

An aerial photograph of a town nestled in a valley, partially obscured by thick white clouds. A weather map is overlaid on the bottom half of the image, showing contour lines with values such as 1010, 1015, 1020, 1025, 1030, 1035, and 1040. Wind direction is indicated by arrows, and a low-pressure system is visible in the bottom left corner. The background is a deep blue sky.

CAP support by Meteo France Group

Christine VENZAC (MFI)
Michaël Claudon (Météo-France)

CAP Implementation Workshop
Roma, Sept.23, 2015



METEO FRANCE
Toujours un temps d'avance

Meteo France Group



- ▶ **Meteo France**, the national meteorological service



- ▶ **Meteo France International**,
values our know-how around the world



- ▶ **Météorage**,
provides products and services for lightning risk-reduction
and thunderstorm monitoring



- ▶ **Predict-services**,
supports local communities exposed to flooding risks



- ▶ **Metnext**,
Provides weather-dependency management tools and services to
businesses



- ▶ **Météo France Régie**,
sells advertizing space on electronic or paper publications by
Météo-France



Solutions and experiences from Meteo France International

Christine VENZAC



Meteo France International

➤ Company profile

- ❖ Created in May 2002
- ❖ Staff: 50p (2015)
- ❖ Subsidiary of Météo-France (66,66%)
- ❖ Both **Governmental** and **private** Company



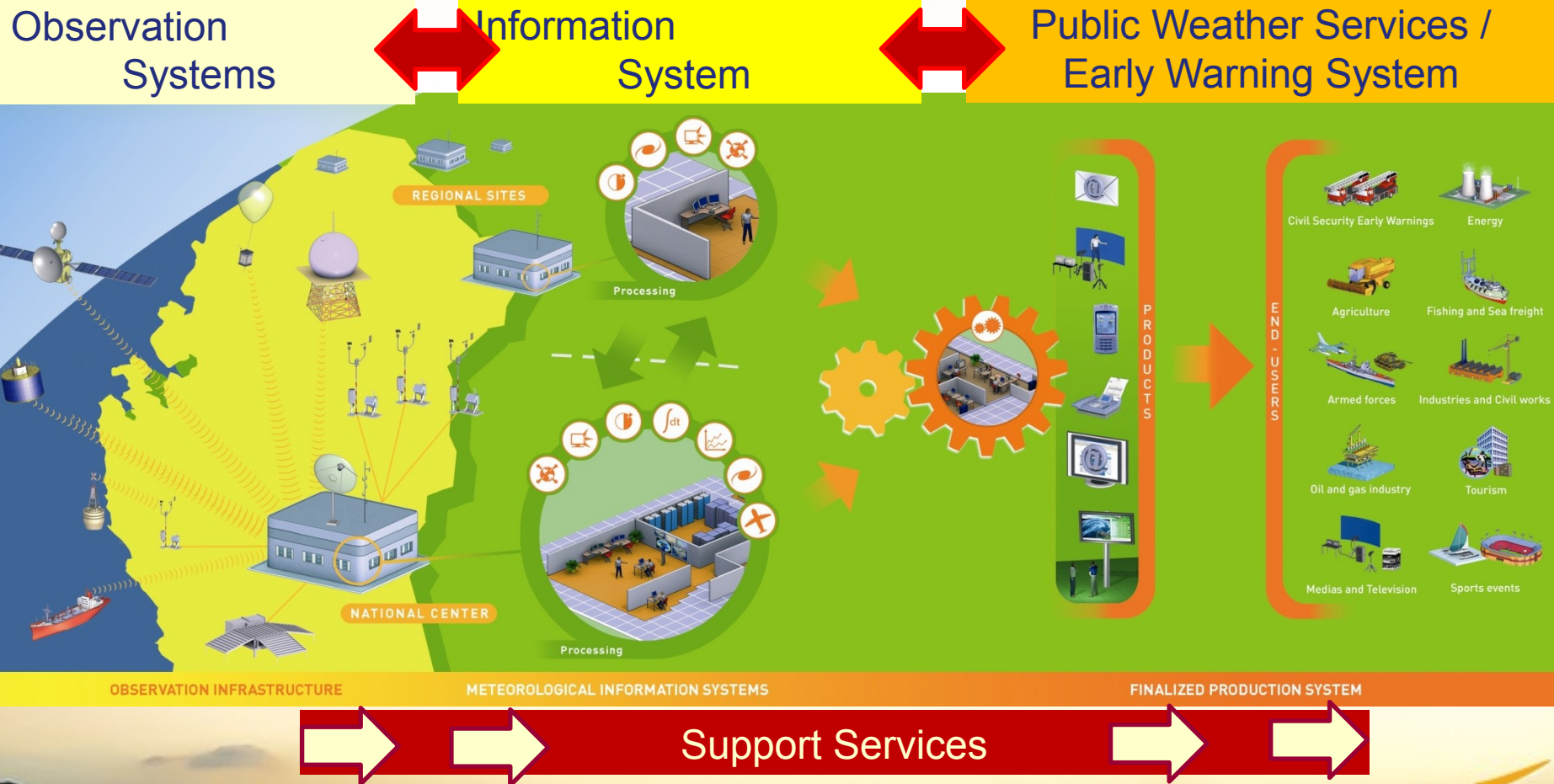
➤ Mission: Design and Implement **Integrated Global Meteorological Projects**

- ❖ **Support National Met Services** on the long run all along their Modernization process, especially with respect of the development of their **service capacity**
- ❖ Respect and enhance **sovereignty** of National Meteorological Hydrological Services (NMHS)
- ❖ Develop a partenarial approach with NMHS to deliver **sustainable projects** with emphasize on capacity building and chagement management.

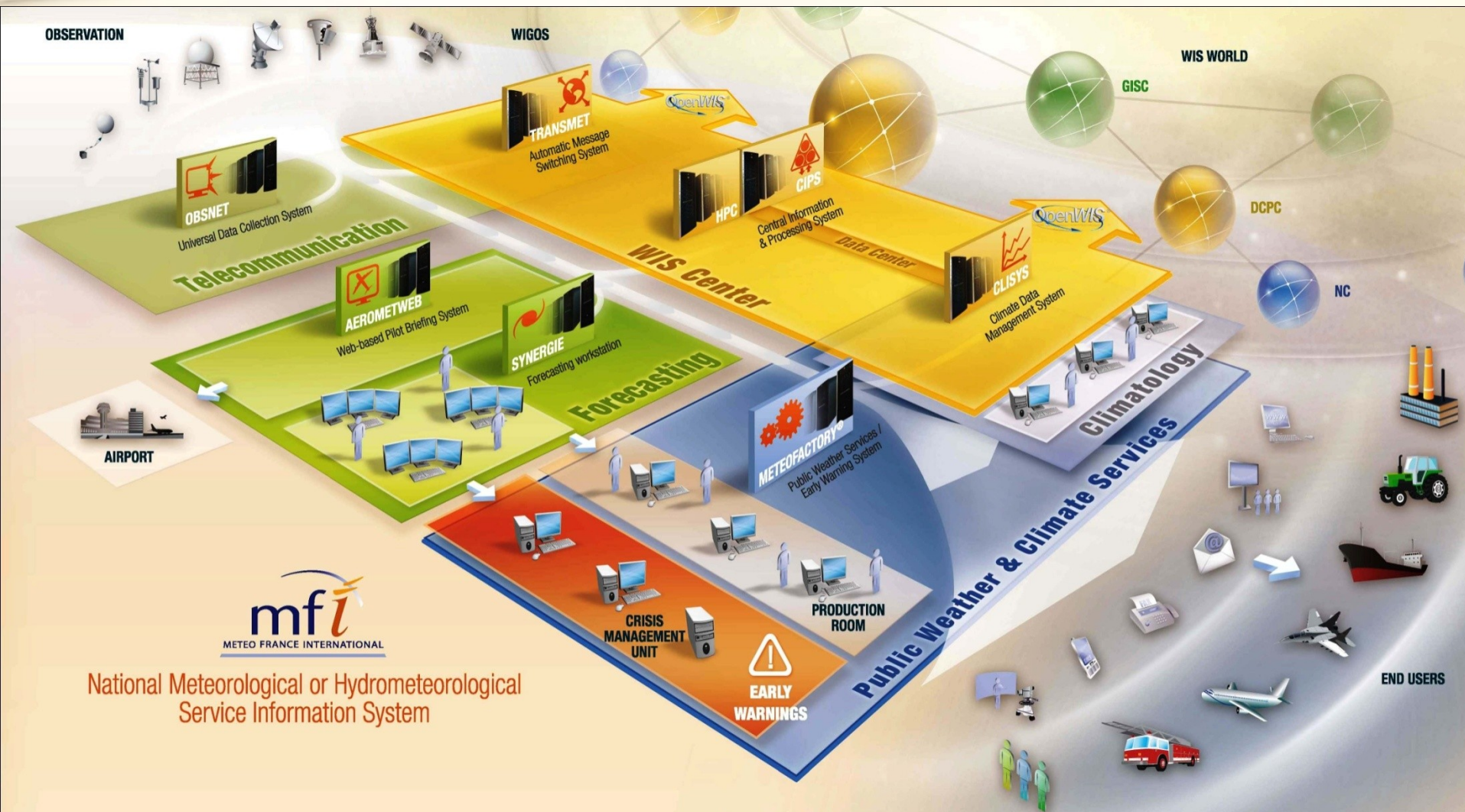
➤ More than 360 projects in 109 countries

Turn key projects in meteorology

Typical project organization / architecture



User oriented, modular, integrated and added value architecture



CAP as a critical part of MFI project design

- Safety of goods and people is the first duty of National Meteorological Services
- Warning to public will be fully efficient if
 - ❖ Timely available
 - ❖ Visible
 - ❖ Understandable
- **CAP is a guarantee** of universal and multichannel delivery of alerts to the public

Turnkey systems and services to comply with CAP protocol

MeteoFactory® : Off-the-shelf MFI system

- ❖ For digital forecasting and warning at district/city level
- ❖ For automatic production of tailored products and warnings
- ❖ Able to generate xml files compliant with CAP syntax
- ❖ Able to disseminate these CAP XML files widely to various stakeholders

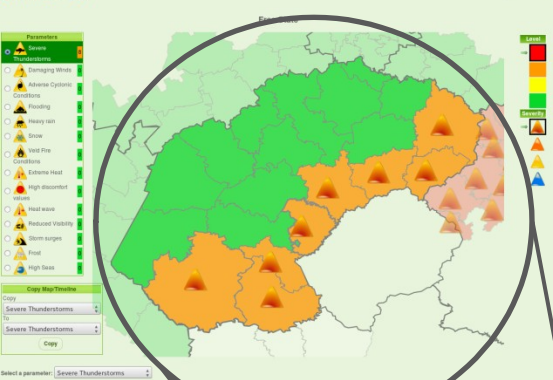


CAP in South Africa (PWS-EWS, 2012-2014)

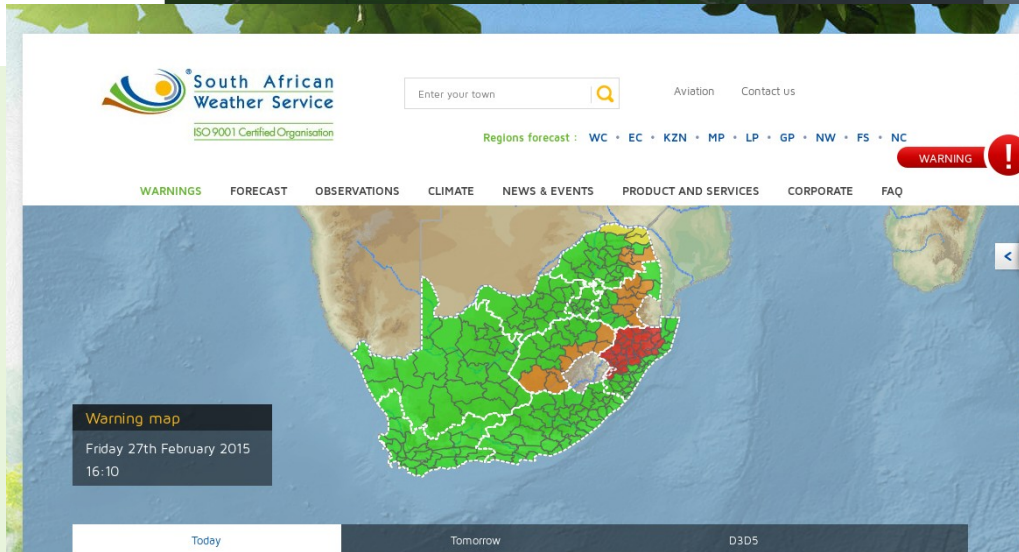
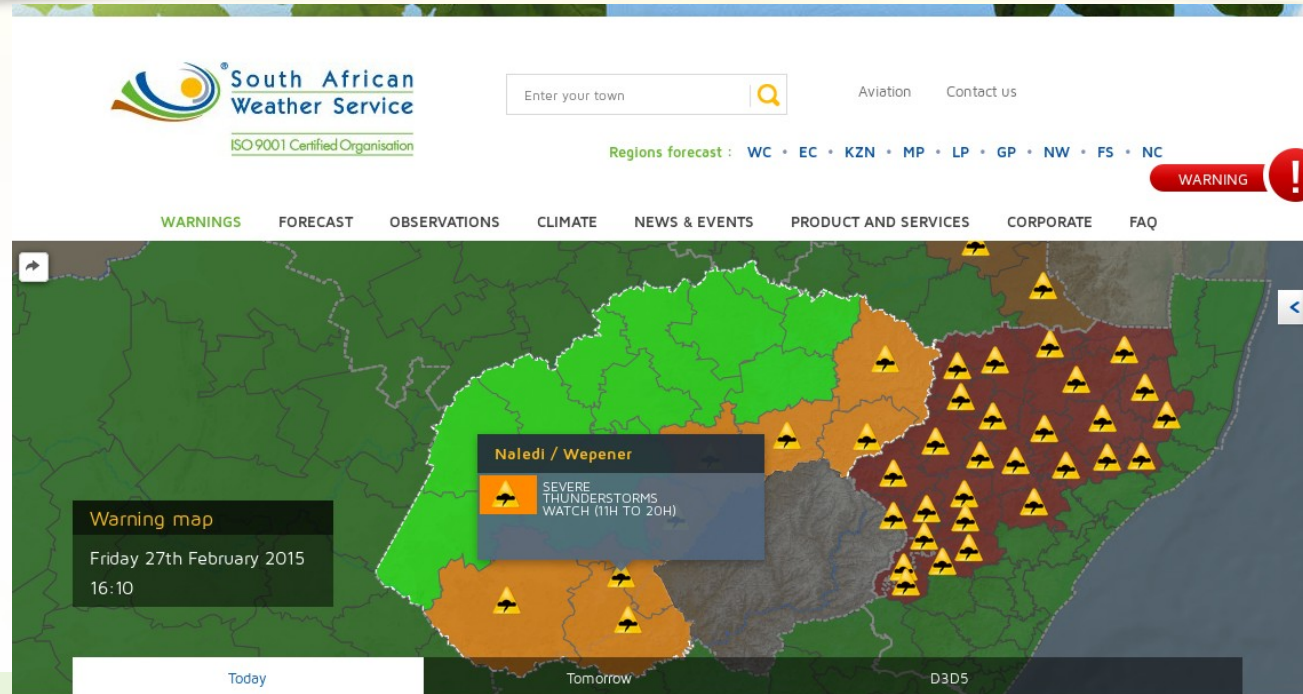
From SAWS forecaster
position (MeteoFactory
system)...

... to website, and more

Expertize Warnings



Expertize Warnings



CAP in South Africa (PWS-EWS, 2012-2014)

Severity

WMO recommendations adapted by the SAWS

	Severe Weather Alert Levels			
	GREEN	YELLOW	AMBER	RED
Alert Category	No alert	Advisory	Watch	Warning
Awareness level for disaster management and public	None expected	Be aware	Be prepared	Take action
Risk	No adverse weather is expected	A risk that adverse weather conditions may occur	Moderate risk that adverse weather conditions will occur	Very high risk, about to happen, or already happening
Impact		A risk of some damage to infrastructure and local disruption, dangerous to people and small communities	Moderate risk of some damage to infrastructure and local disruption, dangerous to people and small communities	High risk of some damage to infrastructure and local disruption, dangerous to people and small communities
Advice		Be alert and follow the latest weather forecasts.	Be vigilant and follow the latest weather forecasts.	Be extra vigilant of dangerous conditions and follow the advice given by authorities.
Typical forecaster confidence of event occurring	Very low <20%	Low >20% Moderate to high >40%	Low >20% Moderate to high >40%	Very high >80%

Probability



Multi-channel dissemination

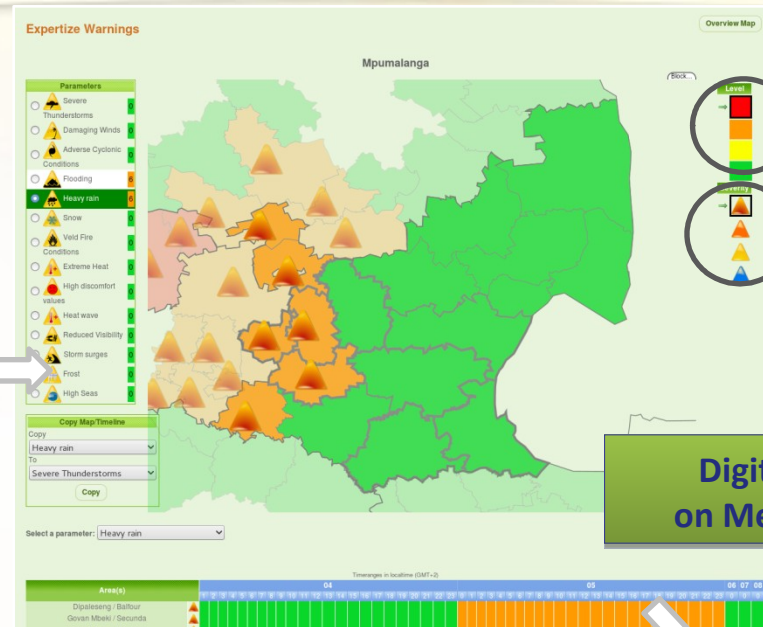
MP - XMLCAP - Heavy Rain

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```

<?xml version="1.0" encoding="UTF-8"?>
<alert>
  <identifier>a756133cb8f5e21db866690fa7b9547</identifier>
  <sender>SAWSMeteoFactorySystem</sender>
  <sent>2015-09-04T13:11:14</sent>
  <status>Actual</status>
  <msgType>No Change</msgType>
  <scope>Restricted</scope>
  <info>
    <senderName>SAWSMpumalangaRegionalOffice</senderName>
    <category>Met</category>
    <event>Heavy rain</event>
    <instruction>
      Listen to radio/television for more updates on the alert. Never drive on a roadway that is covered with water. Do not cross flooded bridges. Avoid low lying areas.
    </instruction>
    <description>
      is expected in places in Ehlanzeni District tonight (Friday) into tomorrow (Saturday) morning.
    </description>
    <language>en_US</language>
    <urgency>Future</urgency>
    <startTime>2015-09-04 22:00+00:00</startTime>
    <severity>Extreme</severity>
    <certainty>Likely</certainty>
    <expires>2015-09-05 21:00+00:00</expires>
    <headline>Heavy rain</headline>
  </info>
</alert>
  
```

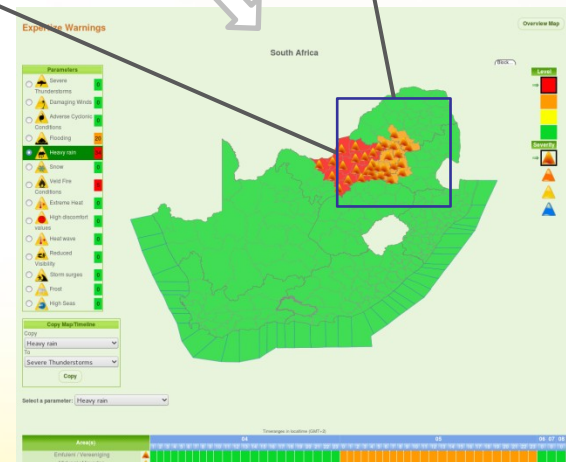
CAP XML generated for Heavy rain



Probability

Severity

Digital warning on MeteoFactory®



CAP in South Africa (PWS-EWS, 2012-2014)

```

MP - XMLCAP - Heavy Rain
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  <headline>Heavy rain</headline>
</alert>
    
```

CAP XML generated for Heavy rain

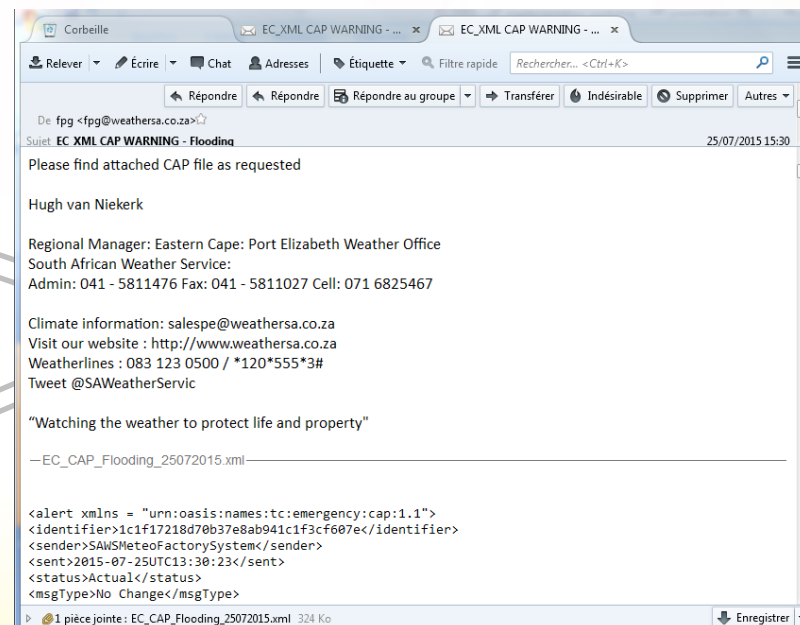
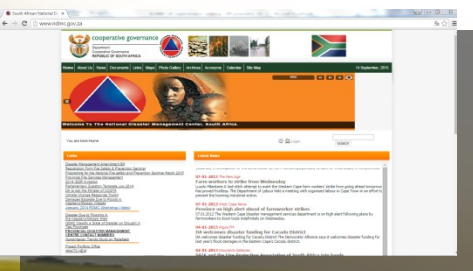
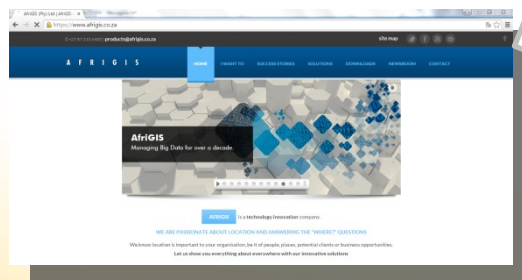
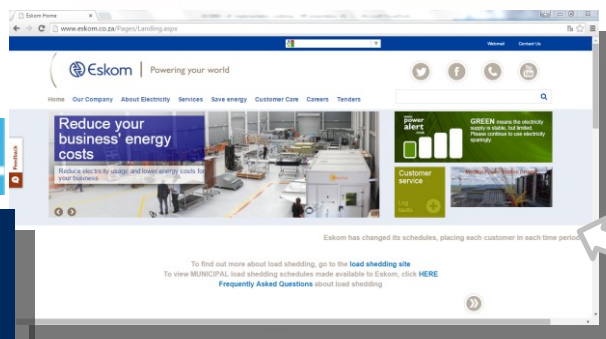


Multi channel dissemination

MEDIA 24

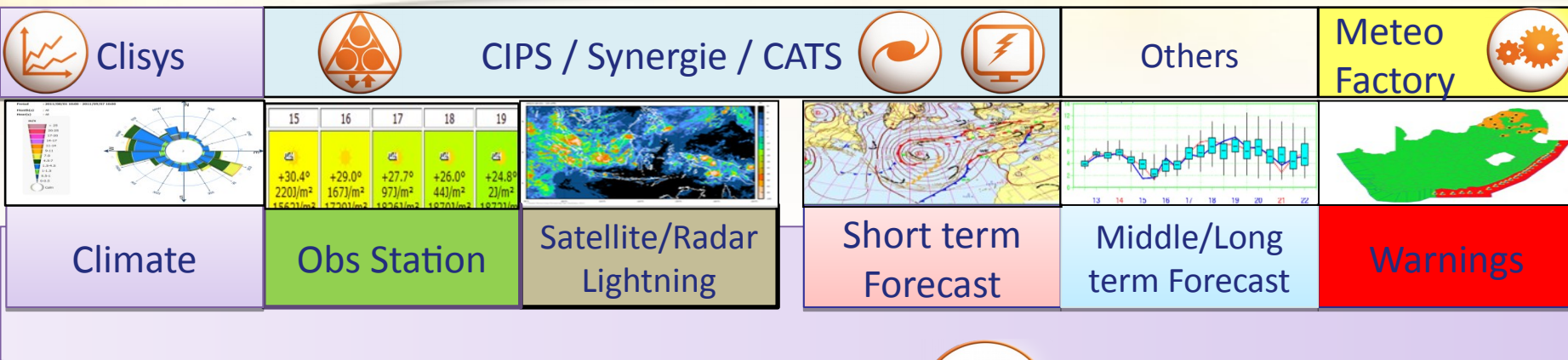
WELCOME TO MEDIA 24
Touching lives through the power of media

More than 60 magazines in our family
Over 90 newspapers in the group
Top 5 magazines in South Africa
6 of the top 10 newspapers in the country



Indonesia (2012-2015):

An integrated project to serve the citizens

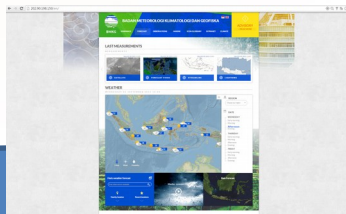
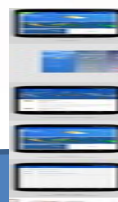
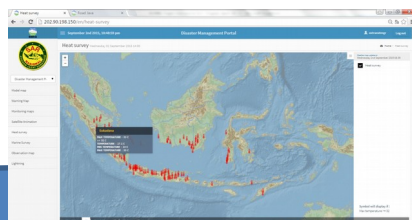


METEOFACORY®



PWS/EWS dissemination

Extranet / Email / Mobile app / SMS / Web / Social Networks / TV / Public screens



Agriculture



Forestry



Fishery



Aviation



Marine

BMKG End users



Oil & Gas



Civil Security



Media

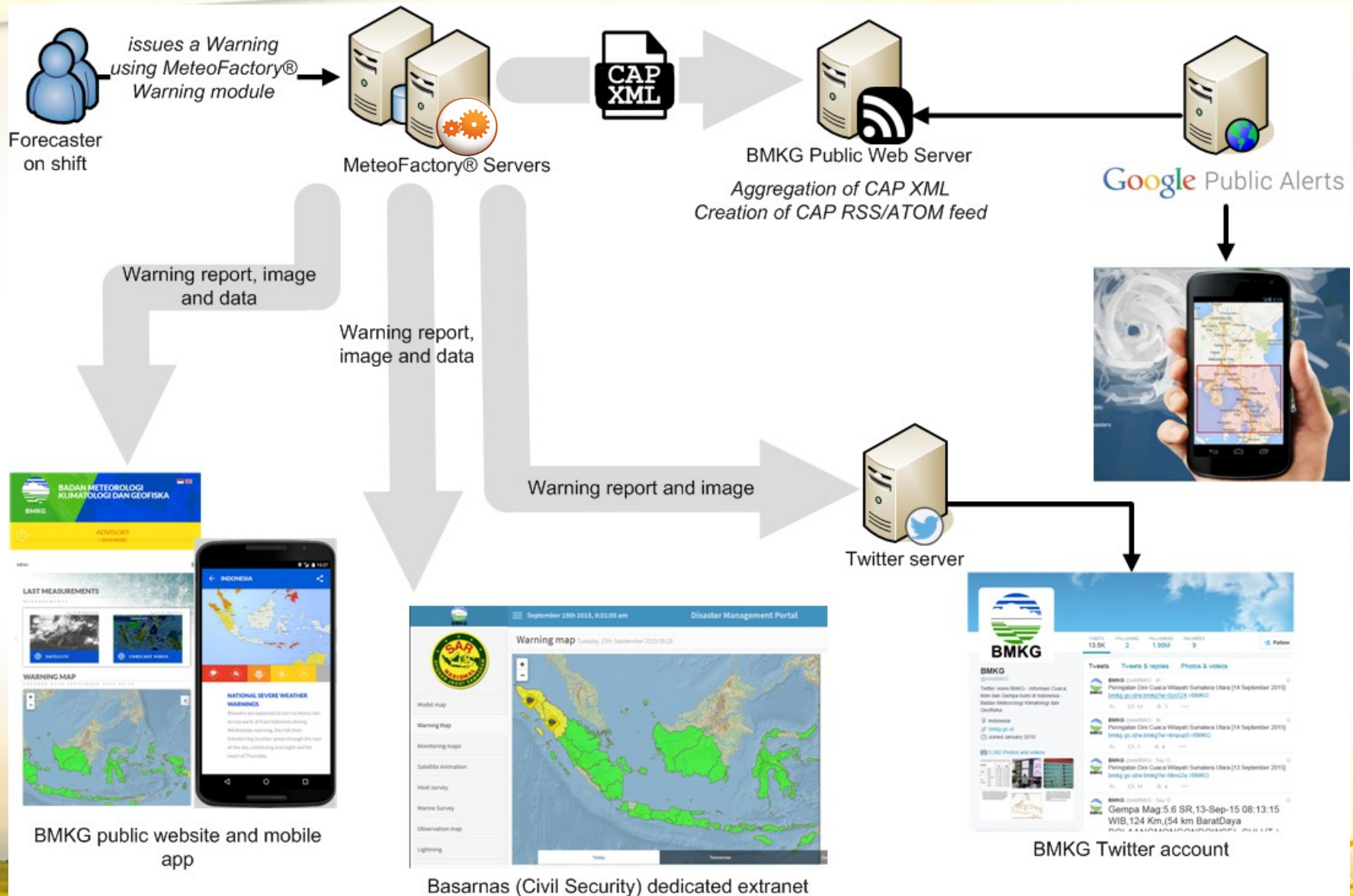


Tourism



With you for weather

Using CAP protocol to publish alerts widely





Meteo France International
your ideal partner for
all meteorological projects

With you for weather

www.mfi.fr



With you for weather

Météo-France vigilance EWS over mainland France : from observation to warning

COLLECTING DATA



Satellites

Balloons

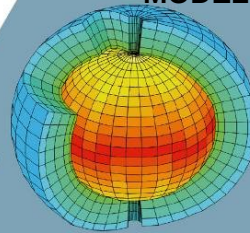
Radars

Buoys

Tide gauges

FORECASTING & EXPERTISE

NUMERICAL
WEATHER
PREDICTION
MODELS

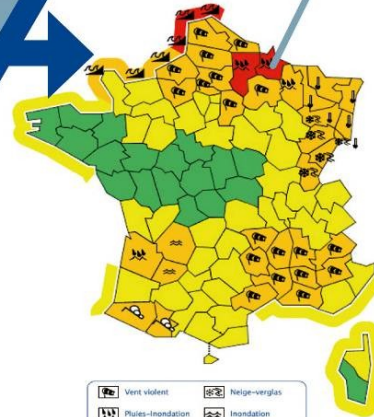


FORECAST
RS



Model output
analyses
Provision of
charts and
bulletins

Bulletins and
associated
recommendations



ISSUE WARNINGS



AUTHORITIES

Civil Safety

- National Central Operations Room
- Prefectures
- Ecology Ministry



MEDIA

**Weather anchors
Newsrooms**



POPULATION

- Website

**SIMULTANEOUS
DISSEMINATION**

- CAP and Twitter
- CAP feed and WMO Information System (WIS)

CAP use in MeteoFrance : weather warning

<http://vigilance.meteofrance.com/>

Vigilance météorologique

La carte est actualisée au moins 2 fois par jour, à 6h et 16h.

Une vigilance absolue s'impose des phénomènes dangereux d'intensité exceptionnelle sont prévus...

Soyez très vigilant, des phénomènes dangereux sont prévus ...

Soyez attentif si vous pratiquez des activités sensibles au risque météorologique ...

Pas de vigilance particulière.



Vent violent



Neige-verglas



Pluie-Inondation



Inondation



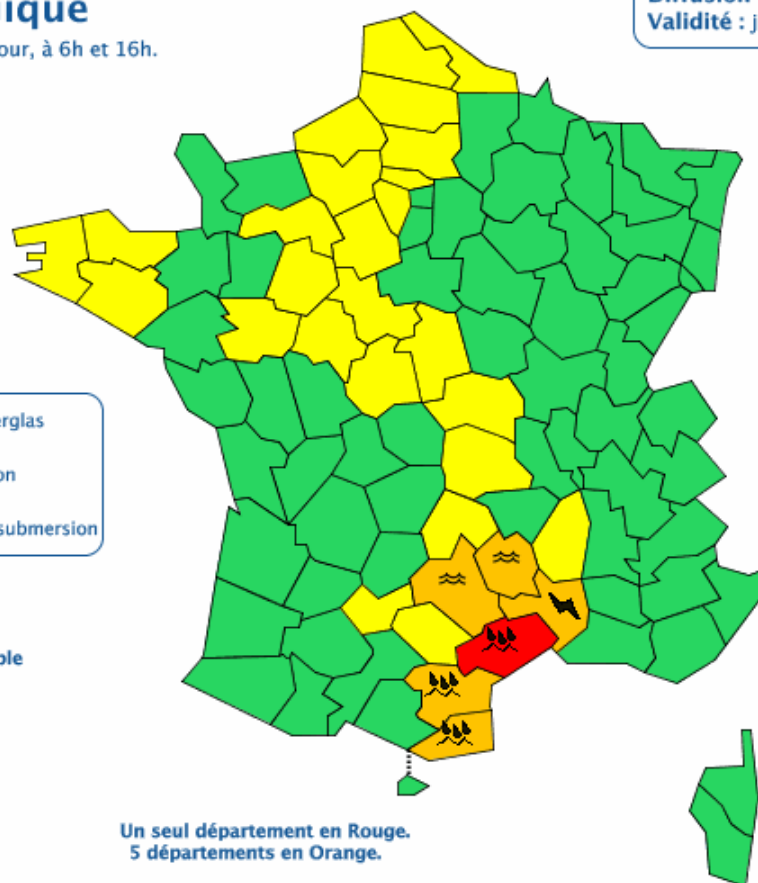
Orages



Vagues-submersion



Les vigilances pluie-inondation et inondation sont élaborées avec le réseau de prévision des crues du Ministère du Développement durable



Un seul département en Rouge.
5 départements en Orange.

Diffusion : le lundi 29 septembre 2014 à 16h10

Validité : jusqu'au mardi 30 septembre 2014 à 16h00

Consultez le [bulletin national](#)

Poursuite d'un épisode pluvio-orageux conséquent conduisant au passage en vigilance rouge de l'Hérault, et orange sur le Gard, l'Aude et les Pyrénées Orientales. Le 34 est aussi en rouge pour le risque de crue.

Cliquez sur la carte pour lire les **bulletins régionaux**

Conseils des pouvoirs publics :

Crues/Rouge/orange – Dans la mesure du possible, restez chez vous ou évitez tout déplacement dans les départements concernés. – S'il vous est absolument indispensable de vous déplacer, soyez très prudents. Respectez, en particulier, les déviations mises en place. – Ne vous engagez en aucun cas, à pied ou en voiture, sur une voie immergée. – Signalez votre départ et votre destination à vos proches. – Pour protéger votre intégrité et votre environnement proche : Orages/Rouge/Orange – Soyez prudents, en particulier dans vos déplacements et vos activités de loisir.



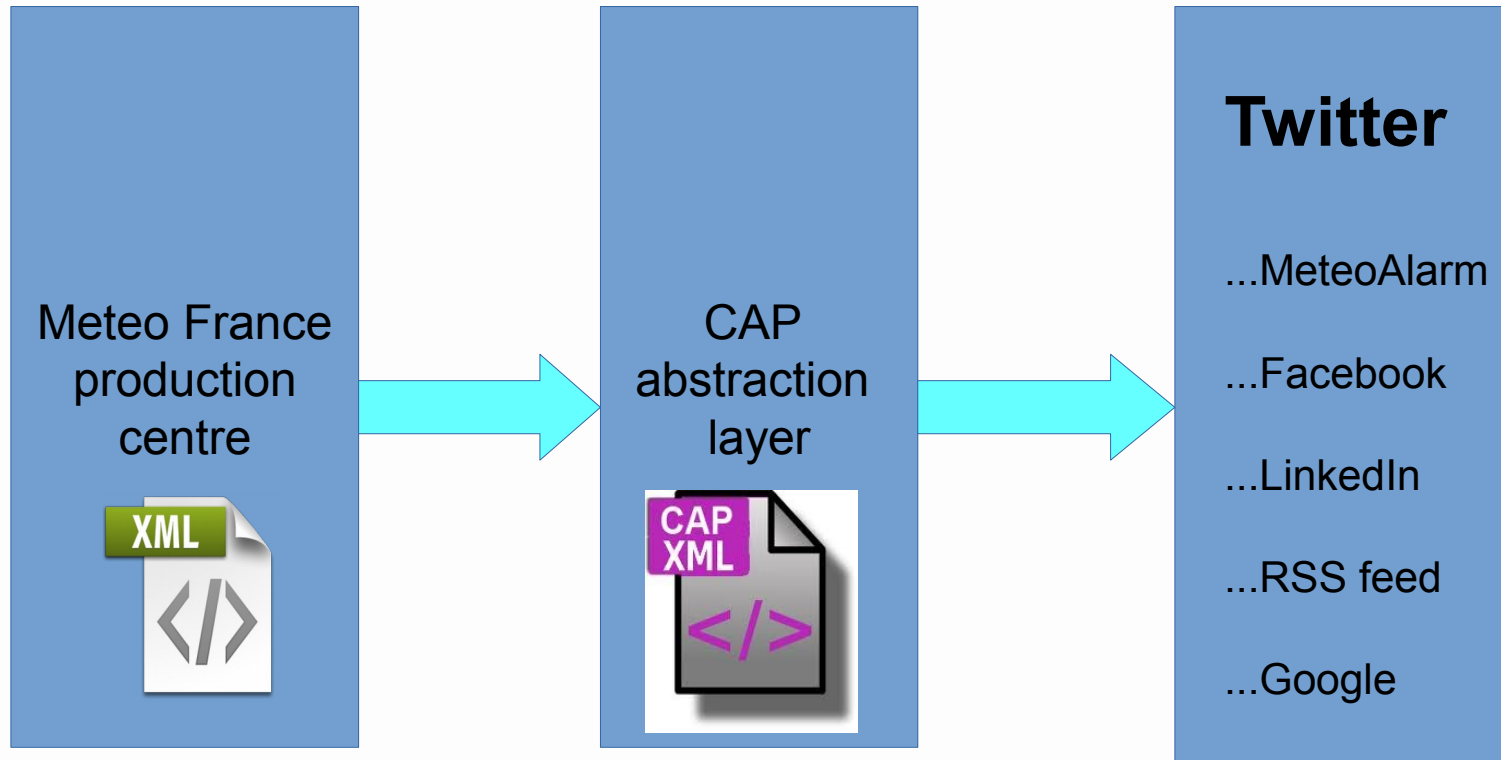
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Toujours un temps d'avance

Copyright Météo-France



METEO FRANCE
Toujours un temps d'avance

CAP use in MeteoFrance : workflow



CAP use in MeteoFrance : message example



```
<?xml version="1.0" encoding="UTF-8"?>
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
```

```
<identifieur>METEO-FRANCE</identifieur>
<sender>vigilance@meteo.fr</sender>
<sent>2015-08-06T14:00:00+02:00</sent>
```

```
<status>Actual</status>
<msgType>Alert</msgType>
<scope>Public</scope>
<info>
<language>fr-FR</language>
<category>Met</category>
```

```
<event>Vigilance</event>
<urgency>Immediate</urgency>
<severity>Moderate</severity>
```

```
<certainty>Likely</certainty>
<expires>2015-08-07T16:00:00+02:00</expires>
<senderName>CENTRE NATIONAL DE PREVISION. METEO-FRANCE TOULOUSE</senderName>
<headline>CARTE DE VIGILANCE METEOROLOGIQUE</headline>
<description>Episode de fortes chaleurs sur le flanc Est de la France, en particulier sur le departement du Rhone qui est en vigilance orange.
</description>
```

```
<instruction>Canicule/Orange
- Passez au moins 3 heures par jour dans un endroit frais.
- Rafrachissez vous, mouillez vous le corps plusieurs fois par jour.
- Buvez fr quemment et abondamment m me sans soif.
- Evitez de sortir aux heures les plus chaudes.
</instruction>
```

```
<web>http://france.meteofrance.com/vigilance/Accueil</web>
```

...

Heat wave
severity and
instruction / advice

CAP use in MeteoFrance : Twitter

**Vigilance Météo**
@VigiMeteoFrance

Compte officiel de la vigilance météorologique (vigilance orange ou rouge). Ce compte est automatique. Nos actualités et nos coulisses sur @meteofrance.

vigilance.meteofrance.com

Inscrit en juillet 2013

TWEETS
501

ABONNÉS
4 782

Tweets

Tweets & réponses

**Vigilance Météo** @VigiMeteoFrance · 3 h
[07/08/2015-08h24] 1 dpt en #vigilance Orange
Toute l'info vigilance.meteofrance.com
↳ ↻ 7 ★ 1 ...

**Vigilance Météo** @VigiMeteoFrance · 3 août
[03/08/2015-16h00] 17 dpts en #vigilance Orange
Toute l'info vigilance.meteofrance.com
↳ ↻ 11 ★ 4 ...

**Vigilance Météo** @VigiMeteoFrance · 3 août
[03/08/2015-10h07] 3 dpts en #vigilance Orange
Toute l'info vigilance.meteofrance.com
↳ ↻ 2 ★ ...

**Vigilance Météo** @VigiMeteoFrance · 3 août
[03/08/2015-06h00] 3 dpts en #vigilance Orange
Toute l'info vigilance.meteofrance.com
↳ ↻ 9 ★ 4 ...

**Vigilance Météo** @VigiMeteoFrance · 24 juil.
[24/07/2015-16h00] 11 dpts en #vigilance Orange
Toute l'info vigilance.meteofrance.com

TWITTER

<https://twitter.com/vigimeteofrance>

1 Tweet

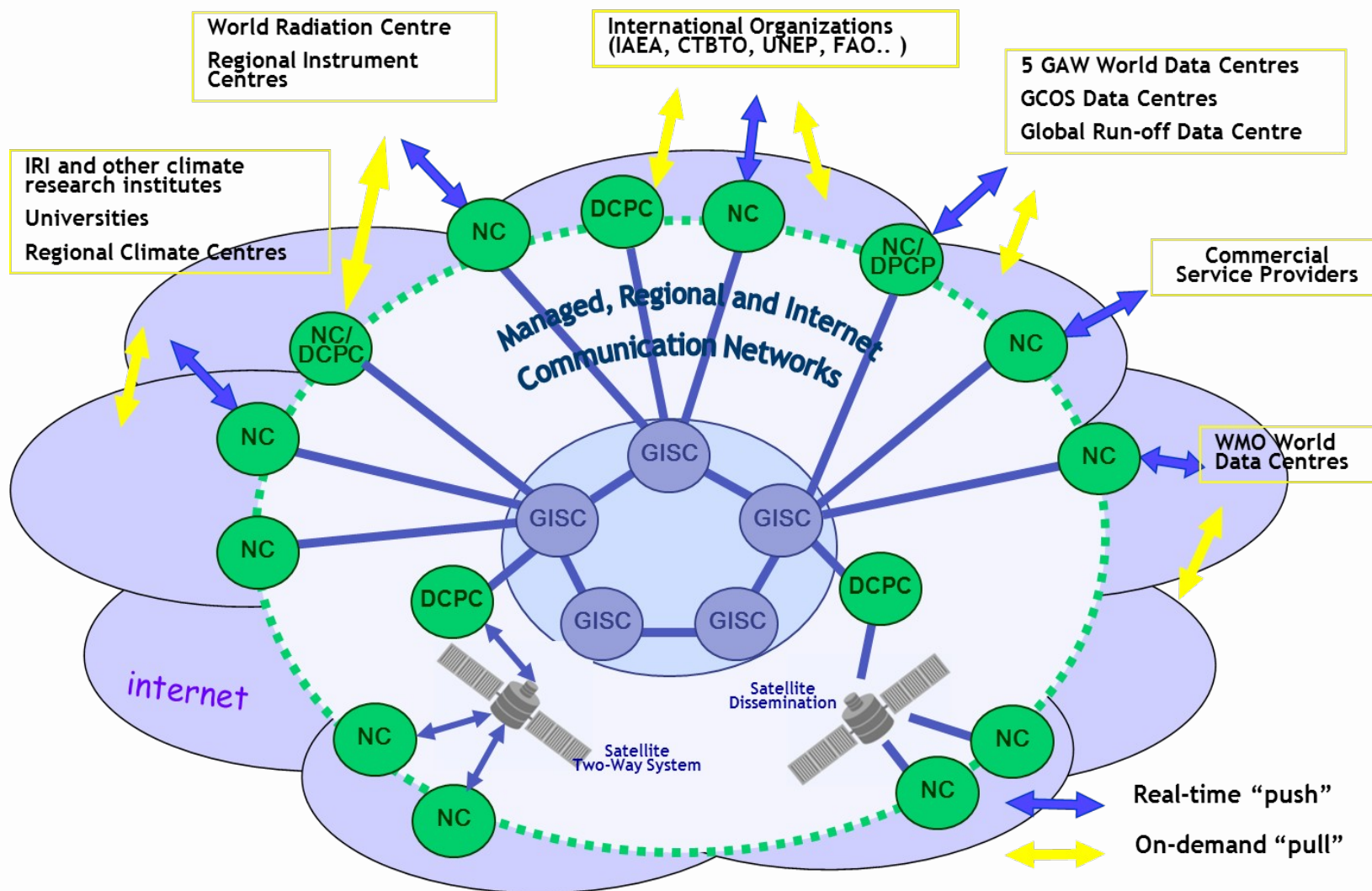
<=>

1 orange / red
weather warning
(Beginning, update)

CAP use in MeteoFrance

- CAP and Twitter.
- CAP feed and WMO Information System (WIS).

WIS (WMO Information System)



CAP feed and WIS

WMO report of ICT-ISS 2014 – Annex J

WMO recommandation « WIS support for the CAP »

- 1) WIS needs to support WMO Members in implementing CAP as soon as possible in each of the WIS National Centre(s).
- **2) Each of the WIS Global Information System Centres (GISCs) shall maintain on its website links to the news feeds of CAP alerts for all centres they support.**



Limits to the second recommandation

- publishing CAP feeds = manual process ;
- poor visibility of the CAP feed on the GISC portal ;
- solution not consistent with the overall WIS architecture.

Paper « Proposed method to advertise CAP feeds on the WIS. »

Frédéric Guillaud and Rémy Giraud (MeteoFrance),
Eiji Toyoda (Japan Meteorological Agency - JMA)

CAP feed and WIS

Typhoon Advisories from RSMC Tokyo

TY SOUDELOR (1513) ANALYSIS (0712UTC): 22.9°N 123.8°E GOOD MOVE WNW 11 kt PRES 935 hPa MXWD 90 kt GUST 130 kt R30KT 600 km N 500 km S R50K...
07/08/2015 14:48

TYPHOON SOUDELOR (1513)
ANALYSIS (0712UTC):
Pressure 935 hPa
at 22.9 degree north 123.8 degree east
position GOOD (radius of 55 km or less).
Moving west-north-west 11 knots.
Max winds 90 knots.
Gust 130 knots.
30 knot wind radius 600 km north 500 km south.
50 knot wind radius 240 km north 190 km south.

TY SOUDELOR (1513) FCST 24h (0812UTC): 25.1°N 119.2°E ±130 km
07/08/2015 14:48

TYPHOON SOUDELOR (1513)
Forecast 24 hr (0812UTC):
Pressure 970 hPa
at 25.1 degree north 119.2 degree east
with 130 km of 70 percent probability circle.
Moving west-north-west 10 knots.
Max winds 65 knots.
Gust 95 knots.

TY SOUDELOR (1513) FCST 48h (0912UTC): 27.8°N 116.4°E ±200 km MOVE NW 9 kt PRES 990 hPa TOBE TS MXWD 45 kt GUST 65 kt
.....

JMA has an
experimental
CAP feed for Tropical
Cyclone Advisory

1

Metadata
describing the
CAP feed

2

GISC METEO FRANCE
Global Information System Center for Western Europe

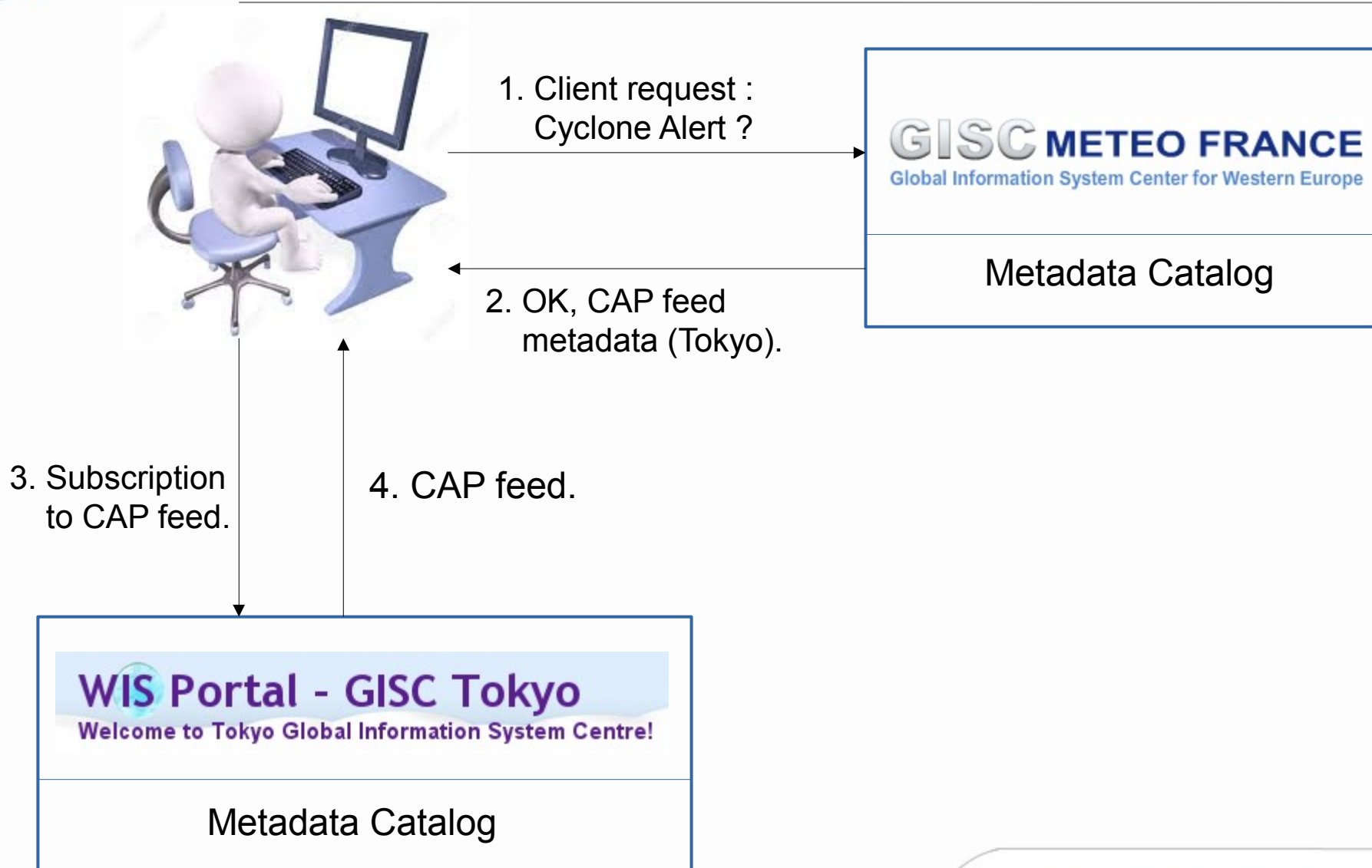
Metadata Catalog

3

WIS Portal - GISC Tokyo
Welcome to Tokyo Global Information System Centre!

Metadata Catalog

Use case of CAP feed on the WIS



An aerial photograph of a town, likely in the French Alps, is shown from a high angle. The town is nestled in a valley, surrounded by steep, forested slopes. A weather map is overlaid on the bottom half of the image, featuring white contour lines and arrows indicating wind direction and pressure systems. The map shows a low-pressure system moving towards the town, with various pressure values like 1010, 1015, 1020, 1025, 1030, 1035, and 1040. Wind arrows are also visible, showing a general flow from the southwest towards the town. The background of the slide is a deep blue gradient.

Thanks for your attention.

Meteo France Group.

Contacts :

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Claudon
michael.claudon@meteo.fr

MFI - Patrick Bénichou
patrick.benichou@mfi.fr



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