



ICAO

*International Civil Aviation Organization*

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

Chitose, Japan, 09 – 13 June 2025

---

**Agenda Item 5: Regional AIM Guidance and Planning**

**ADDRESSING THE NEED FOR CLARIFICATION ON THE REQUIREMENTS RELATED TO ELECTRONIC CHART**

(Presented by Singapore)

**SUMMARY**

This paper seeks clarification on the requirements for electronic aeronautical charts under the Asia/Pacific Regional Plan for Collaborative AIM (Version 2.0), particularly regarding its scope and SWIM-based data exchanges. The Regional Plan does not specify required data elements, formats, update frequency, or data integrity standards to be exchanged in a SWIM environment and implementation details for electronic charts that are needed to meet Phase III requirements. Clear guidance is needed to ensure harmonized and compatible implementation of digital datasets, integrated briefing, and electronic charts within the SWIM environment.

**1. INTRODUCTION**

1.1 The transition from Aeronautical Information Services (AIS) to a digital Aeronautical Information Management (AIM) framework is necessary for modernizing air navigation services. The Asia/Pacific Regional Plan for Collaborative AIM (“Regional Plan”) highlights the importance of electronic charts and their integration in a SWIM environment. However, States may face challenges in implementing this capability in line with Regional AIM Capability Phase III, particularly, regarding how these data exchanges can be facilitated via SWIM. Greater clarity is required for States to align their AIM initiatives with regional objectives.

1.2 A major concern is that the Asia/Pacific regional plan does not define the specific data elements that should be included in SWIM-based exchanges. Clearer guidance is needed on the required chart components as States may interpret requirements and outcomes differently. The lack of standardization increases the risk of compatibility, system interoperability and data integrity issues in data exchanges via SWIM in supporting close to real-time aeronautical information sharing.

1.3 Paragraph 7.21(iii) and Item 18 in Appendix D of the Regional Plan states that electronic aeronautical charts are required to meet Phase III requirements. However, without further details, it presents ambiguities regarding their format and exchange in the SWIM environment. Paragraph 7.21(iii) mandates the provision but lacks the guidance to meet the entire scope of Phase III requirements. Additionally, Appendix D requires their exchange via SWIM without detailing the data elements and formats. The AIS-AIM transition roadmap (P-20) also highlights that electronic charts are to be based on digital datasets and could be deployed online, raising the question of whether the SWIM environment should facilitate the exchange of these to generate charts or allow direct transmission of pre-formatted/ pre-created digital aeronautical charts. Since the SWIM environment is designed to

manage the exchange of digital data, clarifications are needed on how electronic charts should be defined, represented, and used in the SWIM environment will ensure a harmonized implementation of electronic charts across States.

## **2. DISCUSSION**

### Challenges in electronic chart exchange via SWIM.

2.1 The main challenge in the planning and design of electronic chart exchange in the SWIM environment is the lack of clear definitions regarding the scope of data exchange and standardized formats for such exchange. Since the Regional AIM Capability Phase III requires the exchange of electronic charts through the SWIM environment, it is necessary to establish a standardized approach for implementation. Without such explicit requirements, States may interpret the necessary chart elements differently, leading to non-standardized representation of data in the aeronautical chart formats.

2.2 Two other critical challenges are the uncertainty surrounding update frequency of the digital aeronautical data for aeronautical charts, and the consequential maintenance of its data integrity. These challenges may raise concerns among regulators regarding the timeliness of data updates and the measures in place to ensure its integrity. Clearer guidance is needed to manage the risk of outdated or inconsistent aeronautical data being exchanged, impacting the reliability of information provided to the user.

### Proposed Solution to Address These Challenges.

2.3 To address these challenges, the scope of exchanging and the required elements of electronic chart data through SWIM should be clearly defined. It is also necessary to clarify how States should facilitate electronic chart exchange using SWIM, in alignment with Regional AIM Capability Phase III. Standardizing exchange formats by aligning with internationally recognized models such as AIXM would ensure interoperability and consistency across systems. Establishing a consistent update frequency and data integrity guidelines would enhance the reliability and accuracy of exchanged data.

2.4 Establishing defined data elements, standardized formats, and frequency of update protocols will support a harmonized approach to electronic chart exchange, ensuring a structured and interoperable framework across the Asia/Pacific region. This will ensure an efficient and standardized method for implementation that meets data quality requirements.

2.5 The development of clear implementation guidance should be further discussed at the appropriate ICAO regional forums, as this would help establish a common understanding of exchange requirements and would support Asia/Pacific States in adopting a uniform approach to electronic chart exchange.

## **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss the scope of electronic chart data required for SWIM-based exchange;
- c) determine how SWIM should facilitate the exchange of raw digital datasets, pre-formatted electronic charts, or both;
- d) develop guidelines on standardized formats, update frequency, and data integrity, to enhance interoperability in electronic chart formats; and

e) discuss any relevant matters as appropriate.

— — — — —

<b>Draft Conclusion/Decision AAITF/20-X: TITLE</b>	
<b>What:</b> Recognizing that electronic chart exchange via SWIM is a required capability under Regional AIM Capability Phase III, a standardized approach should be developed to ensure consistency and interoperability. Additionally, clarification is required on whether SWIM should manage raw digital datasets, pre-formatted electronic charts, or both.	<b>Expected impact:</b> <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
<b>Why:</b> To standardize requirements for the exchange of electronic charts via SWIM to fulfill Regional AIM Capability Phase III by States.	<b>Follow-up:</b> <input type="checkbox"/> Required from States
<b>When:</b> 9-Jun-25	<b>Status:</b> Draft to be adopted by Subgroup
<b>Who:</b> <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX	