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

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AGENDA ITEM 5: AVIATION SECURITY AND FACILITATION

DIGITAL CERTIFICATION OF AVIATION SECURITY PROGRAMME *ENHANCING REGULATORY OVERSIGHT THROUGH DIGITAL TRANSFORMATION*

(Presented by The Republic of Indonesia)

SUMMARY

This paper proposes an integrated Digital Certification Framework for Aviation Security Programmes that digitalizes the entire certification lifecycle, from application and evaluation to on-site verification and certification, within a single platform. The framework is intended to strengthen regulatory oversight by improving efficiency, transparency, traceability, and continuous compliance monitoring, while supporting the implementation of ICAO's Global Aviation Security Plan (GASeP) Priority Area 4 on improving technological resources and fostering innovation.

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1. INTRODUCTION

1.1 In accordance with Standards 3.2.1 and 3.3.1 of Annex 17 - *Aviation Security*, each Contracting State is required to ensure that airport operators, aircraft operators, and other regulated entities develop, implement, and maintain an aviation security programme that complies with the requirements of the State's National Civil Aviation Security Programme (NCASP). As the appropriate authority, the Directorate General of Civil Aviation (DGCA) is responsible for reviewing and assessing these security programmes to verify their conformity with national requirements before granting operational approval. Furthermore, the DGCA is required to conduct periodic reviews and oversight activities to ensure that approved security programmes continue to comply with applicable regulatory standards and remain effective in addressing evolving security risks.

1.2 To fulfil these responsibilities, Indonesia has established the Director General Decree Number PR 23 of 2024 on the Guidelines for the Development and Certification Procedures of Aviation Security Programmes, which provides the regulatory framework for the certification process of Aviation Security Programmes. Under this framework, the certification process consists of four sequential stages: evaluation of the application and self-assessment forms submitted by the applicant; presentation and assessment of the Aviation Security Programme documentation; on-site verification to confirm the implementation and effectiveness of the proposed security measures; and formal approval and certification of the Aviation Security Programme upon satisfactory compliance with the applicable regulatory requirements.

1.3 These four stages currently rely heavily on physical document submission, in-person meetings scheduled according to the availability of the inspectors and operators, manual scoring sheets, and paper-based site inspection checklists. This generates bottlenecks that are increasingly challenging to justify given that numerous operators particularly major airports and aircraft operators are rapidly embracing digital systems.

1.4 Recognizing these challenges, there is a growing need to modernize regulatory certification processes through the application of digital technologies. Such an approach is consistent with the ICAO Global Aviation Security Plan (GASeP). Among its six Global Priority Areas, Priority Area 4, Improve Technological Resources and Foster Innovation, encourages States to promote and apply technological solutions and innovative techniques that strengthen aviation security effectiveness while improving operational efficiency and integrating human factors principles. This paper therefore proposes the application of digital transformation to the four-stage certification process to enhance regulatory efficiency while maintaining effective aviation security oversight.

2. DISCUSSION

2.1 Our digital approach begins with a single online intake workflow combining the application form and self-assessment into one organized submission. Automated completeness checks flag missing fields before the file ever reaches an Inspector, and both the compliance review and the Director's approval are recorded as digital sign-offs, with reasoned justification required for any rejection. Once approved, billing codes are generated automatically and reconciled against the State Revenue Transaction Number and Bank Transaction Number through direct integration with the payment hub, eliminating manual matching and giving applicants real-time visibility of their status, from submission to confirmed payment.

2.2 Once payment is confirmed and the applicant's Person in Charge (PIC) has been approved by the Directorate General of Civil Aviation (DGCA), the regulator issues a presentation invitation letter and notifies the applicant of the confirmed schedule. In the manual process, has often been a source of delay, since aligning the availability of the applicant's PIC with that of DGCA's evaluation panel proved difficult challenging, particularly when documentation requires multiple rounds of revision The digital process addresses this issue by automatically activating the scheduling function once payment is confirmed, displaying available time slots for the assessment panel and enabling prompt selection of a mutually suitable date. At the same time, the system records the assignment of the designated regulatory official responsible for the assessment, ensuring that both the applicant and the regulator have clear visibility of the agreed schedule.

2.3 At the presentation stage, the same reasoning applies. The regulator's designated PIC reviews the applicant's draft immediately within the application by adding comments and mark-ups onto specific clauses or sections rather than exchanging remarks through separate correspondence. Every comment and revision are logged and time-stamped against the relevant section, allowing compliance status can be monitored section by section at a glance, rather than reconstructing the revision from emails and meeting notes.

2.4 After the documentation is approved at the presentation stage, the inspector prepares an on-site verification order, and the same scheduling challenge that affected the presentation stage occurs here: it is challenging to manually coordinate the applicant's PIC availability with that of the designated regulatory officials , which frequently causes the verification visit to be delayed. This stage is completed by the same digital process as it was during the presentation phase: A single digital scheduling procedure instantly alerts the applicant when the schedule is confirmed and records PIC availability, , regulatory acknowledgement, and supervisory approval as sequential steps within a single record rather than as separate exchanges. The system also monitors the regulatory 45 calendar day deadline for further action following both the presentation and the on-site verification. This deadline is visible to both the applicant and the regulator's PIC, with automated notifications issued prior to deadline, eliminating the need for manual follow-up on both sides.

2.5 In the final stage formal approval and certification, the Sub Coordinator’s approval and Director’s certification are recorded as sequential digital sign-offs within the same file used throughout Stages 1 to 3, so the final decision is directly and visibly linked to the underlying self-assessment, presentation and the on-site verification evidence. Upon approval, the regulator issues a digital QR verifiable certification sheet, certified along with its covering letter, directly to the applicant. This eliminates the need for physical collection or local printing and allows any party to verify a certificate's authenticity by comparing it to the regulator's digital certification file.

2.6 Beyond the individual certification file, the application serves as a consolidated database of each operator's Aviation Security Programme. This provides the regulator with a current, oversight-ready record across all operators, and allows each operator continuous access to its own draft and certified documentation supporting the security and long-term maintenance of these documents in contrast to locally held paper or file copies.

2.7 The core benefit of digitising this process is not any single stage in isolation, but the integration between them. A submission that is structured from the outset feeds directly into a standardized evaluation rubric, evaluation findings feed directly into the presentation record and the presentation record feeds directly into the on-site verification checklist. This creates a single, traceable certification file per operator from initial proposal through to final certificate issuance, replacing the current fragmented set of documents stored across different stages and, in some cases, different offices.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) recognize the potential of the proposed Digital Certification Framework for Aviation Security Programmes as a practical contribution to advancing Global Priority Area 4 of the Global Aviation Security Plan (GASeP), and note its potential to strengthen regulatory efficiency, information security, and continuous compliance monitoring;

b) encourage Contracting States to consider the concept presented in this paper as a voluntary reference for modernizing their own aviation security programme certification processes, while fully respecting State sovereignty and recognizing that States are at differing levels of digital maturity and will advance at their own pace; and

c) promote the exchange of knowledge, best practices, and practical experiences among Contracting States, ICAO, and industry stakeholders on the digitalization of aviation security oversight, so that lessons learned by early adopting States can benefit the global community.

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