



ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

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

NEED TO UPDATE THE COMPETENCY FRAMEWORKS FOR AVIATION PERSONNEL IN ACCORDANCE WITH NEW TRENDS IN AI AND PROFESSIONAL PROJECT MANAGEMENT

(Presented by the Dominican Republic)

EXECUTIVE SUMMARY

This working paper proposes an update to the competency frameworks for air traffic controllers, air traffic safety electronics personnel (ATSEP) and safety inspectors.

It is essential to include competencies related to the use of artificial intelligence (AI) and to professional project management (PPM) in response to regulatory, technological and strategic changes that are having a cross-cutting impact on the performance of aviation personnel and other aviation specialists.

Action: The Assembly is invited to:

- note the information presented in this working paper; and
- invite the ICAO Secretariat to consider establishing a multidisciplinary working group to review and amend relevant guidance documents in order to incorporate these new competencies into the aviation personnel competency frameworks.

<i>Strategic Goals:</i>	This working paper relates to <i>Every Flight is Safe and Secure</i> and <i>Aviation Delivers Seamless, Accessible, and Reliable Mobility for All</i> .
<i>Financial implications:</i>	The activities mentioned in this working paper will be subject to the availability of resources from the 2026–2028 regular budget and/or from extrabudgetary and/or voluntary contributions.
<i>References:</i>	Doc 10056, <i>Manual on Air Traffic Controller Competency-based Training and Assessment</i> , Volume I – <i>Air Traffic Control (ATC)</i> Doc 10057, <i>Manual on Air Traffic Safety Electronics Personnel Competency-based Training and Assessment</i> Doc 10070, <i>Manual on the Competencies of Civil Aviation Safety Inspectors A Guide to the Project Management Body of Knowledge (PMBOK Guide)</i> , Project Management Institute (PMI), Seventh Edition, 2021

¹ Spanish version provided by the Dominican Republic.

1. INTRODUCTION

1.1 As part of ICAO's Standards and Recommended Practices (SARPs), competency frameworks have been established for air traffic controllers, air traffic safety electronics personnel (ATSEP) and civil aviation safety inspectors with the aim of raising performance standards, mitigating human error and strengthening safety. These frameworks were designed in a conventional operating environment that has been profoundly transformed by Artificial Intelligence (AI) and a growing need for professional project management (PPM) competencies.

1.2 In this context, this working paper invites the Assembly to consider an update to these competency frameworks in order to incorporate AI and PPM capabilities, and to request the establishment of a multidisciplinary working group to facilitate their review and incorporation into ICAO standards and guidance documents. This update would help to maintain the relevance, efficiency and international alignment of aviation personnel's technical profiles in an increasingly digitalized, automated and project-oriented environment.

2. DISCUSSION

2.1 Artificial Intelligence has established itself as a disruptive factor in aviation, transforming operational processes, optimizing air traffic management and enabling real-time decision-making. This trend poses significant regulatory challenges, including in relation to ethics, cybersecurity and the redefinition of professional profiles.

2.2 At the same time, the implementation of complex projects in aviation, such as the introduction of new technologies, navigation systems or infrastructure, increasingly requires formal competencies in PPM. However, in many cases, technical specialists take on leadership responsibilities without adequate training, leading to delays, cost overruns and operational risks.

2.3 Against this backdrop, the competency frameworks for air traffic controllers, ATSEP and civil aviation safety inspectors should be updated, incorporating two cross-cutting sets of capabilities:

2.4 Competencies in the use of artificial intelligence (AI)

2.4.1 Including AI-related competencies will enable better data interpretation, predictive maintenance implementation, dynamic airspace management and decision-making based on big data. This will strengthen operational safety, reduce costs and increase efficiency.

2.5 Professional project management (PPM) competencies

2.5.1 Equipping technical staff with project planning, implementation and assessment tools will improve the quality of deliverables, reduce risks and contribute to resource optimization. These capabilities are key to ensuring the success of strategic initiatives in civil aviation.

3. CONCLUSION

3.1 In the face of digital transformation and increasing automation in the aviation sector, it is imperative to update the competency frameworks for technical staff, in particular with regard to artificial

intelligence and professional project management. These competencies are essential today to ensure operational efficiency, safety and effectiveness in the implementation of complex aviation projects.

3.2 It is therefore recommended that the Assembly support the revision of existing frameworks and encourage the establishment of a multidisciplinary working group to be tasked with updating such frameworks to ensure that aviation personnel have the required capabilities to respond to current and future challenges in the industry.

— END —