

Full operation of GHSV SIGMET Coordination project for phenomena occurring in the area of FIRS' boundaries

Presented by Cambodia, China, Hong Kong, China and VATM of Vietnam

MET/IE WG/19 & MET/S WG/11 --- IP/03

Agenda Item 3: Planning and implementation of meteorological services



香港天文台

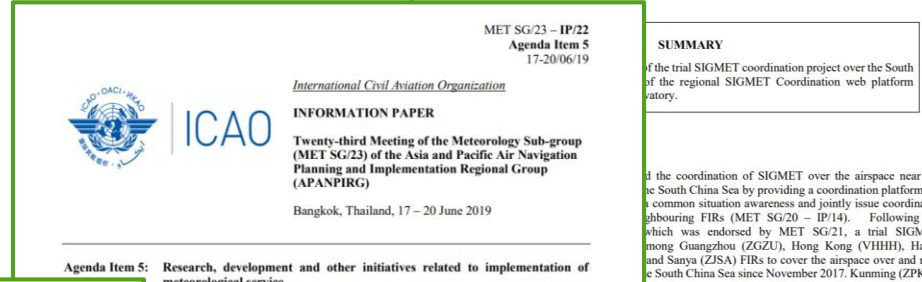
HONG KONG OBSERVATORY



Agenda Item 5: Research, development and other initiatives

A TRIAL SIGMET COORDINATION PROJECT OVER THE SOUTH CHINA SEA COORDINATED BY THE HONG KONG OBSERVATORY

(Presented by Hong Kong, China)



Agenda Item 5: Research, development and other initiatives related to implementation of meteorological service

UPDATE OF THE SIGMET COORDINATION PROJECT AROUND WESTERN AND NORTHERN PART OF SOUTH CHINA SEA

(Presented by China, Cambodia, Hong Kong, China and Vietnam)

SUMMARY

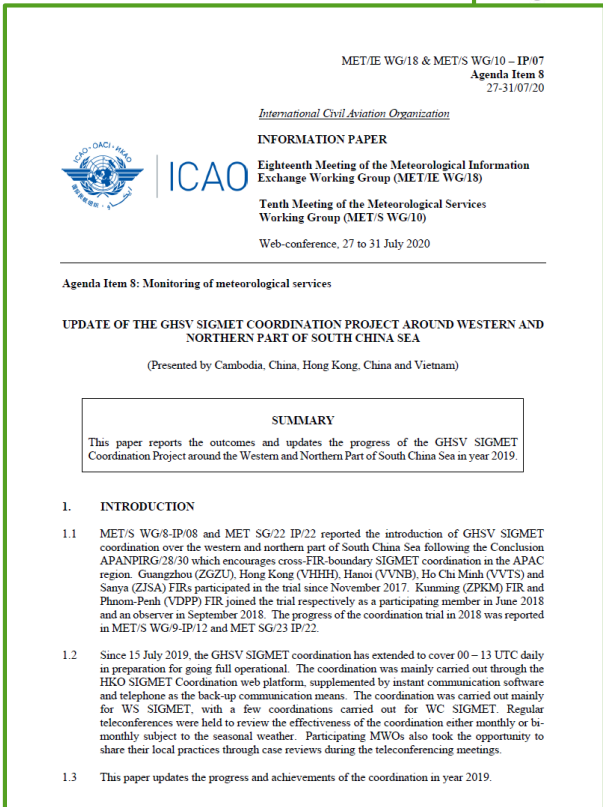
This paper summarizes the experience and progress of the Trial SIGMET Coordination around the Western and Northern part of South China Sea since its commencement in 2017.

INTRODUCTION

MET SG/22 IP/22 and MET/S WG/8-IP/12 reported the progress of the Trial SIGMET coordination (the "Trial") over the western and northern part of South China Sea following the decision of the APANPIRG/28/30 which encourages cross-FIR-boundary SIGMET coordination in the APAC region. Guangzhou (ZGZU), Hong Kong (VHHH), Hanoi (VNVN), Ho Chi Minh (VVTM) and Sanya (ZJSA) FIRs participated in the trial since November 2017. Kunming (ZPKM) FIR and Phnom-Penh (VDPP) FIR joined the trial respectively as a participating member in June 2018 and an Observer in September 2018.

Since 1 July 2018, the Trial has been extended from day time (from 01 – 09 UTC) on weekday to 24 hours a day. The Trial was mainly carried out through the HKO SIGMET Coordination web platform, supplemented by social network apps and telephone as the back-up communication means.

This paper updates on the outcomes, progress of the Trial and the ongoing efforts in promoting the coordination of aviation meteorological services.



Agenda Item 8: Monitoring of meteorological services

UPDATE OF THE GHSV SIGMET COORDINATION PROJECT AROUND WESTERN AND NORTHERN PART OF SOUTH CHINA SEA

(Presented by Cambodia, China, Hong Kong, China and Vietnam)

SUMMARY

This paper reports the outcomes and updates the progress of the GHSV SIGMET Coordination Project around the Western and Northern Part of South China Sea in year 2019.

1. INTRODUCTION

1.1 MET/S WG/8-IP/08 and MET SG/22 IP/22 reported the introduction of GHSV SIGMET coordination over the western and northern part of South China Sea following the Conclusion of the APANPIRG/28/30 which encourages cross-FIR-boundary SIGMET coordination in the APAC region. Guangzhou (ZGZU), Hong Kong (VHHH), Hanoi (VNVN), Ho Chi Minh (VVTM) and Sanya (ZJSA) FIRs participated in the trial since November 2017. Kunming (ZPKM) FIR and Phnom-Penh (VDPP) FIR joined the trial respectively as a participating member in June 2018 and an observer in September 2018. The progress of the coordination trial in 2018 was reported in MET/S WG/9-IP/12 and MET SG/23 IP/22.

1.2 Since 15 July 2019, the GHSV SIGMET coordination has extended to cover 00 – 13 UTC daily in preparation for going full operational. The coordination was mainly carried out through the HKO SIGMET Coordination web platform, supplemented by instant communication software and telephone as the back-up communication means. The coordination was carried out mainly for WS SIGMET, with a few coordinations carried out for WC SIGMET. Regular teleconferences were held to review the effectiveness of the coordination, either monthly or bi-monthly subject to the seasonal weather. Participating MWOs also took the opportunity to share their local practices through case reviews during the teleconferencing meetings.

1.3 This paper updates the progress and achievements of the coordination in year 2019.

SUMMARY

This paper reports the outcomes and updates the progress of the Trial SIGMET Coordination project over the South China Sea since its commencement in 2017.

The paper reports the progress of the Trial SIGMET Coordination project over the South China Sea since its commencement in 2017. It highlights the major enhancement with an aim of facilitating coordination projects within the region as promoted in the 7th Meteorological Requirements working group (MET/R WG/7) for the issuance of seamless ATM. The trial SIGMET coordination community covering the airspace extending from the northern to the southern and southwestern part of China which was flight area. Other connected neighbouring FIRs have also joined the trial. Currently, the trial SIGMET Coordination is conducted during 01 to 09UTC from

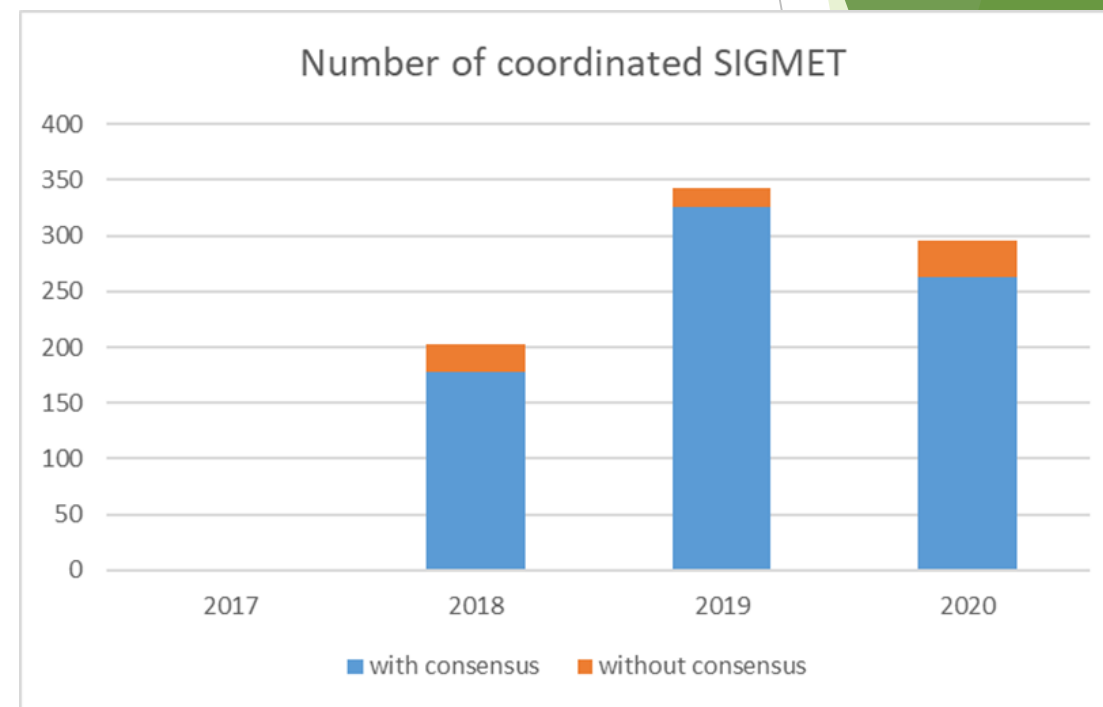
Introduction

- ▶ GHSV SIGMET Coordination
- ▶ Participants: Guangzhou (ZGZU), Hong Kong (VHHH), Hanoi (VNVN), Ho Chi Minh (VVTM), Sanya (ZJSA), Kunming (ZPKM) MWO [since June 2018], Phnom-Penh (VDPP) [since October 2020]
- ▶ Project since November 2017
- ▶ Transition to full operational status in 1st November 2020
- ▶ This paper updates on the progress and achievements of the GHSV SIGMET Coordination project.



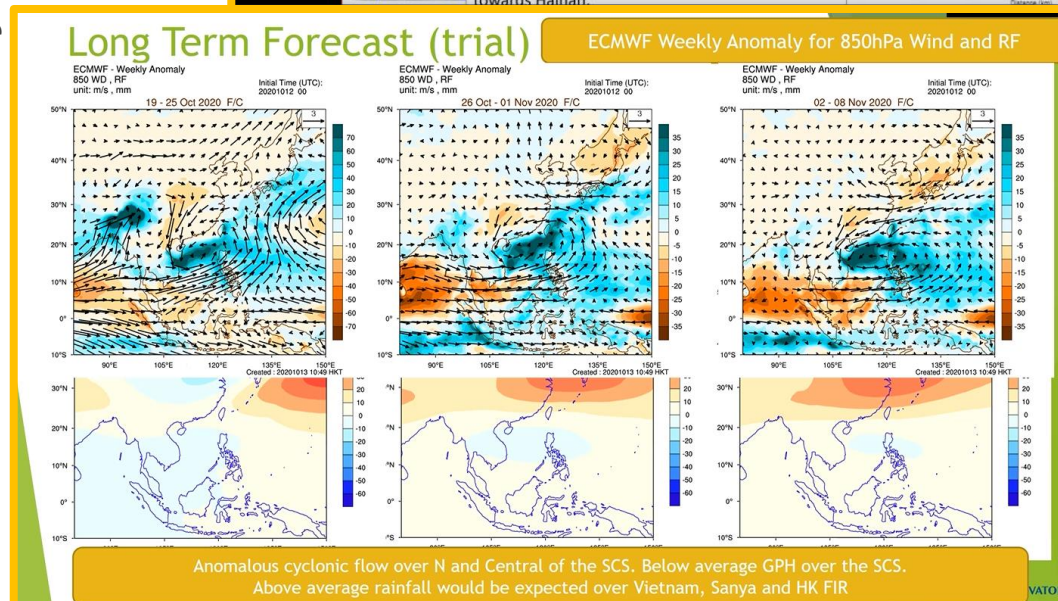
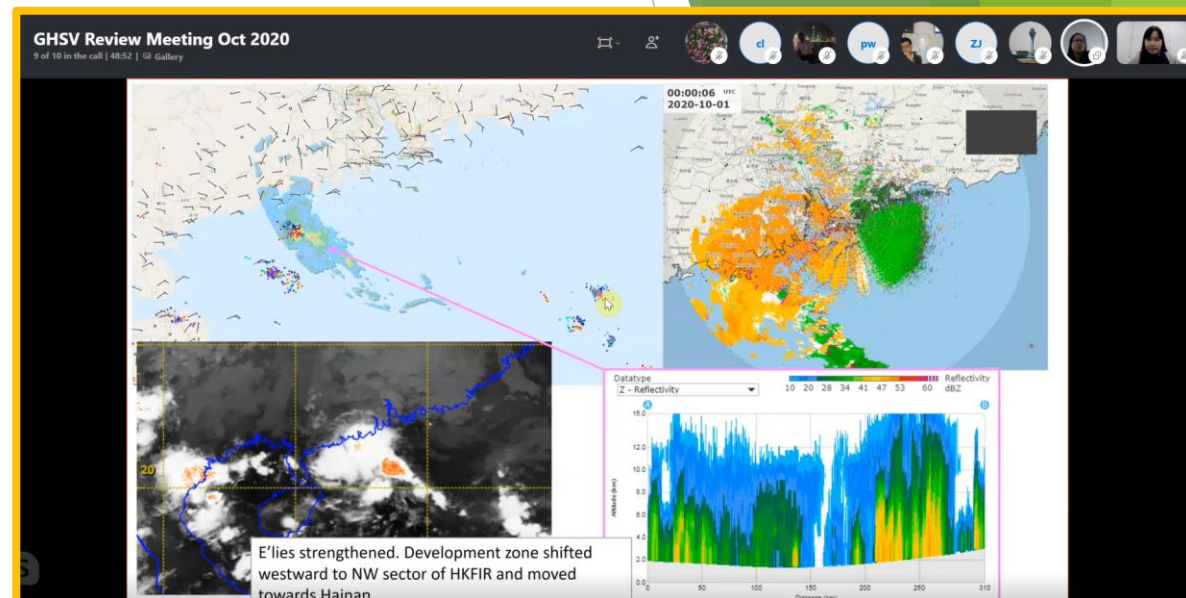
GHSV SIGMET Coordination outcomes

- ▶ From November 2017 to November 2020, there were a total number of 845 coordinated cases.
- ▶ For January to November 2020, there were a total number of 296 coordinated SIGMET issuance, with only around 11% without consensus.
- ▶ There was a record high of 76 coordinated cases in August 2020.



Regular bi-monthly teleconferences

- ▶ The meetings
 - ▶ review the number of coordination cases
 - ▶ conduct sharing of coordination cases
 - ▶ attain mutual understanding on the various local practices
 - ▶ discuss about long term forecast
 - ▶ provide a channel for user feedback on the web platform



Ad hoc Tropical Cyclone briefings

- ▶ Ad hoc meetings on tropical cyclones which were affecting or expected to affect multiple FIRs in the South China Sea under the GHSV area were arranged before the approach of the tropical cyclones to discuss about the possibility of the impact brought to the FIRs along its track for better coordination in the alerting strategy
- ▶ for common situation awareness
- ▶ a total of 5 ad hoc TC briefings was conducted in 2020

The screenshot shows a Zoom meeting titled "18.08.2020 Ad hoc TC Briefing" with 7 participants. The main content is a PowerPoint slide titled "Tropical Storm (Higos)". The slide features three satellite images of the storm at different times: "18 August 0000Z", "18 August 0230Z", and a "High sea surface temperature over 30 degC (orange) based on MODIS satellite data 0142Z 18 Aug". A bulleted list on the right side of the slide notes: "• Better circulation than before", "• Seems to be more symmetrical and more convection developed", and "• Trend to further intensify". The Hong Kong Observatory logo is visible in the bottom right corner of the slide.

Extension to other weather phenomenon

- ▶ In the recent review meetings, the discussion was extended to cover other hazardous weather phenomena such as icing and turbulence.
- ▶ These ad hoc meetings were found to be constructive and helpful in improving the overall SIGMET service quality over the region.

GHSV review meeting Feb 2021
10 of 11 in the call | 29:12 | Gallery

Content view

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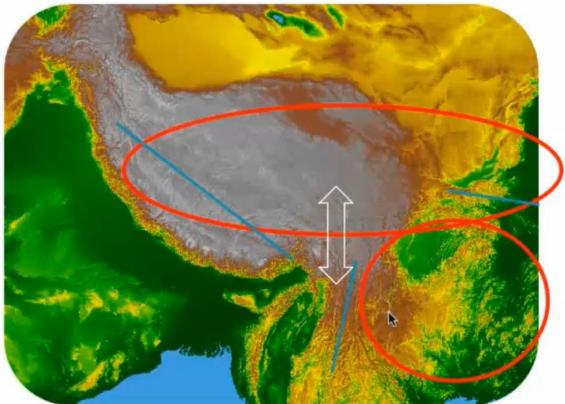
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Cause of Turbulence

The cause of turbulence in southwest China as followings:

1. Jet stream (more than half of the turbulence were caused by JET)
 - High
 - Low
2. Cold air \ Icing \ thermal Inversion layer
3. Covection
4. Shear line



Participants' feedback

Summary of feedback:

- acquired a lot precious experiences through communicating with neighbouring MWOs
- Pilot reports and AMDAR data are really helpful for forecasters to understand the hazardous weather in the upper air
- Skill of using the coordination platform has become more proficient which enabled the communications more effectively and efficiently and the weather parameters in the WS SIGMET messages aligned consistently
- trigger advance awareness of thunderstorms
- accumulated better experience in aviation weather forecast service
- The coordination platform is very useful in both monitoring the weather situation and preparation of SIGMET
- enhanced the collaboration of TC SIGMET
- better capacity for TC analysis and forecast
- closely monitor, discuss and issue SIGMET for phenomenon occurring in the area of FIRs' boundaries
- encouraged to learn English

Feedback on the GHSV SIGMET Coordination project by the participating MWOs

- Guangzhou MWO: The GHSV SIGMET coordination project made great progress in 2020. GHSV SIGMET coordination became full operational (24 hours 7 days) from 1 November 2020 and the HKO SIGMET Coordination platform becomes more and more multifunction. The platform provides different kinds of hazardous weather information, including thunderstorms, icing, turbulence and tropical cyclones. Pilot reports and AMDAR data are also displayed on the website, which are really helpful for forecasters to understand the hazardous weather in the upper air. Moreover, ad hoc web briefings about tropical cyclones over the South China Sea were held among GHSV group members for common situational awareness. We acquired a lot precious experiences through communicating with neighbouring MWOs. We will continue implement the operation of SIGMET coordination and communicate with our group members comprehensively.
- Hong Kong MWO: Forecasters within the GHSV group are enthusiastic in the coordination of thunderstorm activity across the FIR boundaries. Skill of using the coordination platform has become more proficient which enabled the communications more effectively and efficiently and the weather parameters in the WS SIGMET messages aligned consistently. Close coordination among neighbouring MWOs could also trigger advance awareness of thunderstorms approaching our areas of responsibility.
- Kunming MWO: With the efforts of all collaborators this year (2020), we have made achievements on SIGMET collaboration. At the same time, by sharing experience in regular meetings, we have accumulated better experience in aviation weather forecast service. Meanwhile, we are pleased to see Cambodia joined the coordination project this year, and we will continue to work together on this platform.
- Phnom-Penh MWO: The participation in the SIGMET Coordination project is important to Phnom-Penh MWO. We are thankful to the support of other MWOs in the coordination project. The coordination platform is very useful in both monitoring the weather situation and preparation of SIGMET for Phnom-Penh MWO. Thank you very much for the support from the coordination group.
- Sanya MWO: We brought TC SIGMET into coordination subject in 2020. The implementation enhanced the collaboration of TC SIGMET over the South China Sea with our neighbouring FIR. We also modified our practice to adhere to ICAO's recommended practices and updated our software that we use to issue SIGMETs. Through the discussion on TC with forecasters from our neighbouring FIRs, we also have better capacity for TC analysis and forecast.
- Vietnam MWO (for Hanoi and Ho Chi Minh FIR): We understand the role and necessity of SIGMET Coordination project for aviation safety in the region so that we join in the early phase of this project. Through the HKO platform with many useful function, we closely monitor, discuss and issue SIGMET for phenomenon occurring in the area of FIRs' boundaries more precisely. By participating in the project, our forecaster can learn and gain more experience from other MWO's colleague. By closely coordinating with neighbouring MWOs, forecasters are also encouraged to learn English.



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Action by the meeting

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

Thank you for your attention!

Any States who is interested in joining the GHSV SIGMET Coordination project could contact me at yyleung@hko.gov.hk