WORKING PAPER

ASSEMBLY — 40TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 26: Other high-level policy issues to be considered by the Executive Committee

THE SAFE AND EFFICIENT INTEGRATION OF UAS INTO AIRSPACE

(Presented by the Civil Air Navigation Services Organisation (CANSO), the
International Air Transport Association (IATA) and the International Federation
of Air Line Pilots' Associations (IFALPA))

EXECUTIVE SUMMARY

The pace at which the Unmanned Aircraft System (UAS) industry is growing is unprecedented. It is anticipated that in 2035, at any given hour we will have over the skies of Paris 156 commercial aircraft, 2 500 urban air mobility vehicles, 16 667 drones delivering cargo, 58 inspection drones, and 44 hobby drones[2]. The commercial UAS market in the United States could triple in size by 2023[3]. There are already plans for urban air mobility, the transport of cargo over the last to medium mile, cross-border operations and connecting multiple cities via UAS. With such high growth rates, it is critical to find the balance between developing safety standards and innovation. Such a balance can be realized by recognizing industry's working groups and platforms that can complement work strategy and together, industry and the International Civil Aviation Organization (ICAO) can shape the airspace of the future.

The focus of this working paper will be on UAS that are used for commercial purposes, and excludes the mitigation of risks caused by rogue drones.

Action: The Assembly is invited to:
a)   note the content of this working paper, and
b)   request that ICAO consider establishing a framework through which it can work with industry on developing provisions for new airspace entrants.

Strategic Objectives:	This working paper relates to Strategic Objectives: Safety, Air Navigation Capacity, and Efficiency and Economic Development of Air Transport.
Financial implications:	
References:	None

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[1] Arabic, Chinese, English, French, Russian and Spanish versions provided by CANSO, IATA and IFALPA.

[2] Source: Airbus
[3] Source: Federal Aviation Administration (FAA)

1.   **INTRODUCTION**

1.1   The aviation industry has been a driver of innovation as well as a significant contributor to the setting of global safety standards. Together, we have worked towards a better connected world, building a safer and more efficient air transport system. Recently, there has been an accelerated influx of automation; digital application, robotics, and artificial intelligence, allowing for the development of new vehicles and modes of operation. This technology, although disruptive to the status quo, can provide a positive transformation to the air transport sector if properly managed.

1.2   Concepts related to urban air mobility and last to medium mile cargo delivery are transforming the transportation of goods and people. Air travel is no longer perceived as a journey from airport A to airport B but rather a door-to-door integrated service. However, for such transformation to be sustainable, it must remain safe, reliable, and cost effective. This can only be realized with a responsive regulatory framework that can move at the right pace, and ensure a balance between safety standards and innovation.

2.   **DISCUSSION**

2.1   The industry partners presenting this working paper recognize ICAO's efforts in addressing the priorities and concerns pertaining to UAS, including the establishment of the Unmanned Aircraft Systems Advisory Group (UAS-AG). However, the work herewith proposed, goes beyond the current remit of that group.

2.2   There is a need for standards and regulations to keep pace as new airspace users develop their own technology as well as their supporting mechanisms. One of our main concerns is that such development might proceed without the necessary safeguards and standards in place. We can learn from existing trials, and build upon these to better understand the appropriate regulatory framework to match requirements.

2.3   UAS are a fast growing group of airspace users which will gradually require larger portions of airspace for their operations; therefore, it is critical for us as an aviation community to define how the framework in which they operate will interact with existing operational airspace. The forecasted growth in the commercial use of UAS, indicates that segregation of UAS operations may not be sustainable in the long term. Therefore, the industry should collectively look at evolving from accommodation to integration.

2.4   A closer and more consistent collaboration with the UAS industry is needed to collect data, learn from trials, and develop provisions and guidelines. The industry partners presenting this working paper would like to support such work and assist ICAO's governance structure with a working framework to develop requirements. Leveraging existing platforms, including the (IATA's Think Tank, the industry will be able to develop provisions and provide input to ICAO, reducing the onus on its resources and complementing existing programs. Such work and possible proposals for provisions when completed, would be evaluated under the regular ICAO review process.

2.5   It is recognized that ICAO is limited by its charter to items pertaining to international aviation. Some of the business models and proposed plans for the commercial use of UAS are looking at cross border operations; therefore, it is appropriate for ICAO to actively participate in this endeavor. At the same time, we need to ensure that the integration of UAS into civil airspace, will not have a negative safety or operational impact on international commercial aviation.

2.6   There are several industry initiatives developing work on the safe and efficient operation of UAS. These initiatives can be coordinated and serve as an extended resource to progress concepts of operations and best practices using unmanned technology.

2.7   Industry fully appreciates the positive impact that UAS can have on the global economy, and accordingly, volunteers to assist ICAO in ensuring that safety and efficiency are maintained whilst allowing for the growth of this new and emerging air transport sector. Therefore, the industry partners presenting this working paper propose to create a framework through which draft provisions can be developed, for the safe and efficient integration of UAS. The following are recommendations, which would be subject to validation by ICAO:

    a. The industry's work will be based on a pre-agreed scope, including but not limited to; the definition and performance requirements for UAS traffic management (UTM), requirements for UTM/ air traffic management (ATM) interface and transformation in ATM, and possible review of airspace classification and new flight rules; and

    b. IATA volunteers to lead this effort with other industry partners and work with ICAO on progressing the safe and efficient integration of UAS.

3.   **CONCLUSION**

3.1   The rapid proliferation of UAS for commercial use requires a safe and efficient integration into existing operational airspace. It is necessary to develop provisions allowing for harmonized regulations by States. Industry can contribute to the process by building on existing platforms and work done so far. The ICAO workload would hence be reduced to the validation of the proposals through the regular vetting process.

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