

**61ST CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGION**

*Kuala Lumpur, Malaysia
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AGENDA ITEM 3: AVIATION SAFETY

**LEGISLATIVE AND REGULATORY READINESS FOR
DIGITAL AVIATION GOVERNANCE**

(Presented by Islamic Republic of Pakistan)

INFORMATION PAPER

SUMMARY

As aviation continues to evolve through digital transformation and emerging technologies, the effectiveness of States' legislative and regulatory frameworks will increasingly determine their ability to discharge expanding safety oversight responsibilities. This Discussion Paper identifies areas where evolving ICAO provisions are placing new demands on existing oversight frameworks and invites the Conference to consider how regional cooperation and practical guidance can assist Member States in strengthening the USOAP Critical Elements, particularly CE-1 (Primary Aviation Legislation) and CE-2 (Specific Operating Regulations), to support effective and future-ready safety oversight. This approach is consistent with the ICAO Global Aviation Safety Plan (GASP) and the Global Aviation Safety Roadmap (Doc 10161), which recognize robust State safety oversight systems and the effective implementation of the USOAP Critical Elements as fundamental enablers of sustainable aviation safety.

LEGISLATIVE AND REGULATORY READINESS FOR DIGITAL AVIATION GOVERNANCE

1. INTRODUCTION

- 1.1 The Smart Skies theme recognises that technological innovation must be matched by equally capable regulatory systems. As aviation becomes more digital, interconnected and data-driven, effective oversight increasingly depends on whether national legislation provides sufficient authority for regulators to respond to new categories of risk.
- 1.2 Within the ICAO USOAP framework, CE-1 and CE-2 establish the legal and regulatory foundation for all other oversight functions. This paper promotes discussion on how these enabling provisions can remain effective as aviation technologies and oversight responsibilities continue to evolve.

2. DISCUSSION

- 2.1 Rapid advances in digital technologies, interconnected aviation systems and new service-delivery models are expanding the scope of State oversight beyond that envisaged when many States' primary aviation legislation was enacted. While operating regulations establishes technical requirements, its effectiveness depends on the legislative authority provided under the primary aviation legislation.
- 2.2 Recent developments across the ICAO Annexes show how rapidly the regulatory landscape is changing. ICAO Annex-1 provides for the recognition of electronic and digital personnel licences and trusted credentials. Annex-6 to the convention expands oversight of Electronic Flight Bags (EFBs), Flight Data Monitoring (FDM) programs and the protection of operational data. Likewise, Annex 17 highlights the growing need for legal frameworks to address aviation cybersecurity; and ICAO Annex-19 reinforces the protection and appropriate use of safety data and safety information. In parallel, the increasing use of outsourced aviation services requires States to establish clear legal authority for cross-border oversight and regulatory cooperation.
- 2.3 Although technically different, these areas share a common characteristic: they introduce oversight responsibilities that extend beyond the assumptions underpinning many existing legislative frameworks. They require consideration of legal authority over digital credentials, cyber risks affecting aviation systems, oversight of foreign service providers, and the balance between protecting safety information and enabling effective regulatory oversight.
- 2.4 For many developing States in the Asia-Pacific Region, addressing these challenges is therefore not simply a matter of updating technical regulations. It may require legislative frameworks that are technology-neutral, risk-based and sufficiently flexible to support timely implementation of evolving ICAO SARPs and future innovations.
- 2.5 Strengthening CE-1 and CE-2 should therefore be viewed not only as a USOAP compliance objective, but also as an investment in regulatory resilience. The readiness of these enabling provisions will increasingly influence how effectively States can regulate emerging technologies while maintaining safety, security and public confidence.

Achieving the vision of Smart Skies requires legislative and regulatory frameworks that evolve alongside technology. Strengthening CE-1 and CE-2 through regional cooperation, exchange of experience and ICAO APAC office support will help Member States develop harmonised, agile and future-ready oversight systems.

3. ACTION BY THE CONFERENCE

3.1 The conference is invited to:

- a) note the importance of modern aviation legislation and regulations in supporting oversight of emerging technologies;
- b) encourage regional cooperation and the sharing of best practices to develop technology-neutral, performance-based and risk-based regulatory frameworks; and
- c) encourage the ICAO Asia and Pacific Regional Office to continue supporting Member States in developing guidance, building regulatory capacity, and promoting regional initiatives that foster harmonised and future-ready regulatory frameworks for aviation digital governance.

Reference Documents:

- i. *Convention on International Civil Aviation (Chicago Convention, 1944), Doc 7300.*
- ii. *ICAO Doc 9734, Part A — Safety Oversight Manual: The Establishment and Management of a State's Safety Oversight System (3rd Edition, 2017).*
- iii. *ICAO Doc 9735 — USOAP Continuous Monitoring Manual (Protocol Question methodology for assessing CE-1/CE-2 and compliance guidance related to Protocol Questions).*
- iv. *ICAO Doc 10004 — Global Aviation Safety Plan (GASP).*

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