

Brief Introduction to China Emergency Early Warning Release Platform

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February, 2017



应急气象微博



应急气象网站



应急气象电话



应急气象短信



应急发布管理



农村大喇叭



电子显示屏

OUTLINE

- Background
- Present situation
- Guangdong Emergency Early Warning Release Center

WHAT?

- Public institutions entrusted by Government, managed by CMA, provincial, municipal and county meteorological services.
- To perform **government functions** of releasing emergency warning.
- To gather emergency warnings from responsible government departments, and release them effectively and timely when emergency happens. A trigger for social response.
- Mechanism of Government Leading, Departments Linkage, Unified Release and Social Participation.

WHY?

China's emergency incidents

Natural
disasters

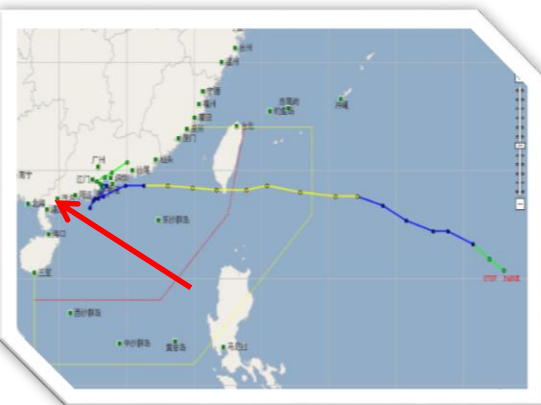
Accidental
disasters

Public health
incidents

Social
security
incidents

WHY?

- In the August of 2007, **a rumor** that there would an **earthquake** spread and caused public panic in Zhanjiang(a coastal city in Guangdong province) after a heavy rainstorm.
- Several hours later, Zhanjiang Meteorological Bureau together with Zhanjiang Earthquake Bureau sent out 2.8 million SMS to **refute the rumor** and calmed the public soon.
- The State Council and Guangdong Provincial Government was satisfied and realized **the importance and necessity** of establishing a unified & efficient emergency warning release platform.
- **CMA** proactively undertook the responsibility of it, and decided to carry out pilot work first in **Guangdong province**.



Zhanjiang, 684mm/24h,
associated with TC Pabuk (0706)



SMS to refute
rumor



Signing ceremony of cooperation
between Guangdong Government
and CMA

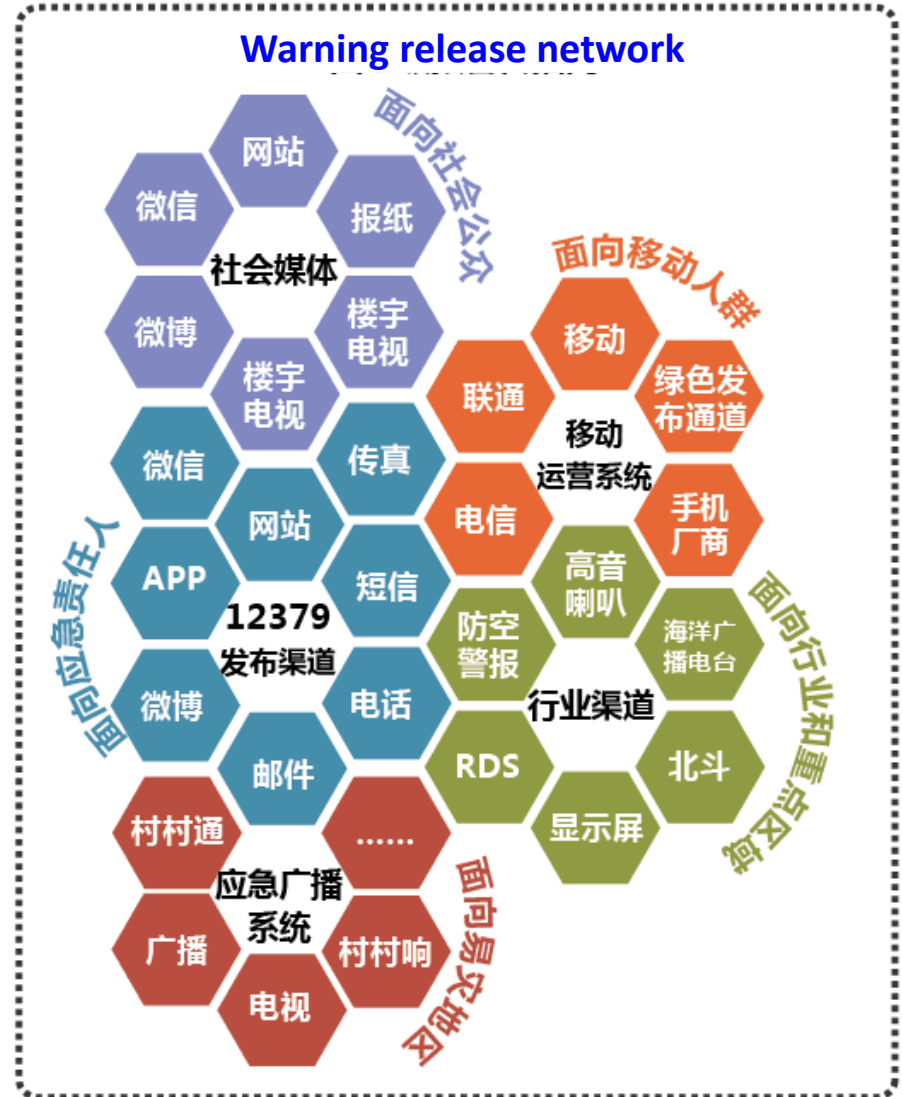


Opening ceremony of Guangdong
Emergency Early Warning Release
Center

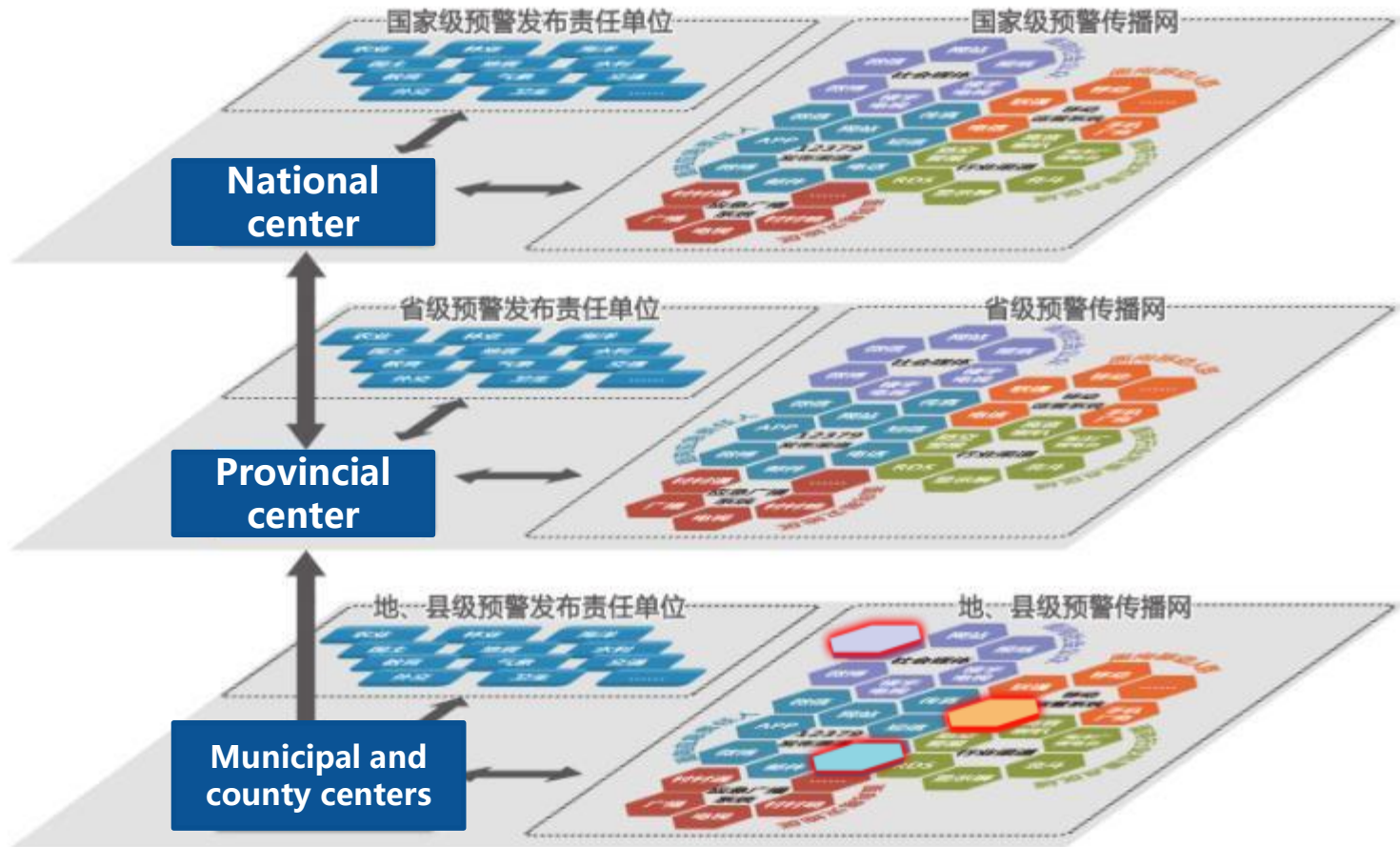
OUTLINE

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Omnimedia release of early warning



Horizontal **sharing**, vertical **connection**



Emergency Warning Release Centers



-  1 national center
-  31 provincial center
-  343 municipal center
-  2015 county center

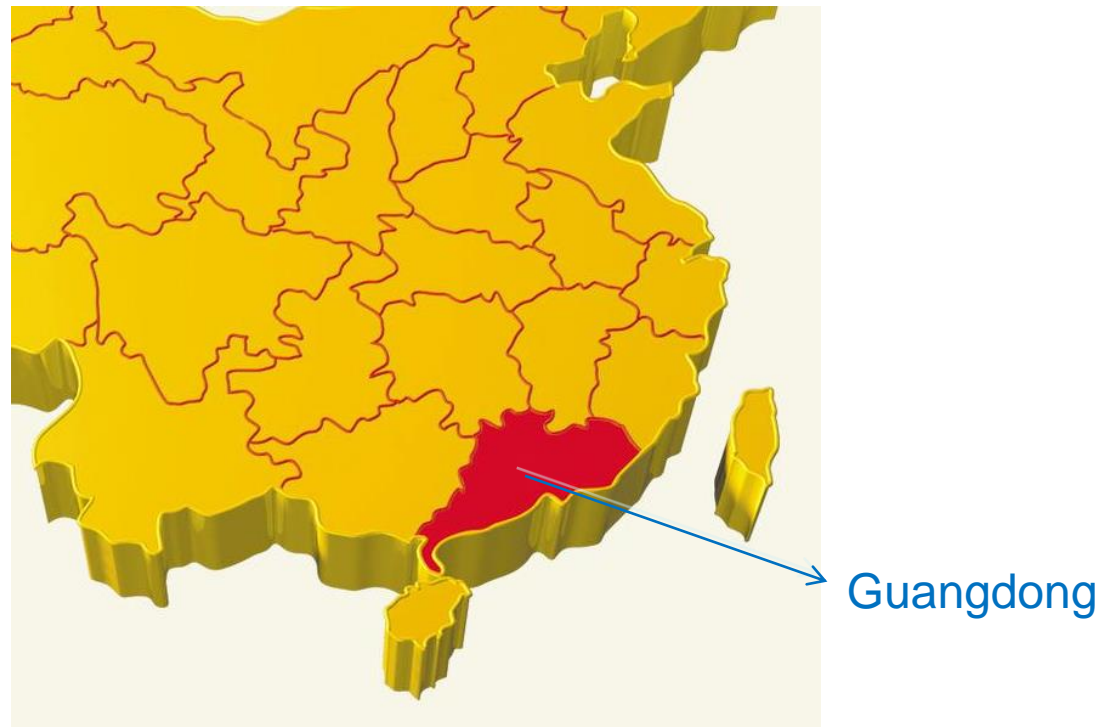
6085 specialty staff

OUTLINE

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Guangdong Province

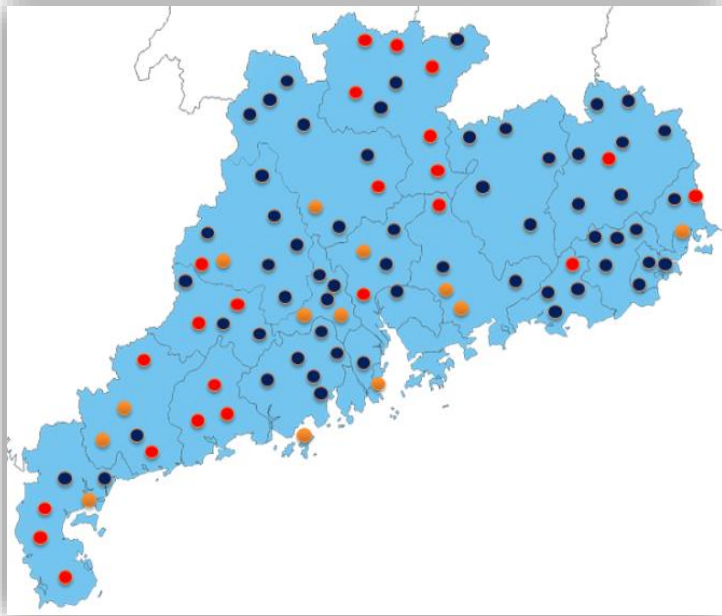
- **Largest population** in China, 104 million of resident in 2016.
- **Highest GDP** in China since 1989, 7951 billion RMB (\approx 1156 billion \$) in 2016.
- **133 deaths per year** due to meteorological disasters in the past 5 years.
- Suffered a lot from other natural disasters, accident disasters and public health events, etc.



Brief introduction

Since the pilot work started, Guangdong has established **99** branches of the EWRC all over the province.

Information is delivered and shared among these branches.



Provincial emergency early warning release center (in Guangzhou)

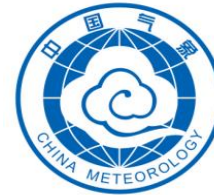


Municipal and county centers

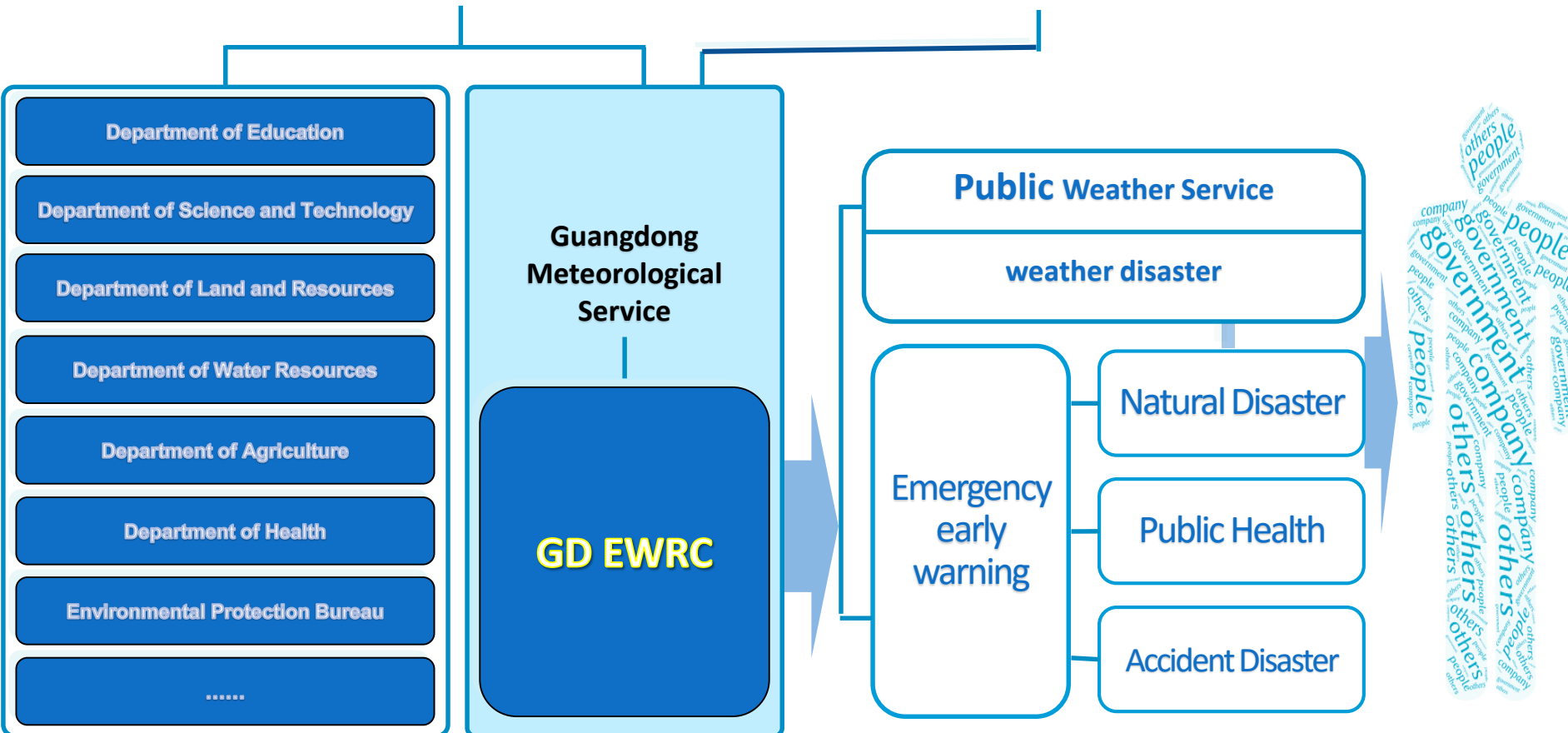
Ownership and Duty



Guangdong Province Government



China Meteorological Administration



Government draws attention

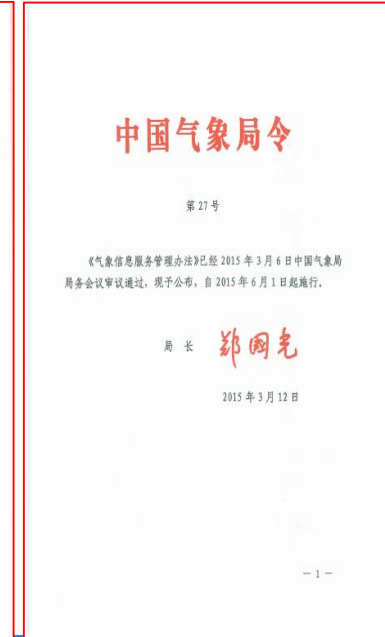
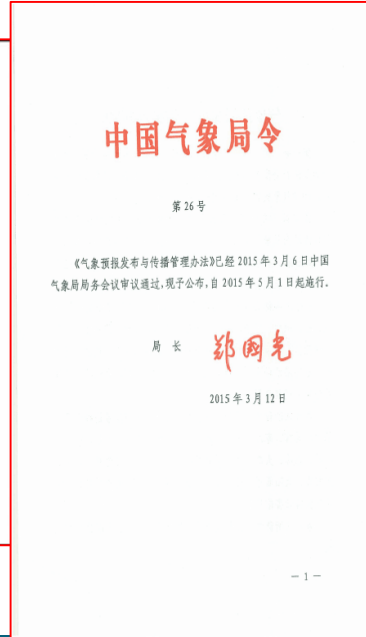
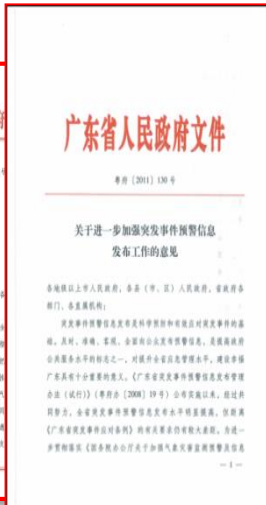
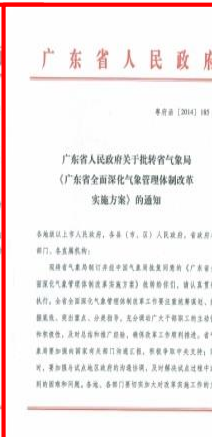
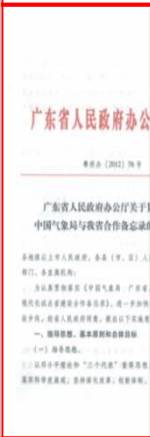
Many provincial conferences to deploy



Relevant Law and Legal Regulations be published to standardize our operation



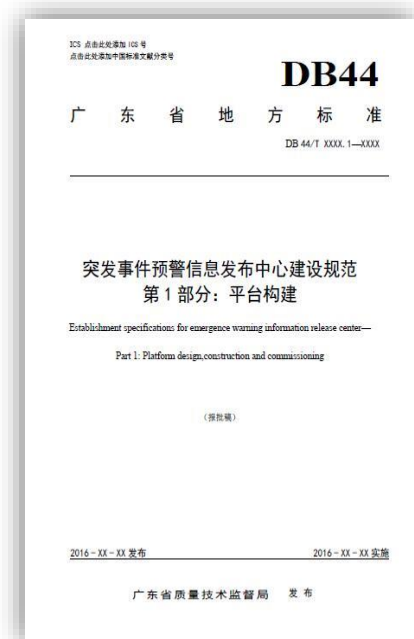
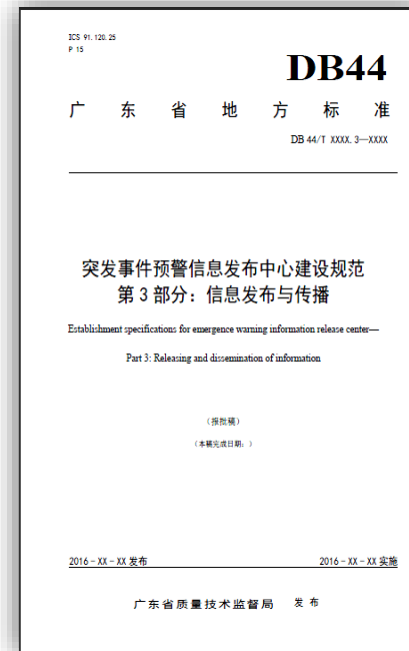
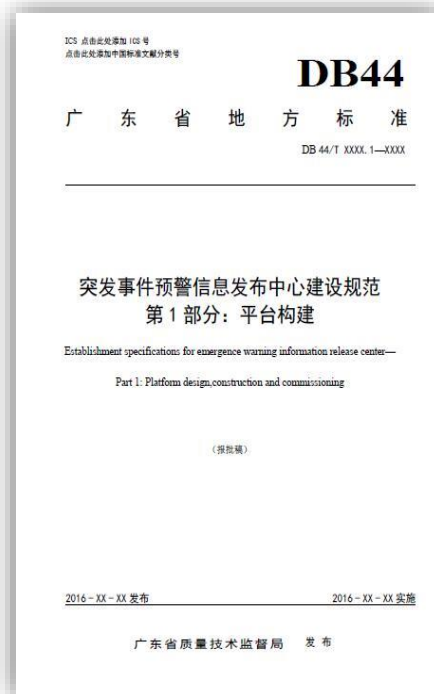
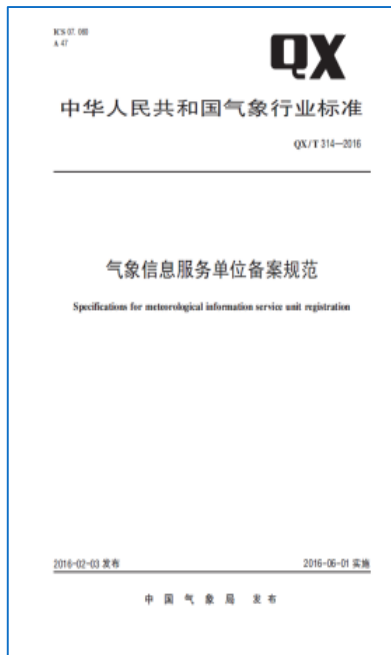
广东省突发事件应对条例



Standard First, Release Normalized.

Providing : code of conduct ; decision-making proof

Launching : the management of reserve plan

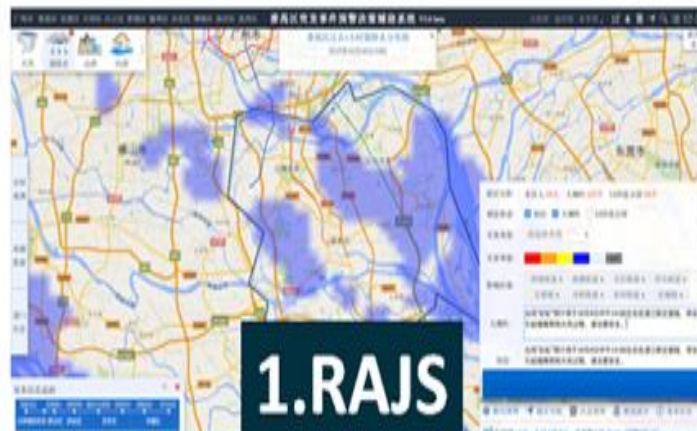


Operational System

To release early warning effectively and accurately

1 Risk Analysis & Judgement System (**Analyse**)

2 Emergency Early Warning Release System (**Release**)



1.RAJS

Risk Analysis & Judgment System

Determining influence region



2.EWRS

Emergency Early Warning Release System

Generating warning information



Person in charge

Cooperative department

Crowded area

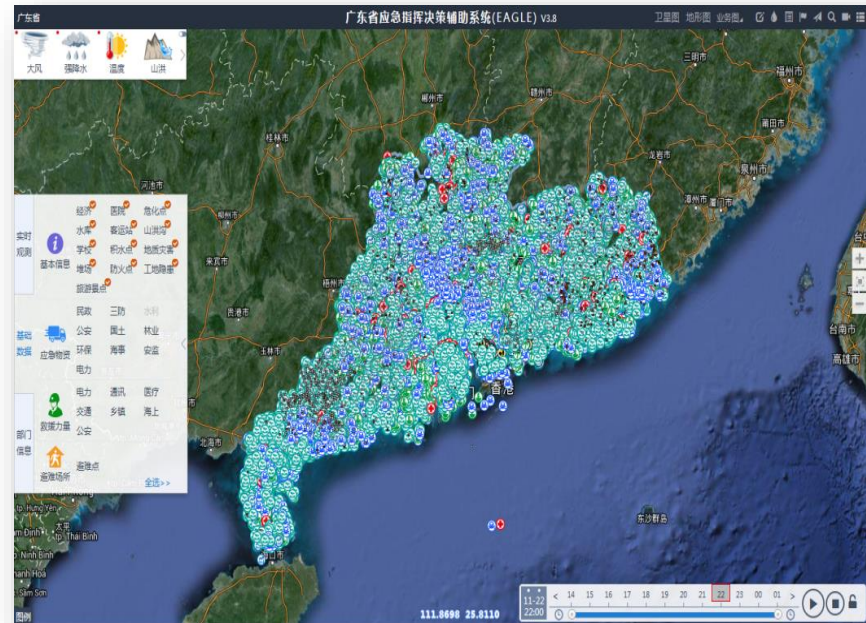
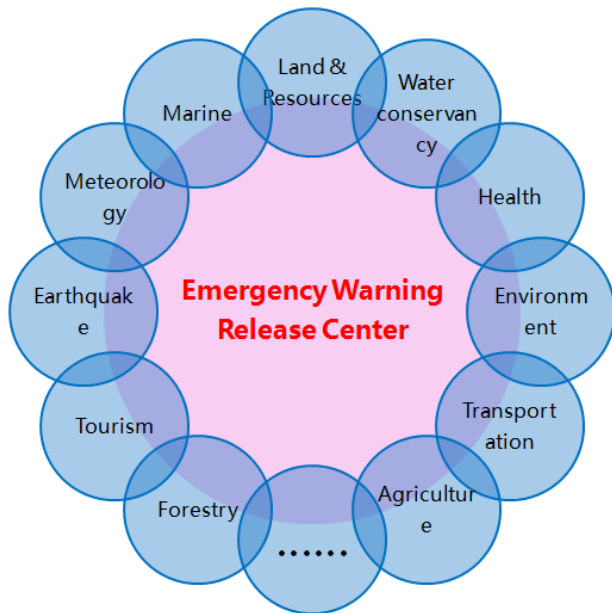
Public

Countryside

Releasing warning to targeted users

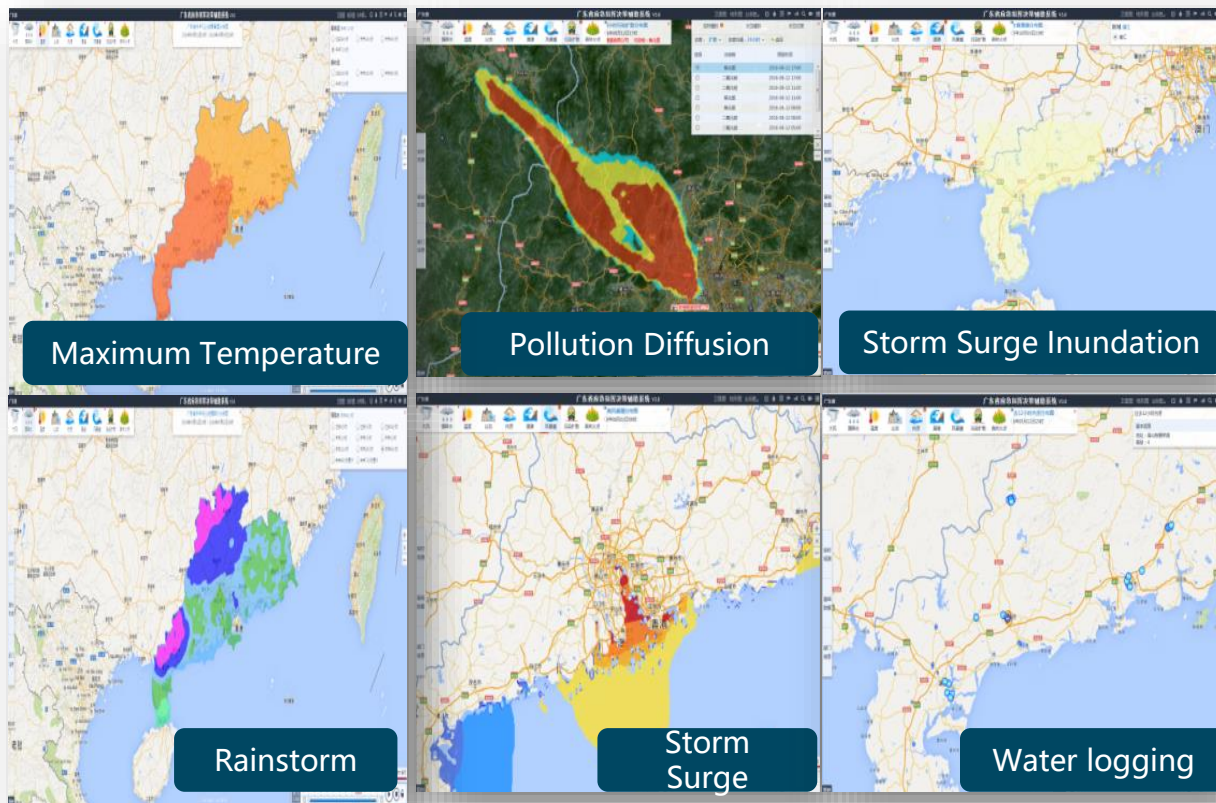
Analyse

- ◆ The Risk Analysis & Judgement System analyzes and aggregates mass of digital data from different departments of government to one GIS map, We call it “**One Atlas**” .
- ◆ 44 kinds of information from 14 different departments on the Atlas(including population, economy, schools, hospitals, dangerous chemical storages, reservoirs location ,real-time ship information etc.)

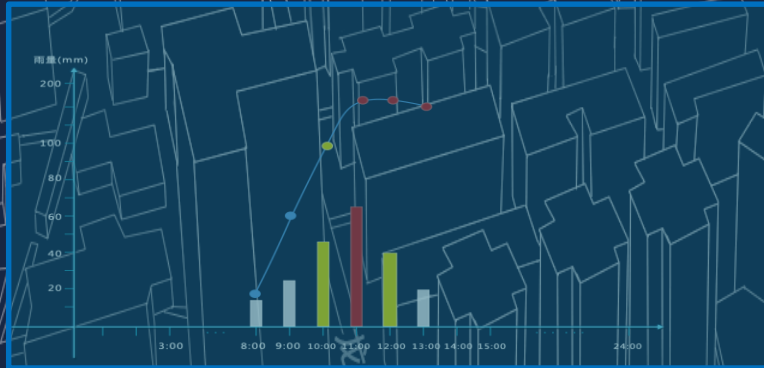


Analyse

- ◆ Based on “One Atlas” and “One Grid”
- ◆ Have developed multiple professional disaster models, such as Pollution Diffusion Model



City Waterlogging Monitoring and early warning based on radar quantitative precipitation estimation and forecast



Early Warning info

Type : urban waterlogging

Age : next 6 hours

Condition : Sliding precipitation exceeded

Model : Urban flood and waterlogging model

waterlogging point :

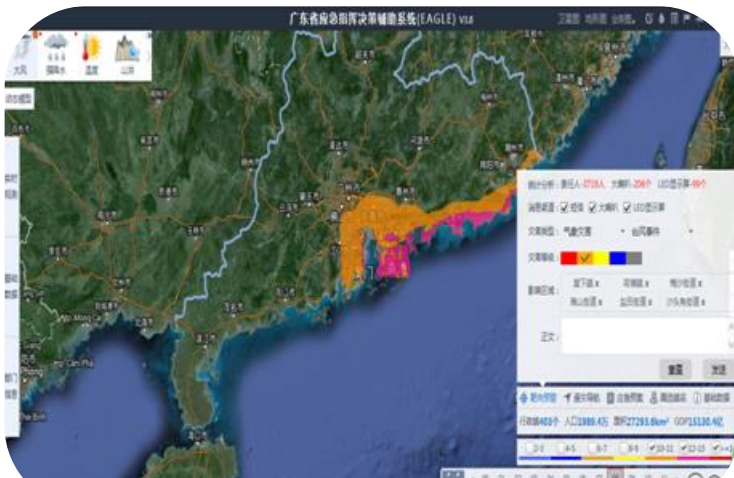
Zhongshan street-

Above Gangding bridge

Warning released to targeted users

- Accurate warning to **targeted** service object by Selected areas & Specific population
- Early and quickly warning released by **One Click** through multiple channels
- Warning spread channels are all monitored, displayed, controlled **on line**

Targeted release



Radio

TV

Website

Loudspeaker

LCD

SMS

Wei bo

Wechat

Etc.

100+ million click-through rate on emergency response website

5852 loudspeakers

3822 LCD

1+ billion SMS per year

7 million users

0.35 million users



APP
Twinkling

Class suspension warning signals

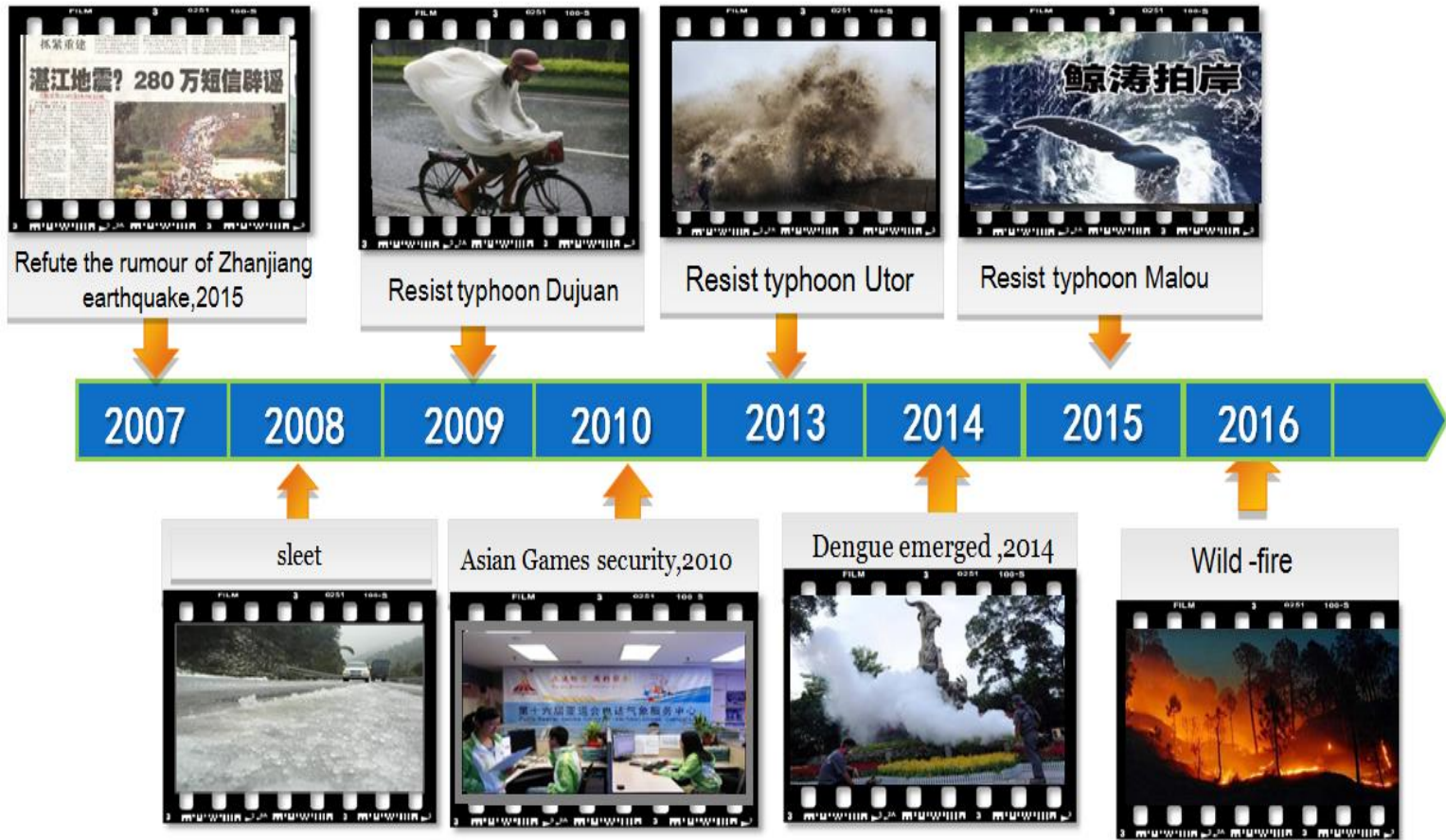


Function: Pushing Weather warning signals for severe weather

Purpose: Protecting students from severe weather



Successful Result



We release warning successfully in: Wild-fire crisis, 2016; Zhanjiang earthquake, 2015; Dengue emerged, 2014; Asian Games security, 2010.

SMS Amount of Main Emergency Warning/Response in Guangdong Province

Date	Emergency	SMS(million)
2007.8	Zhangjiang Earthquake rumor	2.8
2008.1	Low Temperature and Snow-ice Weather	800
2008.5	Wenchuan Earthquake	4.2
2008.7	Oil price rumor	0.94
2010.11	Guangzhou Asian Games	123
2011.3	Nuclear radiation rumor	55
2012.2	Heyuan Earthquake	1.0
2013. 8	Severe Typhoon Utor	170
2013. 8	Railway rumor	118
2014.7	Super Typhoon Rammasum	24
2014.9	Typhoon Kalmaegi	21
2014.9	Dengue fever	112
2015.10	Super Typhoon Mujigae	74.9
2016.1	Strong cold wave	140
2016.8	Severe Typhoon Nida	140
2016.10	Severe Typhoon Haima	140

Improvement of Disaster Prevention and Reduction in Guangdong Province

Influence rate of meteorological disaster to GDP

<0.8% in recent 3 years

Death due to meteorological disaster

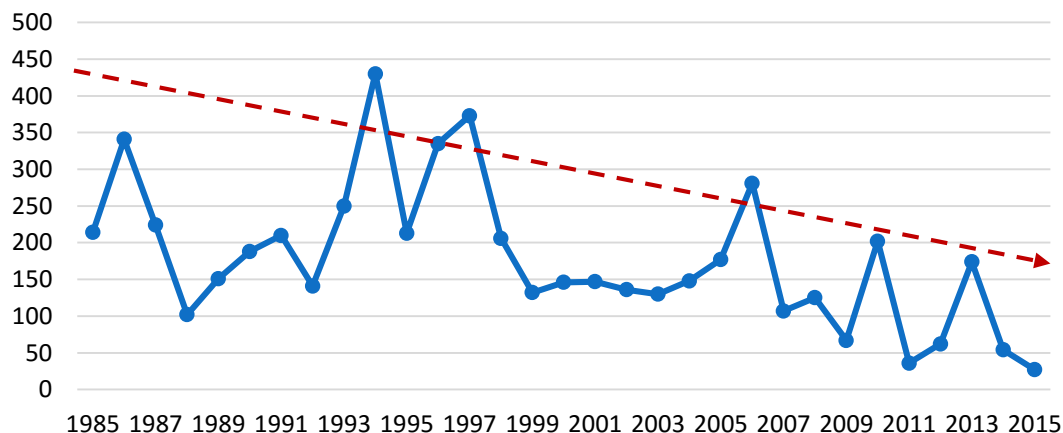
Lowest(28) in recent 30 years

Public satisfaction

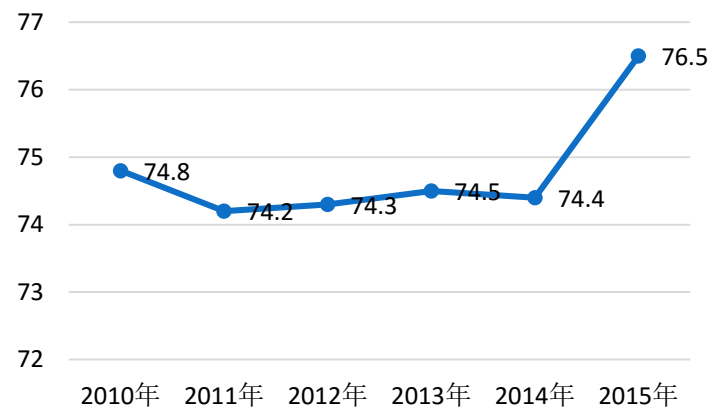
Top 4 of 40 departments in recent 7 years

Casualties to the lowest level in disasters

- No death in Super/Severe Typhoon Rammasum, Kalmaegi, Nida, etc.
- Comparison between No.1522 Mujigae(14 deaths) and No.9615 Shally(359 deaths) .



Death due to disastrous weather in recent 30 years



Public satisfaction to weather service in Guangdong

In the future

- ◆ **More intelligent**
 - Location-based
 - Customizabale
 - Anywhere, anytime
- ◆ **Artificial intelligence**
 - Combining with various models
 - Data from all walks of life
 - Be managed , analyzed





***Thanks for
Your attention***

