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ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

**DIGITAL TRANSFORMATION OF CIVIL AVIATION AUTHORITY OVERSIGHT
FUNCTIONS: MALAYSIA'S EXPERIENCE AND PROPOSAL FOR GLOBAL ADOPTION**

(Presented by Malaysia)

EXECUTIVE SUMMARY

Digital transformation enhances regulatory efficiency, transparency, and safety performance. Malaysia, through its Civil Aviation Authority (CAAM), has implemented several digital platforms to manage licensing, surveillance, examination, compliance monitoring, and safety occurrence reporting. This digitalisation contributes to a more effective, data-driven oversight framework. This paper highlights Malaysia's experience and encourages ICAO to support global adoption of similar approaches through guidance, capacity building, and knowledge sharing

<i>Strategic Goals:</i>	This working paper relates to <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	Nil
<i>References:</i>	Nil

1. INTRODUCTION

1.1 Oversight authorities face increasing pressure to deliver safe, efficient, and consistent regulatory services in a rapidly evolving aviation environment. Digital tools can enable Civil Aviation Authorities (CAAs) to meet these demands more effectively. While some States have begun adopting digital systems, others continue to rely on traditional, paper-based processes that limit oversight quality and responsiveness.

1.2 This paper shares Malaysia's experience in deploying digital platforms for oversight and proposes actions ICAO and Member States may consider to accelerate global adoption of digital oversight capabilities.

2. BACKGROUND

2.1 Many CAAs face operational challenges due to manual workflows and fragmented systems. Such inefficiencies may impact a State's ability to comply with ICAO Standards and Recommended Practices (SARPs), prepare for Universal Safety Oversight Audit Programme (USOAP) audits, or respond to safety issues proactively. Malaysia faced many challenges due to traditional processes, including:

- a) delays in application processing and surveillance follow-up;
- b) difficulty in coordinating multi-disciplinary oversight activities;
- c) limited traceability for audits and inspections; and
- d) inability to fully implement risk-based oversight methodologies due to inaccessible data.

3. MALAYSIA'S DIGITAL OVERSIGHT INITIATIVES

3.1 Malaysia has developed digital platforms to manage its regulatory functions. While these platforms are not integrated, they collectively contribute to improved oversight effectiveness. Key platforms include:

- a) *E-CAAM Licensing Professional Services*. This service enables digital processing of applications, renewals, and licence issuance for flight crews, aircraft maintenance personnel, and air traffic controllers. This system also integrates the medical examination process for aviation personnel.
- b) *Aviation Examination System*. This system allows secure scheduling, delivery, and result management of licensing examinations.
- c) *Enhanced Compliance Oversight System*. Supports planning, conducting, and tracking oversight activities, including management of findings and corrective actions. This system also provides digital recordkeeping for approvals and compliance status, and supports the submission of required documentation.

- d) *Aviation Reporting System*. This system serves as a centralised platform for mandatory occurrence reporting (MOR) and voluntary occurrence reporting (VOR). It is designed to streamline the submission of safety reports by aviation personnel and organisations by collecting, storing, and analysing safety data confidentially and securely. This enables CAAM to identify hazards, trends, and root causes, and to support the development of mitigation strategies and safety action plans.

3.2 These systems have enhanced transparency, shortened processing times, improved audit readiness, and enabled better regulatory performance tracking. They also support consistent application of regulatory procedures and provide stakeholders with greater visibility into the status of their applications and compliance obligations.

4. CONCLUSION

4.1 Malaysia's experience demonstrates that digital platforms, even when implemented individually, can significantly improve the performance and integrity of civil aviation oversight. ICAO can play a key role in encouraging and supporting Member States to pursue similar reforms, contributing to more effective global aviation regulation.

4.2 The Assembly is invited to note the information contained in this paper.

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