International Civil Aviation Organization

Twentieth Meeting of the ICAO Aeronautical Information Services – Aeronautical Information Management Implementation Task Force (AAITF/20)

Chitose, Japan, 9 – 13 June 2025

Agenda Item 4: AIS-AIM Updates

SWIM INFORMATION SERVICE IN JAPAN

(Presented by Japan)

SUMMARY

This paper presents Japan's implementation of SWIM-based services to enhance the sharing of aeronautical information, while retaining certain existing applications to maintain user convenience. The initial services include AIXM 5.1.1-based data distribution and digital NOTAM delivery, with access managed through an organisational authorisation framework. Key initiatives have included ensuring compatibility with legacy systems, promoting user understanding, and advancing alignment with regional and global standards.

1. INTRODUCTION

1.1 The Asia/Pacific Plan for Collaborative AIM aims to achieve the automatic exchange of aeronautical data in the SWIM environment, aligned with ASBU DAIM-B2/1 by 2025. This IP shares the information services to be provided, and challenges based on Japan's experience in digitising aeronautical information services.

2. DISCUSSION

SWIM in JAPAN

2.1 SWIM is an information sharing platform. Under the SWIM mechanism, SWIM-enabled applications that consume information or provide information services enable stakeholders such as air traffic managers and airspace users to exchange information with one another (**Figure 1**). Therefore, they are not normally included within the scope of SWIM. However, in Japan, it was decided to continue providing certain applications in order to maintain the existing services and user convenience.

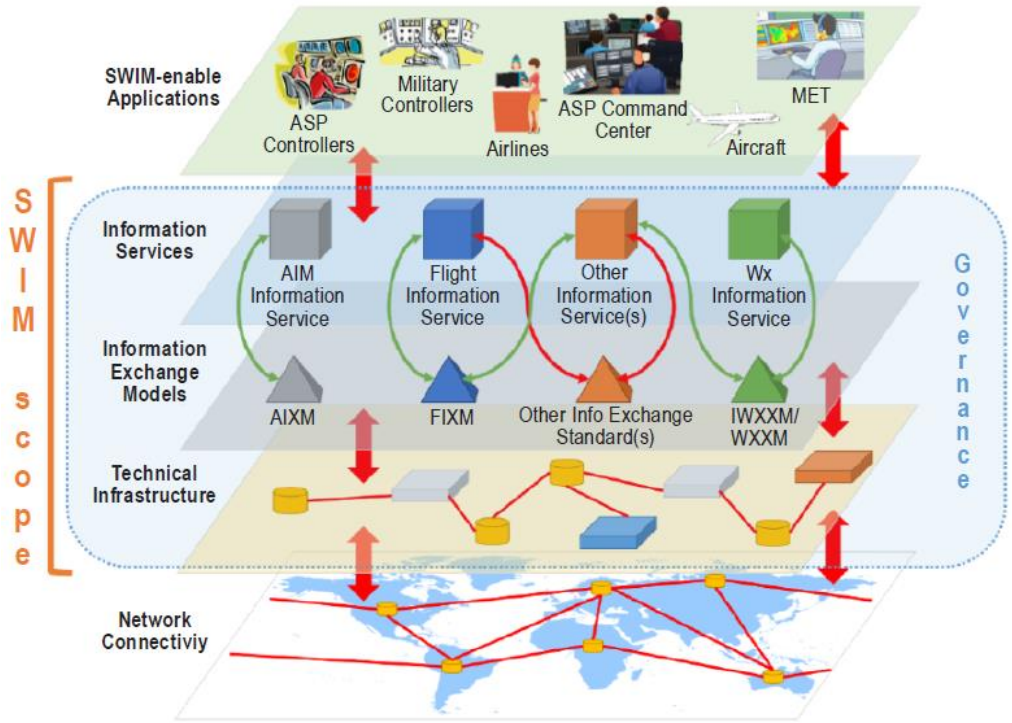

Figure 1: SWIM Global Interoperability Framework (from Doc10039)

Information services provided by SWIM (related to AIS)

For machine processing

2.2 As a data distribution service, AIXM format data (AIXM 5.1.1) is provided through the AIP data distribution service and the digital NOTAM distribution service. The AIP data distribution service provides AIP data set and Obstacle dataset on AIRAC cycle via Publish/Subscribe. The digital NOTAM distribution service generates a digital NOTAM each time a NOTAM is published and provides it via Publish/Subscribe.

2.3 Digital NOTAM Request Service provides digital NOTAMs via Request/Reply using Web API.

For human reading

2.4 Services for human reading are basically outside the scope of SWIM. However, existing services are provided that allow users to view NOTAMs and AIPs via a web browser. These services are widely used as preflight information services to enable operators and others to efficiently check aeronautical information, so we considered that it was important to continue providing these existing functions.

2.5 The digital NOTAM request service enables users to check NOTAMs by setting search criteria on a browser.

2.6 The profile service allows users to display and verify some of the AIP data set on a map. Furthermore, users can overlay NOTAMs, weather information, and flight information for confirmation.

Expected effects

2.7 We have been providing web services specialized in AIS. However, by transitioning to the SWIM service, we will be able to provide integrated information combining operational information and weather information. The user system can be customized to meet specific needs, such as overlaying this information on a map for easy verification or implementing mechanisms to issue warnings, thus users will be able to clearly identify impacts on their operations. Additionally, by using data in globally standardized formats, seamless integration with data from other countries is also expected.

2.8 The initial services being released this year will be the first step in the SWIM service and will serve as a foundation for future development. Going forward, based on these services, we plan to improve and expand the services in collaboration with relevant parties.

Challenges

Coordination and consideration regarding user's systems

2.9 User systems such as ATS units and aircraft operators have already built functions to analyse and display legacy NOTAMs according to their respective operational needs. Since it is not possible to update all user systems simultaneously to start using AIXM 5.1.1 data, it was necessary to generate legacy NOTAMs from digital NOTAMs and continue providing them to the relevant systems.

2.10 Since many users are unfamiliar with AIXM, we took time to explain what AIXM is, starting from the overview, and then explained the necessity and effectiveness of digital data utilization. We also contributed to the user system development by providing sample data and conducting visualization demonstrations.

The necessity of pre-release

2.11 In Japan, NOTAMs and AIPs have already been made available on the AIS-JAPAN website and are widely used. Therefore, in order for users to transition to the new web browser service without any significant issues, it was necessary to provide a trial period during which the service could be used in advance for a certain duration. While it is desirable to operate the existing system and the new system in parallel, it involves significant costs. So, before launching the service, we provided a trial period using dummy data to collect feedback and confirm that there were no critical impacts. In addition, when building the interface for the digital NOTAM request service, it was necessary to coordinate carefully with the parties concerned, especially ATS units, to ensure that there would be no disruption to their ongoing operations.

Mechanism for granting access permission to information services

2.12 Depending on service, it may be necessary to limit access to certain organizations. For instance, only authorized organizations are allowed to use Digital NOTAM Registration service which enables to submit NOTAM Request. Furthermore, by specifying NOTAM templates that each organization is authorized to request, unnecessary NOTAM request can be prevented. On the other hand, services that allow viewing NOTAMs and AIPs via a web browser have no access restrictions and can be used by anyone with a SWIM account.

2.13 The service access permission scheme is built as part of the SWIM scheme. Therefore, the AIS center, as a provider of AIS-related SWIM information services, participated in the development of the scheme together with the SWIM administrator and other service providers. As a result of the consideration, it was established that access permissions to each information service are granted based on the organization to which the user belongs, and that each service provider would define in advance

the access permission criteria for the services they manage. After the service launch, authorization processes will be carried out based on the usage conditions (**Figure2** and **3**).

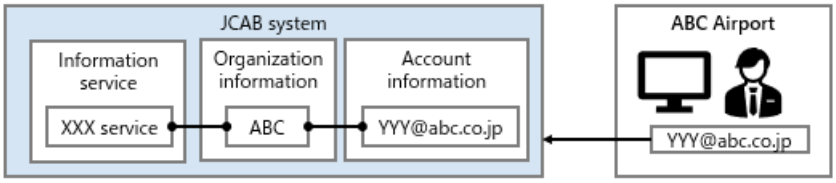

Figure 2: Relationship of service, organization, and account

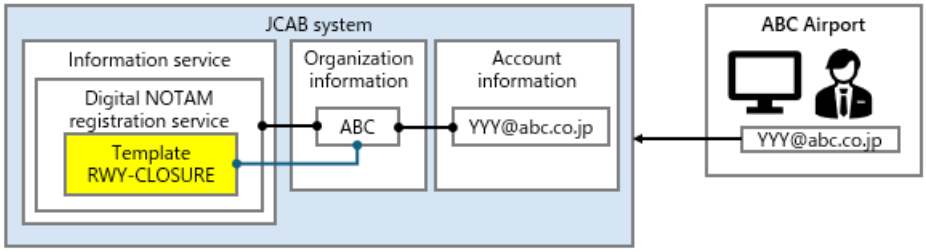

Figure 3: Relationship of service, organization, account, and template for Digital NOTAM request service

Conclusion

2.14 In order to provide aeronautical information services as part of the SWIM information services, it was essential not only to consider the information services themselves but also to clearly understand the structure, governance, and infrastructure of SWIM.

2.15 Although these services will be launched soon as initial offerings, but we will continue to enhance the services with consideration for harmonization at regional and global levels.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

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