



**ASSEMBLY — 41ST SESSION**

**TECHNICAL COMMISSION**

**Agenda Item 31: Aviation Safety and Air Navigation Standardization**

**IMPLEMENTATION OF THE QUALITY MANAGEMENT SYSTEM  
AT THE AIM OFFICE IN BRAZIL**

(Presented by Brazil)

**EXECUTIVE SUMMARY**

More and more, the air traffic management (ATM) community largely depends on providing timely, relevant, accurate, accredited and quality-assured information to the collaborative decision making (CDM) Sharing information across the system will allow the ATM community to conduct its business and operations in a safe and efficient manner. Thus, high quality aeronautical information becomes a prerequisite for new technologies and equipment in order to provide more and better services to aircraft and ATM systems in the same airspace at the same time. Therefore, a QMS - Quality Management System - must establish customer requirements, that is, information reliability, information availability, information veracity, security and service. This information paper aims to share the processes, standards, procedures and tools established in Brazil in an environment associated with Quality Management.

<i>Strategic Objectives:</i>	This working paper relates to the Air Navigation Capacity and Efficiency Strategic Objectives.
<i>Financial implications:</i>	None
<i>References:</i>	Annex 15 — <i>Aeronautical Information Services</i> Doc 9854, <i>Global Air Traffic Management Operational Concept-GATMOC</i> , First Edition, 2005. Doc 9965, <i>Manual on Flight and Flow Information for a Collaborative Environment</i> Montreal, 2012. Doc 10066, <i>Procedure for Air Navigation Services — Aeronautical Information Management (PANS-AIM)</i>

**1. INTRODUCTION**

1.1 The Institute of Aeronautical Cartography of Brazil (ICA) has implemented the “Aeronautical Publications” process certified since 2006 in relation to the ISO 9001 standard, at the time, in the 2000 version. In 2010, it implemented the ISO 9001 Standard of the 2008 version, and, currently, the implemented version of ISO 9001 is 2015, which also changed the name of the process to “Aeronautical Information Management”.

## 2. **MANAGEMENT BY PROCESS**

2.1 The ICA has a Doctrine Section that standardizes the processes that, together with the technical team, establish its flow in order to guarantee the quality and integrity of the data. The flows are recorded in the Work Instructions that are available to the technical team on the institutional website. The flowchart is drawn in software called Bizagi.

2.2 The following list brings together all the processes mapped for the dissemination of aeronautical information:

- a) aeronautical information management;
- b) topographic surveys;
- c) visual charts;
- d) visual corridor charts;
- e) register of objects projected in the airspace;
- f) electronic data on terrain and obstacles;
- g) capacity; and
- h) analysis of the protection zone plan.

## 3. **LEADERSHIP**

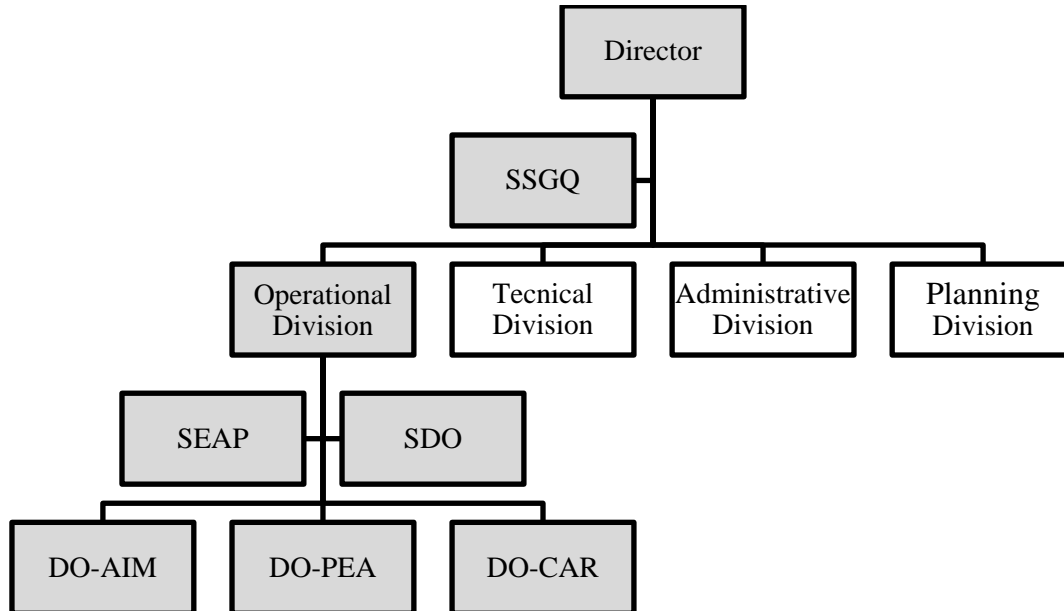
3.1 The ICA chose to keep a person responsible for the QMS and even created an exclusive sector to carry out activities related to quality. However, all professionals involved in the processes are adequately trained.

3.2 Consequently, another important aspect is to share the responsibility for quality with the managers and technicians of each process. This distribution of responsibility can be formalized in the Work Instructions and in the dissemination carried out through meetings and training.

3.3 As the QMS is based on the integration of processes, the involvement of all personnel is very important, as well as understanding the benefits when a process is managed by a QMS, such as:

- a) management by process;
- b) definition of goals;
- c) monitoring of processes and goals;
- d) prevention of failures instead of their corrections;
- e) avoid doing it again;
- f) ensure the traceability of information;
- g) visibility of results; and
- h) increased customer satisfaction.

3.4 The following figure represents the organization chart of the ICA, and we can see that the Quality Management System Section (SSGQ) is directly subordinated to the Director, exercising leadership over the other sectors.



3.5 It is up to the Aeronautical Information Management Subdivision (DO-AIM) to receive, verify and validate the Work Packages (SDIA) in accordance with the competencies, deadlines and quality requirements.

3.6 The Subdivision of Procedures and Airspace (DO-PEA) is responsible for controlling and executing activities related to the elaboration of air navigation procedures and the design of Brazilian airspace.

3.7 The Cartography Subdivision (DO-CAR) has the following attributions:

- a) plan, control and execute activities related to aeronautical cartography, topography, geodesy, photogrammetry and geoinformation to support SISCEAB; and
- b) assist in the survey and forwarding of aeronautical data related to aeronautical cartography.

3.8 The Project Study and Analysis Section (SEAP) has the following attributions:

- a) advise the sectors in the design and validation phase of projects related to the aeronautical data and information chain;
- b) research, analyze and coordinate the updating and dissemination of best practices in the management and development of projects in the Operational Division (OD);
- c) research, analyze and coordinate new projects that meet the needs of the OD;
- d) assist Project Managers regarding the application of Project management; and

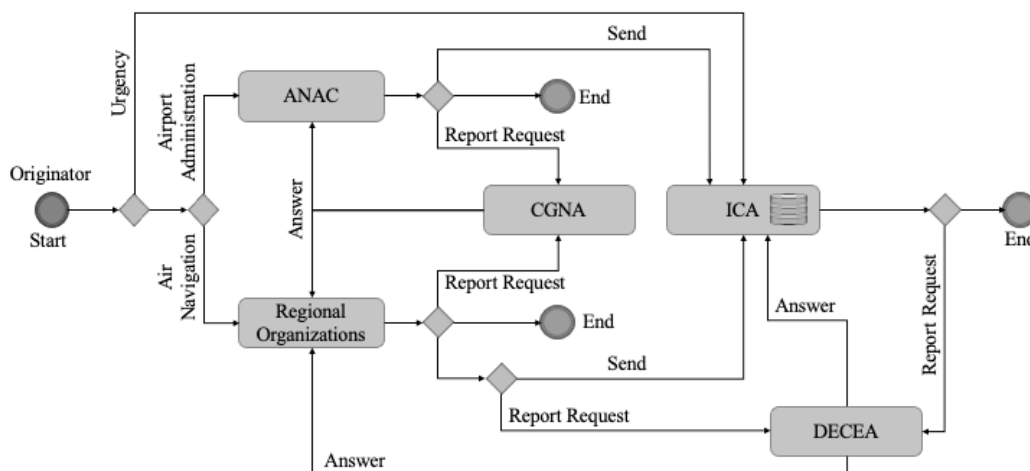
- e) coordinate projects related to the aeronautical data and information chain of Regional Organizations.

3.9 The Doctrine Section (SDO) has the following attributions:

- a) analyze and control the procedures of the OD, with the purpose of promoting the quality of the products, as well as the efficiency and effectiveness of the operational safety and of the processes developed in the OD;
- b) control activities related to the application of operational evaluation criteria, obtaining and maintaining licenses and certificates, as well as recycling and specific technical updating;
- c) establish and disseminate values, disciplines, norms and normative procedures that govern the activities of the OD;
- d) coordinate the insertion of aeronautical information in the database, according to the AIRAC System;
- e) coordinate the generation of AIS Products; and
- f) interact with SSGQ, with the objective of providing the continuous improvement of AIS Products and Services.

#### 4. FUTURE PROJECTIONS

4.1 Before starting future projections, it is necessary to identify some concepts related to the aeronautical data chain in Brazil, presented below at a high level:



**Figure 1 - ANAC - National Civil Aviation Agency; CGNA - Air Navigation Management Center; DECEA - Airspace Control Department**

4.2 Evolve QMS to be applicable to the entire data supply chain, from data source to distribution, taking into account the intended use of the data. Thus, it implies the integration of the QMS of all the organizations that are part of this chain.

4.3 The Airspace Control Department (DECEA) developed a specific plan for structuring regional organizations. This plan aims to transform them into agencies responsible for providing aeronautical data and information to efficiently meet the requirements of the Global ATM Community. At the end of the implementation process, these organizations will be able to carry out actions related to the dynamic and integrated management system for the dissemination of aeronautical information products and services inside and outside the Brazilian territory.

4.4 The adopted plan consists of an implementation based on five phases, one for each of the regional organizations, consisting of:

- a) physical structuring of facilities;
- b) adequacy of human resources;
- c) human resources training;
- d) updating or creating processes, service standards, standard action rules and updating internal regulations; and
- e) assessment of the ability to carry out the work through the aeronautical data and information monitoring chain.

4.5 This implementation started on 20 September 2021 and is expected to end in December 2023.

## 5. CONCLUSION

5.1 Achieving effective results increasingly requires organizations to work together. Working together, they can improve and maintain a collaborative approach to achieving their quality goals, objectives and purposes demanded by the national and global airline industry. Therefore, joint action is necessary and essential to succeed in our activities.

5.2 Quality management is a means to succeed and meet a set of pre-defined requirements. The QMS offers the ability to formalize an organization's processes and thus provide assurance that process requirements are being met.