Development of China National Early Warning Release System and CMA Participation in GMAS-A

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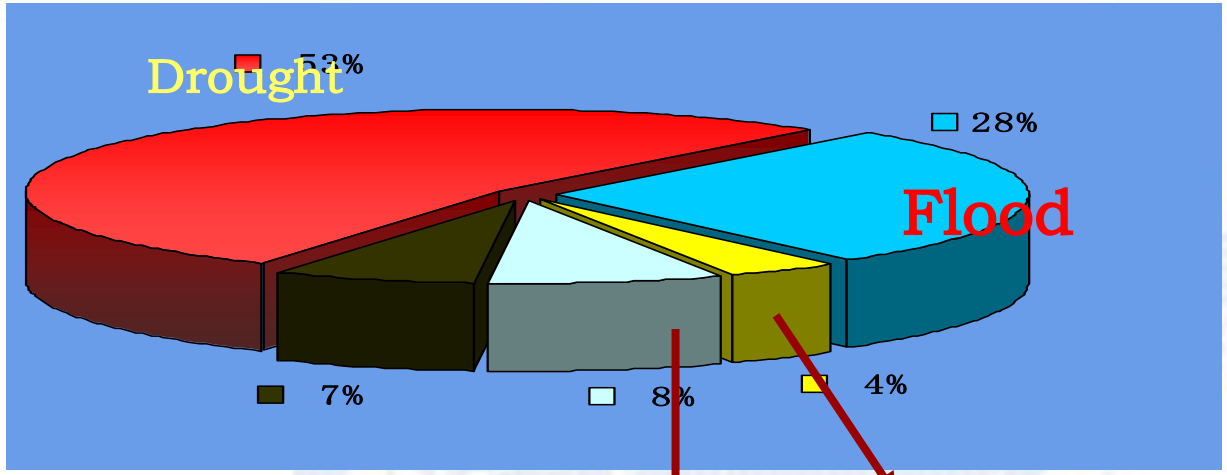
ABSTRACTS

- The Development of China National Emergency Warning Releasing System (NEWRS)
- CMA Participation in the Development of Global Multi-Hazard Alert System-Asia (GMAS-A)

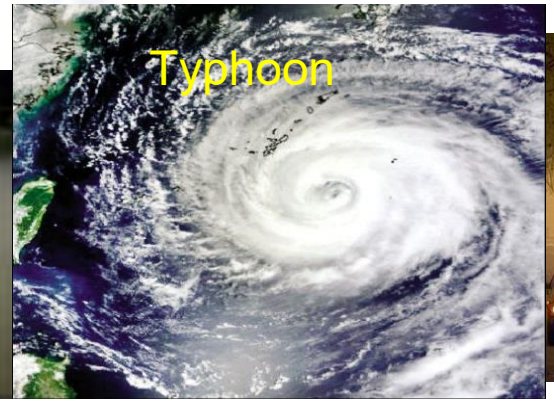
Part 1:

The Development of China National Emergency Warning Releasing System (NEWRS)

Major Meteorological Hazards in China



- Almost all the meteorological disasters happen in China.
- 71% of all natural disasters are meteorological disasters in China.
- The major meteorological disasters are drought, flood, typhoon, etc.



Background

《The Law on Response to Emergencies》
Implement since November 1,2007

- **Establish a nationwide unified early warning release system**

Developing process since NEWRS project approval

2011	2012	2013	2014	2015
• The national development and reform commission issued project investment, and the construction started.	• The platform construction of system was completed.	• The provincial and municipal platform.	• System was put into test operation	• System was put into formal operation • **System operation management method was issued**

The Principle of System Construction:

Government organization

Meteorological Adminstration undertaken

Departments collabration

Media participation

close partnership

Objectives and Contents

- ✓ Including 4 kinds of emergency incidents: Natural disasters, accidents disasters, public health emergencies, social security incidents；
- ✓ Possessing the ability of receiving, processing and timely releasing information.

NEWRS system construction scale

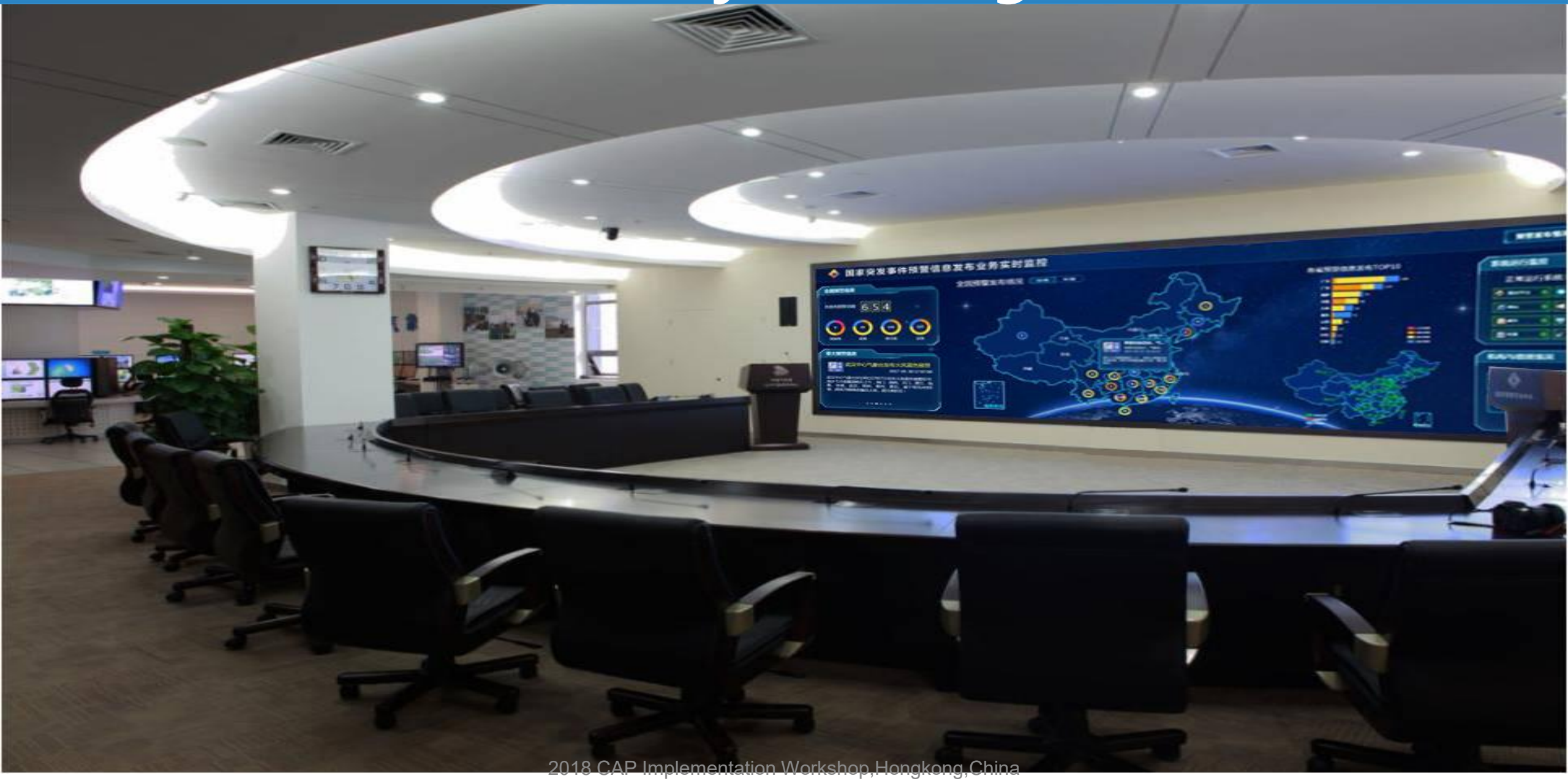
1 national center

31 provincial center

343 municipal center

2015 county center

National Early Warning Center



Guangdong Early Warning Center

Shanghai Early Warning Center

Adopted CAP standards

- **NEWRS based on the Common Alerting Protocol (CAP)**
- **a CAP-based regional meteorological warning system is completely feasible and necessary.**

The world meteorological organization promote the international general alarm protocol implementation. Geneva

NEWRS system structure

1

【Cross-sector】
Sharing information with DMAs and other policy makers

- Department of Transportation; Ministry of Finance ;Ministry of Civil Affairs; Ministry of Land and Resources; Earthquake Administration; Ministry of Water Resources ; Ministry of Health; China Meteorological Administration; Ministry of Foreign Affairs...

2

【Top-down】 Information reached and applied at all levels

Central Government

31 Provinces

343 Cities

2015 Counties

25 Ministries

3

Emergency information distribution system

Management Platform

Collection → Proce-ssing → Commun cation

Sharing

Monitoring

Feedback

Assessment report

Evalution feedback system

SMS dissemination

Feedback

SMS platform

Web dissemination

Feedback

Website platform

Dissemination

- SMS
- Website
- Email
- Landline
- TV
- Fax
- Display
- Loud-speaker
- Broadcast
- ……

User Interface

Overall Warning release Process

Live image

Public opinions

Release situations

95%
SMS
loudspeaker
100%
LED
90%
Web site
100%
TV

Early warnings

warning types

warning levels

warning contents

print documents

Leader approval

System approval

Approval documents

Warning release

Quick report

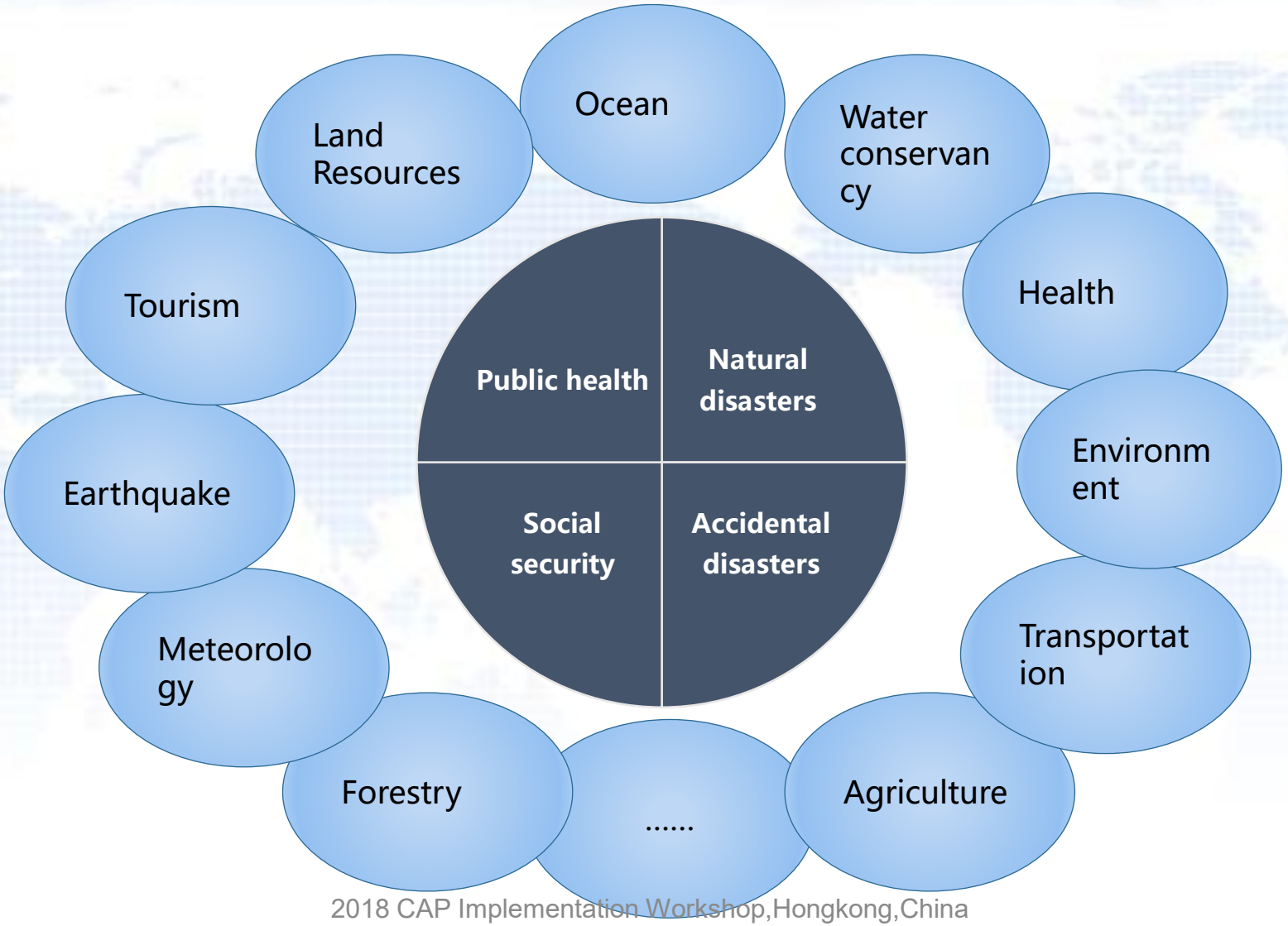
Track, feedback

Analyze, summarize

Generate analysis report

Emergency duty staff
Releasing department

Sharing of warning information across related departments



Wide coverage of early warning dissemination network

Broadcast and TV

- Television instant inter-cut of 30 provinces, radio instant inter-cut of 31 provinces
- **Emergency network：** Implement the docking with emergency network comprehensive emergency

National social media

- **Tencent:** Cover 600 million WeChat users and 400 million QQ users with popup
- **Ali:** Covering 400 million Alipay users
- **Baidu:** Cover 83% internet users with Baidu search and map
- **Sina:** Cover 300 million microblog users

Business & Operating Support System

- **Green channel: 31 provinces SMS to effect area**
- **Mobile phone producers: discuss with lenovo, samsung on mandatory app installation standard**

Improvement of Distribution Channels

Based on the current channels:

- Broadcast
- TV
- Internet
- Marine radio
- Loudspeakers
- Display

■New Channels have been developed:

- ✓**Emergency message platform**
- ✓**National emergency message website**
- ✓**Broadcast and TV special line**
- ✓**Meteorological service center**

Enlarge the scale of emergency message, and improve the releasing time of warning information.

WWW.12379.CN

Main functions:

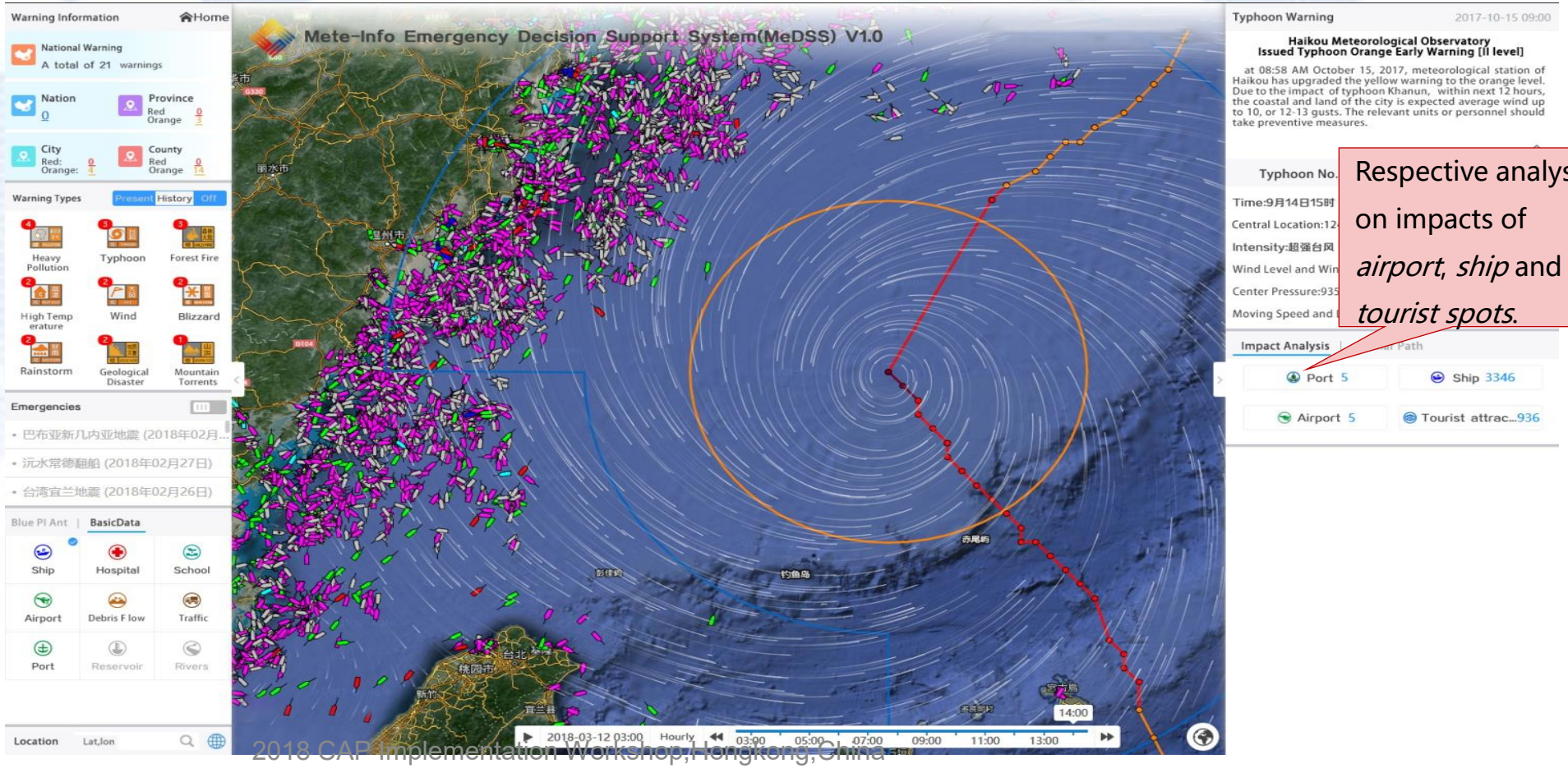
- 10 Channels
- 3 types warning publishing channels
- Websites content management
- Analysis of traffic statistics

Typhoon-Impacted Service

- **A specific web-page built for such topics, displaying relevant information such as meteorological elements, weather disasters monitor and forecast.**
- **Accordingly, our emergency commanders and officers would be well-informed and conduct rescue activities orderly.**

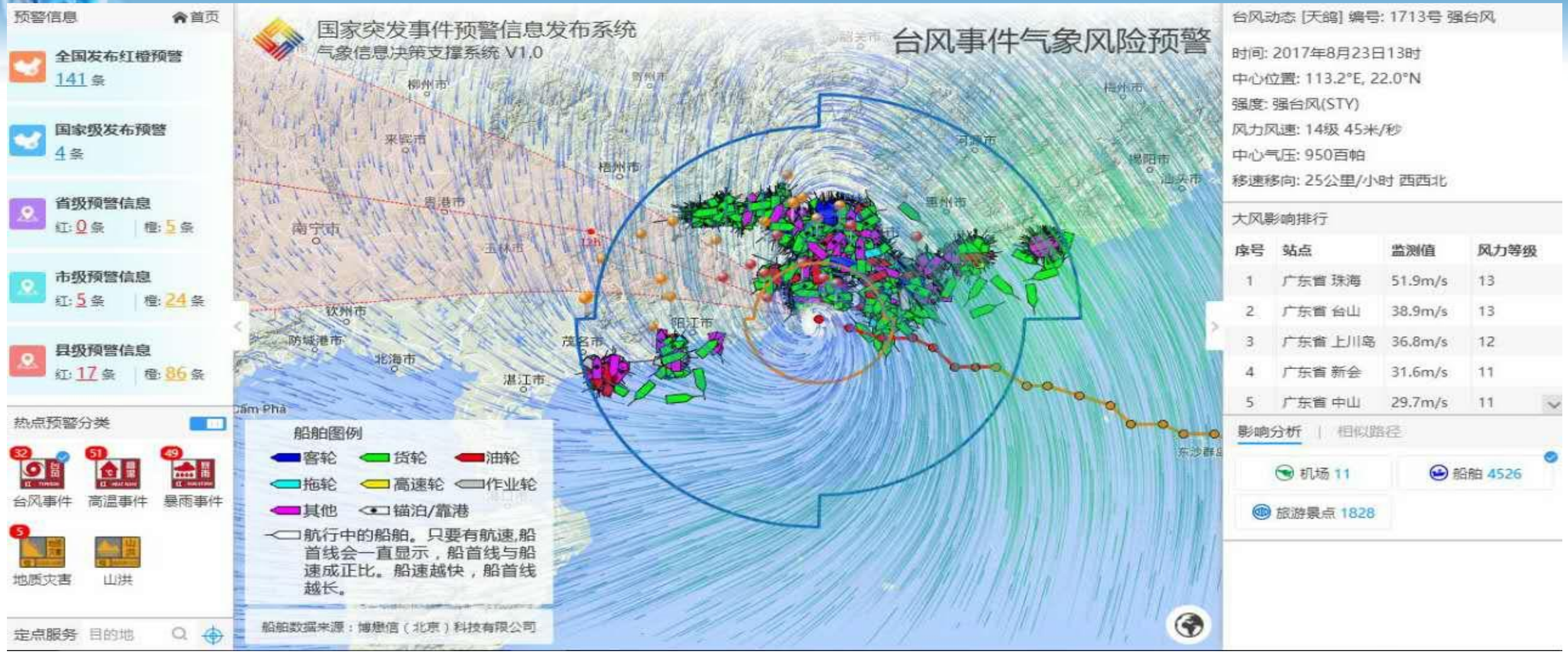
Risk Warning Topics

- Typhoon
- Rainstorm
- High Temperature
- Heavy Pollution
- Gale
- Forest Fire
- Geologic Hazard
- Torrential flood



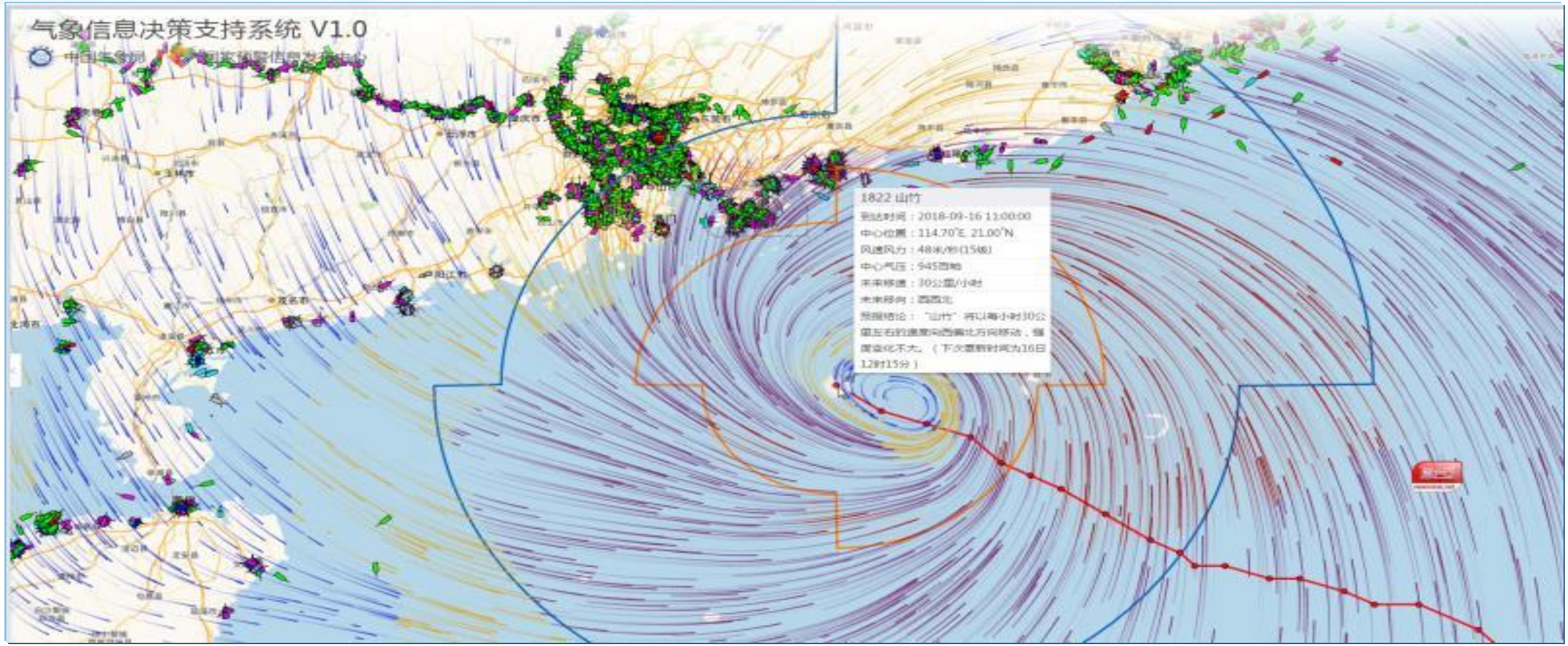
Respective analysis on impacts of *airport*, *ship* and *tourist spots*.

warning leading responses

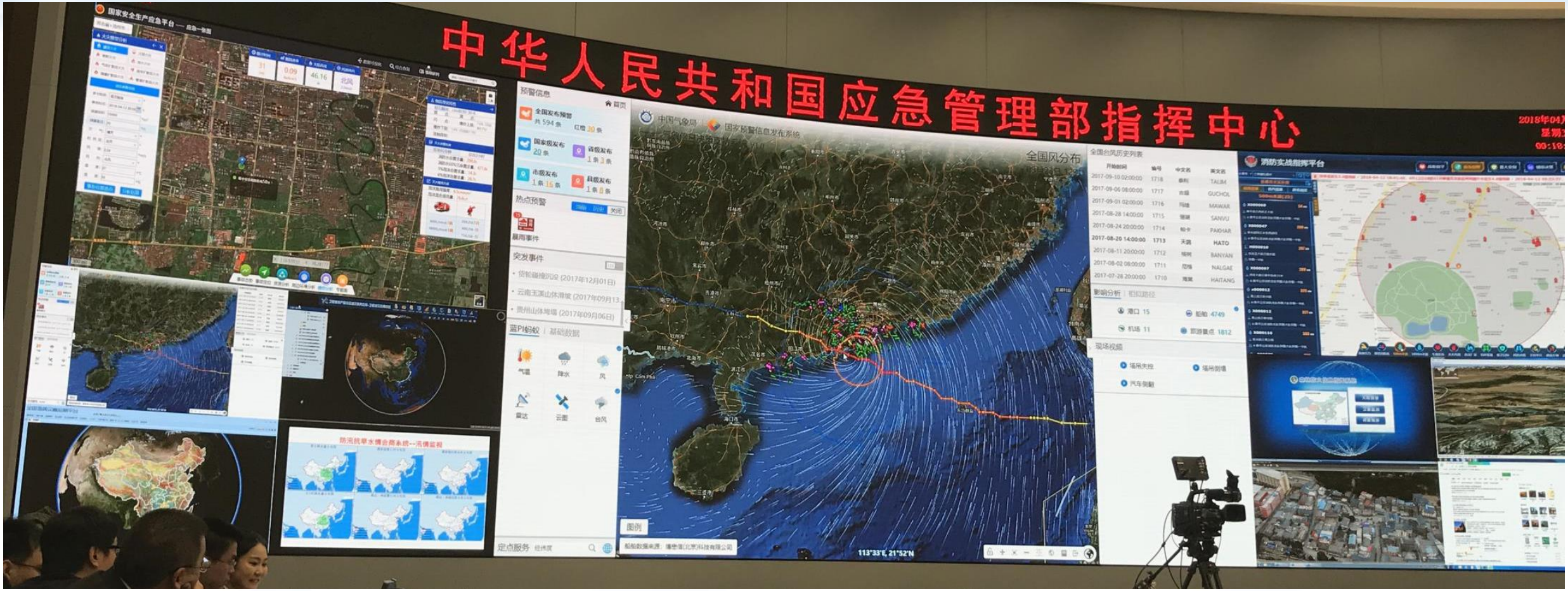


On August 23, 2017, Typhoon “Hato” , No. 13 this year, landing in Zhuhai City Guangdong Province in strong typhoon intensity, with 741 million people affected, and direct economic losses of 12.18 billion yuan.

“mangosteen”： 2018.09.16， 11:00:00 Beijing time



Applications



National emergency management department

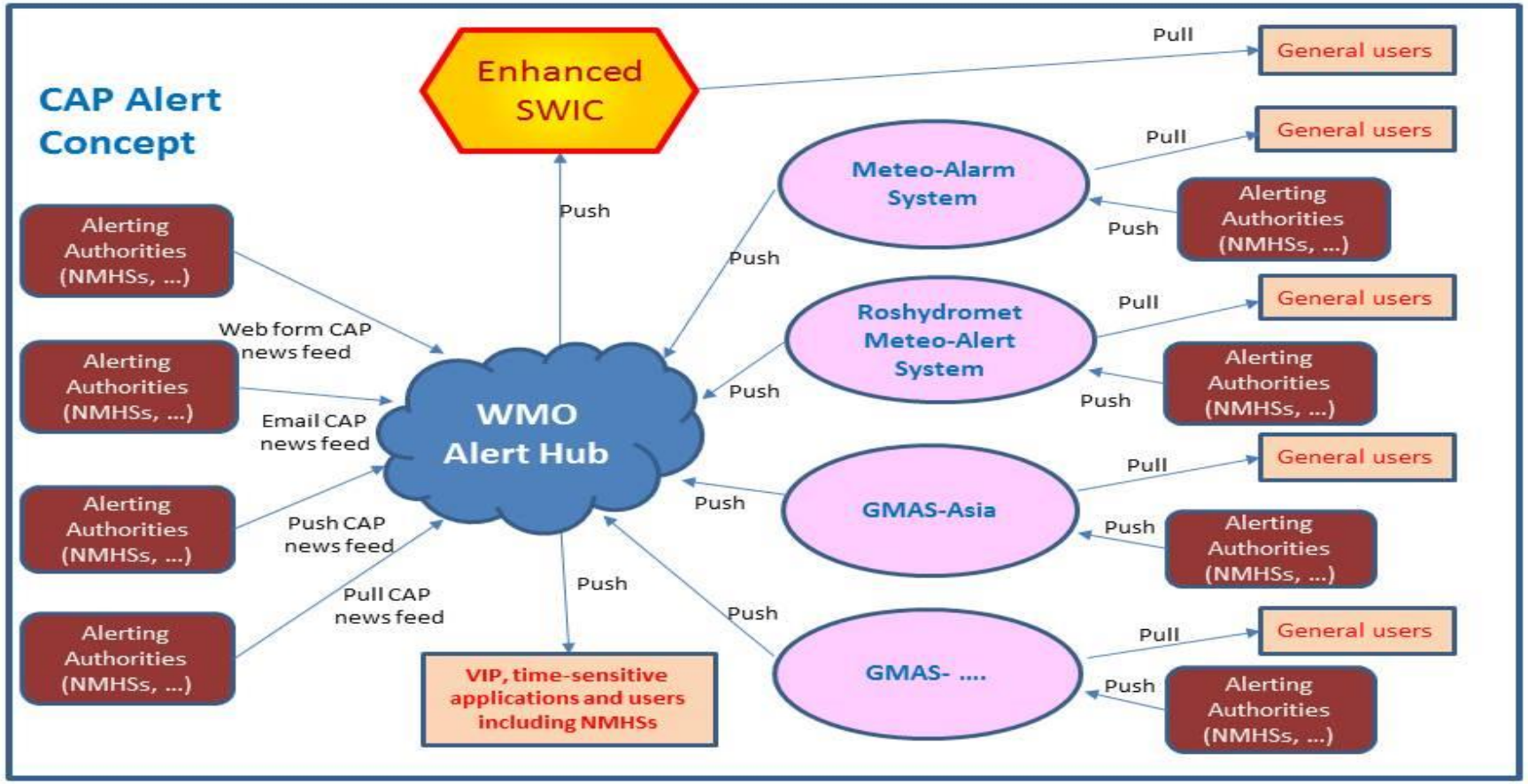
Warning release real-time monitoring platform

- Monitoring the operation of NEWRS, the releasing processes, the releasing pattern .
- The real-time disaster situation.
- Response action.

Part 2:

CMA Participation in the Development of Global Multi-Hazard Alert System-Asia (GMAS-A)

WMO Alert Hub as an alert component of GMAS

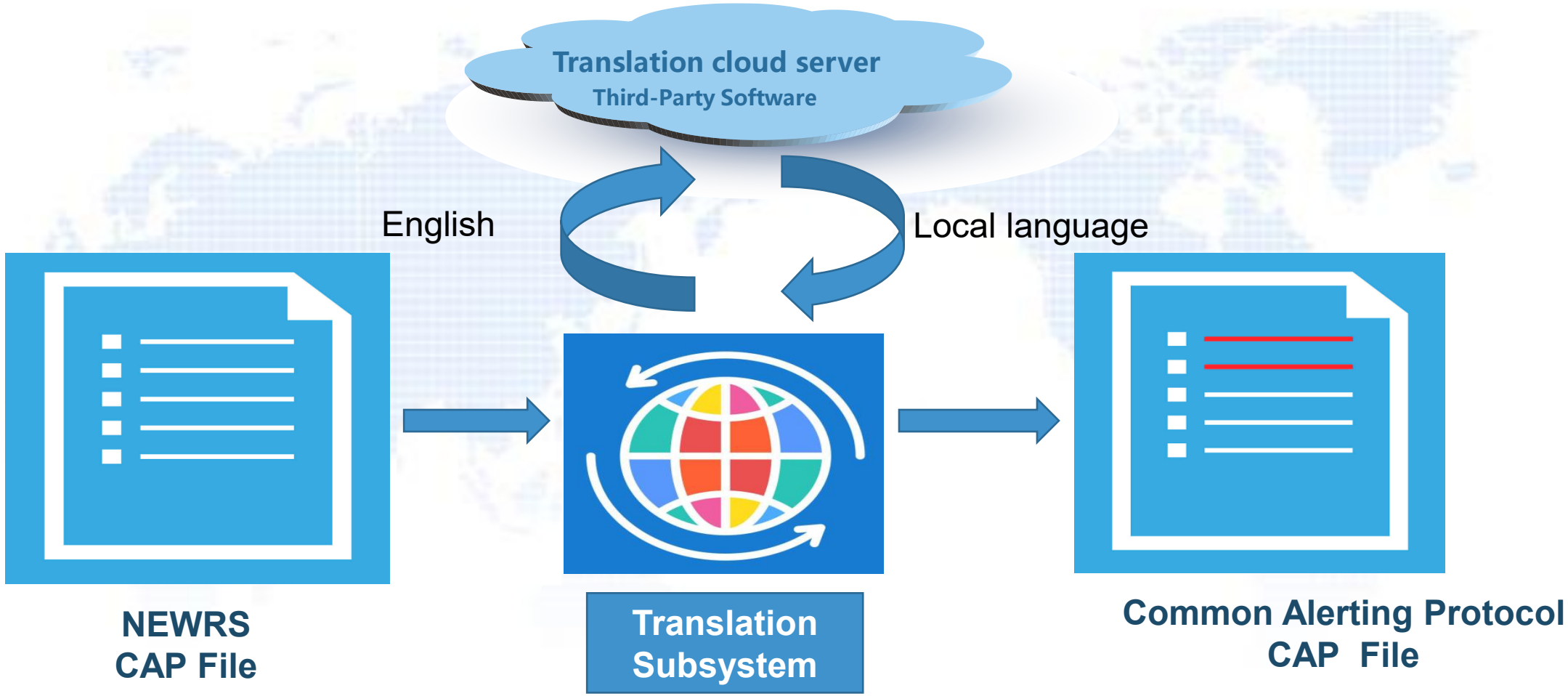


Develop Regional Asian – GMAS

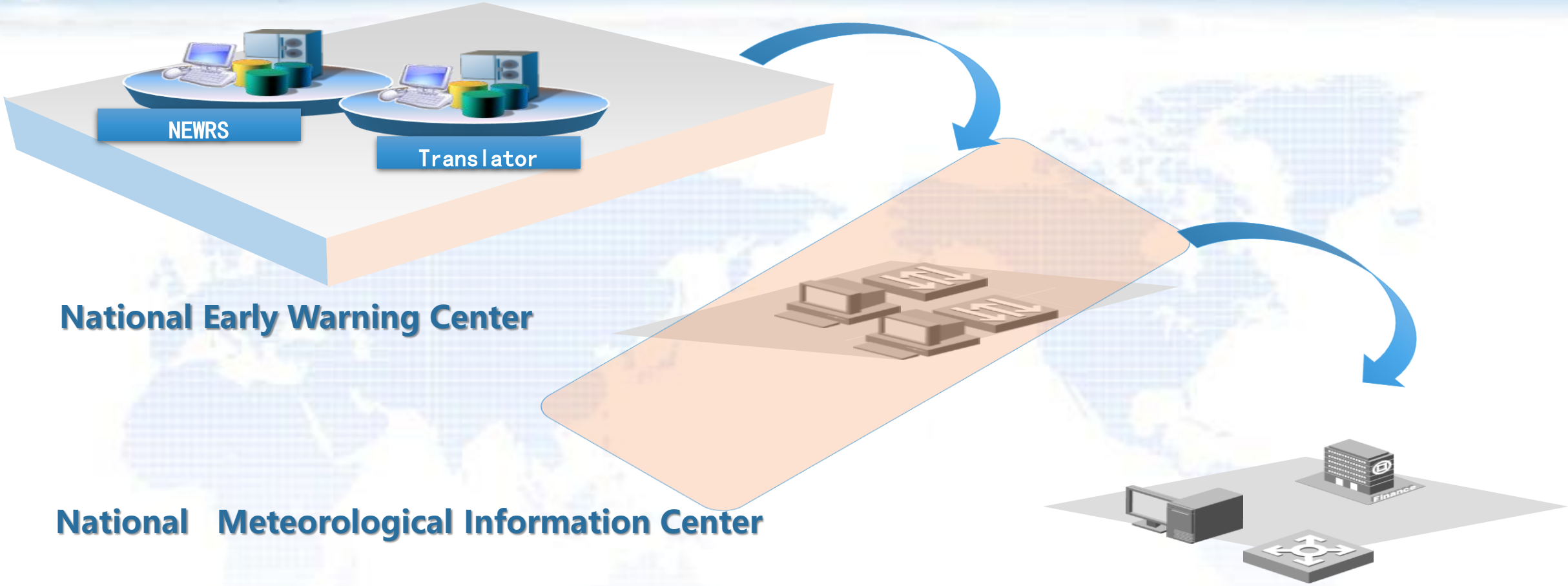
- CMA and HKO as co-coordinators
- To establish a regional multi-alarm system (GMAS-A), based on the implementation of CAP (Common Alerting Protocol) and the experience in WMO WWIS and SWIC
- To promote experience sharing among NMHSs in Asia in disaster risk reduction
- To organize training courses
- To provide assistance to relevant members to improve operational capability in meteorological risk reduction

RAII Pilot Project

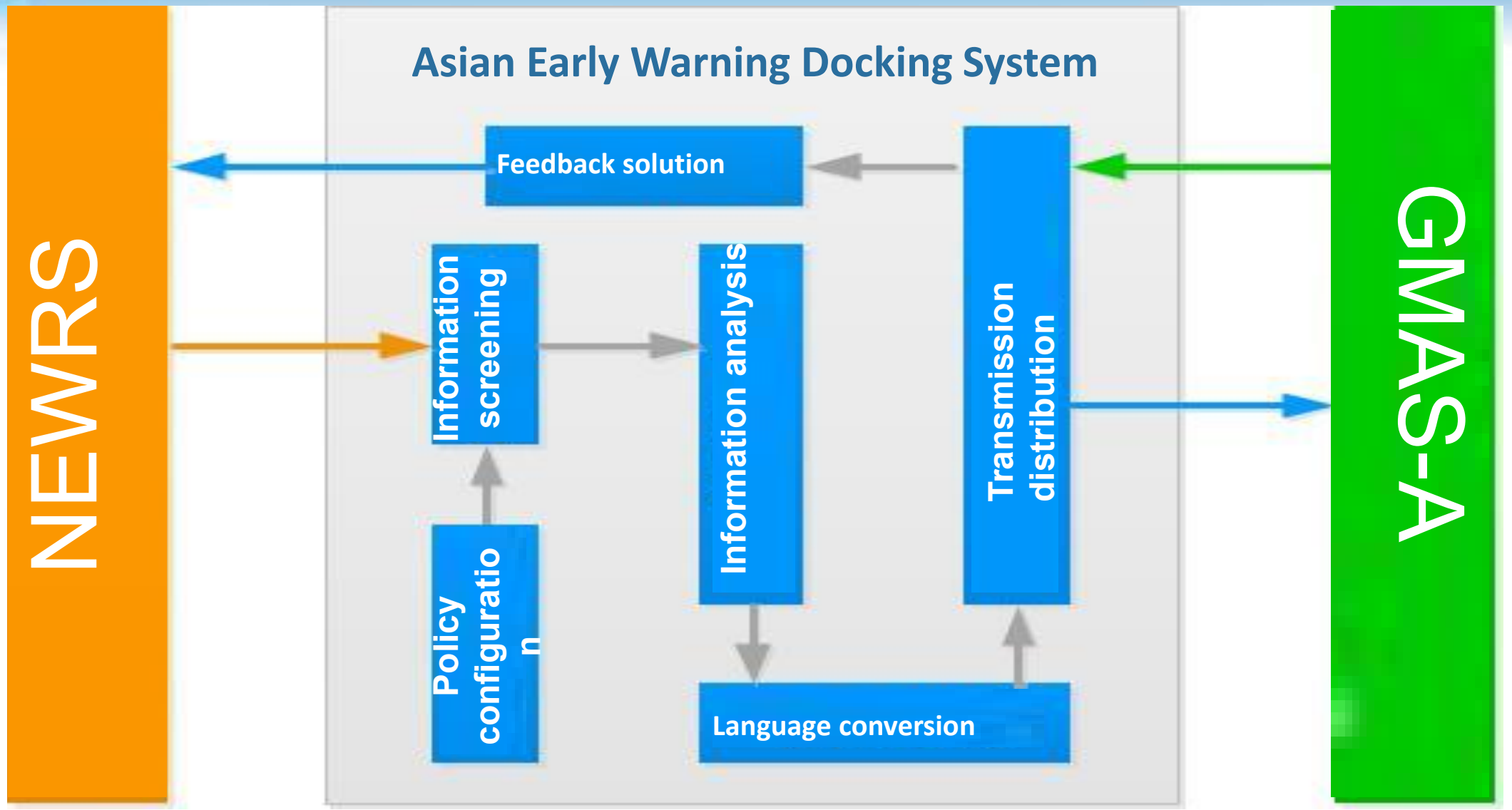
CAP translator based on International standard protocol



CAP Data Transfer Process



NEWRS connected to GMAS-A (Alert Hub of HK)



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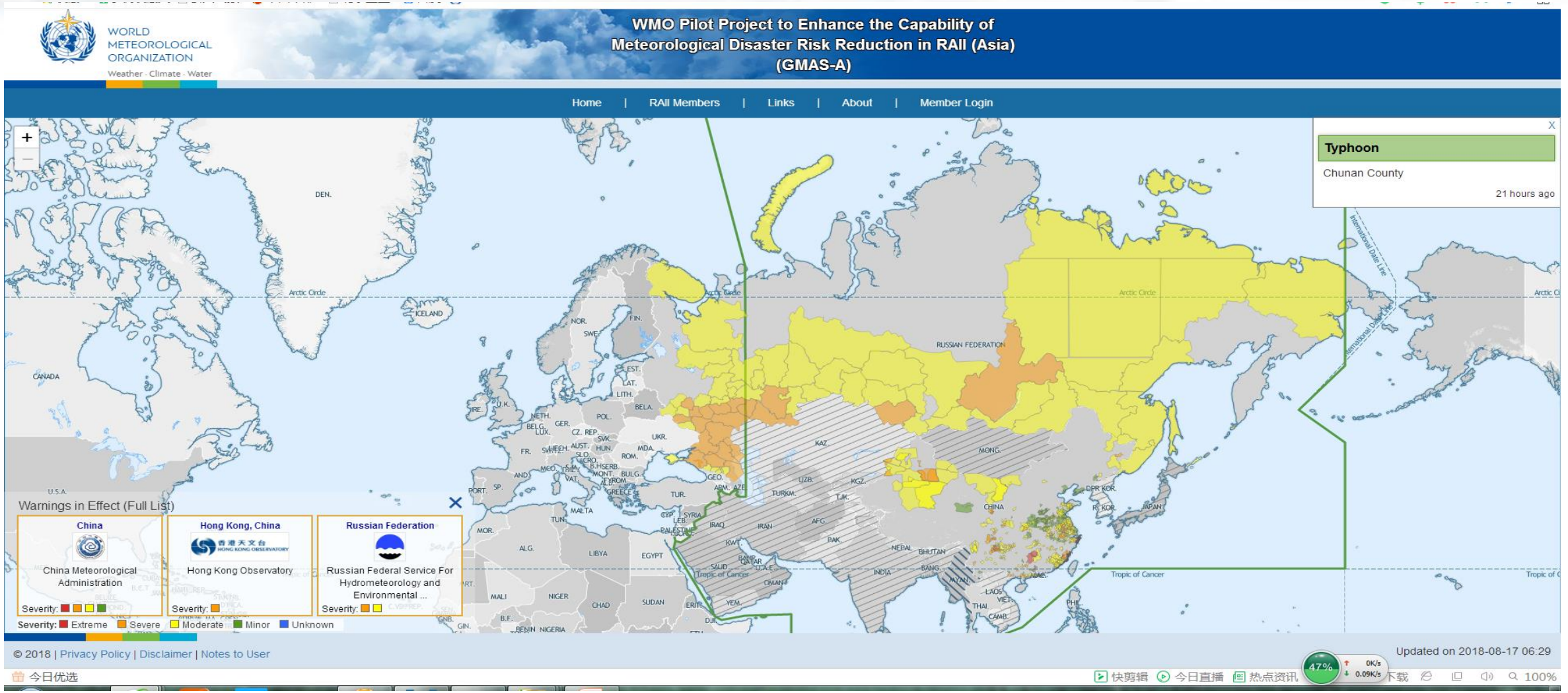

WORLD METEOROLOGICAL ORGANIZATION
Weather · Climate · Water
WMO Pilot Project to Enhance the Capability of Meteorological Disaster Risk Reduction in RAII (Asia) (GMAS-A)
Home | RAII Members | Links | About | Member Login
Typhoon
Chunan County
21 hours ago
Warnings in Effect (Full List)
China
China Meteorological Administration
Severity:
Hong Kong, China
Hong Kong Observatory
Severity:
Russian Federation
Russian Federal Service For Hydrometeorology and Environmental ...
Severity:
Severity: Extreme Severe Moderate Minor Unknown
© 2018 | Privacy Policy | Disclaimer | Notes to User
Updated on 2018-08-17 06:29

World Meteorological Centre-Beijing

Global Monitoring, Global Forecasting, Global Services

On 16 January 2018, CMA Headquarters awarded the plaque of the "World Meteorological Centre (Beijing)" to the **National Meteorological Centre** (NMC, also known as Central Meteorological Observatory). NMC will work with the National Climate Centre, National Satellite Meteorological Centre, and National Meteorological Information Centre to fulfill the WMC's functions and translate the Chinese meteorological vision of "**Monitoring, Forecasting and Servicing globally**" into practice.

The World Meteorological Centre in Beijing (WMC-Beijing) is committed to:

a) Improving global numerical weather prediction (NWP)

b) Developing a global satellite product system

c) Establishing a high-speed meteorological data exchange center

d) Putting a global seamless forecasting system into practice

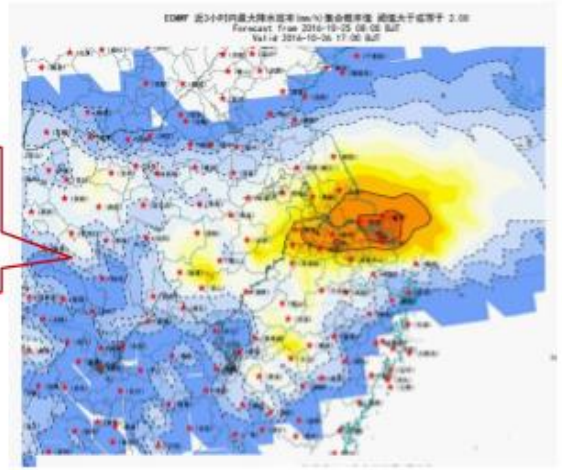
e) Building a regional consultation platform

f) Contributing an international exchange mechanism for weather forecasting and service

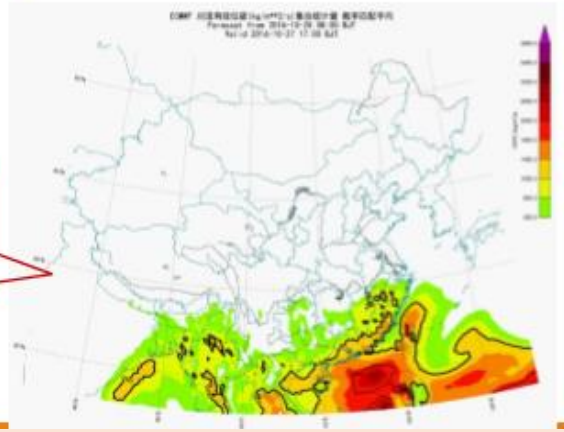
Ensemble Forecast Products

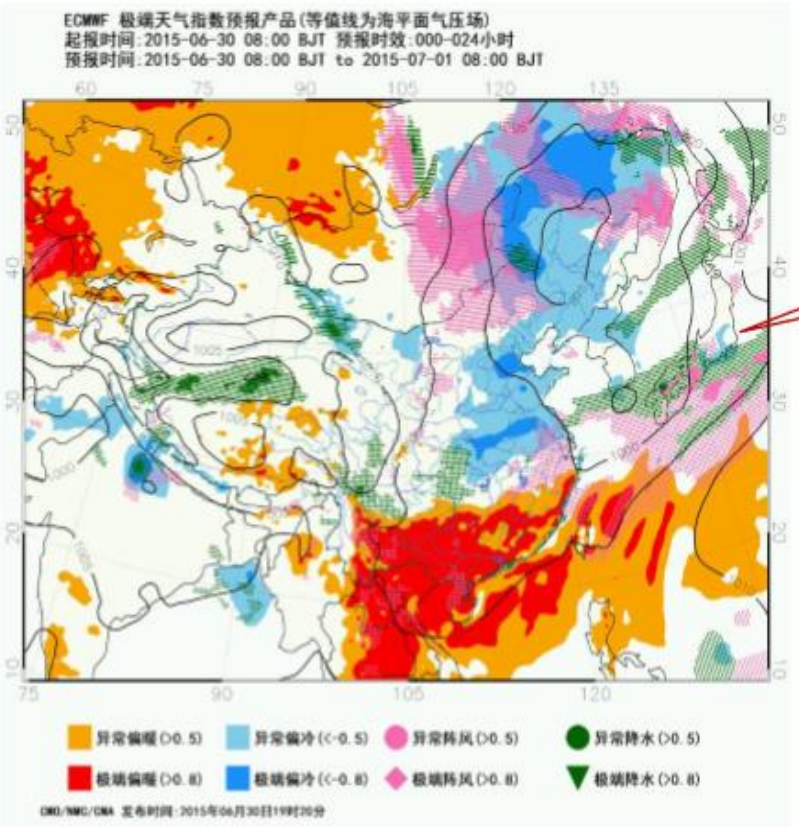
Extreme Forecast Index(EFI)

Precipitation Probability



CAPE





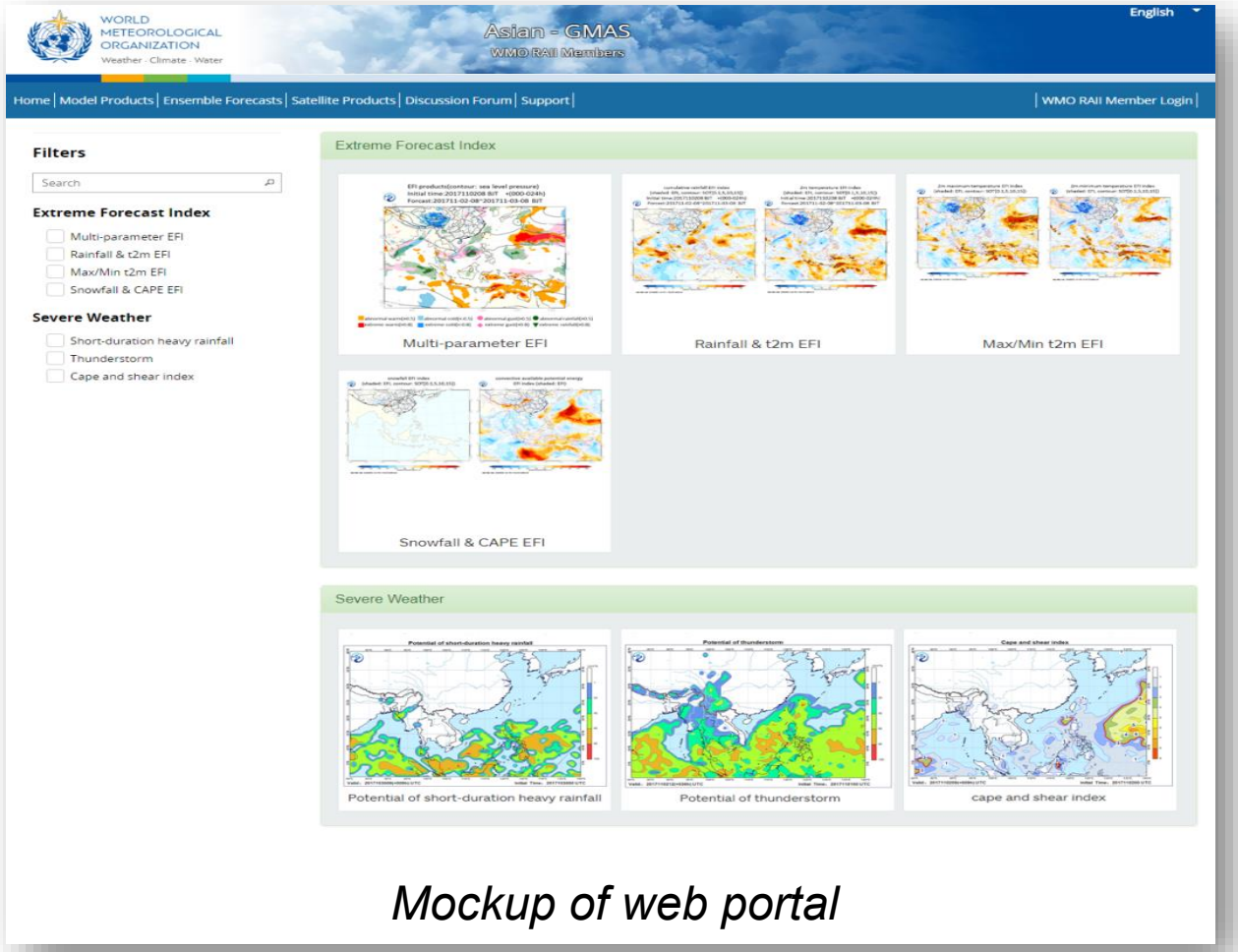
Extreme Weather Index

- Extreme temperature
- Extreme precipitation
- Extreme gust

Description information：

The Extreme Forecast Index(EFI) is computed from the difference between Cumulative Distribution Function (CDF) curves of the M-climate and the current ENS forecast distribution. The EFI is presented in chart form on a composite chart for 2-metre temperature(max and min), total precipitation and maximum gusts.

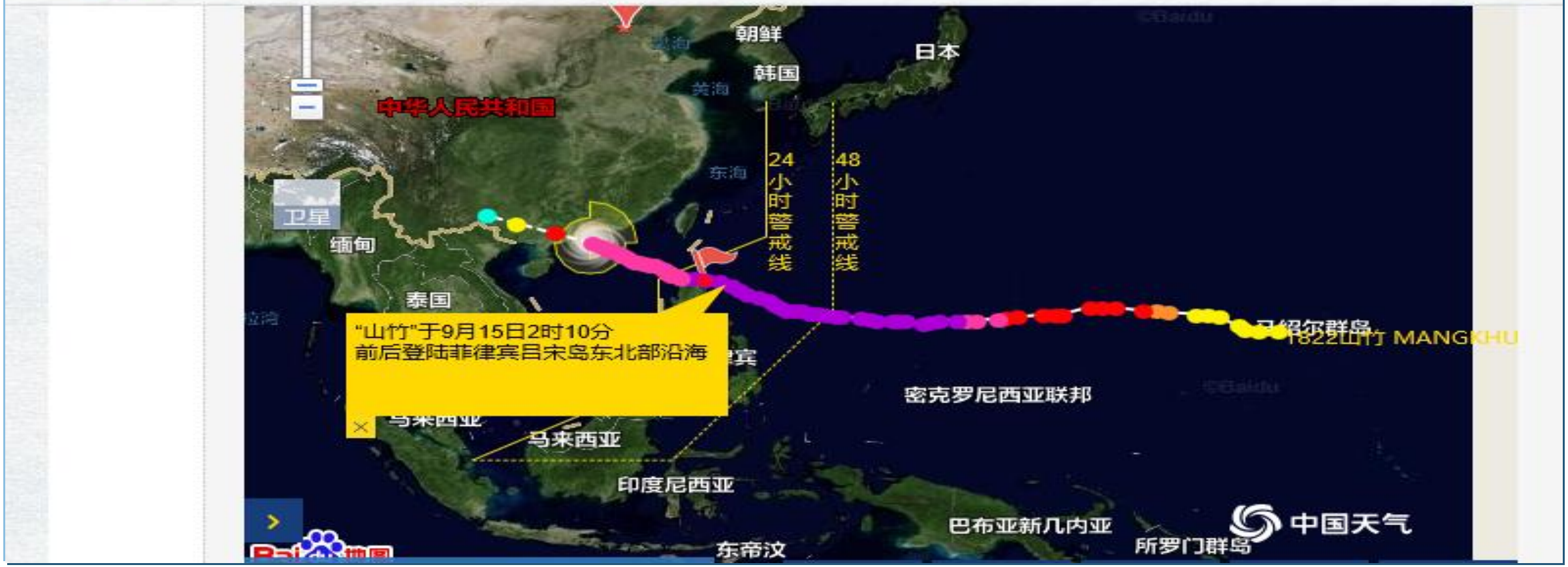
Restricted Web Portal of Asian – GMAS (GMAS-A)



Mockup of web portal

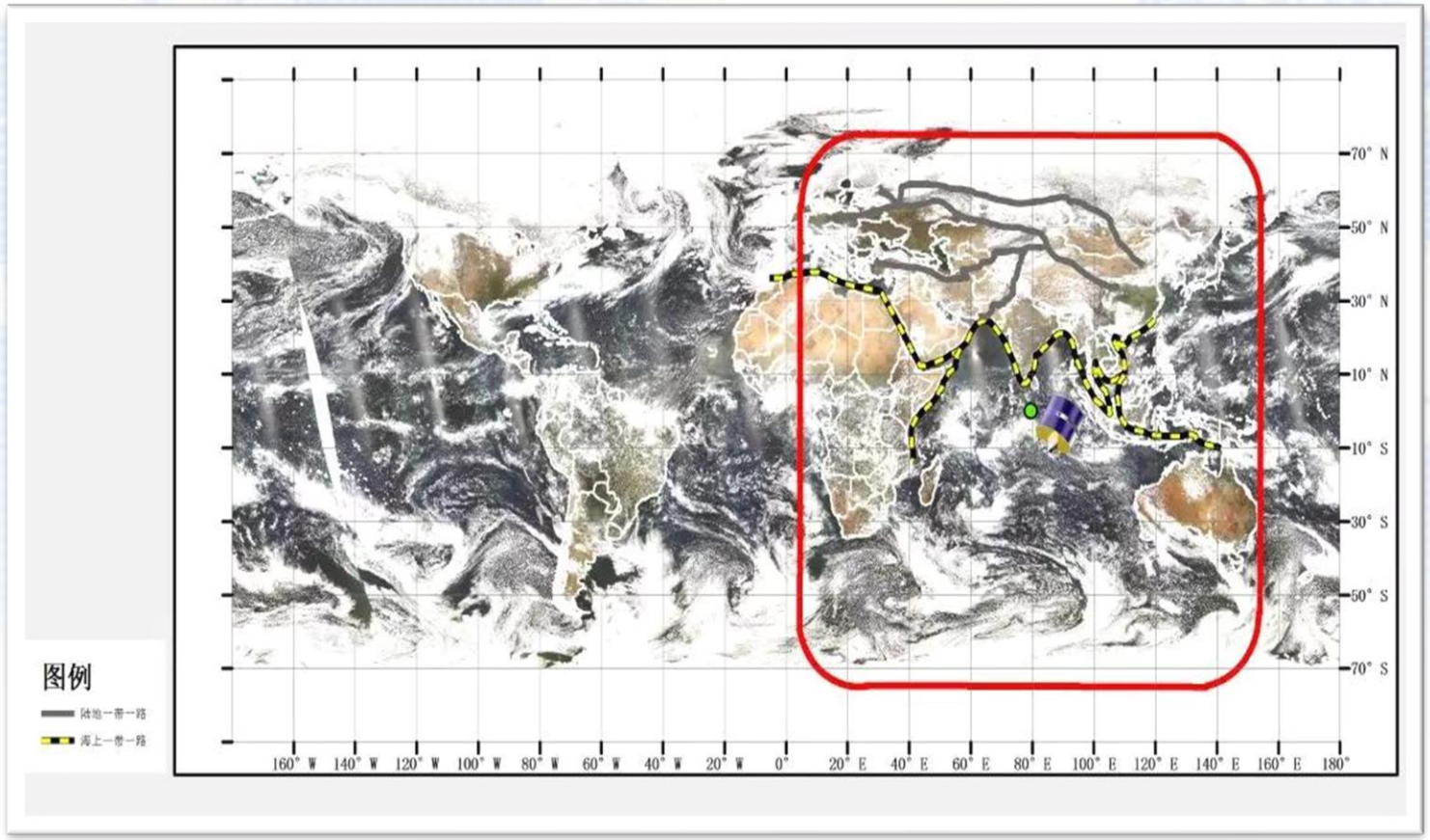
- For **sharing of hazard-related information** with Members, e.g.
- risk-based NWP products, probabilistic and ensemble forecast products, etc.

The 22nd typhoon Mangosteen moving route

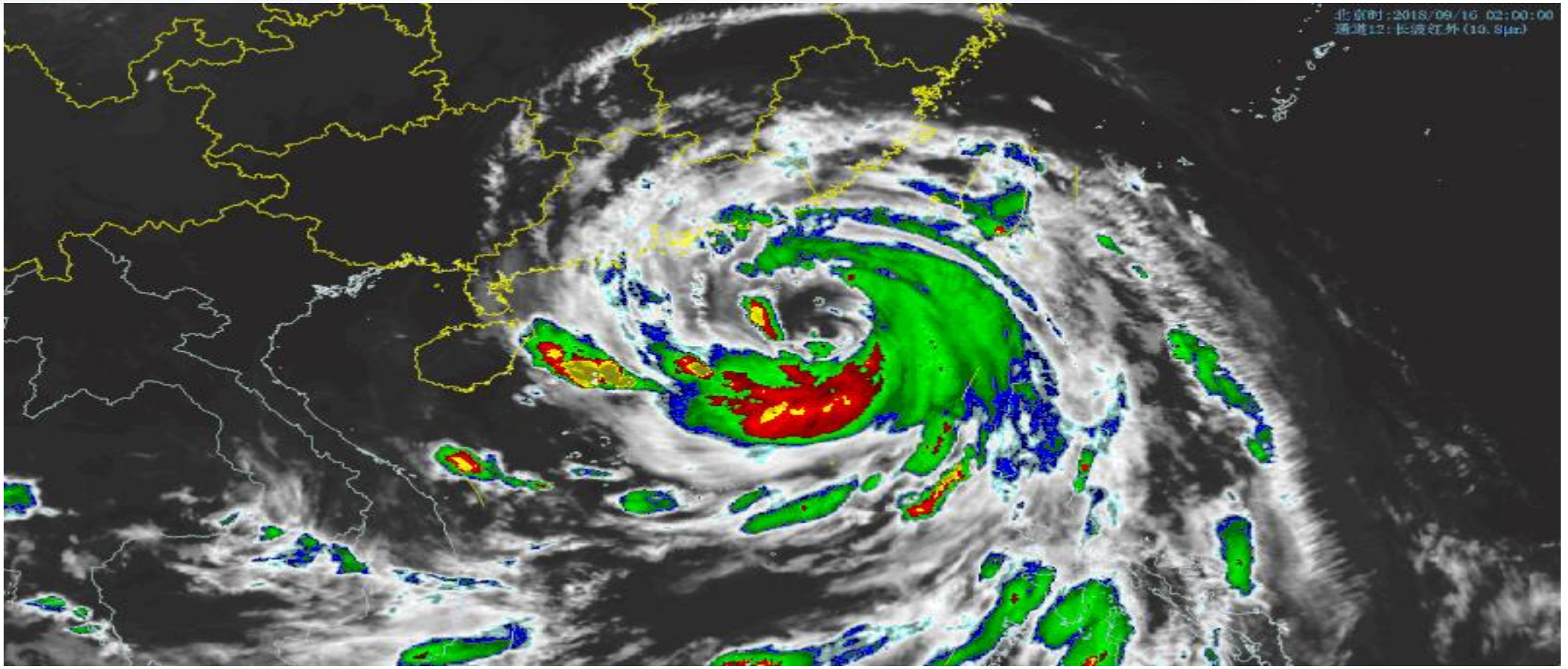


Successful launch of FY-2H Jun. 2018

Its position was moved westward to 79°E to extend the coverage to the Indian Ocean, South Asia, West Asia, Central Asia and most African countries.



FY-4 : “mangosteen“ monitoring



风云四号 “山竹”监测动图

Emergency Support Mechanism of FENGYUN Satellite

- ✓ In 2018, the mechanism was formally established.
- ✓ Based on a user's request, CMA uses the on-duty satellite for **intensive regional observation** per 5-6 min over the disaster-affected areas.
- ✓ provides the requesting Member with the processed satellite images and related quantitative products in various ways.

Regional emergency consultation when typhoon occurs

- On September 15, 2018, as the 22nd typhoon of this year approached the coastal areas of south China, the CMA, the Hong Kong observatory, and the macau meteorological and geophysical bureau held a joint consultation on the trend and impact of "mangosteen" to jointly determine the future development trend and impact of "mangosteen".

Project dissemination

The 2th China-ASEAN Meteo. Forum (September 12. 2018)

Thank you for your attention !

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