GUIDANCE ON IMPLEMENTATION OF A QUALITY MANAGEMENT SYSTEM IN THE AERONAUTICAL INFORMATION SERVICE.

1.0   PURPOSE

This Advisory Circular (AC) provides information and guidance on establishing and implementing a Quality Management System (QMS) in the Aeronautical Information Service (AIS) in accordance with the national regulatory requirements.

2.0   REFERENCE

2.1.   Regulation 18, Schedule 1 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022

2.2.   ICAO Doc 10066 – PANS AIM

2.3.   ICAO Doc 9839 – Manual on the Quality Management System for Aeronautical Information Services

2.4.   ICAO Doc 8126 – AIS Manual

2.5.   ICAO Doc 9991 – Aeronautical Information Management Training Development Manual

3.0   GUIDANCE AND PROCEDURES

3.1.   Background

3.1.1.   Regulation 18 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022 requires the aeronautical information service provider (AISP) to establish, implement, maintain and continuously improve a QMS in the AIS at each function stage. This requirement grants users assurance and confidence in the quality of aeronautical data and aeronautical information throughout the aeronautical data chain, from origination to distribution.

3.1.2.   A primary goal of the AISP is to deliver quality aeronautical information products and services in accordance with the intended use of the information. This is done through the provision of adequate, quality, and timely aeronautical information/data necessary for the safety, regularity, and efficiency of air navigation. Quality aeronautical data and aeronautical information are critical for area navigation, required navigation performance (RNP), airborne computer-based navigation systems and data link systems. To achieve this, the AISP shall receive and/or originate, collate or assemble, edit, format, publish/store and distribute aeronautical information/data concerning the entire territory of the State as well as areas in which the State is responsible for air traffic services outside its territory in the form of aeronautical information products.

3.1.3.   So as to achieve this goal, the AISP should establish, implement, maintain and continuously improve a QMS within the organizational structure with the objective of providing the next intended users with the necessary assurance that the distributed aeronautical data and aeronautical information satisfy the

predefined data quality requirements contained in Schedule 1 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022. Non-compliant and corrupted aeronautical data and aeronautical information can potentially affect the safety of air navigation.

3.2. General

3.2.1. The AISP shall establish an adequately organised QMS containing procedures, processes, and resources necessary to implement quality management at each function stage outlined in 3.1 above. The execution of such quality management shall be made demonstrable for each function stage when required. As far as is practicable, the QMS should conform to the International Organization for Standardization (ISO) 9001 series of quality assurance standards.

3.2.2. Letters of agreement concerning data quality between originator and distributor and between distributor and next intended user may be used to manage the aeronautical information data chain.

3.2.3. The AIS QMS shall follow the ISO 9001 series of quality assurance standards and be certified by an approved organization. It should be noted, however, that ISO 9000 certification does not automatically mean that the QMS is encompassing all functions of an AIS organisation.

3.3. Development of the Quality System

3.3.1. In developing the AIS Quality System, the following shall be taken into consideration:

3.3.1.1. The general requirements for a QMS, and shall be to:

    a) Develop policy and strategy

    b) develop a quality manual that includes the scope of a QMS as applied to AIM processes

    c) identify the procedures and processes needed for the QMS

    d) determine the sequence and interaction of these processes

    e) determine criteria and methods required to ensure the effective operation and control of these processes

    f) ensure the availability of information necessary to support the operation and monitoring of these processes

    g) measure, monitor, and analyze these processes, and implement sufficient action to achieve planned results and continual improvement;

    h) maintain appropriate records that are necessary to provide confidence of conformity of the processes and resulting product.

    i) identify personnel responsible for the development, establishment and management of the Quality System

    j) Establish measures for data collection, processing (including verification and validation) and quality control.

3.3.1.2. Define and implement in the framework of the QMS a user feedback system from the client and regulator.

3.3.1.3. Once the AISP establishes the quality policy and objectives, the following information is included as a minimum as part of the QMS:

    a) scope of QMS

    b) overarching processes

    c) roles and responsibilities

    d) work instructions, operating procedures, and guidance material

    e) training plans

    f) formal internal and external arrangements and agreements;

    g) compliance observations; and

h) continuous monitoring and performance metrics

3.3.1.4. The application of the seven quality management principles:

a) customer focus
b) leadership
c) engagement of people
d) process approach
e) improvement
f) evidence-based decision making
g) relationship management

3.3.1.5. Within the context of the established QMS, the competencies and the associated knowledge, skills, and abilities required for each function (inclusive of the roles and responsibilities) shall be identified, and personnel assigned to perform those functions shall be appropriately trained.

3.3.1.6. The AISP must determine what processes are needed to deliver standardized products and services, what in terms of quality is acceptable to the next intended users, such as pilots, airlines, navigation database suppliers, etc., and ensure the effectiveness and continuous improvement of the QMS.

3.3.1.7. The AISP is responsible for the establishment of processes which includes:

a) determination of the inputs required, and the outputs expected from processes
b) determination of processes required to ensure collected data is in accordance with formal arrangements and is traceable throughout the aeronautical data chain
c) determination of additional processes that are required to ensure the data integrity is maintained throughout the process
d) determination of the interaction and sequence of processes
e) determination of the criteria and methods to control internal and external processes
f) determination of resources needed and to ensure the availability of resources
g) assignment of responsibilities to functions within the processes, for example: maintenance of aeronautical data and aeronautical information; creation of aeronautical information products; authorization to release aeronautical information products and services; communication with next intended users in relation to nonconforming outputs; and monitoring of compliance against all regulatory requirements
h) identification and addressing of risks and opportunities for improvement, both internal and external
i) evaluation and implementation of changes to the processes; and
j) continual improvement of the processes and the QMS.

3.3.1.8. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed.

3.3.1.9. A system of initial and periodic assessments shall be established that require personnel to demonstrate the necessary competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls in knowledge, skills, and abilities.

3.3.1.10. Each quality management system shall include the necessary policies, processes, and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.

3.3.1.11. The established quality management system shall provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.

3.3.1.12. All necessary measures shall be taken to monitor compliance with the quality management system in place.

3.3.1.13. Aeronautical data integrity shall be provided according to the resolution requirements in The Civil Aviation (Aeronautical Information Services) Regulations, 2022.

3.3.1.14. Demonstration of compliance of the quality management system applied shall be by audit. If nonconformity is identified, initiating action to correct its cause shall be determined and taken without undue delay. All audit observations and remedial actions shall be evidenced and adequately documented.

3.3.1.15. A degree or level of confidence that the data provided meet the requirements of the data user in terms of accuracy, resolution, integrity (or equivalent assurance level), traceability, timeliness, completeness, and format shall be maintained throughout the data process from survey/origin to distribution to the next intended user.

3.3.1.16. Validation and verification procedures shall be established which ensure that quality requirements (accuracy, resolution, integrity traceability, timeliness, completeness and format) and traceability of aeronautical data are met.

3.3.1.17. The content of the Quality Management System manual is as indicated in the appendix to this Advisory circular.

UGANDA CIVIL AVIATION AUTHORITY
DIRECTOR
SAFETY, SECURITY AND ECONOMIC REGULATION

Director Safety, Security and Economic Regulation.

APPENDIX

Structure of Quality Management Manual

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v)   Distribution
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1.4   Quality management system and its processes for each AIM functional area

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1.3   AIM Quality management roles, responsibilities and authorities

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Appendices

Attachments