

# CAP Implementation Workshop 2017

## WMO Global Multi-hazard Alert System

**WWIS & SWIC as platforms to disseminate  
weather warnings in CAP**



**WMO OMM**

World Meteorological Organization  
Organisation météorologique mondiale

20-21 Sep 2017

WEATHER CLIMATE WATER  
TEMPS CLIMAT EAU

# WMO GLOBAL MULTI-HAZARD ALERT SYSTEM (GMAS)

- Decision 3.2(1)/1 (EC-69) on GMAS
- Vision
  - Recognized globally by decision makers as **authoritative warnings and information** related to high-impact weather, water, ocean and climate events
- Rational
  - Sendai framework – NMHSs and WMO agreed to do more to enhance services, strengthen regional and global collaboration to support Multi-Hazard Early Warning System (MHEWS)
  - To make warning information from all countries more easily available for decision makers



# **WMO GLOBAL MULTI-HAZARD ALERT SYSTEM (GMAS)**

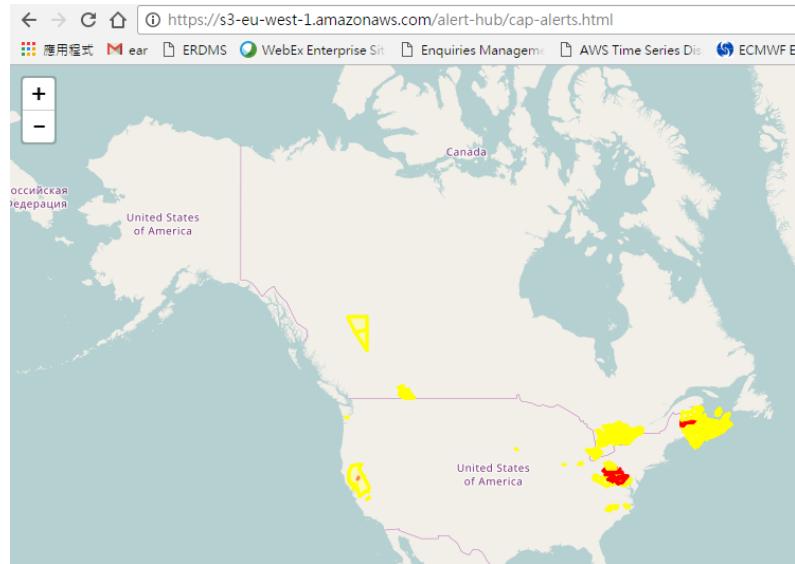
- Rational (Cont'd)

- Share vital lessons learnt by NMHSs in delivering vital multi-hazard services with global DRR community
- Strengthen NMHSs as official authoritative source
- Ensure global community receives the multi-hazard information from authoritative source
- Ensure complex hydrometeorological language is translated into information which can be “actioned” by decision makers

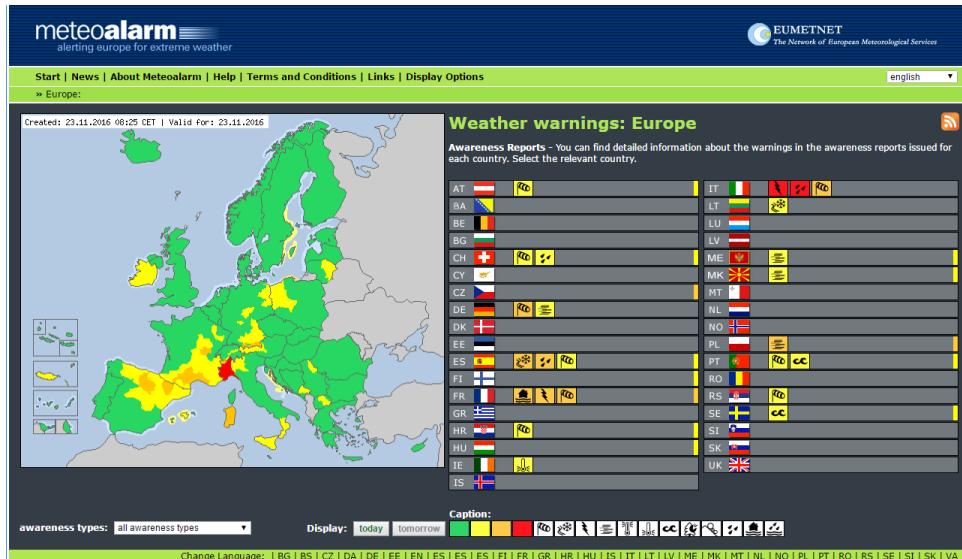


# WMO ALERT HUB

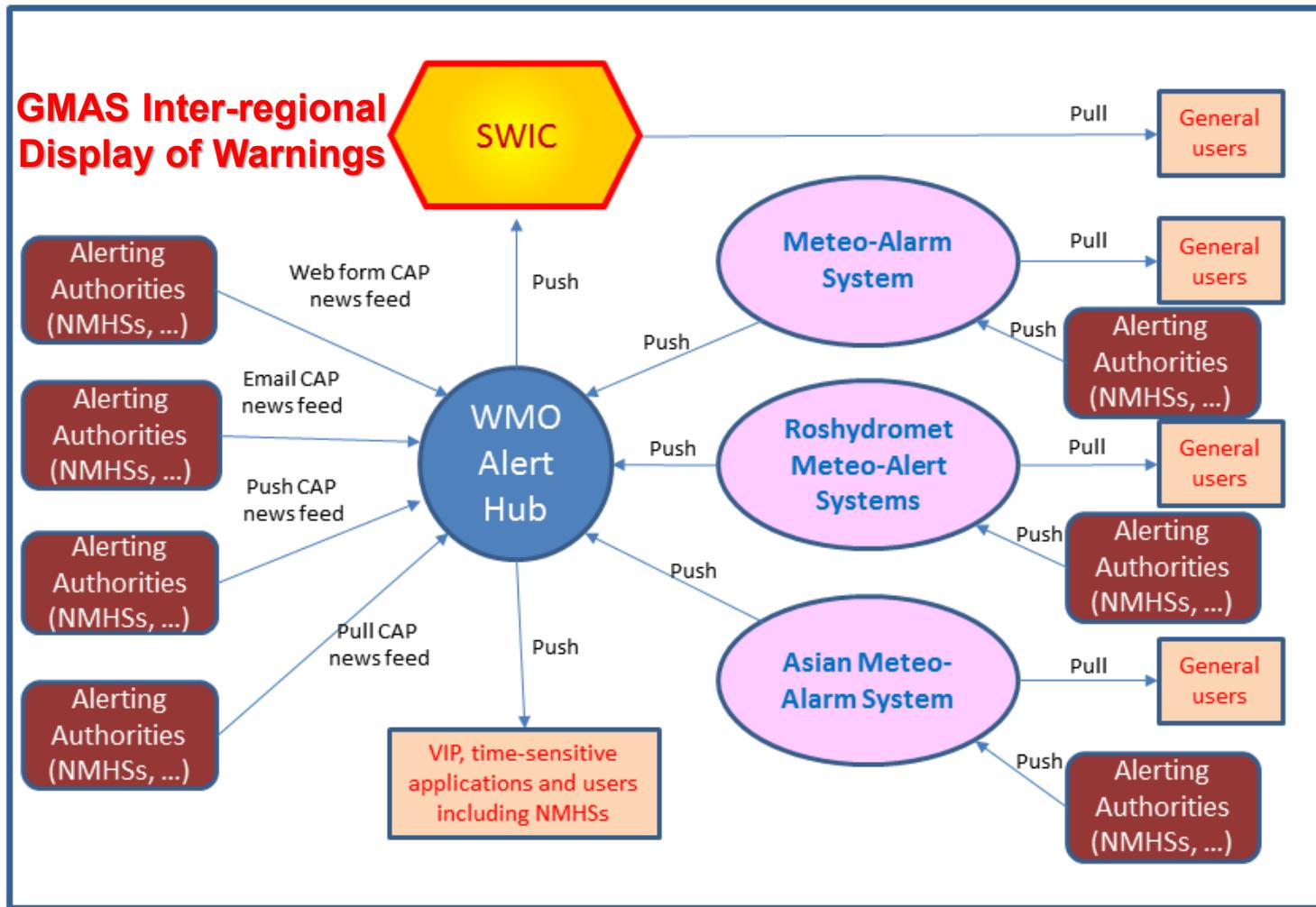
- WMO working with NOAA to develop an alert hub for free service to all alerts from Members (*Partners: Open Commons Consortium, Amazon Web Services, IBM/TWC, Hong Kong Observatory, Honeycomb Networks*)
- Hub to provide one-stop platform for alerts issued by authorized agencies/institutions
- Prototypes developed



## Other WMO Systems featuring Warnings



# AN INITIAL IDEA

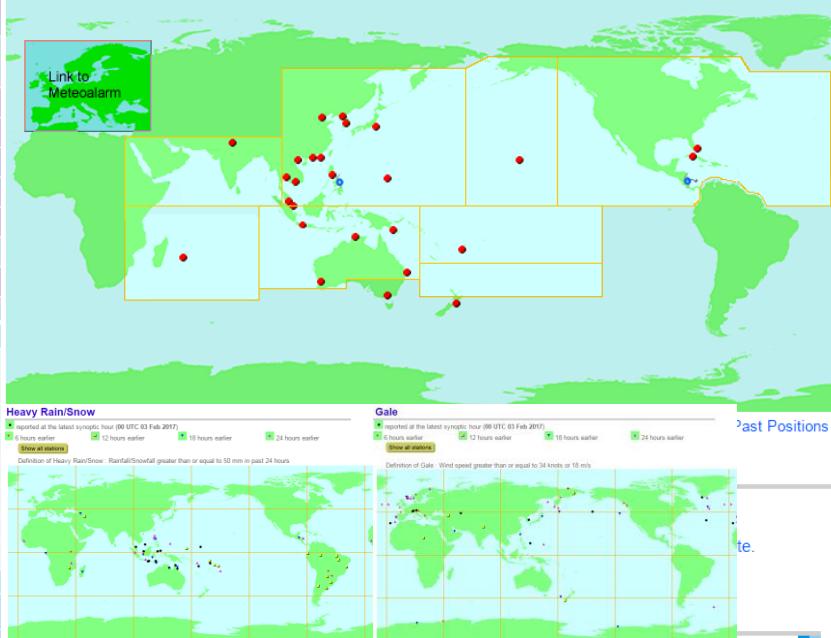


# SEVERE WEATHER INFORMATION CENTRE (SWIC)



## Severe Weather Information Centre

Official Observations. Official Warnings.



- Centralized platform to provide **official authoritative** warnings and information issued by NMHSs
- Contains advisories issued by RSMCs
- Features warnings on tropical cyclones and worldwide information on severe weather

## Challenges

- Not all hazards covered
- Inconsistent content/format
- **Proliferation of warning websites from other sectors**



# ENABLING CAP IN SWIC (PROTOTYPE)

## COMMON PLATFORM TO COLLATE, DISPLAY & SHARE

## WARNINGS IN CAP FORMAT ISSUED BY NMHSs

### Global View



Date (UTC)	Event	Headline
2017-08-10 16:38:00	Severe Thunderstorm Warning	Severe Thunderstorm Warning issued August 10 at 16:39PM PDT until August 10 at 17:15PM PDT by NWS Portland
2017-08-10 15:07:00	11009	北半球氣象災害警報(聯合颱風警報中心)
2017-08-10 14:59:00	暴雨警報	暴雨警報 - 低地
2017-08-10 23:00:00	Special Weather Statement	Special Weather Statement issued August 10 at 23:39PM EDT by NWS Birmingham
2017-08-12 22:59:00	Flash Flood Warning	Flash Flood Warning issued August 12 at 22:59AM MST until August 13 at 23:15PM MST by NWS P
2017-08-12 22:57:27	11014	北半球氣象災害警報(聯合颱風警報中心)
2017-08-17 01:21:00	大雨注意報	大雨注意報 - 表現暴雨
2017-08-10 10:20:00	暴雨警報	暴雨警報 - 低地

Date (UTC)	Name	Category	Region
2017-07-28 06:00	NESAT	Typhoon	Western North Pacific Ocean and South China Sea
2017-07-28 06:00	NORU	Typhoon	Western North Pacific Ocean and South China Sea
2017-07-28 03:00	HILARY	Tropical Storm	Caribbean Sea, Gulf of Mexico, North Atlantic and eastern North Pacific Oceans
2017-07-28 03:00	IRWIN	Tropical Storm	Caribbean Sea, Gulf of Mexico, North Atlantic and eastern North Pacific Oceans

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### Regional View



Date (UTC)	Name	Category	Region
2017-08-10 15:07:00	11009	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:59:00	暴雨警報	暴雨警報 - 低地	
2017-08-10 22:27:27	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 12:15:00	大雨注意報	大雨注意報 - 表現暴雨	
2017-08-10 15:20:00	暴雨警報	暴雨警報 - 表現暴雨	
2017-08-10 15:00:00	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:53:11	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:49:26	11014	竹山縣豪雨化為地震黃色警報	

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### National View



Date (UTC)	Name	Category	Region
2017-08-10 15:07:00	11009	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:59:00	暴雨警報	暴雨警報 - 低地	
2017-08-10 12:15:00	大雨注意報	大雨注意報 - 表現暴雨	
2017-08-10 15:20:00	暴雨警報	暴雨警報 - 表現暴雨	
2017-08-10 15:00:00	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:53:11	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:49:26	11014	竹山縣豪雨化為地震黃色警報	
2017-08-10 12:15:00	11015	徑流警告	臺灣
2017-08-10 15:20:00	11015	徑流警告	臺灣
2017-08-10 15:00:00	11014	徑流警告	臺灣
2017-08-10 14:53:11	11014	徑流警告	臺灣
2017-08-10 14:49:26	11014	竹山縣豪雨化為地震黃色警報	臺灣

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### Tropical Cyclone



Date (UTC)	Name	Category	Region
2017-08-10 16:38:00	NORU	Typhoon	Western North Pacific Ocean and South China Sea
2017-08-10 15:07:00	11009	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:59:00	暴雨警報	暴雨警報 - 低地	
2017-08-10 12:15:00	大雨注意報	大雨注意報 - 表現暴雨	
2017-08-10 15:20:00	暴雨警報	暴雨警報 - 表現暴雨	
2017-08-10 15:00:00	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:53:11	11014	北半球氣象災害警報(聯合颱風警報中心)	
2017-08-10 14:49:26	11014	竹山縣豪雨化為地震黃色警報	臺灣
2017-08-10 12:15:00	11015	徑流警告	臺灣
2017-08-10 15:20:00	11015	徑流警告	臺灣
2017-08-10 15:00:00	11014	徑流警告	臺灣
2017-08-10 14:53:11	11014	徑流警告	臺灣
2017-08-10 14:49:26	11014	竹山縣豪雨化為地震黃色警報	臺灣

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# ENABLING CAP IN OTHER APPLICATIONS

## E.G. IN WWIS

**World Meteorological Organization**  
Weather - Climate - Water

**World Weather Information Service**  
Official Forecasts

Home | Personalize | What's New | Links | Severe Weather | Cloud Atlas | About | Apps | Support |

Home > North and Central America > United States of America > Miami, Florida

**HURRICANE WARNING REMAINS IN EFFECT.**  
Issued by: National Weather Service

Issued time: 2017-11-21T23:45:00-07:00  
Effective time: 2017-11-21T23:45:00-07:00

**Description**  
STORM SURGE WARNING IS CANCELLED

\*LOCATIONS AFFECTED - Miami - Coral Gables - Kendall - Miami Springs - Hialeah - Miami Lakes - Cutler Ridge

\* WIND - LATEST LOCAL FORECAST: Equivalent Tropical Storm force wind - Peak Wind Forecast: 40-50 mph with gusts to 75 mph - Window for Tropical Storm force winds: until early Monday morning - CURRENT THREAT TO LIFE AND PROPERTY: Moderate - The wind threat has decreased from the previous assessment. - Remain braced against the reasonable threat for strong tropical storm force wind of 58 to 73 mph. - To be safe, efforts should fully focus on protecting life. Properties remain subject to significant wind impacts. - Now is the time to hide from the wind. Failure to adequately shelter may result in injury. Remain sheltered until the hazardous wind subsides. - POTENTIAL IMPACTS: Unfolding - Potential impacts from the main wind event are unfolding.

\* STORM SURGE - No storm surge inundation forecast - CURRENT THREAT TO LIFE AND PROPERTY: None - The storm surge threat has decreased from the previous assessment. - Surf conditions may still be rough with some beach erosion. Stronger than normal rip currents may also be present. - Exercise due safety. - Review your seasonal plan and ensure readiness for the next storm surge event. - REALIZED IMPACTS: Being Assessed - Little to no additional surge impacts expected. Community officials are now assessing the extent of actual surge impacts accordingly.

\* FLOODING RAIN - LATEST LOCAL FORECAST: Flood Watch is in effect - Peak Rainfall Amounts: Additional 10-14 inches, with locally higher amounts - CURRENT THREAT TO LIFE AND PROPERTY: Extreme - The flooding rain threat has remained nearly steady from the previous assessment. - Emergency considerations should include a threat of flooding. - Be safe and remain ready to protect against flooding rain impacts. - If flood related watches and warnings are in effect, heed recommended actions. - POTENTIAL IMPACTS: Devastating to Catastrophic - Extreme rainfall flooding may prompt numerous evacuations and rescues. - Ditches and canals may overwhelmingly overflow their banks in many places with deep moving water. Flood control systems and barriers may become stressed. - Flood waters can enter numerous structures within multiple communities, some structures becoming uninhabitable or washed away. Numerous places where flood waters may cover escape routes with streets, parking lots and underpasses submerged. Driving conditions become very dangerous. Numerous road and bridge closures with some weakened or washed out.

\* TORNADO - LATEST LOCAL FORECAST: Tornado Watch is in effect - Situation is favorable for tornadoes - CURRENT THREAT TO LIFE AND PROPERTY: Moderate - The tornado threat has remained nearly steady from the previous assessment. - Emergency considerations should include a reasonable threat for tornadoes. - Be safe and remain ready to protect against tornado impacts. Stay informed. - Listen for tornado watches and warnings. If a tornado approaches, quickly move to the safest place within your shelter. - POTENTIAL IMPACTS: Significant - The occurrence of scattered tornadoes can hinder the execution of emergency plans during tropical events. - Several places may experience tornado damage with a few spots of considerable damage, power loss, and communications failures. - Locations could realize roofs torn off frame houses, mobile homes demolished, boxcars overturned, large trees snapped or uprooted, vehicles tumbled, and small boats tossed about. Dangerous projectiles can add to the toll.

\* FOR MORE INFORMATION: - <http://www.weather.gov/ml> - [www.miamidade.gov](http://www.miamidade.gov) - For storm information call 3-1-1

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Updated on 13 Jun 2016

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Home > North and Central America > United States of America > Miami, Florida

**New York City** +

**Miami, Florida** +

United States of America

**Hurricane Warning was issued at 7:26PM, 17 October 2017(local time)**

26°C 85%  
ENE 44 km/h

Sun, 10 Sep 2017 3:53 AM (Local Time)

N.B.

**National Weather Service**

**Miami, Florida**  
30-year period

Temperature (°C)

Month Mean Daily Minimum Temperature (°C) Mean Daily Maximum Temperature (°C) Mean Total Rainfall (mm) Mean Number of Rain Days

Month	Mean Daily Minimum Temperature (°C)	Mean Daily Maximum Temperature (°C)	Mean Total Rainfall (mm)	Mean Number of Rain Days
Jan	17.3	23.7	56.1	6.7
Feb	19.2	24.3	59.7	6.0
Mar	-2.8	3.5	92.7	10.4
Apr	-1.7	5.3	78.5	9.2
May	1.8	9.8	110.7	10.9
Jun	7.1	16.2	114.3	11.5
Jul	12.2	21.6	106.4	11.1
Aug	17.6	26.3	112.0	11.2
Sep	20.4	28.9	116.8	10.4
Oct	19.9	28.1	112.8	9.5
Nov	16.0	24.0	108.7	8.7
Dec	10.0	17.7	111.8	8.9

10 Sep 2017

Sunrise 6:31 AM Sunset 7:12 PM

N.B.

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# PLANS

- Upgrade **SWIC** to become an online GIS-enable platform to aggregate, display and share authoritative warnings and alerts in CAP format from WMO Alert Hub and other industry standards
- A example of display platform for the **GMAS**
- Mature WMO Alert Hub aggregating official alerts and warnings from NMHSs and officially Registered Alerting Authorities (RAAs)
- Encourage NMHSs to adopt CAP format for their warnings and disseminate these warnings to WMO Alert Hub and thus **SWIC**
- Enhance **WWIS** to become a online GIS-enable platform for official weather observations, authoritative forecasts and warnings provided by NMHSs around the world
- To implement RA II Pilot Project on **Regional GMAS** (Resolution 5.2/10 (RA II-16))



# Thank you



WORLD  
METEOROLOGICAL  
ORGANIZATION

# REGIONAL GMAS IN ASIA

- RAII-16 approved the pilot project to enhance the capability of meteorological disaster risk reduction (Resolution 5.2/10)
- To establish a regional system, based on the implementation of CAP and the experience in WMO WWIS and SWIC
- To promote experience sharing among NMHSs in RAII in disaster risk reduction
- To organize training courses
- To provide assistance to relevant RAII members to improve operational capability in meteorological risk reduction
- CMA and HKO as co-coordinators



## TARGETS OF RAII PILOT PROJECT

- To develop a prototype of Alert Hub for aggregating CAP alerts issued by NMHSs and an upgraded SWIC website for displaying the CAP alerts with GIS interface by end of 2017
- To develop a prototype website for sharing of advisory products among RAII members by mid-2018.
- To develop plans for training and development of advisory products for RAII members in early 2018

