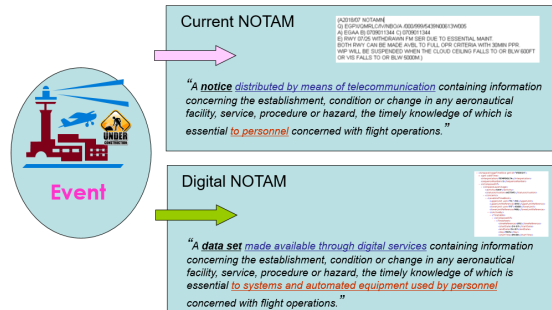# Digital NOTAM Specification

Executive summary

The term "Digital NOTAM" identifies **a small data set which contains digitally coded data about one or more related aeronautical information changes, which are of temporary nature or provided on short notice**. From this point of view, the information scope is similar to that of a traditional NOTAM message, as defined by the ICAO Annex 15 and PANS-AIM. However, there are essential differences between the NOTAM messages and the Digital NOTAM concept:

- the current NOTAM is a text note intended to be read by pilots, air traffic controllers and other operational personnel involved in flight operations. A Digital NOTAM is intended for **automatic processing and interpretation**. Using dedicated software, it can be **formatted into textual and graphical formats for presentation to human operators**. Digital NOTAM data can be used, for example, to present an actual airport map to the pilot or to the air traffic controller, containing graphical depictions of the work in progress areas, closed taxiways or runways, temporary obstacles, etc. A Digital NOTAM might also **trigger automated actions**, such as determine procedures impacted by the unavailability of a navaid;
- verifying the quality of the information contained in the current NOTAM messages requires manual effort, as the NOTAM typically needs to be read by an operator. Digital NOTAM can be **quality checked automatically**, both for adherence to the coding specification and for coherence with the rest of the data;
- the NOTAM messages can refer to information contained in Aeronautical Information Publications and aeronautical charts, requiring just small subsets of data to be digital, such as the list of FIR and the list of airports. Digital NOTAM encoding is **based on fully digital static data sets.** It also requires software tools that provide dedicated input forms;
- the NOTAM messages can be distributed by basic teletype networks such as the Aeronautical Fixed Telecommunication Network (AFTN). A Digital NOTAM requires **more advanced communication networks** for distribution, such as IP-based networks, AMHS, TypeX, etc.

To enable the provision of Digital NOTAM, the information currently exchanged by NOTAM was modelled and specified in a logical data model. This was achieved with the **Aeronautical Information Exchange Model (AIXM) version 5**.

In addition to the AIXM data model, specific rules are necessary to harmonise the encoding of the different categories of NOTAM "events". A situation that affects one or more aeronautical features, by altering their properties, either temporarily or permanently and which requires specific encoding, decoding and verification rules in AIXM is described in this document as an **"event scenario"**. The core of this document consists into coding rules for Event scenarios, such as runway closure, temporary obstacle, activation of temporary airspace restriction, etc.

Digital NOTAM are expected to be implemented incrementally: the most common types of NOTAM will be supported first, in order to match the gradual implementation by the end-user of their capabilities for digital NOTAM processing. Therefore, the Digital NOTAM Specification document will continue to be developed incrementally, adding new scenarios as required.

To enable a smooth transition and to support the current NOTAM users who will not have the capability to use Digital NOTAM from the first day, Digital NOTAMs will be issued in parallel with the current NOTAM messages. For this reason, guidelines for the automatic generation of the text NOTAM are provided, as a complement to this Specification, through the AIXM web site: NOTAM Production Guidelines.

Thus, NOTAM will be generated in the same way that AIP tables and aeronautical charts are generated from a common aeronautical information database. For this purpose, the text NOTAM generation rules are described for each scenario. This will avoid the manual creation of the NOTAM on a different system and will minimise the risk of inconsistencies between the conventional NOTAM text and the Digital NOTAM data.

Purpose of this document

The Digital NOTAM Specification defines the rules for harmonised encoding of NOTAM information as digital AIXM data sets (version 5.1 or later). This document is intended primarily for system developers, as most of these rules will have to be translated into computer code that results in database structures, human-machine interfaces (HMI), data validation rules, etc. However, the document is developed with significant input from operational experts, in order to capture all the rules and requirements that will guarantee safe, efficient and reliable Digital NOTAM operations. Therefore, the document is also intended for aeronautical information experts, who need to understand how the event data is coded digitally.

The main goal of the document is to enable the interoperability of the different systems that produce, transform, transmit and consume Digital NOTAM data, as part of the digital aeronautical information in general. The application of common rules is also expected to reduce the cost of the implementation because it minimises the need for mapping and adaptation of the data coming from different sources.

The rules specified for different events (scenarios) describe the minimal information necessary to be provided on short notice. Some events might concern permanent changes, which are initially announced by NOTAM. In this situation, the initial data might be refined with more detailed information in order to provide all the detail necessary for recording a permanent change of the aeronautical feature concerned and which was not available for the initial notification.