International Civil Aviation Organization

Twentieth Meeting of the ICAO Aeronautical Information Services − Aeronautical Information Management Implementation Task Force (AAITF/20)

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Agenda Item 6: Any Other Business

MALAYSIA IMPLEMENTS QMS FOR AIS COMPLIANCE

(Presented by Malaysia)

SUMMARY

The Aeronautical Information Services (AIS) of Malaysia plays a critical role in ensuring the accuracy, integrity, and timely dissemination of aeronautical data for aviation safety. In line with International Civil Aviation Organization (ICAO) Annex 15 and global best practices, AIS Malaysia initiated the implementation of a Quality Management System (QMS) to enhance operational efficiency and compliance with international standards.

This paper outlines the progressive implementation of QMS in AIS Malaysia, from initial training and documentation to ISO 9001:2015 certification achieved in November 2024.

1.   INTRODUCTION

1.1   ICAO mandates that AIS providers establish a Quality Management System (QMS) to ensure the highest level of data quality. Prior to 2021, AIS Malaysia operated under traditional processes, but with the transition from AIS to Aeronautical Information Management (AIM), a structured QMS became essential.

1.2   The implementation was driven by the need to comply with ICAO Annex 15 and Doc 10066 (PANS-AIM), standardize aeronautical data processes, prepare for digital transformation (AIM, AIXM, SWIM), and achieve ISO 9001:2015 certification to demonstrate commitment to quality.

2.   DISCUSSION

Phases of QMS Implementation

2.1   Beginning in 2021, AIS Malaysia initiated QMS awareness programs, conducting a series of training courses for AIS officers covering QMS fundamentals (ISO 9001:2015), risk management in aeronautical data processes, documentation and process standardization, along with internal workshops to align QMS with ICAO AIM requirements.

2.2   Development of QMS Documentation (2023–Early 2024): AIS Malaysia developed comprehensive QMS manuals, procedures, and work instructions through process mapping of AIS workflows, established SOPs for data validation, NOTAM issuance, and charting, implemented Corrective & Preventive Action (CAPA) mechanisms, and ensured all documentation complied with ISO 9001:2015 standards.

2.3   Engagement of QMS Consultant (2024): To strengthen the QMS framework, AIS Malaysia engaged an experienced QMS consultant who conducted a thorough gap analysis to identify areas for improvement in existing processes. The consultant played a major role in refining documentation to meet ISO 9001:2015 requirements, while also providing specialized training to internal auditors to ensure robust QMS compliance checks and sustained adherence to quality standards.

2.4   In 2024, AIS Malaysia underwent a comprehensive certification process conducted by SIRIM QAS International, the nation's foremost certification body recognized for quality management system assessments. The audit was executed in two critical phases:

a)   Stage 1 (Documentation Review): SIRIM's auditors meticulously examined the complete suite of QMS documentation, including manuals, procedures, and work instructions, to verify compliance with ISO 9001:2015 requirements. This preliminary stage ensured all foundational documents met the standard's rigorous criteria before proceeding to implementation evaluation.

b)   Stage 2 (On-site Assessment): Auditors conducted thorough on-site evaluations at AIS Malaysia facilities, observing actual processes, interviewing personnel, and reviewing records to assess the practical application and effectiveness of the implemented QMS. This stage validated that daily operations aligned with documented procedures and quality objectives.

2.5   The successful completion of both audit stages demonstrated AIS Malaysia's full adherence to international quality standards, resulting in the organization being awarded the prestigious ISO 9001:2015 certification in November 2024. This achievement not only recognized AIS Malaysia's commitment to operational excellence but also positioned it as a benchmark for quality management within Malaysia's aviation sector. The certification serves as a testament to the organization's dedication to continuous improvement and its capability to deliver reliable, high-quality aeronautical information services that meet global aviation standards.

<u>Benefits of QMS Implementation</u>

2.6   The implementation of a Quality Management System (QMS) in AIS Malaysia has significantly enhanced data accuracy through rigorous validation protocols and multi-layered system of checks, substantially reducing errors in critical aeronautical publications like NOTAMs, AIP amendments, and aeronautical charts, thereby improving flight safety and navigation reliability.

2.7   By aligning with ICAO Annex 15 standards and achieving ISO 9001:2015 certification, the QMS ensures full regulatory compliance while establishing standardized operating procedures that have streamlined workflows, improved interdepartmental coordination, and created clear accountability measures across all AIS operations.

2.8   Furthermore, this achievement has elevated Malaysia's standing in global aviation circles, demonstrating operational excellence while simultaneously creating the necessary framework for transitioning to advanced Aeronautical Information Management (AIM) systems, including digital data exchange formats like AIXM and the implementation of System Wide Information Management (SWIM) technologies to support future air traffic management.

<u>Challenges & Lessons Learned</u>

2.9   The transition to QMS initially faced resistance from staff accustomed to legacy systems, particularly senior AIS officers that comfortable with traditional workflows who showed reluctance in adopting new documentation procedures and quality control measures. The problem occurred was addressed through a comprehensive change management program featuring hands-on workshops demonstrating QMS benefits, discussion between early adopters and resistant staff, and recognition programs rewarding quality improvement suggestions.

2.10   Simultaneously, maintaining conventional AIS operations while building AIM capabilities created operational tensions due to dual maintenance of paper-based and digital systems along with differing skill requirements, resolved through a phased integration approach with parallel run periods for gradual digital transition, cross-training programs covering both systems, and a clear roadmap with milestones for full AIM adoption (future development).

2.11   Documentation inconsistencies across regional offices and departments - including inconsistent record-keeping formats, decentralized version control, and varying procedure interpretations that risked audit failures - were addressed through standardization initiatives. These included implementing a centralized digital documentation platform, appointing dedicated quality control officers (including document champions), and establishing continuous workflow reviews through digital platforms.

2.12   To sustain audit readiness post-certification and prevent risks like procedural drift, audit preparation fatigue, and evolving regulatory requirements, ongoing sustainability measures were implemented including internal audits, real-time KPI tracking through digital dashboards, and annual certification surveillance reviews that collectively ensure maintained compliance and continuous improvement.

Conclusion

2.13   The QMS has transformed AIS Malaysia into a more efficient, compliant, and forward-thinking organization. By minimizing errors, ensuring regulatory adherence, and preparing for digital transformation, the system not only enhances current operations but also secures Malaysia's role as a key player in the evolving global aviation ecosystem.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

a)   note the information contained in this paper; and

b)   discuss any relevant matters as appropriate.

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