



International Civil Aviation Organization

MIDANPIRG Air Traffic Management Sub-Group

Tenth Meeting (ATM SG/10)

(Jeddah, Saudi Arabia, 20 – 23 October 2024)

Agenda Item 3: Planning and Implementation issues related to ATM/SAR

**CONTINUOUS MONITORING OF AIR TRAFFIC CONTROL OFFICERS (ATCOS)
PERFORMANCE**

(Presented by Saudi Arabia)

SUMMARY

This paper outlines the importance of continual ATCO performance monitoring in improving air traffic safety and efficiency. It outlines ten key objectives for effective performance monitoring, including airspace awareness, conflict resolution, procedural adherence, workload management, risk mitigation, effective communication, situational awareness, continuous improvement, standard compliance, and accountability. Addressing the challenges and strategies for building a continuous monitoring system that would improve excellence in air traffic management, consequently increasing safety and efficiency while adhering to global and national sustainability goals.

REFERENCE(S)

- ICAO - 10056 VOL II/ MANUAL ON AIR TRAFFIC CONTROLLER COMPETENCY-BASED TRAINING AND ASSESSMENT
- SAUDI AVIATION STRATEGY

1. INTRODUCTION

1.1 To enhance the performance of Air Traffic Control Officers (ATCOs) in preparation for Saudi Aviation Strategy, which aims to triple annual passenger traffic to 330 million travellers, expand connectivity to over 250 destinations via 29 airports, and develop global passenger and cargo hubs. This paper outlines the key objectives for implementing performance monitoring systems that will support the efficiency and safety of air traffic management while also aligning with national sustainability goals.

2. DISCUSSION

2.1 Continuous Monitoring of ATCOs Performance

The continuous monitoring of Air Traffic Controller performance is essential for ensuring aviation safety and operational efficiency. This discussion explores the implications, challenges, and potential strategies for implementing effective monitoring systems based on key Objectives.

2.2 Objectives of Continuous Monitoring

- a) **Maintain Airspace Awareness:** Assure that ATCOs maintain a comprehensive of their assigned airspace, encompassing the location, altitude, and flight trajectory of all aircraft. This understanding is essential for safe operations.
- b) **Conflict Resolution: Enhance** ATCOs proactively identify and resolve potential conflicts between aircraft. Continuous monitoring should verify that they effectively maintain safe separation and handle conflicts before they escalate.
- c) **Adherence to Procedures:** It is essential to follow that ATCOs consistently follow established air traffic control procedures, regular evaluations of adherence to these directives are recommended.
- d) **Workload Management:** The ability of ATCOs to manage their workload is critical. Evaluating how efficiently they balance traffic inside their airspace and make required modifications contributes to a manageable situation
- e) **Risk Mitigation:** Validate ATCOs' capabilities to identify and mitigate potential safety risks promptly. Continuous monitoring allows for early intervention when risks are identified.
- f) **Effective Communication:** Clear and effective communication between ATCOs, pilots, and other stakeholders is essential. Monitoring should ensure that ATCOs convey instructions and information accurately.
- g) **Situational Awareness:** Evaluating ATCOs' situational awareness and decision-making capabilities is vital to ensure operational safety. Monitoring how well they perceive and respond to dynamic air traffic conditions is necessary.
- h) **Continuous Improvement:** Identify opportunities for ATCOs to enhance their skills and performance through training, feedback, and professional development initiatives. Continuous improvement is key to maintaining high standards.
- i) **Compliance with Standards:** Verify that ATCO actions align with organizational safety and operational standards. Regular assessments and evaluations are crucial for ensuring compliance.
- j) **Accountability and Responsibility:** Hold ATCOs accountable for their decisions and actions. Ensuring that they fulfill their duty of care to all airspace users is critical for maintaining trust and safety in air traffic management.

2.3 Importance of Continuous Monitoring

- a) **Enhancing Safety:** It ensures that ATCOs maintain situational awareness and can react effectively to evolving air traffic circumstances. Regular evaluations under established objectives facilitate the identification of deficiencies and the implementation of remedial actions prior to the escalation of concerns
- b) **Fostering Accountability:** Continuous monitoring promotes a culture of accountability within air traffic control operations. When ATCOs know their performance is being evaluated, they are more likely to adhere to procedures and maintain high standards. This accountability builds trust among aviation stakeholders, including pilots and regulatory bodies.
- c) **Aligning with Sustainability Goals:** Continuous monitoring is crucial for achieving national and international sustainability goals. It assists in determining inefficiencies that result in excessive fuel usage and pollution. ANSPs may improve flight routes and minimize holding times by assessing ATCOs actions against specified

parameters, therefore aligning operational practices with environmental objectives.

2.4 Challenges in Implementation

- a) **ATCOs culture:** ATCOs may be concerned about monitoring, fearing disciplinary actions instead of helpful criticism. Transparent communication of the objectives and advantages of monitoring is essential to alleviate these worries.
- b) **Resource Allocation:** Continuous monitoring requires investment in technology and training. Budgetary constraints may limit organizations' ability to implement sophisticated monitoring systems.
- c) **Data Privacy:** Collecting and analyzing performance data raises confidentiality concerns. Establishing protocols to protect sensitive information while allowing effective evaluations is vital.

2.5 Saudi Arabia ANS provider (Saudi Air Navigation Services) Strategies for Effective Monitoring

- a) **Integrative Training Programs:** Developing training programs based on ATCOs' continuous monitoring outcomes cultivates a culture of growth and learning. These programs incorporate simulation exercises that improve ATCOs abilities to practice different scenarios, focusing on procedural adherence and efficient communication.
- b) **Use of Technology:** Investing in technology for real-time data collection and analysis enhances the efficiency of the monitoring process. Automated systems provide insights into performance metrics, facilitating rapid decision-making.
- c) **Regular Feedback Mechanisms:** Implementing structured feedback mechanisms guarantees that ATCOs have constructive evaluations of their performance obtained from the monitoring session. This can include peer reviews and debriefing sessions focused on learning rather than punishment.
- d) **Fostering a Collaborative Culture:** Encouraging a team-oriented approach where ATCOs share experiences and best practices enhances collective performance. Creating forums for discussion and collaboration helps normalize the monitoring process and alleviates concerns.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to note the information in this paper.

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