International Civil Aviation Organization

Sixteenth Meeting of the ICAO Aeronautical Information Services − Aeronautical Information Management Implementation Task Force (AAITF/17)

Video Teleconference, 20 – 24 June 2022

Agenda Item 5: AIS-AIM Updates

IMPLEMENTATION OF DIGITAL NOTAM IN JAPAN

(Presented by JAPAN)

SUMMARY

This paper presents the challenge of implementing digital NOTAM and associated activities in Japan.

1. INTRODUCTION

1.1 In recent years, the number of NOTAMs has been increasing in AAITF. Last year, ICAO launched the Global Campaign on NOTAM Improvement (NOTAM2021) and noted that yearly totals such as this have increased steadily over the years, on average by more than 100,000 annually. This might lead to safety risks caused by increased crew workloads and a lack of information affecting aircraft operations.

As noted in Chapter 1 of ANNEX15, the role and importance of aeronautical data and aeronautical information changed significantly with the implementation of various air navigation. The aeronautical information world is required a transformation from paper-based Aeronautical Information Products to digital data-centric AIM where the aeronautical information and data are to be digital and primarily, machine readable. One operator told us, ‘it is expected to see all filtered information such as airspace restriction or runway closure on the map with their flight plan, and, if there is any information to note, then we confirm its details whether it affects to the operation. Then, it is possible to take any action to change the plan.’

Understanding the user needs to transition from AIS to AIM, it is important to consider offering machine-readable digital NOTAM. This IP shares the challenge of implementing digital NOTAM and associated activities in Japan.

2. DISCUSSION

2.1 ANNEX15 does not include the definition of Digital NOTAM, instead, it describes that *when temporary changes of short duration are made available as digital data (digital NOTAM), they should use the same aeronautical information model as the complete data set*. In 2018, Japan conducted the research to implement digital NOTAM and related AIXM model and confirmed AIXM version 5.1, which includes the time slice concept, is necessary to implement digital NOTAM. As a result of the research, we plan to implement digital NOTAM in 2025 1Q with AIXM version5.1.1.

NOTAM classification

2.2 Some States have already introduced digital NOTAM, but there is no global common digital NOTAM specification yet. The Digital NOTAM Event Specification has been created by FAA and EUROCONTROL and published on AIXM web-site (https://aixm.aero). By referring to this specification, it is possible to provide digital NOTAM as XML data based on AIXM and also to present it in an ICAO format on the user's system. In Japan, we sorted out current NOTAMs with reference to this specification, and classified as follows based on the number of NOTAMs issued.

- Closure and Restriction of Runway/Taxiway/Apron/Spot
- SNOWTAM
- Breaking Action on Taxiway/Apron
- Unserviceable center line light of Runway/Taxiway
- Unserviceable obstacle light/obstacle day marking
- Obstacles
- Unserviceability/Test emission of Radio Navaids
- RAIM forecast information
- Flow control, Conditional Route, Pacific Organized Track System (PACOTS)
- Act of Airspace
- Presence of hazards, which affect air navigation
- Other Events

After that, based on this classification, we developed the contents of digital NOTAM in consideration of the association with AIXM elements and the rules. In addition, to establish digital data chain regarding digital NOTAM, we also developed a web form that allows Originator to directly input digital NOTAM proposal without being aware of AIXM. This will allow Originators to easily send NOTAM proposal, which is expected to improve NOTAM accuracy and reduce processing time.

Utilization of geographical information

2.3 Geographical information is another important factor to support quick understanding. In Japan, efforts are being made to prepare geographical information to identify the impact of aeronautical information on operations in four dimensions and to overlay it on a WEB map.

2.4 From last year, we started collecting and creating aerodrome data in cooperation with the airport administrator, and aerodrome data for 96 airports used by civil aviation will be prepared by the end of this year. Also, we will create airspace data around airports such as air traffic control zone from next year.

2.5 In the next step, these data will be registered in association with the AIXM baseline data. By doing so, when an event occurs, it will make easier to identify, for example, the closed area of taxiways or the hazards to air navigation.

Cooperation with AIM stakeholders

2.6 The definition of AIM states that "*The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties*." AIM cannot be achieved only by the AIS unit, but it builds and operates together with AIM stakeholders. So, AIS unit shall play a central role among them.

2.7 Therefore, we will provide training on AIXM, GIS and SWIM to AIS personnel in AIS units, and also provide necessary knowledge to Originator such as the role and importance of aeronautical information, Originator's role in AIM, as well as technical matters. In addition, we will coordinate for continuous data updating with quality assured.

3. CONCLUSION

3.1 Some States have started to provide data sets for static information, but should further facilitate processing dynamic data together with them, in order to support and improve daily operations. Therefore, AIS organization in each State is encouraged to implement such integrated information management with digital data based on AIXM as soon as possible.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

…….