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Twenty-Fourth Meeting of the AFI Planning and Implementation Regional Group
(APIRG/24)
(Virtual – 2 to 4 November 2021)

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

Mechanism for authentication, verification and validation of published aeronautical data

(Presented by ASECNA)

SUMMARY
This document describes the data authentication process implemented by ASECNA as well as the verification and validation procedures for published aeronautical data.
REFRENCE(S): - Global Air Navigation Plan (Doc 9750) - APIRG/22 - Doc 7474
Related ICAO Strategic Objective (s): *A: Safety - Strengthen the safety of global civil aviation.* *C: Environmental protection - Minimize the negative effects of global civil aviation on the environment.* *E: Efficiency: Strengthen the efficiency of air operations.* *D: Continuity: Maintain the continuity of flight operations.*

1. Introduction

1.1 In accordance with the global air navigation plan (GANP), the regional navigation plan and the concept of upgrading the block aviation system (ASBU: BO-DATM), ASECNA has put in place an authentication mechanism , verification and validation of aeronautical data which today supports the operationalization of the aeronautical database "AIXM" and of the electronic AIP (eAIP) for the 17 member states of ASECNA.

1.2 This information paper reports on the mechanism put in place by the Agency as well as the expected benefits.

2. Discussion

2.1 Context and State Responsibilities

Since 2016, ASECNA has expressed to its member states the need to set up a formal mechanism for the validation and authentication of national static aeronautical data to be published, in accordance with ICAO Annex 15, which requires States to ensure that the aeronautical data and aeronautical information provided are complete, communicated on time and of the required quality (precision, resolution, integrity, traceability, punctuality, completeness and format of the data).

In ASECNA members states, this mechanism mainly concerns:

- ✓ The identification of all data originators (textual and graphic)
- ✓ The process for ensuring the reliability of data at the level of Civil Aviation Authorities: the authorities following the agreements may seek the expertise of ASECNA technical services for this purpose;
- ✓ The establishment of service level agreements (formal arrangements) for the management of aeronautical information (SLA-AIM) under the authority of the State
- ✓ The establishment of interface contracts, internally at ASECNA between the departments involved;
- ✓ The definition of the admissible conditions of the data to be published (authorized signatories and compliance with aeronautical data catalogs);
- ✓ **The training** of data originators and their authorization by the State

This mechanism is all the more important for the collection of critical data, the use of which, if it is altered, leads to a very high probability that the continuation of a flight and the landing of an aircraft involve a serious risk of disaster.

2.2 Data verification and validation procedures

ASECNA has implemented a certified quality management system since 2015 through which the Agency has defined a framework for measuring and monitoring the performance of the verification and validation of aeronautical data / information.

This verification system mainly includes:

2.2.1 the verification procedures so-called **ab-priori control** at four levels (airport, country, regional, headquarters): These procedures include ***verification and validation tasks*** for the data collected in order to ensure that all information has been included and that all details are correct for publication., in accordance with the provisions of annex 15 and ISO 9001.

2.2.2 the verification procedures so-called **Ab-posteriori control** at four levels (airport, country, regional, headquarters): These procedures include data ***verification and validation tasks*** occurring immediately after publication of information in order to detect as quickly as possible deviation or error and rectify it, in accordance with ISO 9001 standards.

2.2.3 the procedures for validating the data and information published using automated and semi-automated platforms for data analysis and visualization based on TOPSKY AIXM, Corel DRAW maps, Data for Flight, Global Mapper, ArcGIS technologies , AIP GIS Charting, RADIONAV, GEOTITAN, ...

2.2.4 continuous and specialized training of personnel, through training programs in each field involved, necessary for mastering the techniques and principles of data processing from verification to validation in order to guarantee the exchange of data under all formats and better data quality. This training is open in ASECNA schools and in operational centers to data creators who request it.

All these procedures and actions aim to support the data authentication mechanism at the state level and to guarantee the quality of the published aeronautical data.

3. Meeting action

3.1 The meeting is invited to:

a) Take note of the information contained in this document,

b) Pursue actions for the establishment of formal arrangements between data originators and the publisher under the authority of the State

c) Take actions **to train** and raise awareness among data originators (especially critical ones) of data quality requirements (precision, resolution, integrity, traceability, punctuality, completeness and format of data) and associated collection metadata

d) Introduce automated tools for the validation of aeronautical data to be published