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TECHNICAL COMMISSION

Agenda Item 25: Other issues to be considered by the Technical Commission

DIGITALIZATION OF AIRWORTHINESS APPROVALS – AN INITIATIVE BY KAZAKHSTAN AND THE WAY FORWARD FOR ICAO

(Presented by Kazakhstan)

EXECUTIVE SUMMARY	
The global aviation sector increasingly relies on digital technologies to streamline oversight functions, improve transparency, and ensure efficient service delivery. However, there remains a lack of detailed international guidance on how civil aviation authorities can digitalize key regulatory processes, particularly in the domain of airworthiness certification and approvals. This working paper highlights the global need for harmonized, efficient, and secure digital systems to manage airworthiness functions and proposes that ICAO consider the development of structured guidance on this issue. As an example of national best practice, Kazakhstan has implemented a comprehensive digital platform for airworthiness approvals, which offers useful insights and practical experience. Kazakhstan respectfully offers its support and expertise in contributing to the development of global ICAO guidance in this area.	
Strategic Goals:	This working paper relates to Strategic Goal *Every Flight is Safe and Secure.*
Financial implications:	To be determined.
References:	ICAO Global Aviation Safety Plan (GASP) ICAO Annexes 6 — *Operation of Aircraft*, 8 — *Airworthiness of Aircraft* , and *19 — Safety Management* Assembly Resolution A40-27: Innovation in Aviation. ICAO digital aviation strategy

1.   INTRODUCTION

1.1   The digital transformation of regulatory processes in civil aviation is a key enabler of operational efficiency, risk-based oversight, and improved safety performance. As civil aviation continues to grow in complexity and demand, it is vital that regulatory authorities leverage digital technologies to enhance the quality and responsiveness of their services.

1.2   In alignment with ICAO's digitalization strategies, including the digital aviation strategy and Resolution A40-27: Innovation in Aviation, Kazakhstan has implemented a digital platform for several core airworthiness functions.

1.3   This working paper calls upon ICAO to consider the global development of guidance materials based on lessons learned and successful practices—including those demonstrated by Kazakhstan—to assist other Member States in transitioning toward efficient, secure, and harmonized digital airworthiness oversight systems.

2.   ICAO GUIDANCE ON DIGITALIZATION

2.1   ICAO has taken important steps to promote digital innovation, including high-level strategies encouraging the adoption of digital tools.

2.2   Resolution A40-27 encourages the development and implementation of innovative technologies to improve aviation oversight. However, it does not yet offer specific practical frameworks tailored for digitalizing airworthiness approvals.

2.3   ICAO's foundational SARPs—particularly in Annexes 6 — *Operation of Aircraft*, 8 — *Airworthiness of Aircraft* , and *19 — Safety Management*—outline regulatory responsibilities, but specific digitalization pathways remain underdeveloped. This can result in Member States facing challenges in implementing secure, interoperable, and user-friendly systems aligned with international practices.

3.   KAZAKHSTAN'S DIGITALIZATION INITIATIVE IN AIRWORTHINESS

3.1   Kazakhstan has developed and deployed a fully integrated digital platform that enables online application, documentation review, and approval certificates for Maintenance Organization Approval, Certificates of Airworthiness (C of A), Export Certificates of Airworthiness, Special Flight Permits.

3.2   The platform incorporates user authentication, e-signature functionality, automated audit trails, and real-time tracking of application status.

3.3   Key results include:

    a) improved data accuracy and regulatory compliance tracking;
    b) enhanced transparency for both operators and regulators; and
    c) seamless integration with safety oversight and inspection functions.

4.   WAY FORWARD FOR ICAO

4.1   To support wider digital transformation, ICAO may consider:

    a)   a manual on digitalization of airworthiness functions, including best practices and implementation steps;
    b)   a template for digital regulatory approval workflows;

      c)   guidelines for interoperability, cybersecurity, and data privacy in digital airworthiness systems; and

      d)   a knowledge-sharing platform for Member States to exchange experiences and tools.

4.2   Kazakhstan would like to contribute its experience and lessons learned toward any ICAO-led effort in this regard and volunteer to prepare the said guideline.

4.3   ICAO may consider expanding its existing technical assistance programs and Implementation Packages (iPacks) to support digital transformation in regulatory bodies, especially in developing States.

5.   CONCLUSION

5.1   The digitalization of airworthiness approvals presents an important step toward improving efficiency, transparency, and oversight globally.

5.2   The initiative by Kazakhstan can serve as a practical example and resource for ICAO and its Member States.

5.3   ICAO is encouraged to take a leadership role in facilitating harmonized digital solutions and empowering Member States through structured guidance and capacity building.

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