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Agenda Item 5:   **ICAO / Member State / Industry Presentations**

**CAAM DIGITAL TRANSFORMATION:
JOURNEY TOWARDS DIGITAL LICENSING SYSTEM**

(Presented by Malaysia)

SUMMARY

Pursuant to the digital transformation plan, Civil Aviation Authority of Malaysia (CAAM) is currently in the process of transitioning from traditional manual system into digital efficiency by developing a digital online platform for all of its regulatory divisions and industry. The initiative for digital transformation will improve efficiency and delivery while upholding the current standards to ensure its aviation safety oversight remained effective and relevant.

This Information Paper aims to share CAAM initiative and the transformation efforts and challenges faced while pursuing the development of digital platform for personnel licensing system.

1.   INTRODUCTION

1.1   During early days the manual processing of application was a tedious and time-consuming process. The average time taken to process an application until production of a licence could take more than a month. With stacks of documents, administrative processes and manual verification, delays become inevitable. The digital transformation is very much needed to improve delivery and increase efficiency.

1.2   The initiative for the transition from a traditional manual system into digitization started right after the transformation of Department of Civil Aviation Malaysia (DCAM) into CAAM in February 2018. The main objective was to enhance publication structure and improve internal process to be in-compliance with ICAO safety standards, and at the same time increase efficiency and productivity as well as service delivery to the industry.

1.3   In its efforts to strive for greater efficiency, CAAM continues moving forward with the ideas of having a fully digitalised system for all its regulatory divisions. Hence in 2022, the idea of having e-licensing system as a digital online platform between CAAM and the industry was introduced. Later in early 2023, with the amendment of ICAO Annex 1 at Amdt. 178 published in November 2022, CAAM started to initiate its effort for the development of electronic personnel licence (EPL).

2.   DISCUSSION

2.1   In mid-2022, CAAM initiated the development of e-licensing project, a licensing online platform known as e-CAAM Licensing Professional Services (eCLIPSE). It allows users to manage, monitor and submit their licence applications online for flight crew, aircraft maintenance engineers and air traffic controllers.

2.2   With eCLIPSE, users are able to have a quick overview of their licence status including their personal information. eCLIPSE has also been designed to be accessible on a self-contained mobile device such as mobile phones or tablets. For CAAM this has significantly simplify administrative process and reduced human error. Effectively this reduces approval timeline and enabe real-time data to be collected for the purpose of enhancing oversight, regulatory monitoring and compliance. With the introduction of eCLIPSE, the operational efficiency has improved significantly and substantially cutting down the time needed for an applicant to acquire a licence.
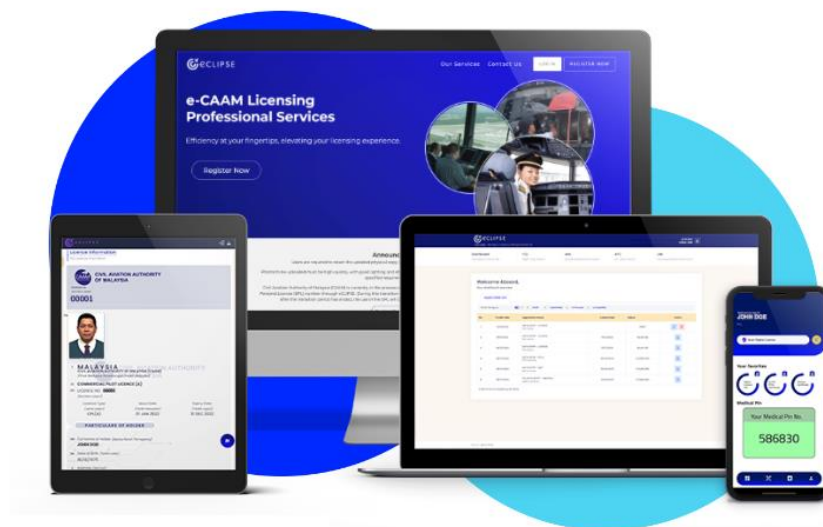
2.3   With the publication of ICAO Annex 1 Amdt. 178 in November 2022, States now have the option to choose between issuing traditional hardcopy licence or Electronic Personnel Licence (EPL) on electronic mobile device. CAAM has taken this approach positively and currently in the midst of developing this feature to be integrated with eCLIPSE. Few of the initial challenges faced was to develop an automated system that is capable to verify licence authenticity especially online and off-site verification, encrypting licence information, server security and counterfeiting proof measures.

2.4   As personal detail and electronic signature are an essential information under the Digital Signature Act [Act 562] Act in Malaysia, CAAM is working closely with multiple government agencies such as Ministry of Communication and Digital to formulate a comprehensive product resolution.

2.5   The initiative for implementation of electronic signature into EPL presented various considerations that CAAM has to address prior to integrating with e-licensing system, which included:

   a)   **Adherence to ICAO SARP:** ICAO Annex 1, Chapter 5.3 provides standards for EPL specification. In addition, an interim solution has been introduced that allow verification on the authenticity of EPL as addressed in ICAO State Letter AN 12/1.125-22/115. Adherence to such recommendation is essential in ensuring licence issued meets ICAO safety standard and it is recognisable by other States.

b) **Legal standard and compliance:** One significant challenge faced when implementing a digital system for electronic signature is ensuring that there is a legal provision. Legal framework requires signatures to be verifiable, secure, and tamper-free. CAAM has to navigate through regulatory intricacies to ensure that application of the electronic signatures on EPL is legally binding.

c) **Interoperability:** The main hurdle of implementing EPL is to ensure secure exchange of licensing-related data between systems. This includes transmitting electronically signed documents and verified information in a secure and standardized manner, maintaining the confidentiality and integrity of the exchanged data.

d) **Authenticity and identity verification:** Implementing robust authentication mechanisms to verify the identity of individuals using electronic signatures is essential. This involves addressing concerns related to identity theft and ensuring that only authorized person can sign EPL.

e) **Technology evolution:** Adapting to the evolving landscape of technology and cybersecurity is an ongoing challenge. Implementing an electronic signature system that remains secure and up-to-date with technological advancements requires continuous monitoring and updates.

3.   CONCLUSION

3.1   While the benefits are substantial, the implementation of EPL comes with challenges such as data security, infrastructure requirements, and user adoption. Careful planning and collaboration between stakeholders are crucial to overcome these challenges successfully.

3.2   Sharing information and experience from other member States that have developed similar EPL system would be beneficial to APAC States towards an effort in harmonizing licence verification and reduced any potential burden across the States.

3.2.1   Through frequent engagement with the industry and States, Malaysia could effectively regulate, facilitate and promote the digitalisation effort as well as to ensure that the national and international obligations in matters relating to civil aviation can be carried out, and the universal safety and security standards and requirements in civil aviation are implemented, complied with and well-maintained.

4.   ACTION BY THE MEETING

4.1   The Meeting is invited to:

a) note the information contained in this paper;

b) encourage member States to share their knowledge and experience on implementation of e-licensing and EPL system; and

c) discuss any relevant matters as appropriate.

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