

**54<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGION**

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**AGENDA ITEM 3: AVIATION SAFETY AND  
AIR NAVIGATION**

**DEVELOPMENT OF THE ASIAN AVIATION  
METEOROLOGICAL CENTRE**

(Presented by People's Republic of China)

**INFORMATION PAPER**

**SUMMARY**

This paper presents the latest development of the Asian Aviation Meteorological Centre (AAMC), a collaborative effort of Civil Aviation Administration of China (CAAC), China Meteorological Administration (CMA) and the Hong Kong Observatory (HKO).

## DEVELOPMENT OF THE ASIAN AVIATION METEOROLOGICAL CENTRE

### 1. INTRODUCTION

1.1 The ICAO Meteorology Divisional Meeting in 2014 (MET14) formulated a recommendation (Recommendation 2/9) to call for a phenomenon-based regional advisory system for select en-route hazardous meteorological conditions consistent with the Global Air Navigation Plan (Doc. 9750) to be developed expeditiously. The recommendation is to address the long-standing deficiencies in the reporting and forecasting of en-route hazardous meteorological conditions which have persisted for many years in some Regions. In addition to this the aviation industry has identified a need for a phenomenon-based system to provide advice on hazardous weather.

1.2 Many efforts had been put in by China and Hong Kong, China to improve the quality and efficiency of SIGMET issuance in the region. One of the more recent one is the Asian Aviation Meteorological Centre (AAMC) to be jointly established by Civil Aviation Administration of China (CAAC), China Meteorological Administration (CMA) and the Hong Kong Observatory (HKO).

### 2. DISCUSSION

#### Progress of the Establishment of AAMC

2.1 Under the agreement, CAAC will establish the main operational centre in Aviation Meteorological Centre (AMC) while CMA will establish the technological centre to support CAAC in the development of AAMC. HKO is responsible for the establishment and operation of the Backup AAMC Centre in HKO. HKO will also provide technical guidance and garnering international support. The three parties will jointly conduct research and development products for the provision of the aviation weather services in the region by 2018.

2.2 Under the agreement, a management group, a working group and an advisory group have been formed. The management group, composing of senior officials from the three parties, will oversee the strategic development and progress of the whole project. The working group, composing of meteorologists and IT staff, is the main thrust to develop the products and services of the AAMC. The advisory group, composing of local and overseas experts to provide experts and end-user representatives, will provide advisory information from technical and end-user perspectives. Each group meets either face to face or by video conference to discuss the progress and the problems during the establishment of AAMC.

2.3 Development of the detailed products and services have already started, through the enhancement of the following 5 main systems and the framework is shown in Fig.1. :

a. Hazardous weather monitoring system

This system conducts to process and display various related observations, generate routine synoptic and mesoscale analysis of latest weather automatically based on the observations, issue alerts of hazardous weather within the AOR.

b. Hazardous weather forecasting system

This system forecasts hazardous weather by integrating various observations and the interpretation products from NWP model outputs. Schematic diagram of the system is given in Fig.2.

c. “Advisory” preparing system

It mainly acts as a platform to generate the hazardous weather advisory information (HWA) in text and graphic format by machine automatically or by man-machine interactively, allowing neighbouring MWOs in the region to coordinate the SIGMET interactively and collaboratively. The HWA can also be

used to generate related SIGMET automatically. The system also displays information from the monitoring and forecasting system.

d. Guidance dissemination system

The advisory information and related products can be disseminated by FTP and Website through the issuing system.

e. Verifying system.

To further improve the usefulness and accuracy of the advisories, the advisories will be verified objectively using related observations and subjectively with the feedbacks from users (MWOs, Pilots and other air navigation service providers).

2.4 AMC is updating its QMS to ISO9001:2015 and will comply with ISO9001:2015 International Quality Management System in the end of 2017.

Aims and Users of the AAMC

2.5 AAMC aims at providing frequently updated (3-hourly and as required) Advisories, in the form of text and graphics, on the above aviation hazardous weather in the Asia/Pacific region to facilitate issuance of SIGMET over some SIGMET deficiency areas and better harmonization in SIGMET issuance especially when the hazardous weather phenomenon crosses FIR boundaries within the region. Sample convection nowcast product is given in Fig. 3. The hazardous weather advisory will be issued by FTP or the website.

2.6 Targeted users would be (i) MWOs in the region and (ii) airlines/pilots. MWOs in the region may make reference to the Advisory to issue corresponding SIGMET for their Flight Information Region of responsibility. Noting that some MWOs in the region might not issue SIGMET, the information would also be made available to airlines through web service who could then distribute it to its pilots.

Operational Plan of the AAMC

2.7 The main and backup centres would start trial operations in 2018. A meeting is planned to be held in 2017 to kick off the involvement of MWOs in the region and user groups.

**3. ACTION BY THE CONFERENCE**

3.1 The Conference is invited to note the information contained in this Paper.

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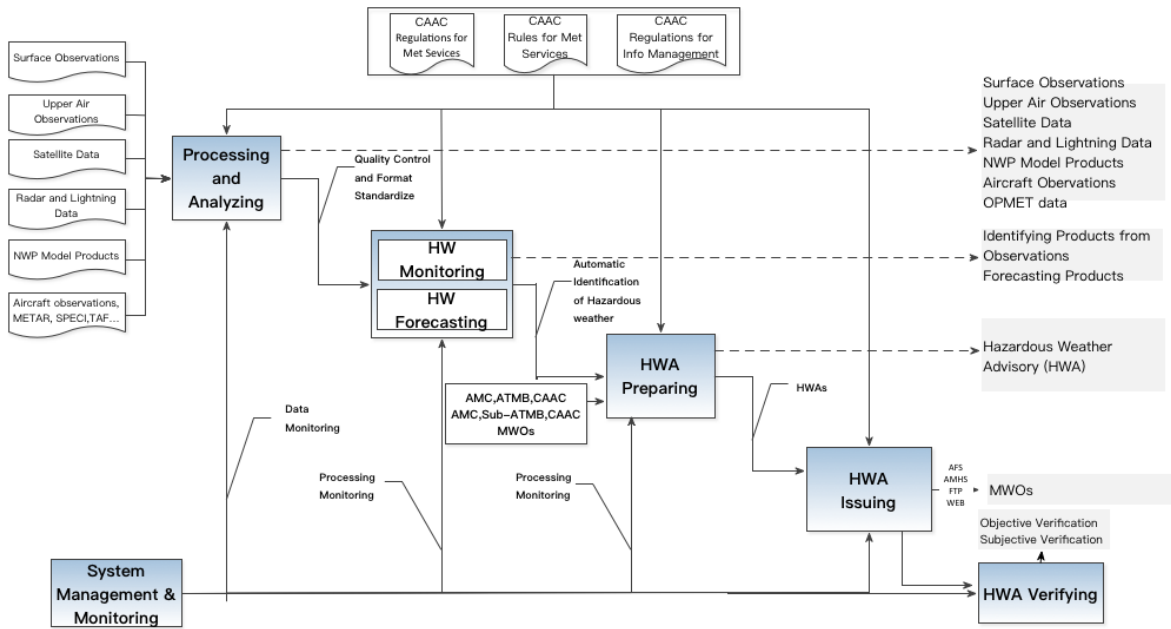


Fig.1 Overall operational procedures for AAMC

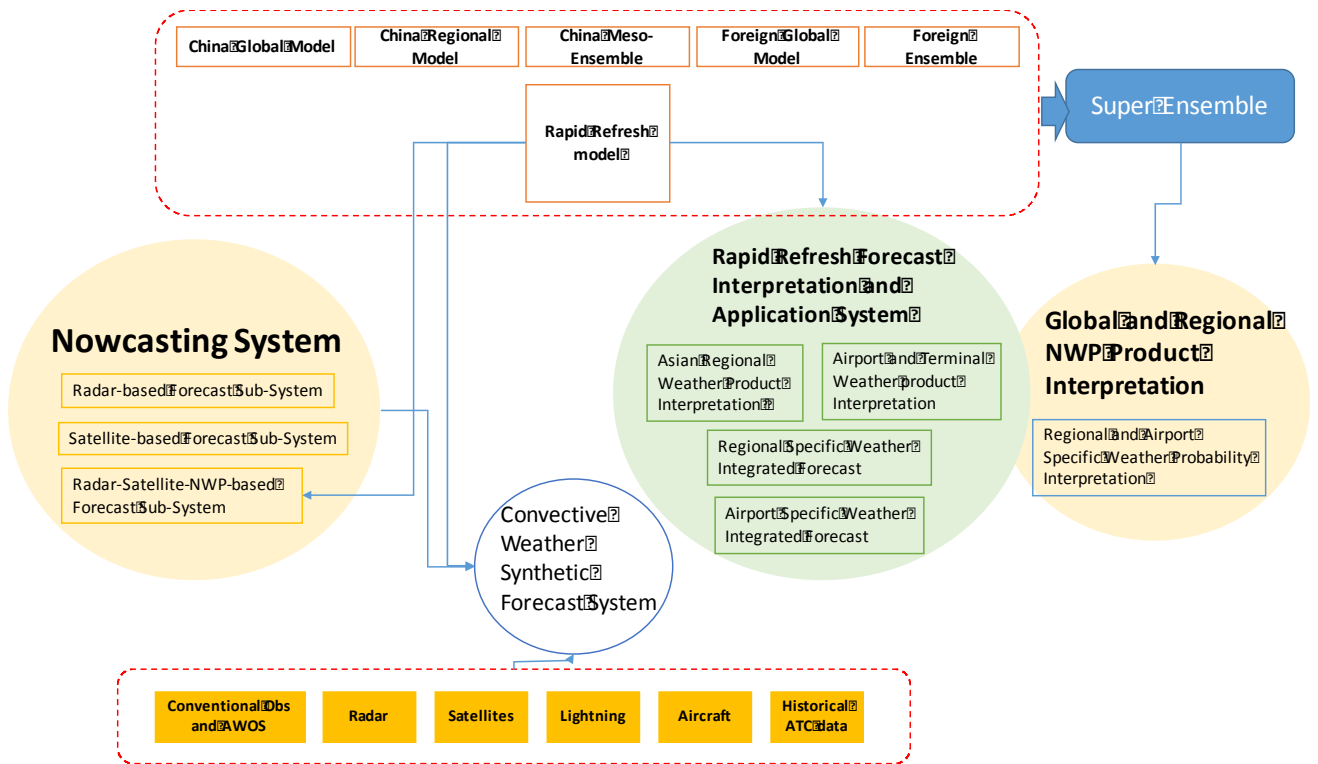


Fig. 2. Schematic diagram of hazardous weather forecasting system

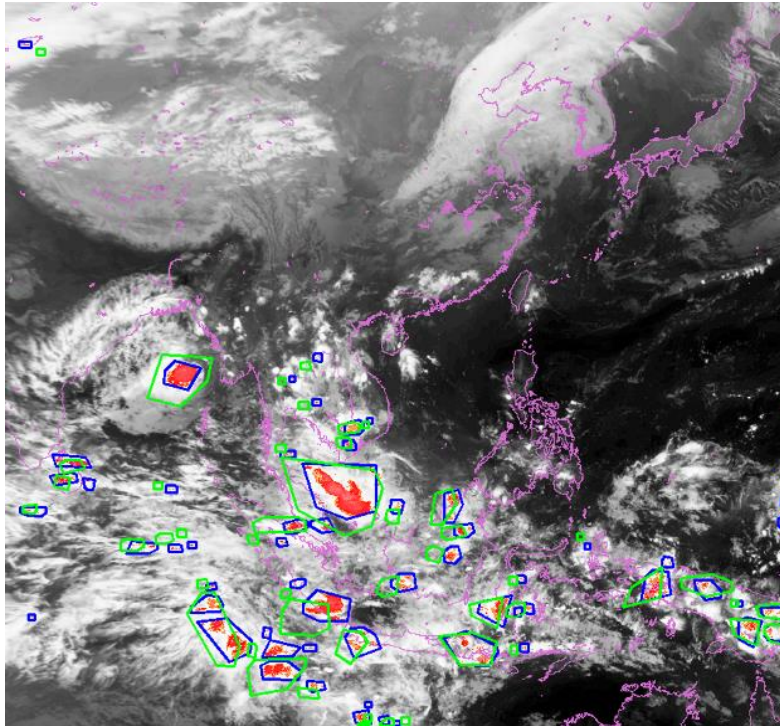


Fig. 3 Sample Significant Convection Nowcast Products (blue and green polygons represent the current and predicted positions (6 hour ahead) and extends of deep convection).

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