



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

OPERATION OF ASIAN AVIATION METEOROLOGICAL CENTRE

(Presented by China)

EXECUTIVE SUMMARY

This paper presents the latest development of the Asian Aviation Meteorological Centre (AAMC) established by China, including the progress of the Asian Hazardous Weather Guidance (AHWG) Issuance and two regional SIGMET coordination trials among adjacent meteorological watch offices (MWOs).

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| <i>Strategic Objectives:</i> | Air Navigation Capacity and Efficiency |
| <i>Financial implications:</i> | / |
| <i>References:</i> | / |

1. INTRODUCTION

1.1 The ICAO Meteorology Divisional Meeting in 2014 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. Founded by the Civil Aviation Administration of China (CAAC) and co-founded by China Meteorological Administration (CMA) and Hong Kong Observatory (HKO), the Asian hazardous weather advisory platform had been established by the end of 2017, and put online on January 1st 2018. Accompanied with the platform operation, the Asian Aviation Meteorological Centre (AAMC) also started formal trial operation from January 1st 2018, with CAAC serving as the main centre, HKO as the backup centre and CMA as the technical support centre. The operation at the main centre is undertaken by Aviation Meteorological Centre (AMC).

1.2 In the Asia and Pacific Region, SIGMET coordination activities have also been facilitated. 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). The regional SIGMET coordination trials between China and Vietnam, launched by HKO, were carried out from December 2017. Other regional SIGMET coordination trials between China and Russia have been carried out from March 2019.

2. DISCUSSION

2.1 Under the collaboration of CAAC, CMA and HKO, AAMC was preliminarily established at the end of 2017. It is preliminarily capable of monitoring and forecasting the hazardous weather in the Asian region; and it's also capable of issuing/updating/coordinating the Asian Hazardous Weather Guidance (AHWG), and assessing the weather forecast. On January 1st 2018, the Asian hazardous weather advisory platform began its trial operation.

2.2 As the main centre of AAMC, AMC sets up two work seats: the Asian hazardous weather forecasting seat and the Asian hazardous weather collaborating seat, both operate 24 hours per day. The forecasting seat is in charge of monitoring the hazardous weather, generating and updating the AHWG. The collaborating seat is in charge of coordination of the hazardous weather in the Asian region, the SIGMET coordination, the issuance of the advisories, and consultation services for users.

2.3 AAMC sets up and carries out the collaboratively trial operation program. The main centre holds the weather consultation video conference every day at 9:15 a.m., discusses in-depth the future 24 hour weather pattern development in the Asian region, and hazardous weather development and change. AAMC then issues the weather briefing report.

2.4 AAMC has built its own standards for the AHWG. Once ICAO defines the standard and format of hazardous weather advisory product, AAMC can quickly transfer the AHWG to the standard advisory product. Currently, AAMC routinely generate and issue the AHWG for the Asian region 5 times a day, the starting time of the products are: 0000, 0300, 0600, 0900, 1200 UTC and the valid time is 6 hours. The issuing time should be prior to the starting time but no earlier than 30 minutes.

2.5 AMC generates the preliminary AHWG based on observations and forecasting, and collaboratively consult with 9 domestic MWOs to modify the preliminary products. After the modifications, AMC will consult with HKO and issue the advisories with approvals from both sides.

2.6 Referring to the advisories, regional MWOs can use the hazardous weather advisory platform to create automatic SIGMET, to help them issue their final SIGMET more quickly. This can improve the issuance efficiency, assure the consistency of the cross-FIR-boundary SIGMET, and thus provide seamless meteorological service to the ATM units and airlines in the Asian region.

2.7 Currently, 9 domestic MWOs, HKO and AMC have joined the Asian hazardous weather advisory network. They can collaboratively consult the hazardous weather in their watching area any time and issue a consistent SIGMET.

2.8 In accordance with the WMO recommendation of SIGMET coordination cross FIR boundaries, 6 MWOs (Hong Kong, Guangzhou, Haikou, Chengdu, Hanoi and Ho-Chi-Minh, note that the Chengdu MWO is temporarily issuing the SIGMET of Phnom Penh FIR for the Phnom Penh MWO) started to carry out the regional SIGMET coordination trials from December 2017. The first stage of the trials ended in June 2018. The second stage of the trials is from July 2018 to December 2019.

2.9 Other regional SIGMET coordination trials, which are between China and Russia, have started since March 1st, 2019. To achieve a better result, they were carried out under the Letter of Agreement between the Aviation Meteorology Authorities of China and Russia. Five (5) MWOs (Shenyang, Urumqi, Khabarovsk, Irkutsk and Novosibirsk) and AAMC participated in the trials.

2.10 Several airlines have joined the Asian hazardous weather advisory network, such as Shandong Airlines, Hainan Airlines, Capital Airlines, and etc. These airlines can obtain meteorological monitoring information and hazardous weather forecasting products from the network.

2.11 To increase the skills of aviation hazardous weather forecast, coordination and SIGMET issuance among the Asian countries, AAMC hosted a workshop on Asian Aviation Hazardous Weather Coordination on July 9-13, 2018. Over 20 aviation meteorological personnel from 13 countries attended the workshop.

3. CONCLUSION

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

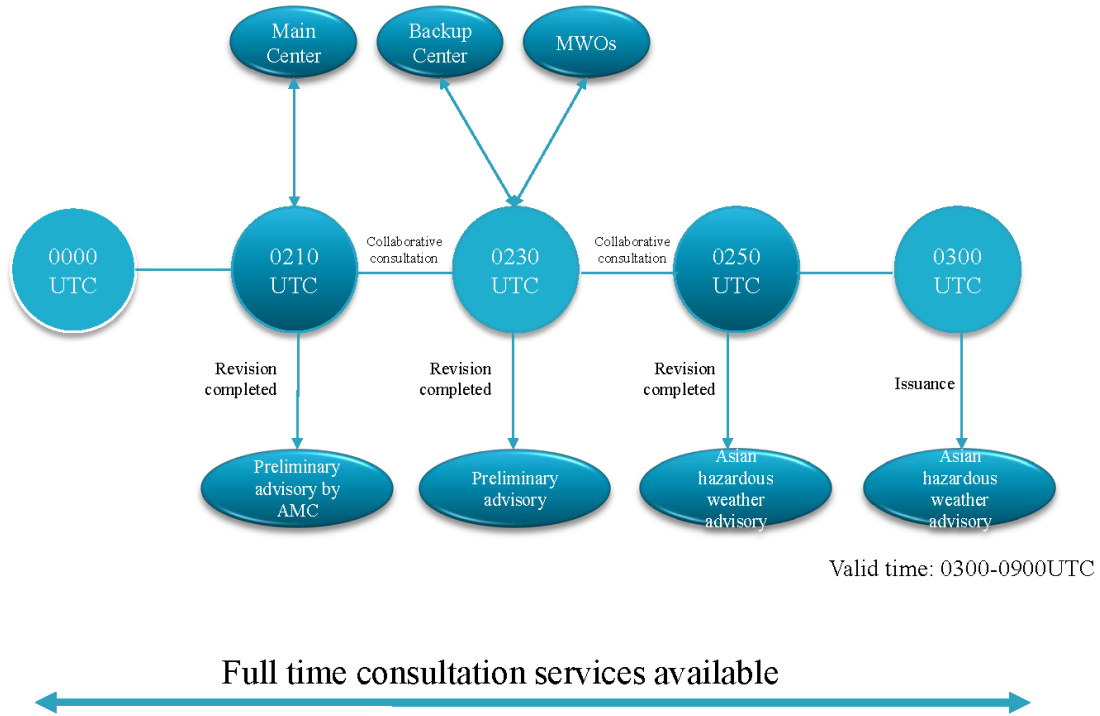


Figure 1: The generation, collaboration and issuance of the routine AHWG, and the consultation services (0000-0300UTC) (Same for the other time periods)

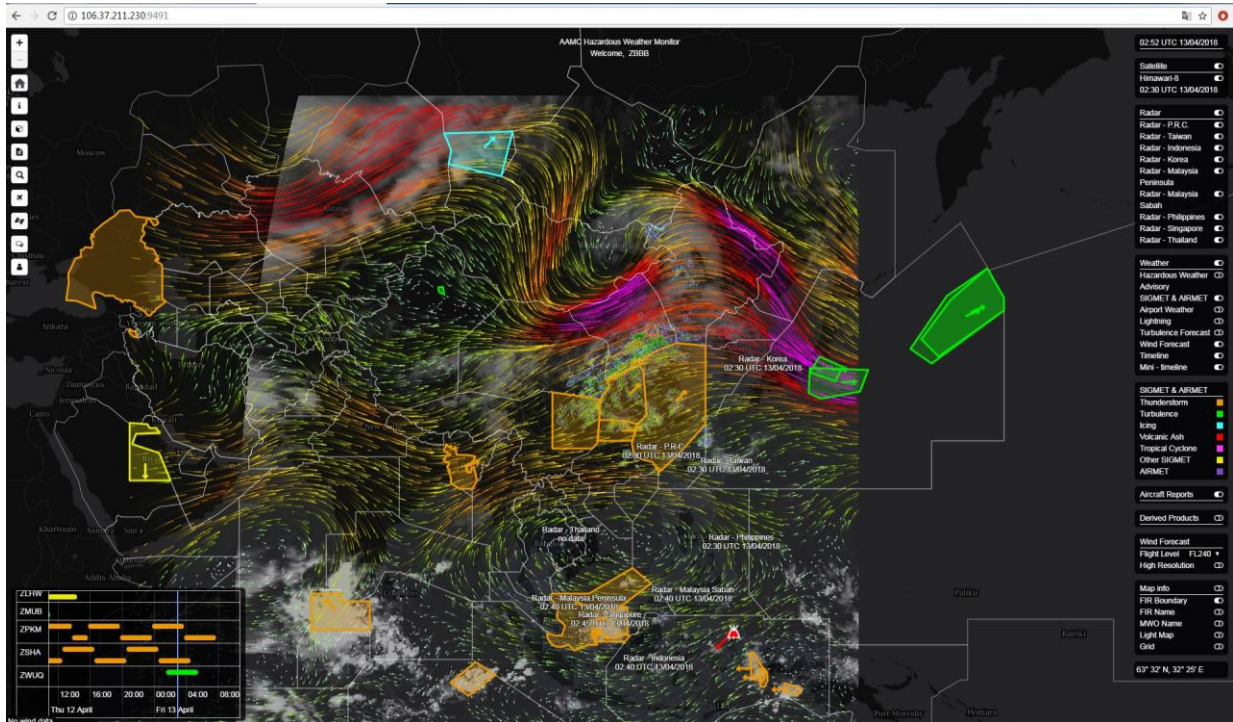


Figure 2: The homepage of the Asian hazardous weather advisory platform

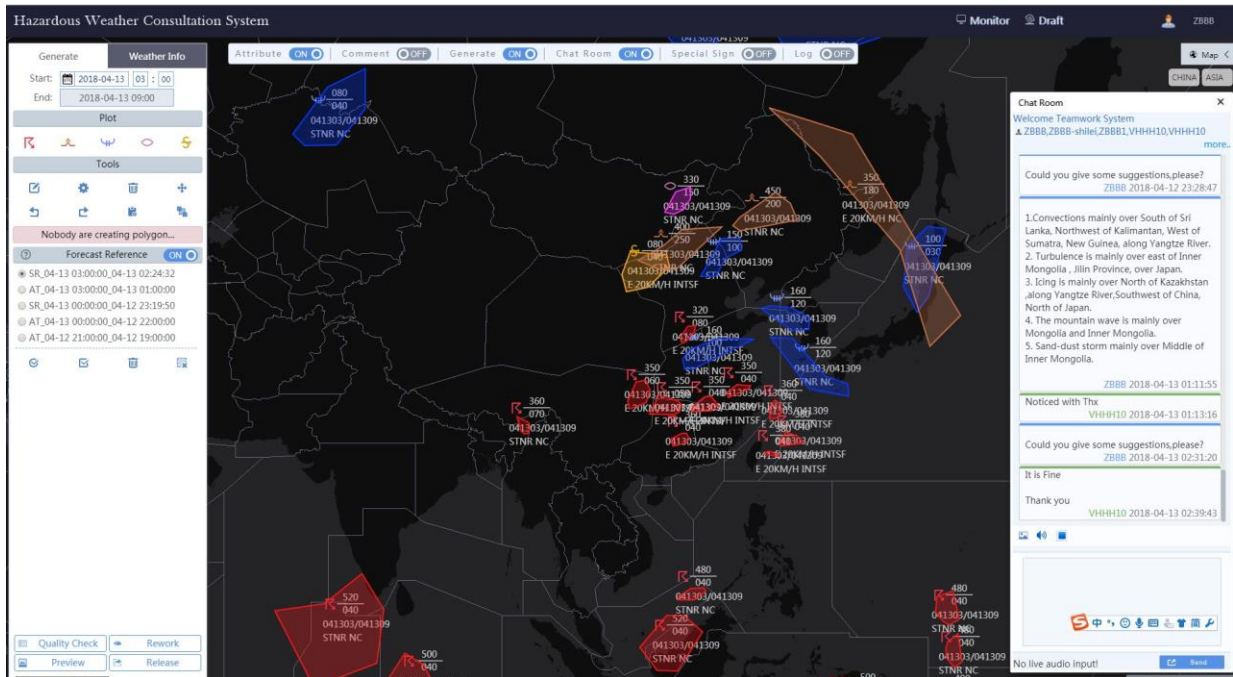


Figure 3: The collaboration page of the Asian hazardous weather advisory platform

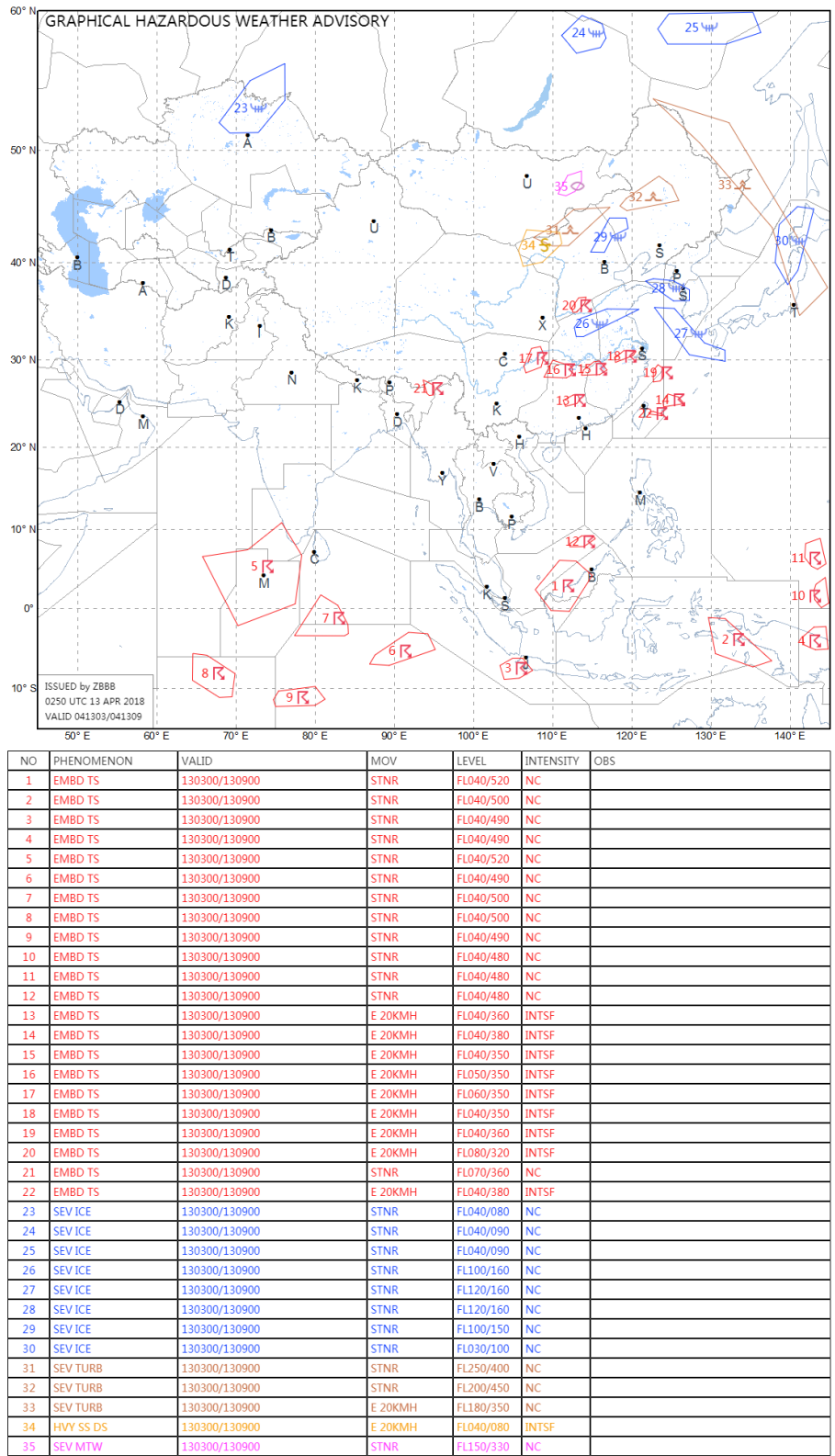


Figure 4: An example of the AHWG

Table 1: The participation of 9 WMOs in mainland China in Asian Hazardous Weather

Coordination from January 2018 to March 2019

| Month | ZBAA | ZYTX | ZSSS | ZGGG | ZJHK | ZHHH | ZUUU | ZLXY | ZWWW |
|----------------|------|------|------|------|------|------|------|------|------|
| January 2018 | 134 | 61 | 90 | 46 | 128 | 0 | 134 | 134 | 131 |
| February 2018 | 124 | 33 | 109 | 19 | 120 | 7 | 118 | 119 | 110 |
| March 2018 | 155 | 46 | 145 | 37 | 143 | 124 | 142 | 151 | 147 |
| April 2018 | 149 | 19 | 134 | 25 | 142 | 138 | 144 | 143 | 133 |
| May 2018 | 154 | 60 | 146 | 106 | 138 | 140 | 148 | 149 | 145 |
| June 2018 | 149 | 137 | 138 | 133 | 139 | 139 | 144 | 146 | 124 |
| July 2018 | 147 | 137 | 139 | 137 | 139 | 139 | 139 | 146 | 129 |
| August 2018 | 147 | 135 | 137 | 128 | 132 | 140 | 136 | 148 | 126 |
| September 2018 | 143 | 130 | 135 | 137 | 126 | 133 | 129 | 143 | 113 |
| October 2018 | 149 | 114 | 140 | 127 | 128 | 139 | 141 | 148 | 132 |
| November 2018 | 140 | 119 | 125 | 126 | 124 | 130 | 137 | 141 | 126 |
| December 2018 | 144 | 114 | 138 | 128 | 122 | 146 | 145 | 148 | 128 |
| January 2019 | 135 | 117 | 125 | 121 | 118 | 119 | 135 | 136 | 131 |
| February 2019 | 122 | 106 | 116 | 117 | 109 | 122 | 122 | 124 | 115 |
| March 2019 | 145 | 116 | 147 | 136 | 122 | 140 | 146 | 148 | 132 |
| Total | 2137 | 1444 | 1964 | 1523 | 1930 | 1756 | 2060 | 2124 | 1922 |

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