Keynote Speech by Han Kok Juan
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European Union-Asia Symposium
on Unmanned Aircraft Systems and Urban Air Mobility
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1. Good afternoon. It gives me great pleasure to join all of you at today's inaugural European Union-Asia Symposium on Unmanned Aircraft Systems (UAS) and Urban Air Mobility (UAM), co-organised by the Civil Aviation Authority of Singapore (CAAS) and the European Union Aviation Safety Agency (EASA). This is the first time regulators from Europe and Asia-Pacific have come together to discuss UAS and UAM development, alongside leading industry players and researchers. The participation of over 140 participants including representatives from over 20 Civil Aviation Authorities, from the two regions in this inaugural symposium indicates clear and present need and strong interest in this subject matter.

2. In the last few years, we have seen quantum leaps in UAS and UAM development, powered by first, maturing technology in electrification, autonomy and digital systems; second, innovation in use cases solving real-life transportation problems, improving safety, boosting productivity, creating better experience and cutting operating costs; and third, huge injection of funds in pursuit of business opportunities that would arise from a transformation of air mobility within reach in the next 10 to 15 years.

3. The potential benefits of UAS and UAM are tremendous.

    a. From a public viewpoint, UAS and UAM will transform the way we live, move and work. The delivery of everyday goods and services, made by machines and not deliverymen, will be cheaper and more convenient, especially in manpower-scarce countries. We would have one more way to move goods and people from point to point with better and faster access, especially in space-scarce, traffic-congested environments. Maintenance and inspection works can be done more effectively and safer for workers.

    b. From an environment viewpoint, UAS and UAM, which will be electric- or hydrogen-powered, will have a smaller carbon footprint and be better for the environment. It offers opportunity to make use of the third-dimension airspace and alleviate ground congestion in urban areas.

    c. From an economic viewpoint, UAS and UAM is potentially a $75 billion industry by 2035, with new economic opportunities and exciting jobs along the entire value chain, including in research and development, design and manufacturing, maintenance, repair and overhaul, piloting and the physical and digital infrastructure such as vertiports and traffic management systems.

4. While we have seen quantum leaps in UAS and UAM development in recent years, deployment and realising their full potential will require the concomitant development of regulation, to assure safety and security and to build public confidence and acceptance. We have reached an inflexion point.

5. Regulation and regulators need to keep pace with technology and business development. This is not easy to do, for a few reasons:

    a. First, safety and security are paramount. The safety and security outcomes and standards we expect of unmanned operations should be no less than what we have in place for manned operations, which have been enhanced and strengthened over many decades.

    b. Second, the technology for unmanned operations is novel and many of its use-cases have no precedent. What this means is that existing regulations for traditional aircraft operations may not be fit-for-purpose if applied as-is to UAS and UAM operations. Regulators would need to understand new technologies and concepts of operation and work from first principles the “what, where and how” of regulatory intervention, taking into consideration technical requirements and public acceptance, and how manned and unmanned operations will interact in the same airspace.

c. Third, taking one and two together, regulators will need to invest heavily in new capabilities and manpower. This is difficult to do amidst many competing priorities and stretched financial resources for many civil aviation authorities in the post-COVID operating environment.

6. This is why regulators cannot do this alone. We can best do our job to assure safety and security in response to new technological development by working together, sharing knowledge and pooling regulatory resources.

   a. At the multilateral level, Member States of the International Civil Aviation Organization (ICAO) agreed, at the recent 41st Assembly, that ICAO's leadership is essential for global harmonisation of international UAM operations and ICAO would form an expert group to advise on UAM related activities. This will help avoid a spaghetti bowl of different rules and regulations across jurisdictions that will add to compliance cost and retard development and deployment.

   b. At the bilateral level, EASA and CAAS are making a start by signing today a Memorandum of Understanding (MOU) to work together to co-develop regulatory requirements for the safe operation of vertical take-off and landing (VTOL) aircraft, share approaches on public engagement and do joint conferences. This is intended to be a pathfinder through which we hope can catalyse collaboration amongst regulators.

7. Today's symposium is the first CAAS-EASA joint conference on UAS and UAM to facilitate cross-region sharing and collaboration. Earlier today, we engaged industry players and listened to their perspectives on regulations. Over the next three days, we will discuss in greater technical details, the areas of UAS operations, VTOL ecosystem and operations, and airspace matters. We will also do a field visit to the Maritime Drone Estate in Singapore, to see how Singapore facilitates the development of novel technology in a regulatory test-bed environment.

8. It is so good to be able to see one another face-to-face after two years of COVID, to reconnect with old friends and make new ones. I wish all of you a productive symposium and for our foreign guests, a very enjoyable stay in Singapore.

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