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# THIRTEENTH AIR NAVIGATION CONFERENCE

**Montréal, Canada, 9 to 19 October 2018**

**COMMITTEE A**

**Agenda Item 2: Enabling the global air navigation system**
**2.3: Future provision of aeronautical meteorological service**

## INTERNATIONAL COOPERATION SCHEME ON COLLABORATIVE SIGMET ISSUANCE (CSI)

(Presented by Japan)

**EXECUTIVE SUMMARY**

This paper presents the progress of the Collaborative SIGMET Issuance Demonstration Project and its transition to operational phase through the establishment of the international cooperation scheme on Collaborative SIGMET Issuance, known as CSI, among six member States: Japan, Lao People's Democratic Republic, Myanmar, Philippines, Thailand and Viet Nam.

## 1. INTRODUCTION

1.1 There have been longstanding SIGMET deficiencies in some States and requirements from users for harmonized, phenomenon-based hazardous weather information. ICAO APANPIRG/26 meeting (2015) noted the importance of cross-FIR-boundary coordination and alignment of the MET information provided by States for adjacent FIRs to support air traffic management (ATM) and formulated the following conclusion:

> **Conclusion APANPIRG/26/62 —** Cross-border MET Collaboration and Coordination
>
> Recognizing the presence of SIGMET weather phenomena that straddles across boundaries, States/Administrations are encouraged to promote cross-border collaboration and coordination to harmonise the MET products of such phenomena between Meteorological Authorities to enhance MET support for ATM in the Asia/Pacific Region.

1.2 In accordance with the Conclusion 26/62, MET/R WG/6 meeting (2017) agreed an action to develop regional guidance on SIGMET coordination. As an ad hoc group, Japan and Singapore have worked on the draft guidance.

1.3 The MET SG/21 meeting (2017) recognized recent progress of sub-regional SIGMET coordination activities, such as WMO SIGMET Coordination Project and Collaborative SIGMET Issuance Demonstration Project, and formulated a draft conclusion to facilitate sub-regional efforts for

SIGMET coordination. APANPIRG/28 (2017) approved the draft conclusion and formulated the Conclusion 28/30 as below.

**Conclusion APANPIRG/28/30 —** SIGMET coordination in the APAC Region

That, States and Administration are encouraged to:

a) Participate in cross-FIR-boundary SIGMET coordination on a bilateral or multilateral basis for seamless hazardous weather information for the benefit of aviation users, as well as advancing the capabilities of participating MWOs in the issuance of SIGMETs for cross-border hazardous weather phenomena; and

b) Continue to share outcomes from SIGMET coordination activities and consider a step-by-step integration of SIGMET coordination activities in the region when operationally ready.

## 2. COLLABORATIVE SIGMET ISSUANCE (CSI) SCHEME

History of Collaborative SIGMET Issuance Demonstration Project

2.1 Noting the presence of SIGMET discontinuity between FIRs and the requirements for harmonized en-route hazardous weather information, the Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA), the Vietnam Air Traffic Management Corporation (VATM) and the Japan Meteorological Agency (JMA) launched a demonstration project on Collaborative SIGMET Issuance in 2015. The Department of Meteorology and Hydrology of Lao People's Democratic Republic (LDMH), the Department of Meteorology and Hydrology of Myanmar (MDMH) and the Thai Meteorological Department (TMD) joined the project in 2016.

2.2 The demonstrations were carried out successfully four times from 2016 to 2018, and the project member States developed SIGMET coordination procedures through both face-to-face and web-based meetings. The dedicated web platform for SIGMET coordination was developed and improved by JMA by integrating the outcomes of the discussion during those meetings. As a part of the project, several training opportunities were provided by JMA, which led to a steady improvement of forecasters' skill in issuing SIGMET among participating MWOs.

2.3 Air navigation service providers (ANSPs) and airlines that have regular operation in the target area were invited to participate in the projects as observers and conducted assessments. The users appreciated the outcomes of those demonstrations in terms of improvements in the availability, quality and consistency of the test SIGMET issued during the demonstrations, and there was a requirement from some of the users for the transition into operational coordination.

Establishment of cooperation scheme on Collaborative SIGMET Issuance (CSI)

2.4 Acknowledging the maturity of SIGMET coordination procedures of the demonstration project, the usefulness of JMA's supporting tools and information and the requests from aviation users who evaluated the demonstration project, the member States decided to transfer the demonstration project into the operational phase with a documented scheme of cooperation from 9 April 2018.

2.5 On 6 March, the Director-General (or its alternatives) from the six member States held a Director-General-level Meting on Collaborative SIGMET Issuance in Tokyo, Japan. The meeting agreed on a joint statement for the establishment of an international cooperation scheme on Collaborative

SIGMET Issuance (CSI) with the exchange of Memorandum of Cooperation witnessed by ICAO Asia and Pacific (APAC) Regional Office.

Overview of the CSI Scheme

2.6 The Collaborative SIGMET Issuance (CSI) is a joint cooperation scheme among member States to prepare and issue SIGMET in a collaborative manner based on jointly-developed coordination procedures and using common tools and supporting information, which is called the SIGMET Preparation Support Information (SPSI) including Himawari-8 satellite imagery and numerical weather prediction products. In addition, members mutually cooperate toward further enhancement of their en-route aeronautical meteorological services via regular review and update of coordination procedures including the dedicated website and continuous and relevant technical cooperation. The overview of the SIGMET coordination procedures under the CSI scheme is shown in the Figure 1 below.

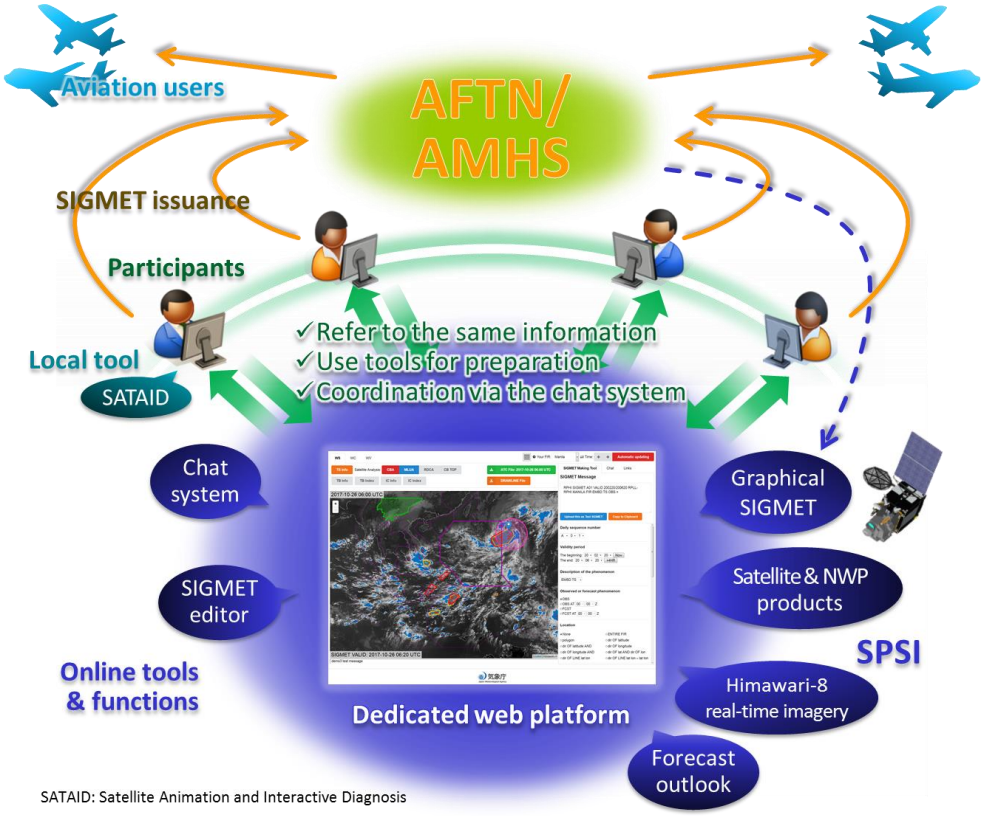



**Figure 1. CSI Scheme: Overview of the CSI procedures**

2.7 Figure 2 shows an actual example of harmonized SIGMETs issued under the CSI scheme. The mutual coordination under the CSI framework allows participating MWOs to issue not only better-harmonized but also precise and timely SIGMET as each MWO's expertise on local weather conditions and climatology is utilized to the full extent on real-time basis. The sub-regional comprehensive approach based on multi-lateral cooperation will facilitate SIGMET improvement within the airspace along with major international air-routes between Northwest Pacific and South-East Asia.

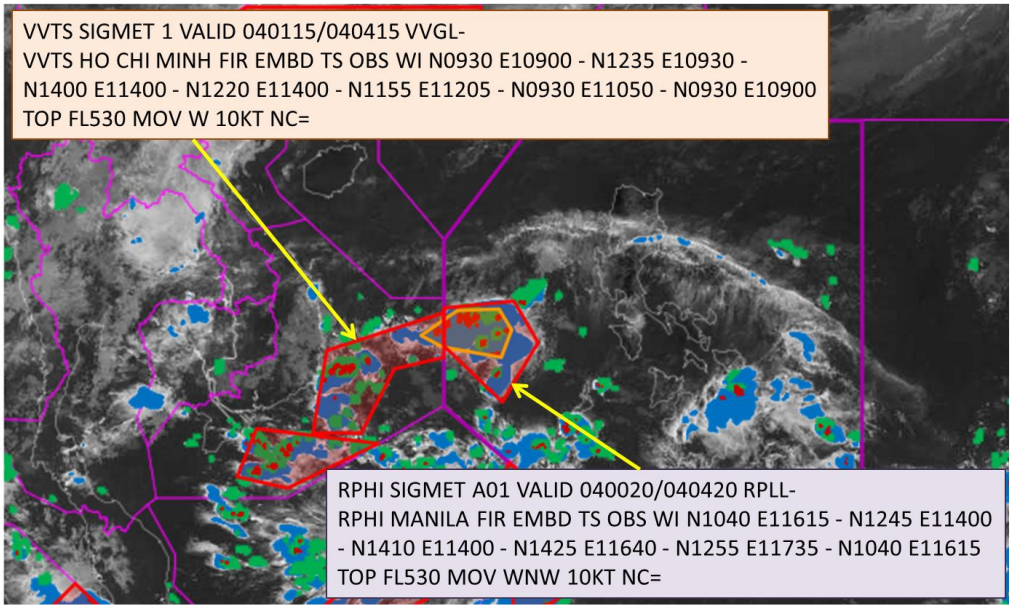



**Figure 2. An example of harmonized SIGMETs issued for the Manila and Ho Chi Minh FIRs under CSI scheme. (Red polygons: SIGMETs valid at 01 UTC on 4 May 2018)**

## 3. SUMMARY

3.1 In March 2018, the CSI scheme was established among six member States: Japan, Lao People's Democratic Republic, Myanmar, Philippines, Thailand and Viet Nam, and its operational phase have successfully started since 9 April 2018. Collaborative issuance of seamless SIGMET information within airspace along major international air-routes between Northwest Pacific and South-East Asia will facilitate the improvement of safety and efficiency of aircraft operations in the Region where air traffic volume has been increasing rapidly.

3.2 Regular review of SIGMET coordination procedures and continuous technical cooperation among the member States will be conducted towards further enhancement of availability, quality and consistency of SIGMET. In addition, the members will jointly share the progress of operational SIGMET coordination under the CSI scheme to the relevant ICAO APAC meetings. The multi-lateral cooperation scheme will contribute to further improvement of SIGMET in the Region.

## 4. ACTION BY THE MEETING

4.1 Note the information contained in this paper.

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