



International Civil Aviation Organization

INFORMATION PAPER

TWENTIETH MEETING OF THE METEOROLOGY SUB-GROUP (MET SG/20) OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)

Bangkok, Thailand, 6 – 9 June 2016

Agenda Item 6: Research, development and implementation issues in the MET field

- 6.1 Observations, reports, forecasts, advisories and warnings
(including MET/S WG Report)

WMO SUPPORT TO SIGMET COORDINATION

(Presented by World Meteorological Organization)

SUMMARY

This paper presents information about the WMO supported activities towards improved SIGMET service in the region through coordination between the MWOs. Information is provided on the current pilot project for SIGMET coordination between Indonesia, Malaysia and Singapore.

1. INTRODUCTION

1.1 WMO has been working with ICAO to improve the quality of SIGMET issued by the States' MWOs, which in many cases belong to the National Meteorological and Hydrological Services (NMHS).

1.2 In April 2015, WMO, in coordination with ICAO Asia/Pacific Office, organized a Regional Forum on Meteorological Services for Aviation Safety in Southeast Asia. The forum adopted a set of recommendations called "Jakarta Recommendations" for enhancing aeronautical meteorological services by the WMO Member States in Southeast Asia. Among them was the establishment of a mechanism for improving the SIGMET service provision in a seamless manner across the borders of the flight information regions (FIR). The mechanism should involve operational cross-border SIGMET coordination between the MWOs of neighbouring countries through a system of SIGMET focal points and procedures for information exchange and sharing of national practices. It was agreed that the action would start with a pilot project on a sub-regional scale between several neighbouring countries in the SE Asia.

2. DISCUSSION

2.1 The kick-off meeting of the pilot project on SIGMET Coordination between Indonesia, Malaysia and Singapore was held from 25 to 26 May 2016 at the Meteorological Service of Singapore

(MSS). The meeting was attended by experts from the five MWOs serving the FIRs of the three countries: Jakarta, Ujung Pandang (Indonesia); Kuala Lumpur, Kota Kinabalu (Malaysia); and Singapore. The objective of the meeting was to establish a mechanism for improved quality of SIGMET information over a large portion of the SE Asia airspace through coordinated meteorological watch and harmonized issuance of SIGMET between the MWOs serving the flight information regions of Indonesia, Malaysia and Singapore.

2.2 The meeting was supported by ICAO Asia/Pacific Office and the MET services of several Member States and organizations with experience in SIGMET coordination, including BoM, Australia; JMA, Japan; HKO, Hong Kong, China; and the MET Alliance¹ represented by Meteo-France.

2.3 The meeting programme included:

- Review of the ICAO provisions and regional guidance on SIGMET;
- Review of the current administrative arrangements for SIGMET issuance in the three participating countries and the current technical and human capabilities of their MWOs;
- Existing coordination mechanisms in other regions (e.g., EUR, MET Alliance);
- Review of the role of relevant advisory centres;
- Establishment of coordination procedures between the MWOs;
- Possible technological solution to support SIGMET coordination;
- Formal institutional arrangements through LoAs between the participating Members;
- Review of relevant ICAO MET panel developments with regard to the future of SIGMET;
- Adoption of project plan and reporting mechanisms.

2.4 A gap analysis was carried out to identify the differences of the current technical capabilities of the three participating countries for an effective meteorological watch and forecasting of the meteorological hazards for aviation. It revealed different level of sophistication of the used SIGMET methodology in terms of: the use of weather radar information (single radar and composite), the use of hi-res NWP and nowcasting techniques; use of special air reports; the actual composition of SIGMET (manual vs computer-aided) and issuance of graphical SIGMET; readiness for XML-coded SIGMET; etc.

2.5 A major concern for the success of the SIGMET coordination in the sub-region was the nature of the hazardous weather phenomena – fast developing tropical convection, which would require expeditious way of carrying out the consultation between MWOs. It was also required that the consultative process should not bring significant additional workload to already busy forecasters. Therefore, for the trial period, the consultation should be carried out during the times when the MWOs have sufficient staff (i.e., weekdays/day time).

2.6 The meeting appreciated the availability of the high-resolution Himaewari-8 information as the main asset that allows improved meteorological watch and SIGMET issuance. JMA had provided software tools to all countries in the region allowing the use of satellite derived products which enhance significantly the capability of the forecasters to detect and predict hazardous tropical weather. This information provides the opportunity to coordinate the SIGMET across the FIR borders, i.e. to apply “phenomenon-based approach”.

¹ The MET Alliance is a group of national aeronautical meteorological service providers from eight European States (Austria, Belgium, France, Germany, Ireland, Luxembourg, Netherlands and Switzerland) that cooperate on further improvement and rationalization of the meteorological services for aviation.

2.7 The meeting considered of primary importance the availability of a common visualization platform to support the consultation and coordination between the MWOs in real time. It was highly appreciated that both JMA and HKO demonstrated software solutions which could be made available to the participating MWOs for use during the trial period.

2.8 With regard to SIGMET verification, some of the participating MWOs have been using some simplified methods, however, the problem with the verification was a difficult one, mostly due to the lack of matching forecast/observations datasets. Users' feedback has been collected as part of the QMS.

2.9 The meeting agreed on a plan for the pilot project covering the period July – December 2016 which will include: 1) nomination of MWO's focal points; 2) signing a letter of agreement by the PRs of the participating Member States; 3) establishment of simple consultation procedures for SIGMET issuance; 4) test use of software platforms for SIGMET visualization and preparation; 5) monthly progress reviews; 6) pilot project wrap-up meeting and planning for an operational phase in 1Q of 2017.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.
