six areas of priority:

- a. First, certification, validation, and acceptance, which covers the approach, rationale, and considerations of States of Design in categorising and certifying an electric vertical take-off and landing (eVTOL) aircraft. This will include guidance that States of Registry and States of the Operator should consider, when validating and accepting a type certificate issued by a State of Design.
- b. Second, entry into service, which covers considerations and corresponding regulatory amendments that a State of Registry, State of the Operator, and State of the Aerodrome need to undertake to facilitate entry into service of eVTOL aircraft.
- c. Third, facilitation, which considers the need for close collaboration between national agencies of a country – for instance, the CAAs and the infrastructure planning and security agencies – to facilitate the operationalisation of eVTOL aircraft.
- d. Fourth, economic policies and regulations, including those needed to govern the commercial activities of eVTOL aircraft operators and vertiport operators.
- e. Fifth, capability building, which covers how CAAs may build capability to develop policies and regulations and conduct safety oversight of the ecosystem, covering air operations, crew licensing, maintenance, and vertiport operations.

- f. Sixth, public education, to promote public acceptance towards this new form of air transport, including approaches to address concerns on safety, security, privacy, noise.

12. For UAS, we have identified two areas of priority:

- a. First, technical guidance to facilitate successful implementation of BVLOS operations, considering aircraft, pilot, and organisation; and
- b. Second, personnel training, including the qualifications and training required for CAA personnel and training to use the developed technical guidance materials.

13. We are deeply encouraged by the outcome of our first meeting and the shared commitment by CAAs to work together to share expertise. We look forward to our next meeting which will be held in the first quarter of 2024.

14. Alongside the Meeting of Asia-Pacific Regulators AAM and UAS, we are holding this Regulators-Industry Engagement Meeting. The meeting will allow regulators to share our approaches and to engage private sector institutes and companies on your plans. I am happy to note that 24 private sector institutes and companies are participating.

15. Through these meetings, we hope to foster greater collaboration amongst regulators and with industry to co-design and co-develop rules that would better meet our twin objectives of leveraging technology and ensuring security and public and aviation safety.

Such collaboration will also help us streamline and align regulatory processes, speed up approval and adoption across States and support public education and outreach. I hope that today's meetings provide the structure for an enduring win-win public-private partnership.