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ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

NEW AVIATION ECOSYSTEM

(Presented by the International Air Transport Association (IATA))

EXECUTIVE SUMMARY	
Passengers today have different expectations. They want to go through airports faster without having to deal with several check points and they want greener, and safer air travel. These expectations have fuelled technological development across the travel journey. Today's aircraft are not only faster and more fuel-efficient but are also capable of providing us with enormous amounts of information that increase situational awareness and thereby contribute to smoother and safer flying. In the next decade we will see the introduction of higher levels of automation on board aircraft. Between now and 2030 the number of new and emerging airspace users is expected to increase as well as the diversity of types of aircraft and their performance/automation levels. This will require overall system transformation and change.	
Strategic Goals:	This working paper relates to *Every Flight is Safe and Secure*.
Financial implications:	N/A
References:	ICAO Assembly Resolution A40-27: Innovation in aviation ICAO Assembly Resolution A41-9: New Entrants

1.   **INTRODUCTION**

1.1   The diverse needs of current and future airspace users arise from emerging operations and investments in new onboard technologies by airline operators. Emerging and new aircraft technologies include electric vertical take-off and landing (eVTOL), electric short take-off and landing (eSTOL), supersonic, commercial space vehicles, single/remotely piloted, and new energy powered aircraft. Upper airspace operations will involve aircraft which have varying performance levels, from balloons with few manoeuvring capabilities to supersonic and commercial space aircraft that will cross the airspace much faster.

1.2   While the definition of automation is not new to aviation, autonomy has been used in a limited manner and constrained to unmanned aircraft. To-date, there is no consensus on the definition of autonomy in operations and what would that require in terms of regulatory framework, regulatory oversight and safety requirements it entails.

2.   **DISCUSSION**

2.1   While segregation may work in the short term, it will negatively impact existing airspace users as operations scale. Therefore, future airspace concepts should focus on integrating new aircraft technologies.

2.2   The air traffic management (ATM) system is not solely about technology. It is also an organizational network. Airspace users, airports, air navigation services providers (ANSPs), civil aviation authorities (CAA) and policymakers, and the industry's technology providers all have a stake in the future of air traffic management. The critical path to achieving the future end state lies in the regulatory framework and the skilled workforce required to support the system.

2.3   Several initiatives have been launched to integrate new and emerging airspace users.

2.3.1   IATA has developed the New Aviation Ecosystem Roadmap as well as the High Level Concept on New Operating Environment and impacts on flight rules.

2.3.2   The Automation Working Group under the Joint Authorities for Rulemaking on Unmanned Systems (JARUS) has developed a whitepaper on autonomy in airspace.

2.3.3   The Complete Air Traffic System (CATS) Global Council, has launched a 2045 vision for future skies.

2.4   At the same time, ICAO has been working with States and industry to ensure that the Global Air Navigation Plan (GANP) and Global Air Traffic Management Operational Concept (GATMOC) are revised to be fit for purpose. Additionally, ICAO's Advanced Air Mobility Study Group (AAM SG) has been working on a gap analysis to identify what provisions would be needed to support future concepts and aircraft technologies, namely Advanced Air Mobility (AAM), with or without a pilot on board.

2.5   Without integrating these initiatives and accelerating the necessary work within the ICAO framework, the industry risks falling behind.

2.6   There is a need for a shift from legacy approaches to developing regulations to a more performance-based framework that relies on data from trials and sandboxes. A review of the standard developing cycle to ensure it is aligned with innovation cycles, without compromising safety, is key to future sustainable operations.

2.7   To ensure accelerated work on new technologies, the assessment of what future provisions will be required and by when is key. Use of local and regional projects as sandboxes that can then feed into ICAO's work program can facilitate input from industry. Expanded use of direct submission to allow industry to provide proposals for change is an important avenue to facilitate innovative approach to development of provisions.

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