



行政法人 國家災害防救科技中心
National Science and Technology Center
for Disaster Reduction

CAP Implementation in Taiwan

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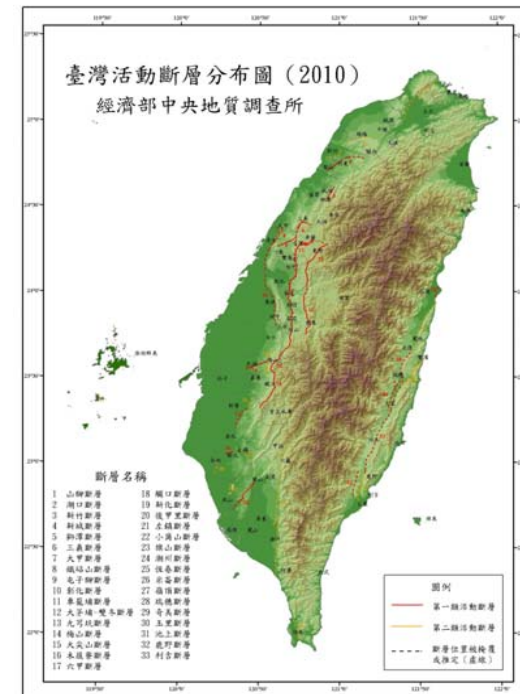
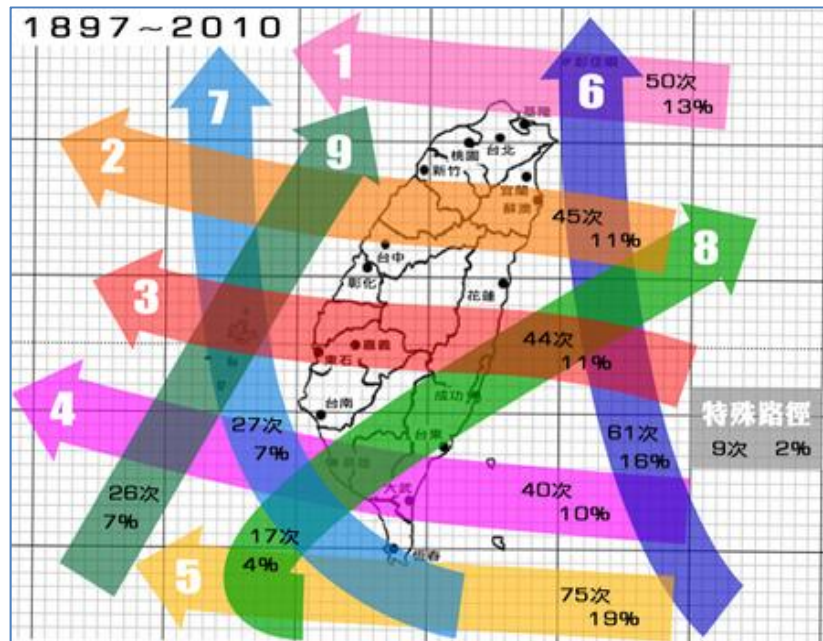
Outline



- | Process of PWS in Taiwan
- | Development of CAP in Taiwan
- | Application of CAP
- | Provided CAP documents and tools
- | Current Applications

Taiwan Environment

- Taiwan has beautiful nature environment, but it has a unique geographic location. It is situated in the subtropical monsoon region.
- There is a plum-rain season every May to June, and typhoons every July to October. This type of climate often brings about torrential rains.



Disasters in Taiwan



Earthquake



Landslide



roadClose



Fire



Typhon



Flood



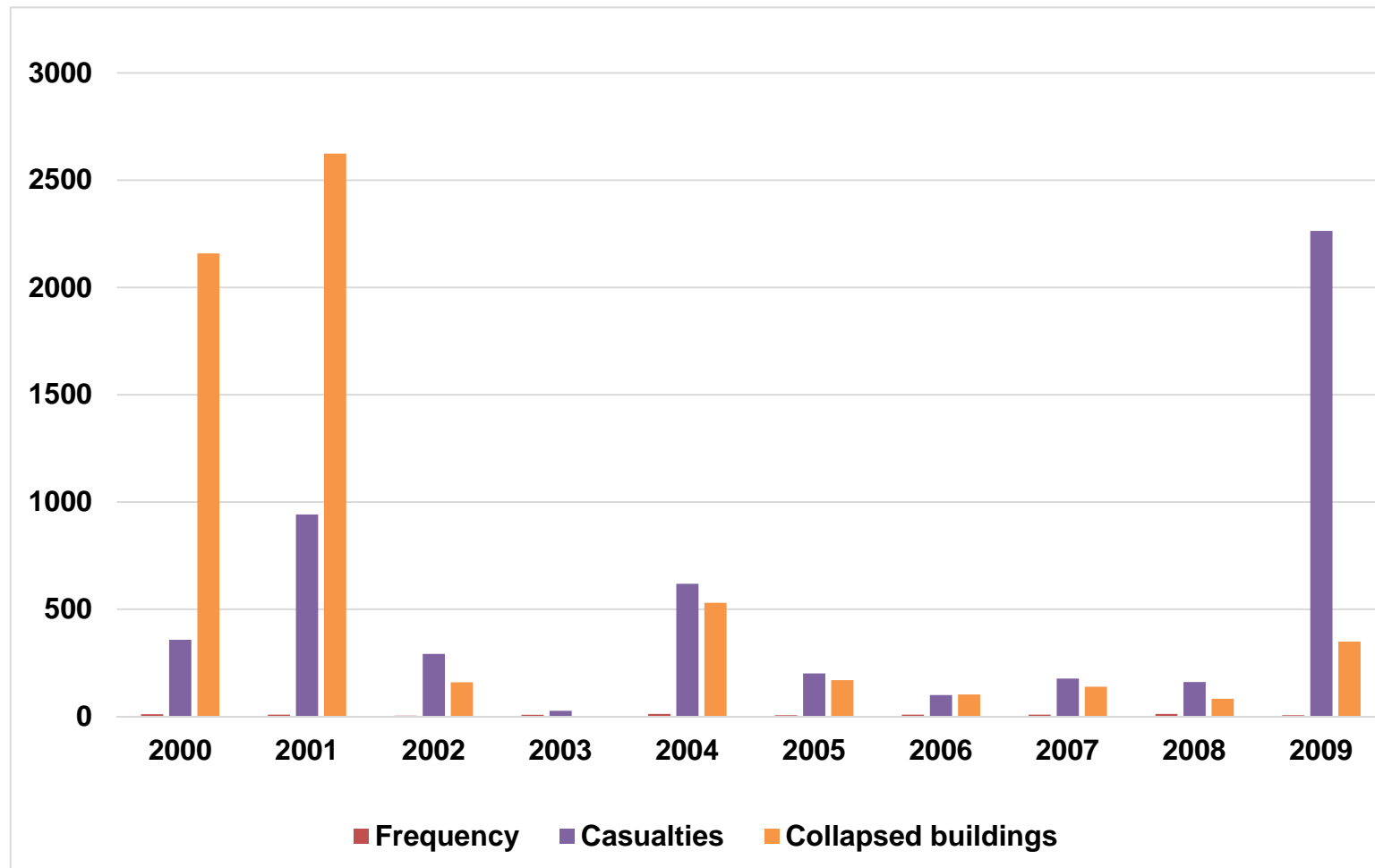
debrisFlow



roadClose



Frequency of natural disaster (typhoon and earthquake)





Natural
disaster



Prevention
and
Preparation



NCDR has comprehensive teamwork with public and private sector – from top decision makers to local communities



Process of PWS in Taiwan

Plan



◆ 2014-2015

1. Implemented **policies** and **structures** of CBS' business mobile alert system and testing
2. **Investigated** disaster alert service **regulations**
3. **Collaborate** with central and local government, release alerts according to Common Alerting Protocol Taiwan Profile
4. **Promoting** EAS-CAP collaboration

◆ 2016

1. **Developing** CBS transmission Commercial Mobile Alert System, CMAS
2. Complete CBE and CBC's **connection**
3. Complete alert message in CMAS **push service**

◆ 2017

1. Complete **CBE**
2. Create the connection between different **media** and CBE's **standard**
3. Using 4G service, combine active disaster preparation system, **auto-push alert service**
4. **Complete** CBE system **operation** plan

PWS in Taiwan Construction Map



Alerting Authorities

Cell Broadcast Entity

Alert Disseminators

Application

Alerting Message

Issued by government

Typhoon, Extremely rain

Earthquake, Tsunami

Debris flow

Reservoir discharge, Flood, High water level

Closure or interrupt of highway

High speed rail service interruptions

Train service interruptions

Call off work and school

CAP-TWP^(※1)

Disaster Information Open Data Platform



Alert Gateway

CAP-TWP

CMAC^(※2)

CMSP Gateway

CMSP Network Infrastructure

4th Generation Mobile CBS



Internet Gateway



APP開發者



自動化防災系統



Broadcast

PWS : Public Warning System

CMAC : Commercial Mobile Alert for C. Interface.

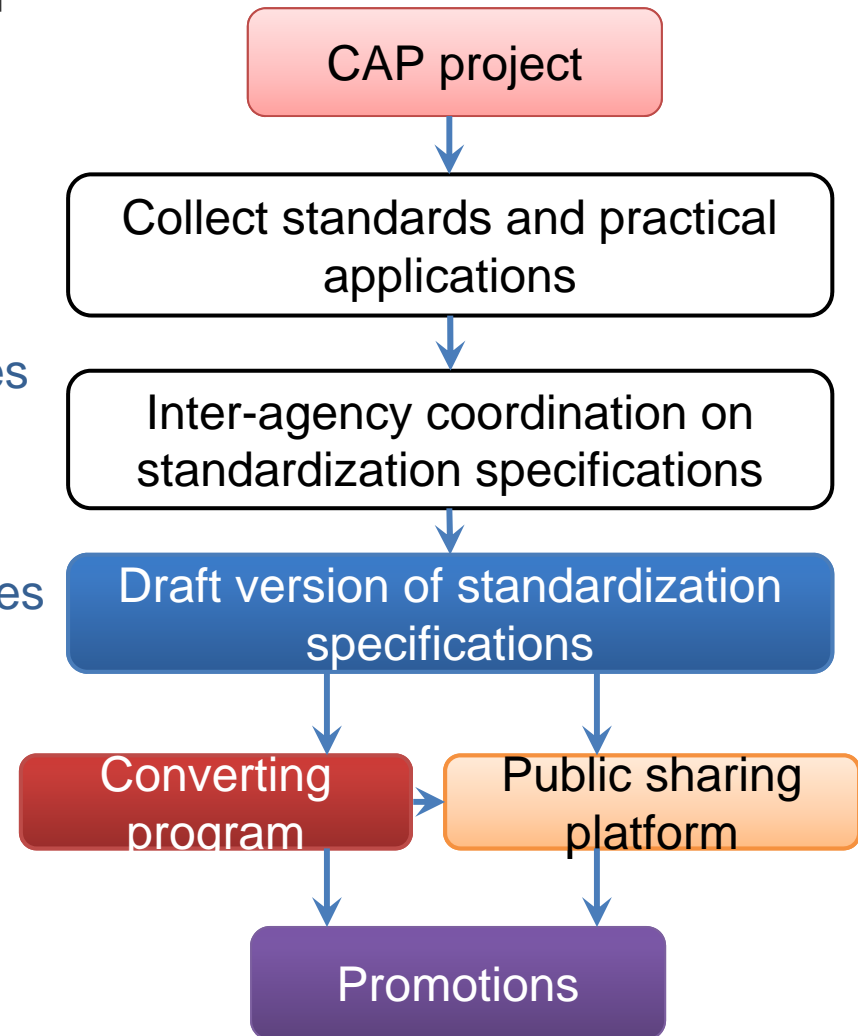
CMSP : Commercial Mobile Service Provider

Development of CAP in Taiwan

Development of CAP since 2013



- | Develop national standards of “Common Alerting Protocol”
 - ◆ Encoding specifications
 - ◆ Location-based warning
- | Develop integrated services
 - ◆ Collect disaster information from agencies and issue alerts through one open data platform
 - ◆ Provide various data transmission services
- | Promote adoption of standardized alert information
 - ◆ Encourage industry, government and academia value-added application
 - ◆ Host CAP APPs contest
 - ◆ Organize CAP conference



Common Alerting Protocol- Taiwan Profile

- | Reference international alert standard
 - ◆ OASIS's CAP(Common Alerting Protocol) ver. 1.2
 - ◆ ITU-T X.1303 “Common Alerting Protocol”

- | Develop relevant parameters according to our nation
 - ◆ Taiwan's disaster event category
 - ◆ Taiwan's geo code
 - ◆ Alert issue agency code
 - ◆ Other additional parameters

Application of CAP

Open Data Platform for Disaster Information (NCDR CAP SYSTEM)



即時資料

即時資料之顯示時間為資料更新時間

中央氣象局		
颱風路徑及預報-颱風消息(KMZ)	2014/05/13 17:02	Meta data
颱風侵襲機率(KMZ)	2014/05/13 17:02	Meta data
颱風暴潮預報(KML)		Meta data
颱風暴潮觀測(KMZ)	2014/05/01 07:31	Meta data
雨量站觀測(KML)	2014/05/14 14:34	Meta data
雷達回波(PNG)	2014/05/14 14:38	Meta data
雨量觀測-日累積圖(PNG)	2014/05/14 14:36	Meta data
雷達回波-座標定義檔案(pgw)	2013/05/23 16:46	Meta data
雨量觀測-日累積圖-座標定義檔案(pgw)	2013/05/23 16:46	Meta data
水土保持局		
彰化縣土石流警戒(含疏散避難路線圖&避難處所)(kmz)	2013/10/07 05:01	Meta data
彰化縣土石流警戒(kmz)	2013/10/07 05:01	Meta data
嘉義縣土石流警戒(含疏散避難路線圖&避難處所)(kmz)	2013/10/07 05:01	Meta data
嘉義縣土石流警戒(kmz)	2013/10/07 05:01	Meta data
新竹縣土石流警戒(含疏散避難路線圖&避難處所)(kmz)	2013/10/07 05:01	Meta data

Combine 16 kinds of alerts from DGPA, CWB, SWCB, WRA, THB, TRA, THSRC

Released a total of 13 kinds of real-time map layers

Provided CAP documents and tools

CAP on the development of documents and software tools



共通示警協議相關資料

CAP Taiwan Profile	文件下載
CAP資料說明	文件下載

各類示警資料說明

 土石流警戒說明	文件下載
 水庫洩洪警戒說明	文件下載
 地震警報說明	文件下載
 河川水位警戒說明	文件下載
 淹水警戒說明	文件下載
 道路封閉通知說明	文件下載
 豪大雨特報說明	文件下載
 颱風警報說明	文件下載

行政區代碼對應座標資料

縣市	文件下載
鄉鎮區	文件下載

Documentation includes:

- CAP Profile
- Information on all kinds of warning
- Drawing warning map with administrative code requires spatial coordinate data

CAP Free Tools



ATOM feed

所有示警(一般訂閱) 生效中的示警(適合web引用)

示警類型

- 颶風(中央氣象局)
- 地震(中央氣象局)
- 海嘯(中央氣象局)
- 潭水(水利署)
- 土石流(水土保持局)
- 降雨(中央氣象局)
- 河川高水位(水利署)
- 水庫放流(水利署)
- 道路封閉(公路總局)
- 鐵路事故(台灣高速鐵路股份有限公司)
- 停班停課(人事行政處)
- 鐵路事故(臺灣鐵路管理局)
- 防空警報(民防指揮管制所)
- 雷雨(中央氣象局)
- 傳染病(疾病管制署)
- 國際旅遊疫情(疾病管制署)

道路封閉

高雄市 桃源區 台20線97K+000~102K+000 · 因 more...

2016-03-14,12:22 | 交通部公路總局

300 X 100

道路封閉

2016-03-14,12:22

高雄市 桃源區 台20線97K+000

180 X 110

道路封閉

2016-03-14,12:22

交通部公路總局

高雄市 桃源區 台20線97K+000~102K+000, 因 便道沖毀災害封閉 · 災害發生時間: 2016/3/14 下午 12:22:00; 預計搶通時間: 2016/3/24 下午 12:00:00

...more

180 X 350

道路封閉

2016-03-14,12:22 | 交通部公路總局

高雄市 桃源區 台20線97K+000~102K+000, 因 便道沖毀災害封閉 · 災害發生時間: 2016/3/14 下午 12:22:00; 預計搶通時間: 2016/3/24 下午 12:00:00

詳細資料

300 X 250

道路封閉

2016-03-14,12:22

高雄市 桃源區 台20線97K+000~102K+000, 因 便道沖毀災害封閉 · 災害...

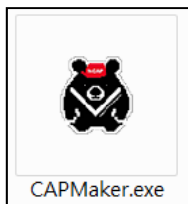
詳細資料

180 X 155

Windows版本 軟體工具箱下載 文件下載

iOS版本 軟體工具箱下載 文件下載

Android版本 軟體工具箱下載 文件下載



CAP產生器 (v0.1)

ALERT

Identifier: 示警代碼_201606093149 msgType: Alert

sender: 示警發送者代碼 scope: Public

sent: 2016/ 6/23 references: 輸入

status: Actual

INFO

category: Infra sendername: 發送者名稱

event: 事件類型名稱 headline: 事件標題

eventcode: 事件代碼 description: 描述事件內容

urgency: Immediate web: 與該事件中額外訊息之網址

severity: Extreme

certainty: Observed

effective: 2016/ 6/23 expires: 2016/ 6/23

AREA

areadesc: 示警區域描述

Circle: 14.20331,121.4892,5.0

Polygon: 10.47,120.14,98.34,-119.95,98.52,-119.74,98.62,-119.89,98.47,-120.14

儲存檔案

AtomFeed下載檔案

Atom選擇 儲存位置

填入AtomFeed網址 ↓ 顯示示警

https://alerts.ncdr.nat.gov.tw/Rss/AtomFeed.ashx G:\CAP_所有示警 選擇

列出檔案 全部下載 自動監控 離開

共有94個檔案

CWB-EQ105089-2016-0804-001643.cap

CWB-EQ105089-2016-0804-001643.cap

CWB-EQ105089-2016-0804-001643.cap

hifows_extremely-rain_201608032000.cap

hifows_extremely-rain_201608032000.cap

WRA_FloodWarn_201608031750.cap

WRA_FloodWarn_201608031750.cap

hifows_extremely-rain_201608031714.cap

hifows_extremely-rain_201608031714.cap

hifows_extremely-rain_201608031609.cap

hifows_extremely-rain_201608022158.cap

WRA_FloodWarn_201608021940.cap

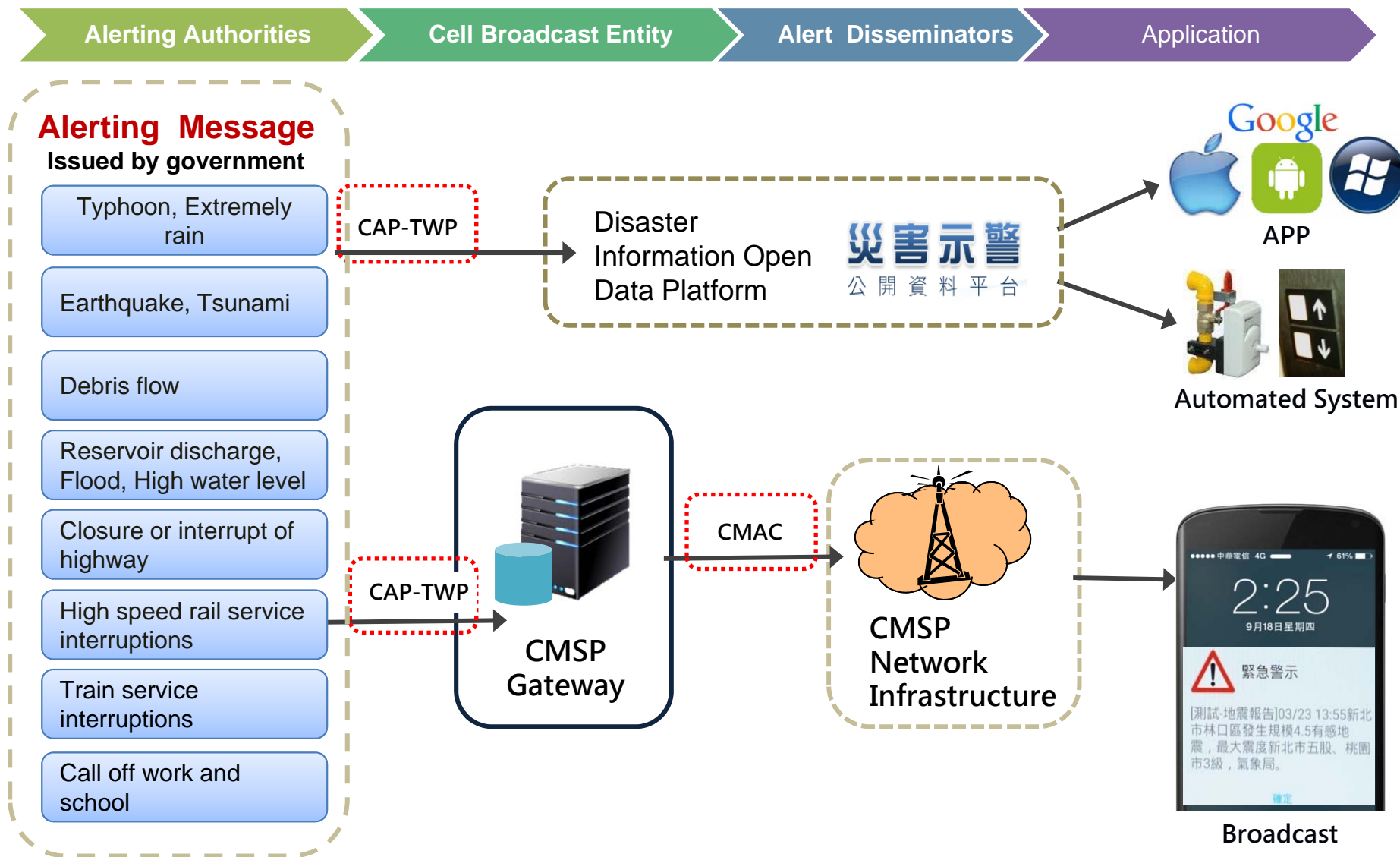
WRA_FloodWarn_201608021920.cap

WRA_FloodWarn_201608021920.cap

示警平台下載cap專用..

Copyright. 示警平台下載cap專用..

Add the CBS Channel



Cooperate with



- | **Executive Office of Disaster Management :**
 - ◆ Planning and supervision of the overall plan
- | **National Fire Agency :**
 - ◆ Integrating CBS systems into the information service platform
- | **Government Department :**
 - ◆ Providing alerts message in their expertise
- | **National Communications Commission :**
 - ◆ Amendments telecommunications-related regulations
- | **NCDR :**
 - ◆ Development of unified alerts messaging format gateways
 - ◆ Building the hardware and software to provide competent authority used the unified push platform

Automatic broadcasting

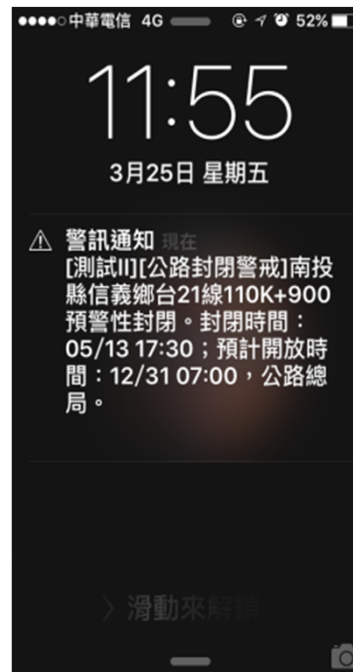


- | Finished automatic **ten** alert warning messages for CBS since March ,2016
 - ◆ CWB(earthquake early warning, earthquake report, thunderstorm)
 - ◆ DGH(road closure)
 - ◆ WRA(reservoir warn)
 - ◆ SWCB(debris flow)
 - ◆ CDC(epidemic diseases)
 - ◆ DGPA(workplace and school closure)
 - ◆ CDCC(air raid alert)

CBS(Cell Broadcast Service)



- Taiwan's 5 major telecommunication companies have successfully received and sent alerts to the public.
- 90% of 4G mobile phones on the market can receive messages from channel 4370, and can immediately send alerts with vibration
- In May(2016), many relevant departments have successfully received and sent the alerts to the public.



Presidential Alert-4370(Chinese)



Current Practices

CAP implementations nowadays



User member over **240**

universities and colleges, governments departments, the military, media companies, telecommunications companies, Google, APP companies

Atom feeds have **320 million** views

The views in 2015 was 5 times more than 2014



個人行動助理
Google Now



村里生活圈
Village APP



軟體防災隨身包
Disaster image APP

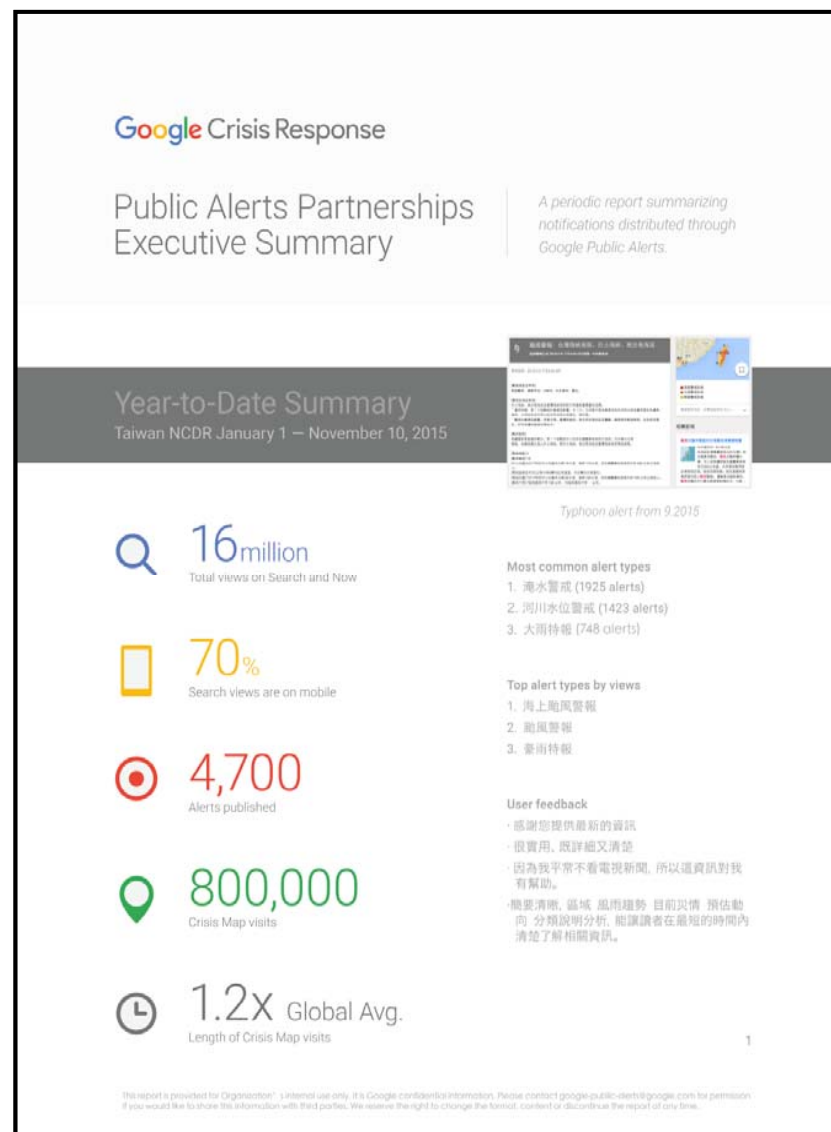


Google Performance Reports in 2015

- **2013 year**
–1,30 million
- **2014 year**
–1,200 million
- **2015 year**
–**16,000 million**

• Top alert types by views

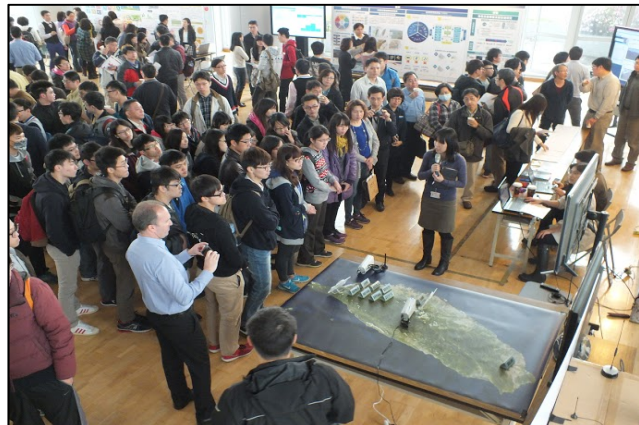
1. typhoon
2. Earthquake
3. Extremely rain



Promotions active



- **NCDR CAP presentation 2015**



- **Secutech international Exhibition and Conference in Taipei 2016**



- **Government open data conference 2016**



- **Taiwan NEWS**



Future Prospects



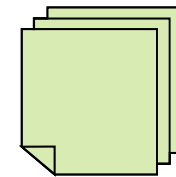
- To promote IoT(Internet of things) commercial applications



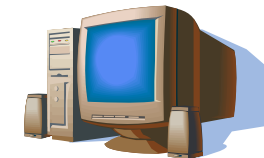
- Convert business mobile communication device standard to national standard



- Submit CAP-TWP to international standard



- Keep upgrading and improving the Open Data Platform



- Actively promote CAP standard and provide trainings to government departments



Q & A

Thank You!