


Zentralanstalt für Meteorologie und Geodynamik 

EMMA / METEOALARM - European Weather Warnings

B. Niedermoser M. Ungersböck, A. Ohms, M. Staudinger,



- History and present situation of the project
- European Warning structures
- Open problems
- Chances for the future

Nature of catastrophies



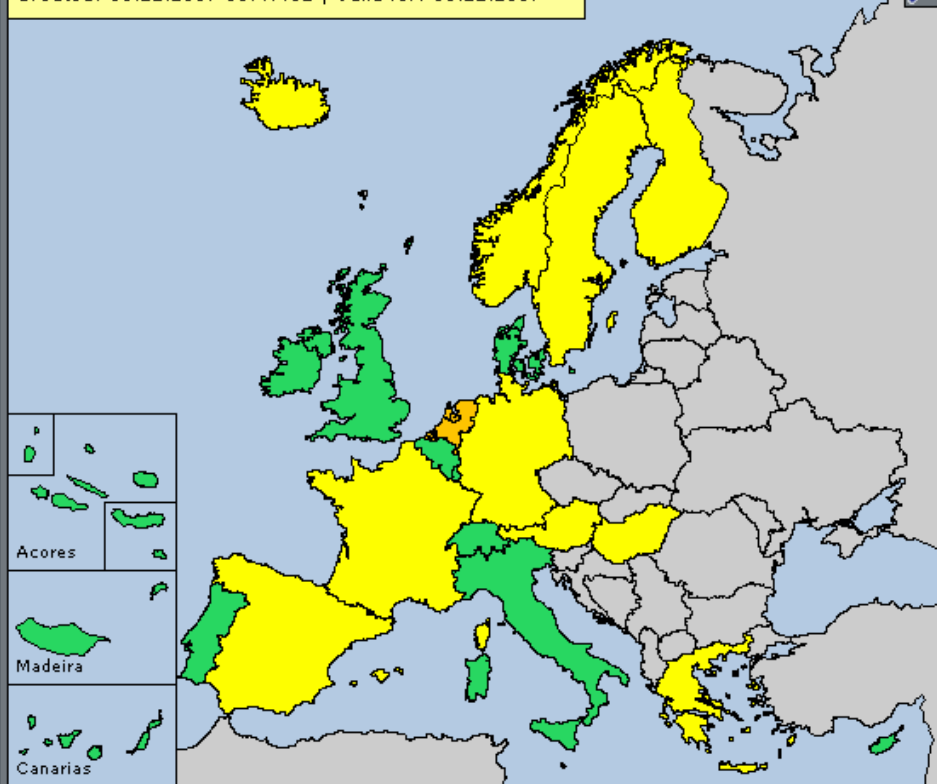
» Europa:

Wetter-Warnungen: Europa:

Warntypen:

Anzeigen:

Created: 06.11.2007 08:47:51 | Valid for: 06.11.2007



Gefahrenstufenberichte

Sie finden detaillierte Informationen über Warnungen in den Berichten der Länder. Wählen Sie das gewünschte Land aus.

AT					
BE					
CH					
CY					
DE					
DK					
ES					
FI					
FR					
GR					
HU					
IE					
IS					
IT					
LU					
NL					
NO					
PT					
SE					
UK					

- | | | | | | |
|--|-------|--|------------|--|----------------------------|
| | Weiss | | Wind | | Extrem hohe Temperatur |
| | Grün | | Regen | | Extrem niedrige Temperatur |
| | Gelb | | Schnee/Eis | | Küstenereignis |

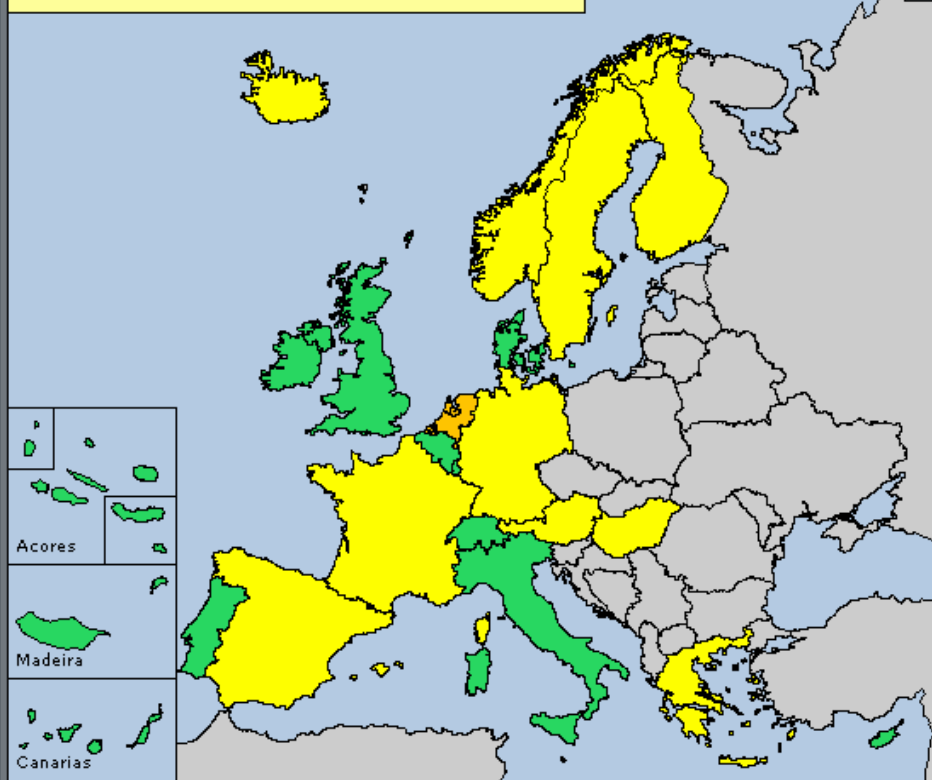
» Europa:

Wetter-Warnungen: Europa:

Warntypen: **Alle Ereignisse anzeigen**

Anzeigen: **heute** **morgen**

Created: 06.11.2007 08:47:51 | Valid for: 06.11.2007



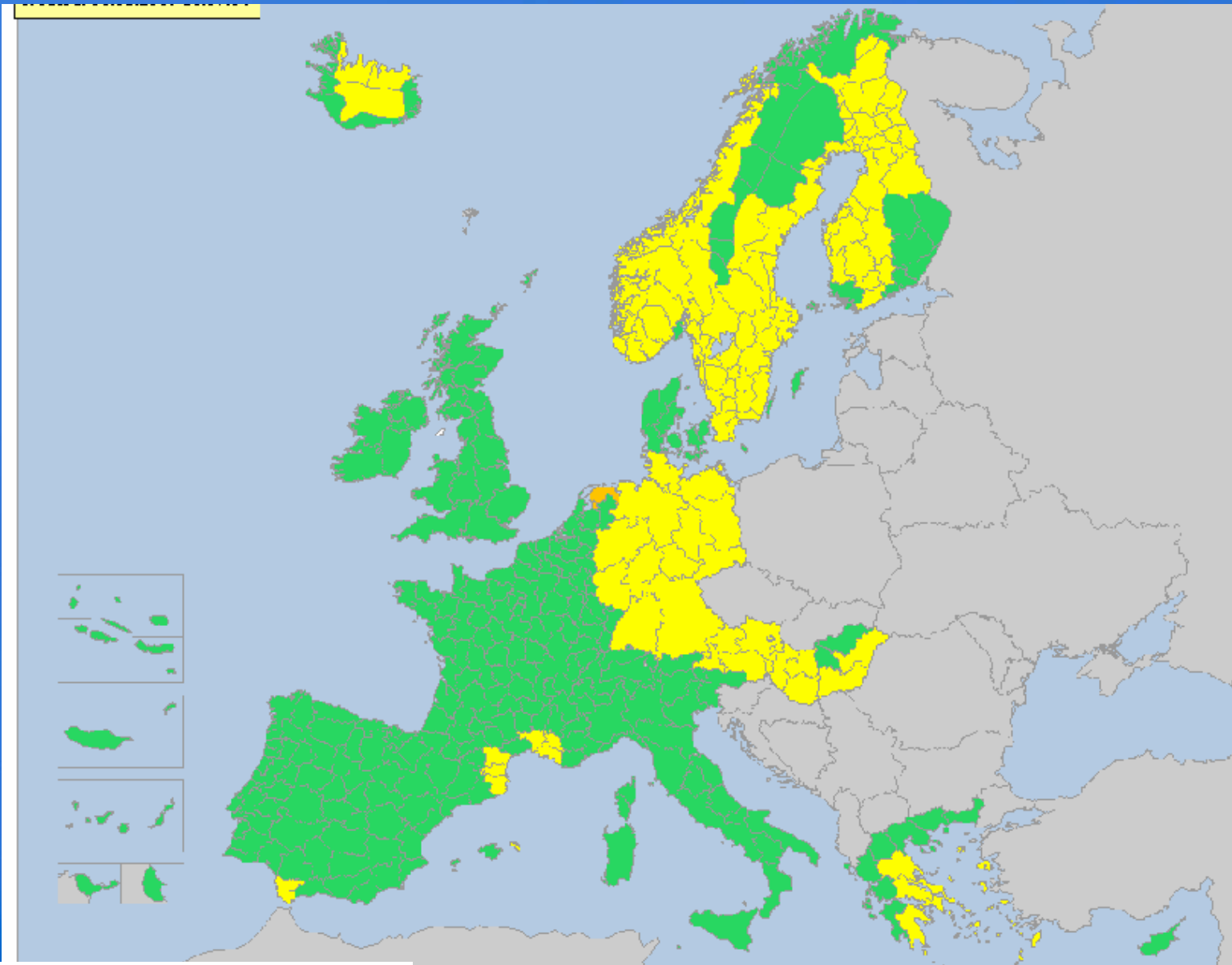
Gefahrenstufenberichte

Sie finden detaillierte Informationen über Warnungen in den Berichten der Länder. Wählen Sie das gewünschte Land aus.

AT					
BE					
CH					
CY					
DE					
DK					
ES					
FI					
FR					
GR					
HU					
IE					
IS					
IT					
LU					
NL					
NO					
PT					
SE					
UK					

- Weiss
- Wind
- Extrem hohe Temperatur
- Grün
- Regen
- Extrem niedrige Temperatur
- Gelb
- Schnee/Eis
- Küstenereignis

Europa Regional



METEOALARM operational maps for today + tomorrow

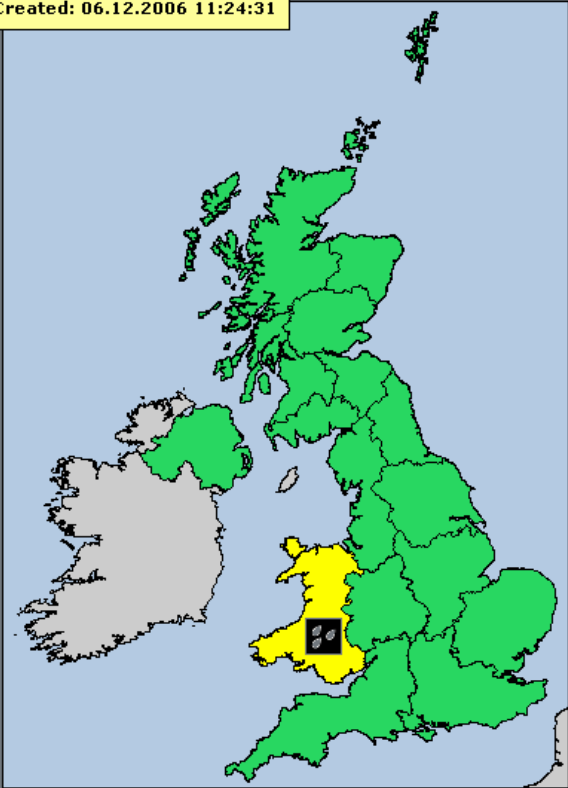
Start | About Meteoalarm | Help | Terms and Conditions | Greyscale Maps | Login

Change Language: english


» Europe

Weather warnings: United Kingdom

Created: 06.12.2006 11:24:31




Awareness Reports
You can find detailed information about the warnings in the awareness reports issued for each area. Select the relevant area.

- Dumfries and Galloway
- East Midlands
- East of England
- Grampian
- Highland & Islands
- London & South East
- Lothian & Borders
- North East
- North West
- Northern Ireland
- South West
- Strathclyde
- Tayside, Central & Fife
- Wales 
- West Midlands
- Yorkshire and the Humber

Legend:

- White
- Green
- Yellow
- Wind
- Rain
- Extreme high temperature
- Extreme low temperature

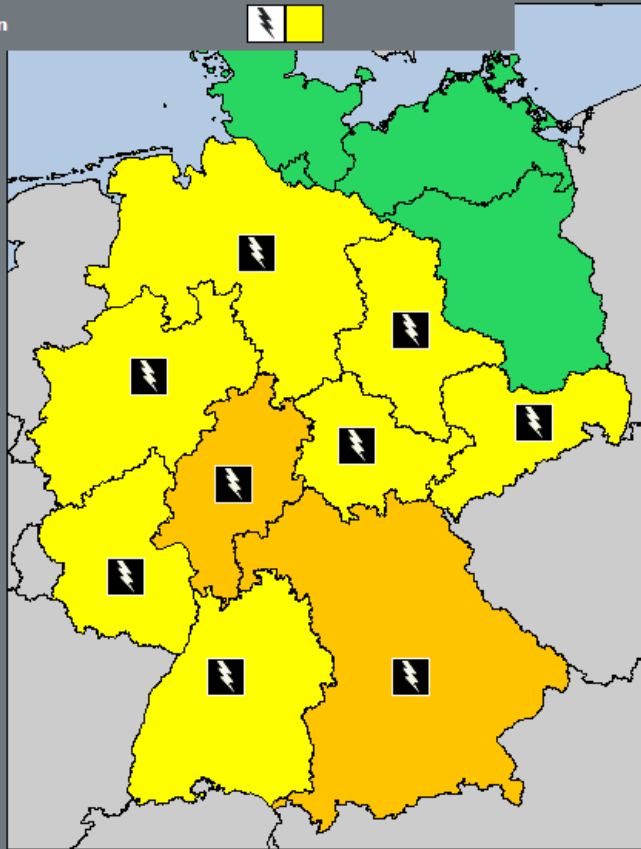


more information:

METEOALARM operational maps for today + tomorrow

Wetter-Warnungen: Deutschland

Thüringen



Gefahrenstufenberichte

Detaillierte Informationen über die Warnungen finden sich in den Berichten der einzelnen Länder. Bitte die entsprechenden Gebiete auswählen.

Baden-Württemberg			
Bayern			
Berlin und Brandenburg			
Bremen und Niedersachsen			
Hamburg			
Hessen			
Mecklenburg-Vorpommern			
Nordrhein-Westfalen			
Saarland und Rheinland-Pfalz			
Sachsen			
Sachsen-Anhalt			
Schleswig-Holstein			
Thüringen			



Mehr Information:

METEOALARM operational maps for today + tomorrow



Browser address bar: <http://www.meteoalarm.eu/area.asp?lang=EN&ShowDate=&Country=GB&area=214&are>

meteoalarm
alerting europe for extreme weather


EUMETNET
The Network of European Meteorological Services

Start | About Meteoalarm | Help | Terms and Conditions | Greyscale Maps | Login

Change Language: **english**

» Europe

Warnings for: Wales



06.12.2006 08:00:00 - 06.12.2006 12:00:00

Rain Awareness Level: **Yellow**

Showers continuing this morning, adding to previous totals yesterday and last night and leading to local flooding.

more information: [Go to UK Met Office](#)

[Back to Europe](#)

[Back to Countrymap](#)

[Go to UK Met Office](#)



>>

Adresse <http://demo.severe.worldweather.org/>



**World
Meteorological
Organization**

Severe Weather Information Centre

Official Observations. Official Warnings.

HOME

Severe Weather

Tropical Cyclones

Heavy Rain/Snow

Thunderstorms

Official Observations

Cloudiness & Rain

What's New

[New Link to Meteoalarm](#)

Introductory Pamphlet

About this web site

Participating Members

Notes To Users

Links

World Meteorological
Organization

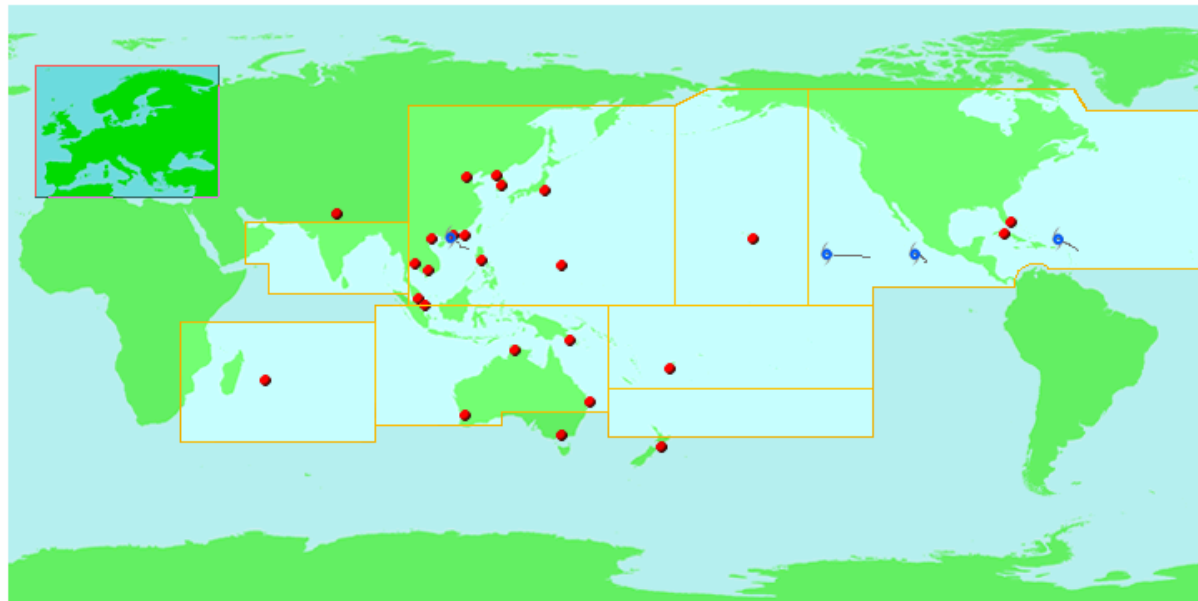
GMDSS

Official World City Forecasts

Meteoalarm (alerting Europe
for extreme weather)

Disclaimer

This World Meteorological
Organization (WMO) web
site is developed and

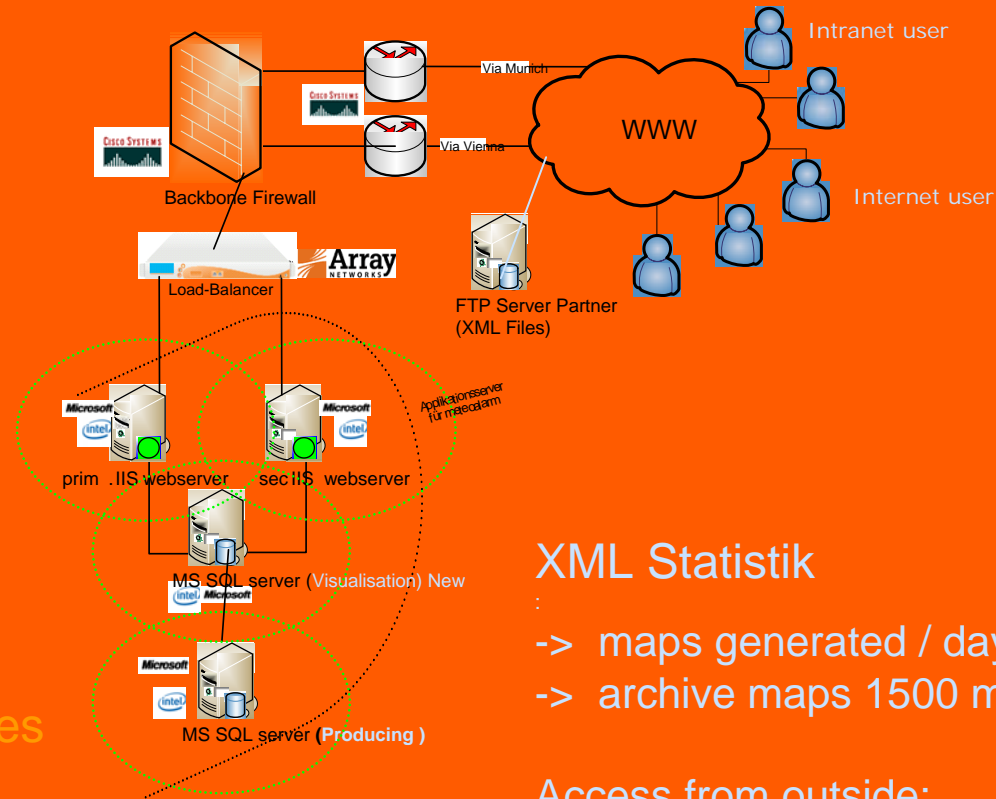


Last Updated at 2006-08-03 06:49 UTC

[Past Positions](#)

NOTES

- ▶ Click on the symbol or for advisories and warnings on the tropical cyclone.
- ▶ Click on the symbol for information from individual WMO Members participating in the [web site](#).
- ▶ Click on individual boxes to view zoom-in maps.
- ▶ This page is best viewed with a display resolution of 1024 x 768 pixels.



XML Statistik

- > maps generated / day 7.5 Mio year
- > archive maps 1500 maps day

Access from outside:

12 Mio/day (Max) – 1 to 6 (average)

- UK July 20th – green when floods / METEO - HYDRO
- Differences between countries
- RSS feed
- Missing info on ozon, air pollution
- Missing EU member states
- Congratulations

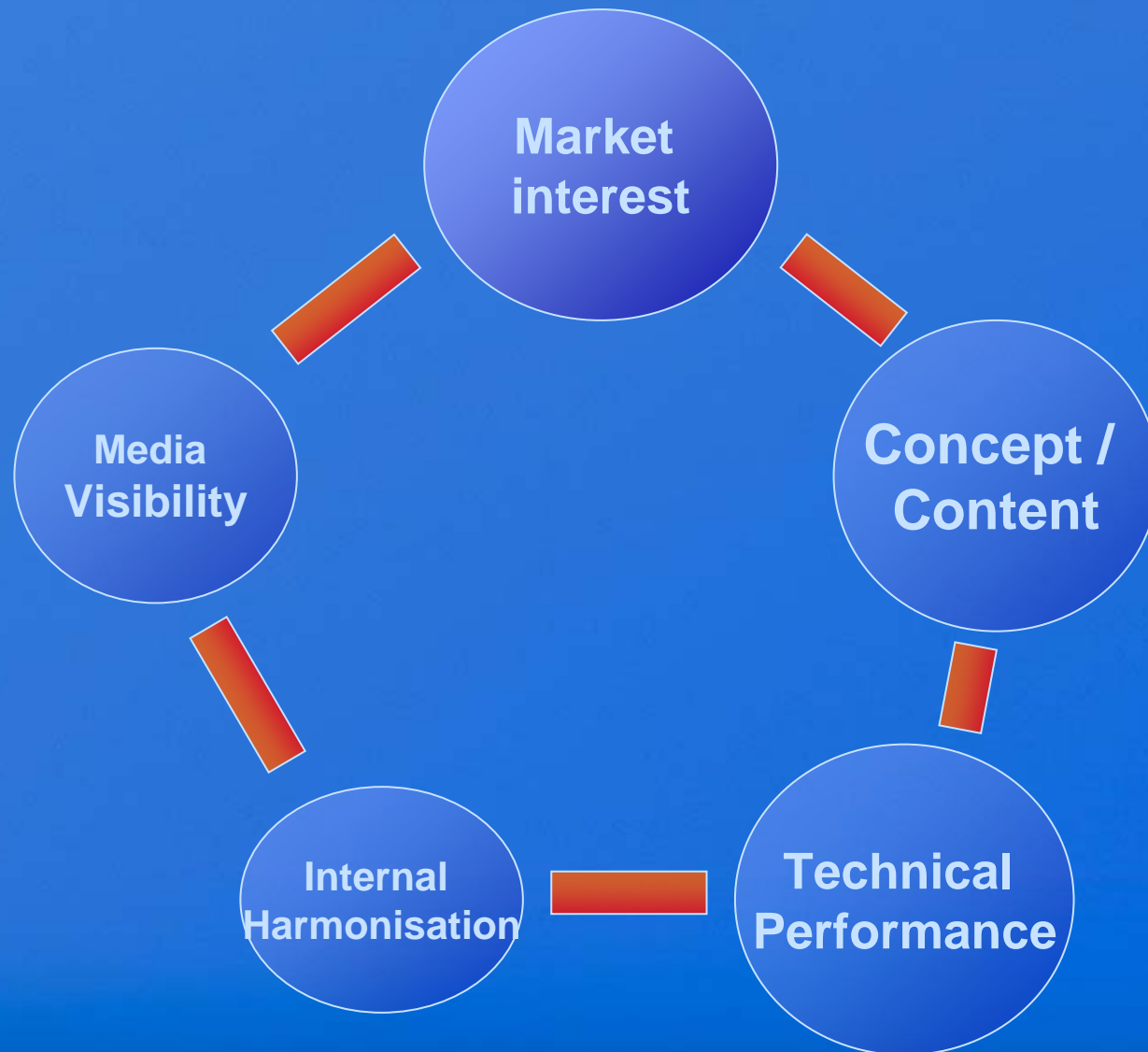


- **Cooperation with other institutions:**
 - Presentation of METEOALARM at the EU Commission, Brussels
 - Cooperation with MIC (Monitorung and Information Center)
 - Integration in BOSS4GMES
 - Cooperation with ECMWF

- **Coming up:**
 - **WMO – PWS**
 - **GEOSS**



- **European partners in the process of joining:**
 - Croatia
 - Czech Republic
 - Estonia
 - Latvia
 - Slovakia
 - Slovenia



Relationship warnings - damages



- Aim of warnings: avoid damages
- To achieve best results: adequate reactions necessary
- „special category “ necessary for large scale damages
 - E.g. large numbers of people displaced
- Frequencies of warnings as most important element for reactions
- If valid for all of Europe: consistent warning- damage relation needed
- Chances of a „Multihazard Warning system“



- **Avoid the following cases:**
 - **Warning for a heat wave in Greenland**
 - **Missing warnings for frost in the Azores**
 - **More than 1 element yellow - extreme damages**
 - **Excessive „red“cases – missing adequate reactions**
 - **.....**



Type of forecast

economic / social implications

- General forecast
(often automatically produced)



- Special weather report
„Warnings“ for single clients



- **Warnings**



Users relate the term „Warnings“ with damages

scales



scales



Damages - Warnings



	Damage / Impact	What to do?	Used how often? (per approx. 300 kkm ²)	Meteo Treshholds Rain area related + Damage related
Green	- - -	usual phenomena		
yellow	exposed objects (avoidable)	caution with exposed activities	> 30 per year	> 30 mm/12h
orange	general damages (not avoidable)	keep informed in detail, follow advice of authorities	1 to 30 per year	> 54 mm/12h
red	extreme damage and /or casualties <i>extreme damage (mostly) on large areas, threatening life and properties</i> (not avoidable, even in otherwise safe places)	follow order of authorities under all circumstances be prepared for extraordinary measures	less then 1 year <i>for large (5000km²) scale phenomena</i>	> 80 mm/12h

Integration into national procedures

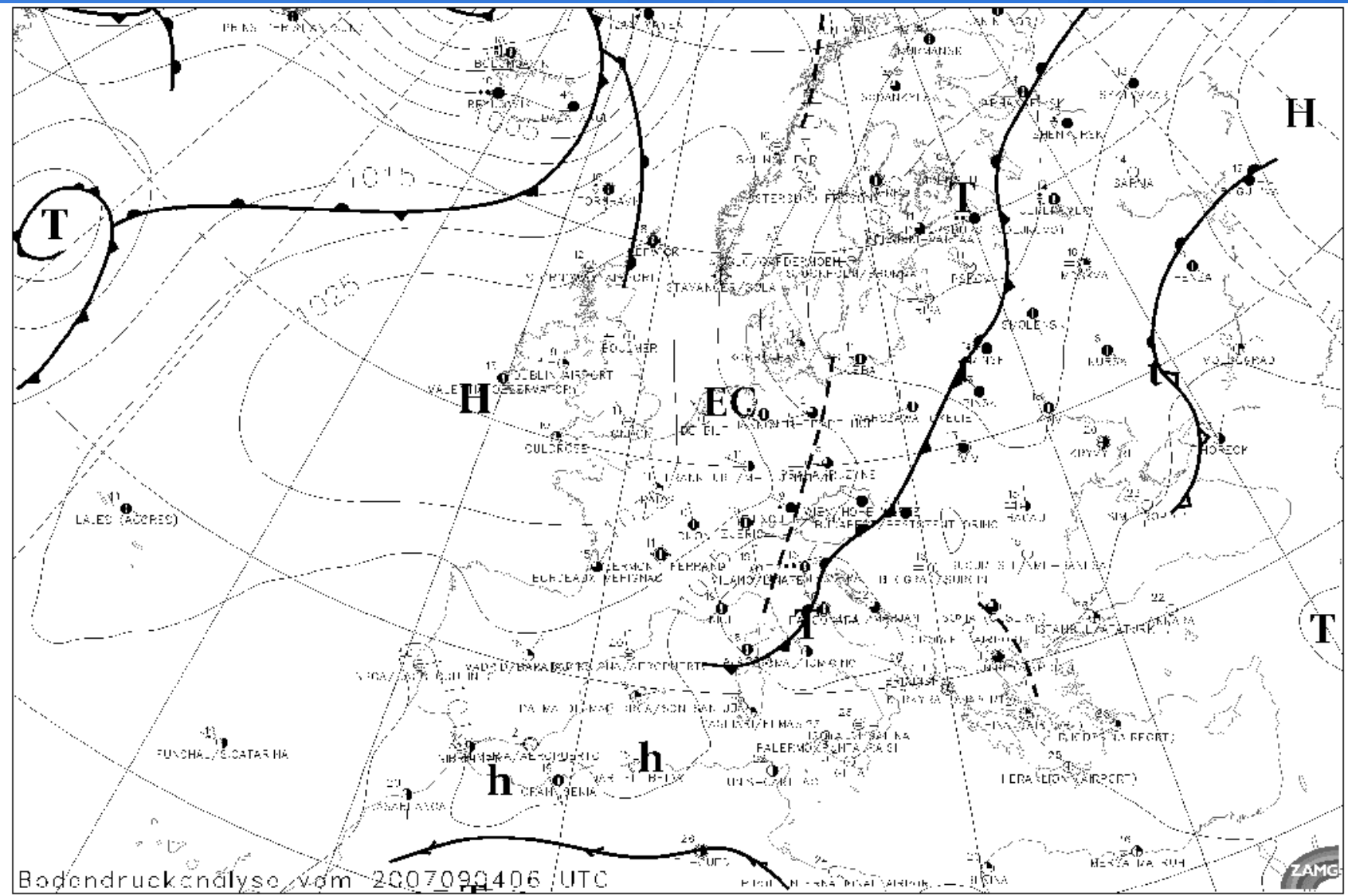
Warning levels are aligned to UK legislation set out in the Civil Contingency Act that requires local authorities to carry out risk assessment using a national scale of impact. This scale of impact aligns to the Emma colours as shown in the table 1 below.

Table 1 – Comparison of Emma colours to CCA risk assessment levels

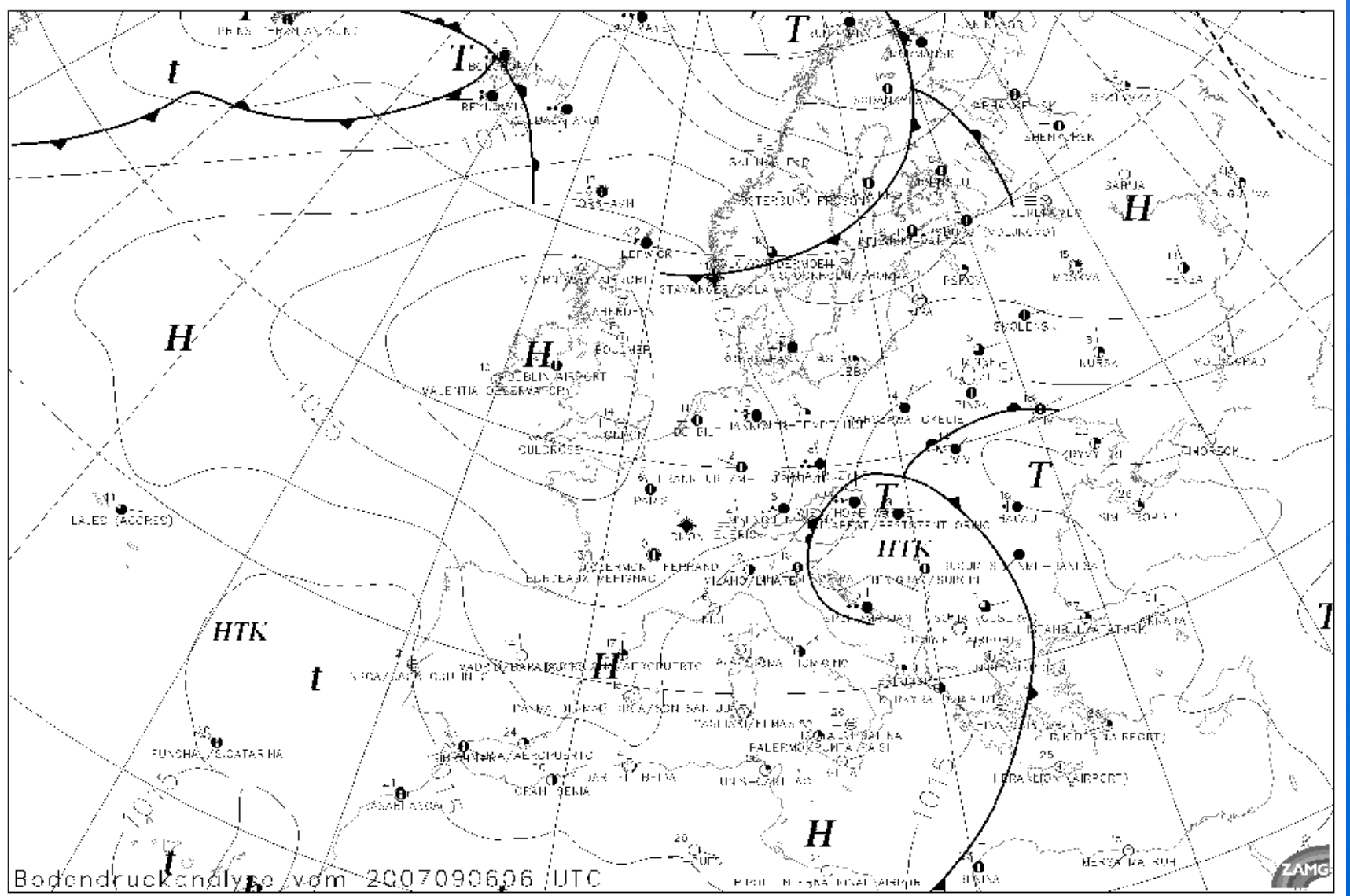
Emma colour	Emma consequence	Civil Contingency Act (CCA) risk assessment level	CCA Impact	Possible issue frequency for UK
Green	Nil	1	Insignificant number of injuries or people displaced	Daily
Yellow	Inconvenience caused by cancellation of avoidable activity such as leisure activity	2	Small number of people affected, no fatalities, Minor property damage	20-50 per year
Orange	Health & safety impact requiring shelter in doors	3	Moderate number of fatalities requiring activation of MAJEX in at least one hospital. Damage confined to a specific location or a number of locations but requires additional resources	1-19 per year
Red	Health & safety impact requiring evacuation to another area or safe shelter	4	Significant number of people affected multiple injuries. Majex procedures across a number of hospitals. Damage requiring external resources. 100-500 people displaced for longer than a week	Less than 1 per year
Red	Health & safety impact requiring evacuation to another area or safe shelter	5	Very large number of people affected, significant fatalities, large number of people requiring hospitalisation with serious or long-term effects. Extensive property damage requiring major demolition. More than 500 people displaced for a prolonged period. Key infrastructure lost for a prolonged period. Communities unable to function without support	

Note: the CCA considers level 1 and 2 are not emergencies.

September floods + snow



September floods + snow

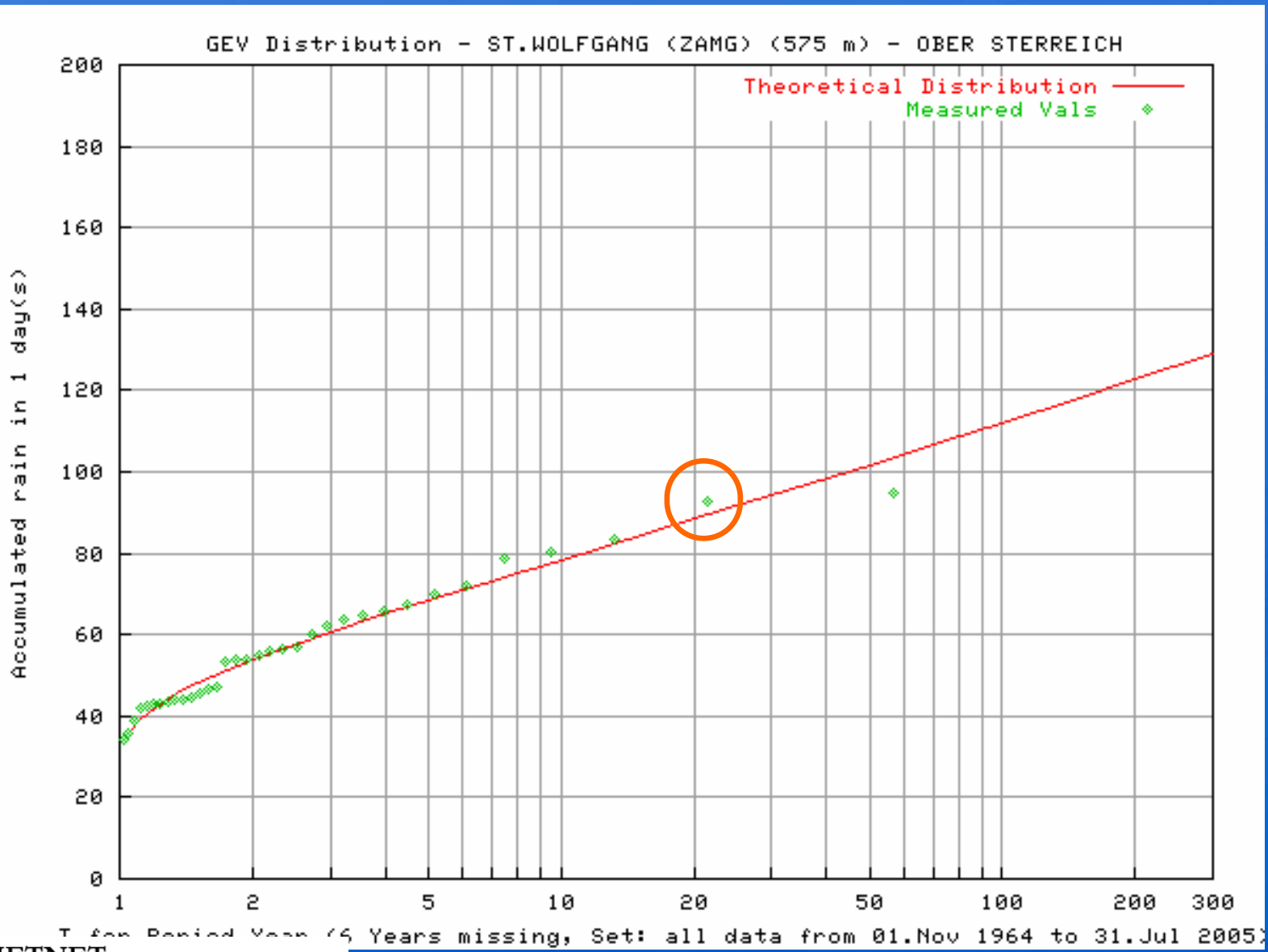


Precipitation sums

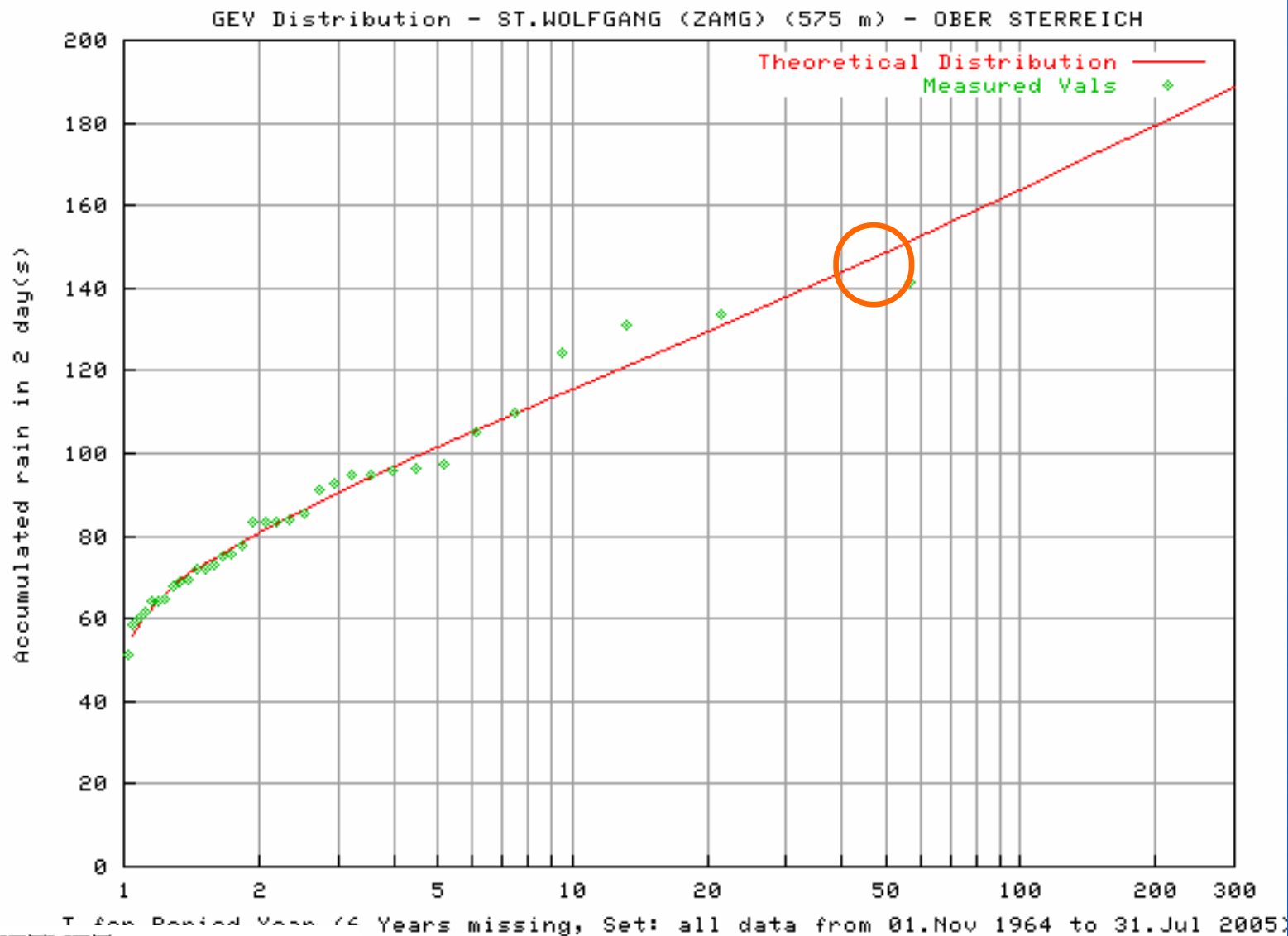


Station	24h sums	48 h sums
Bad Goisern	84,4	143,4
Gmunden	79,7	121,1
St. Wolfgang	90,0	147,3
Windischgarsten	81,0	157,4
Lofer	79,1	137,4
Radstadt	66,6	107,5
Rudolfshütte	71,1	132,7
Salzburg-Freisaal	65,1	96,5

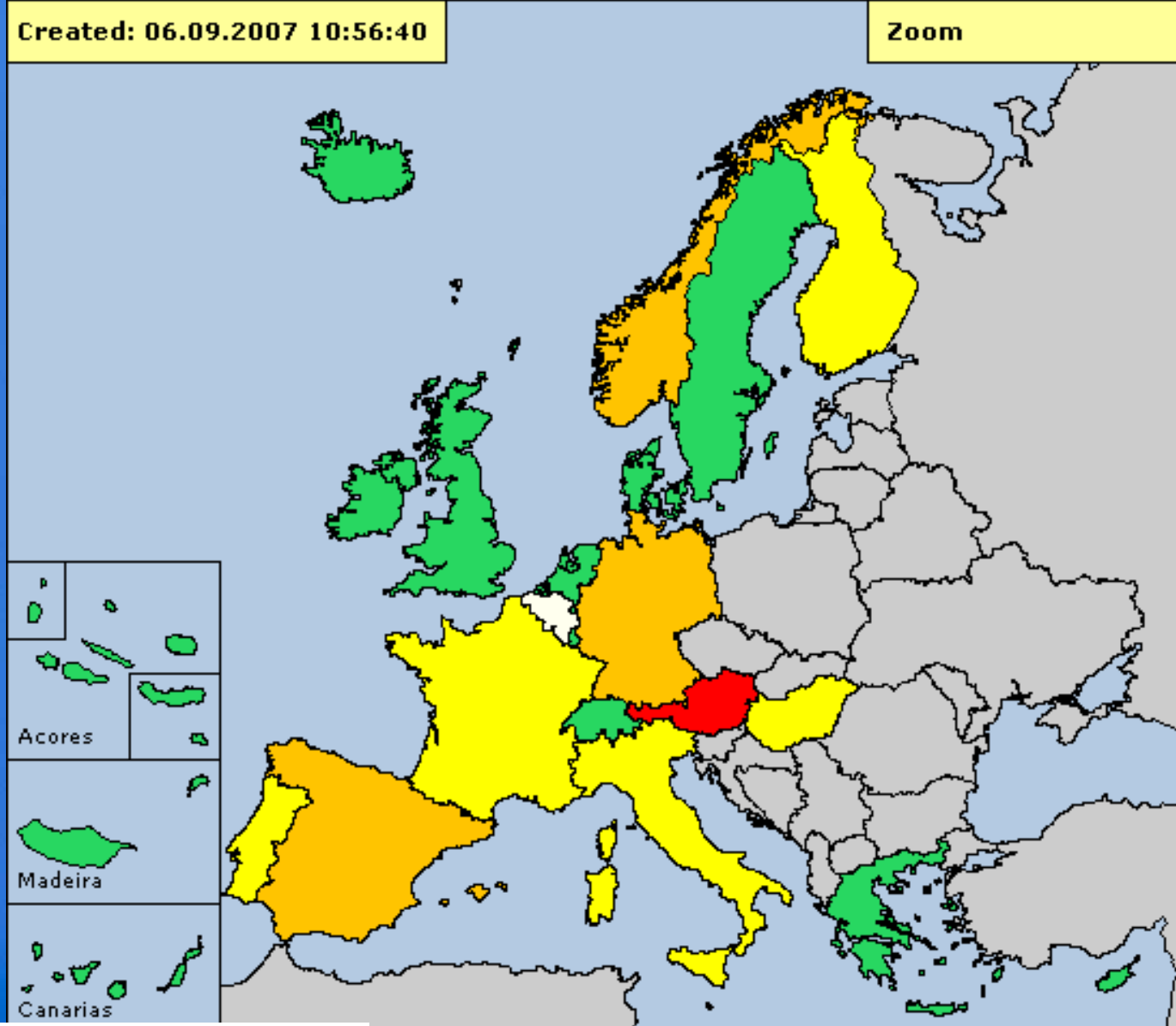
Return period for 24h event



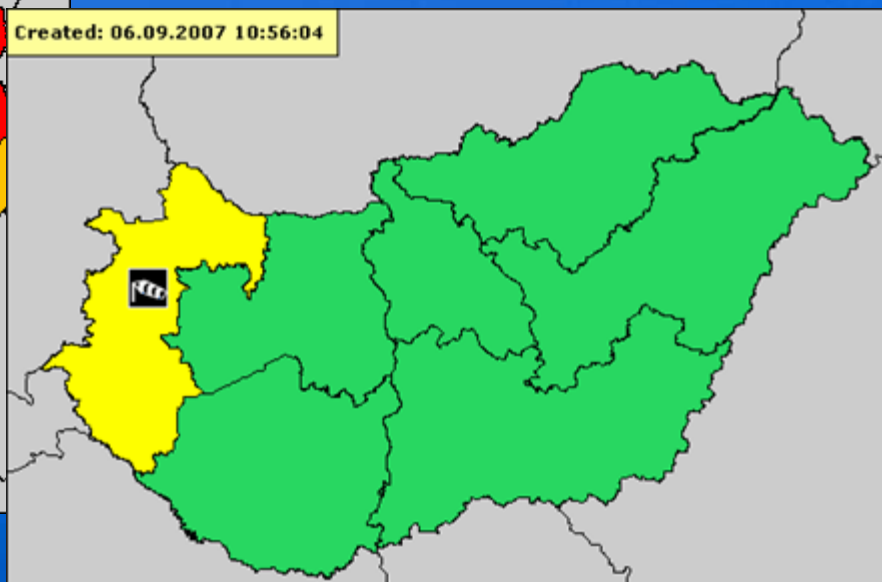
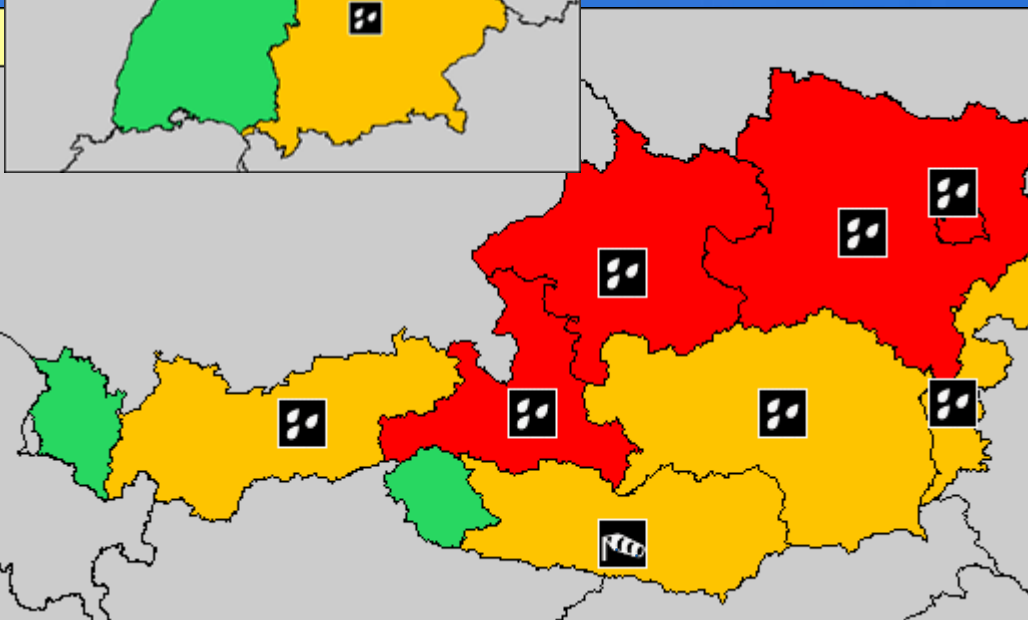
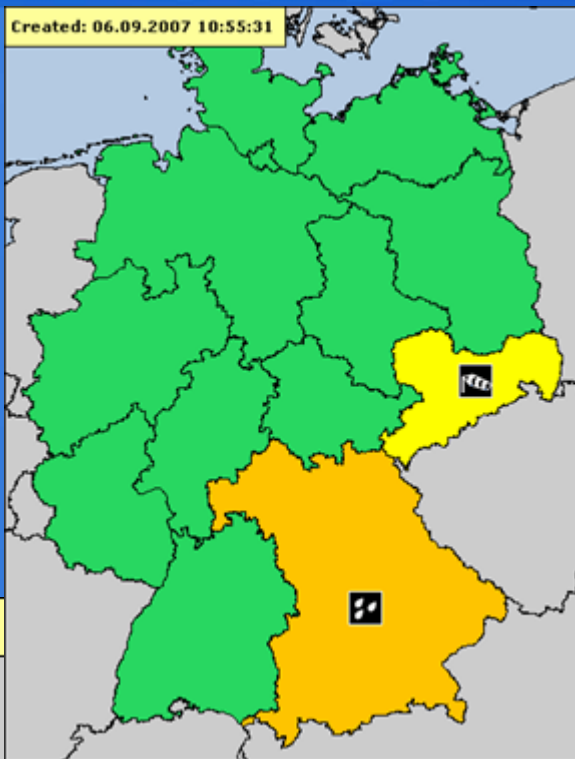
Return period for 48h event



2007 -10 - 06



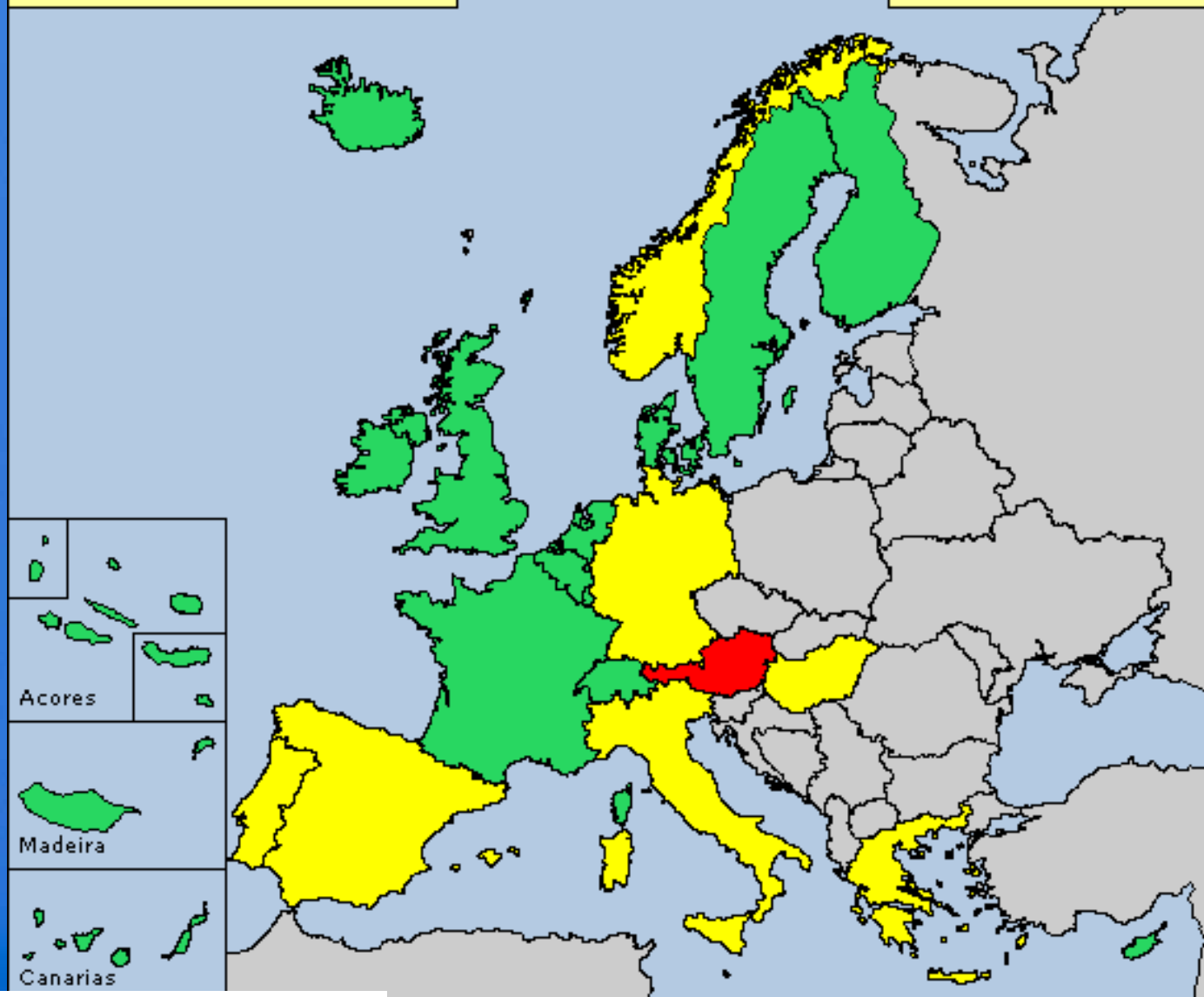
2007 -10 - 06



2007 -10 - 07

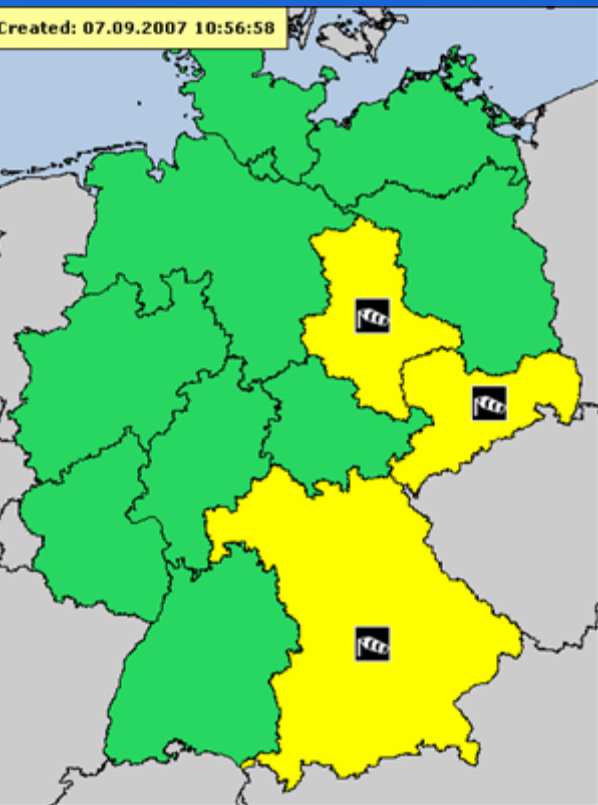
Created: 07.09.2007 10:58:11

Zoom

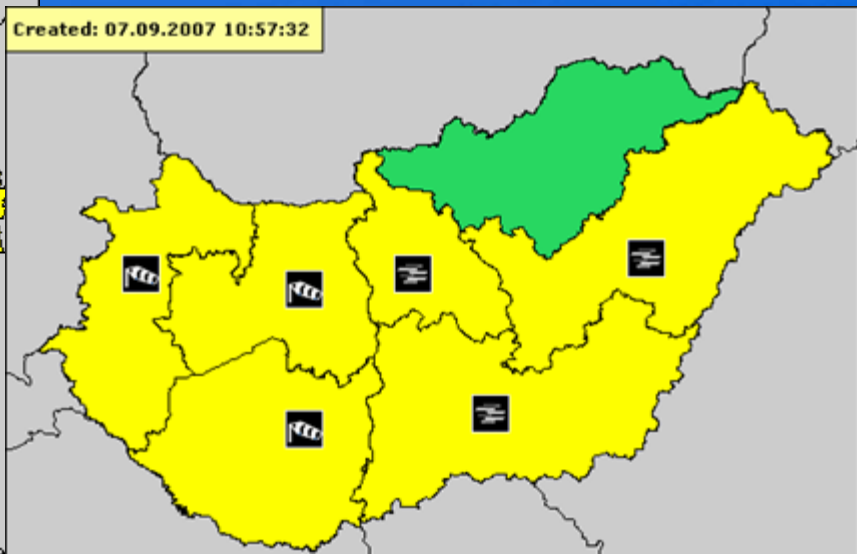
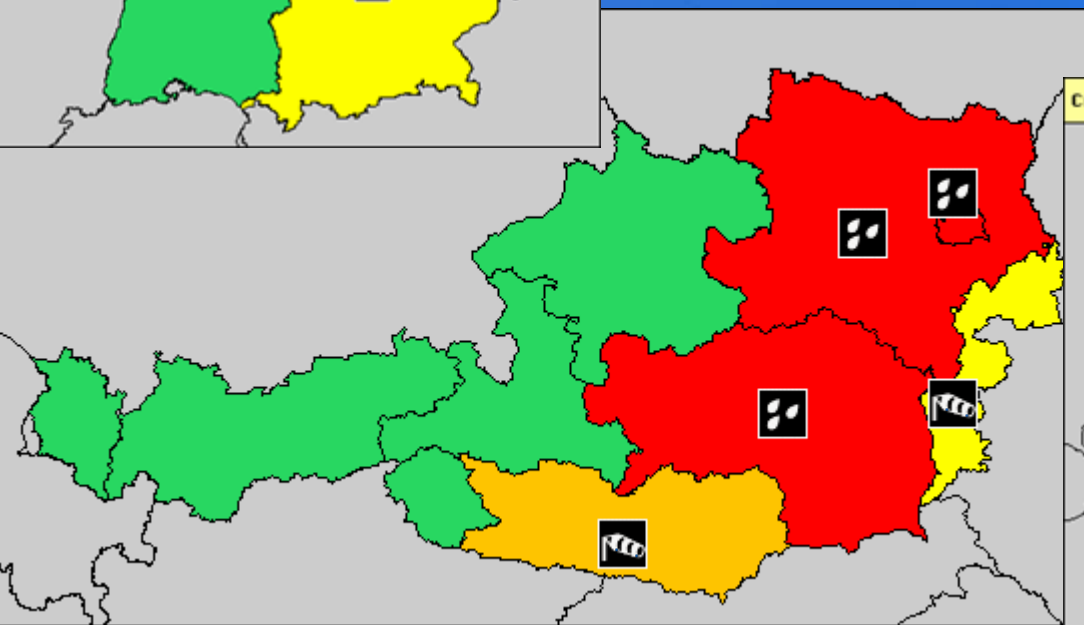


2007 -10 - 07

Created: 07.09.2007 10:56:58



Created: 07.09.2007 10:57:32

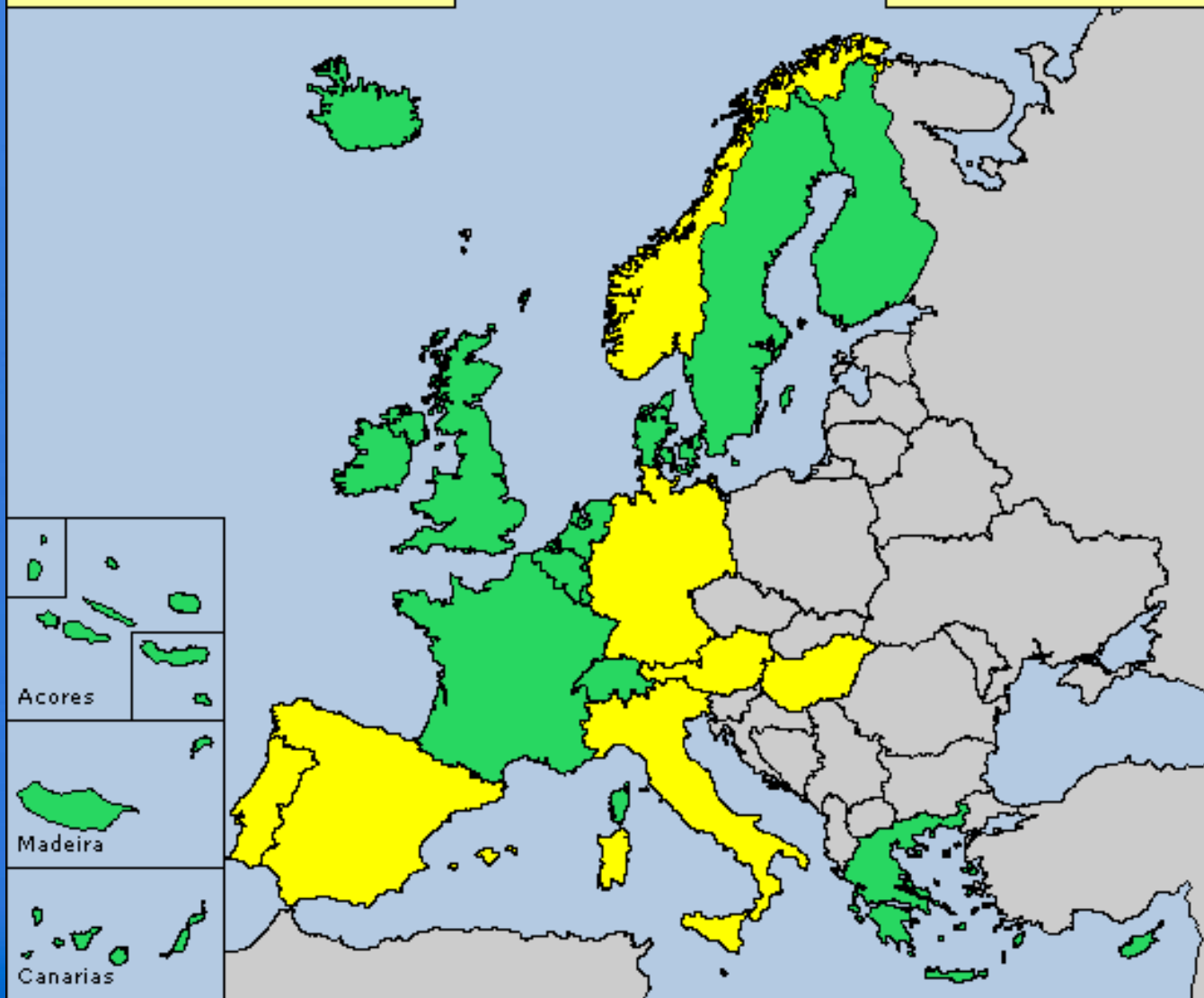


2007 -10 - 08



Created: 08.09.2007 10:57:28

Zoom





www.archiv-poelzl.at



**Schwechat Brücke -
nach Seedörfel - Richtung Achau**

www.archiv-poelzl.at

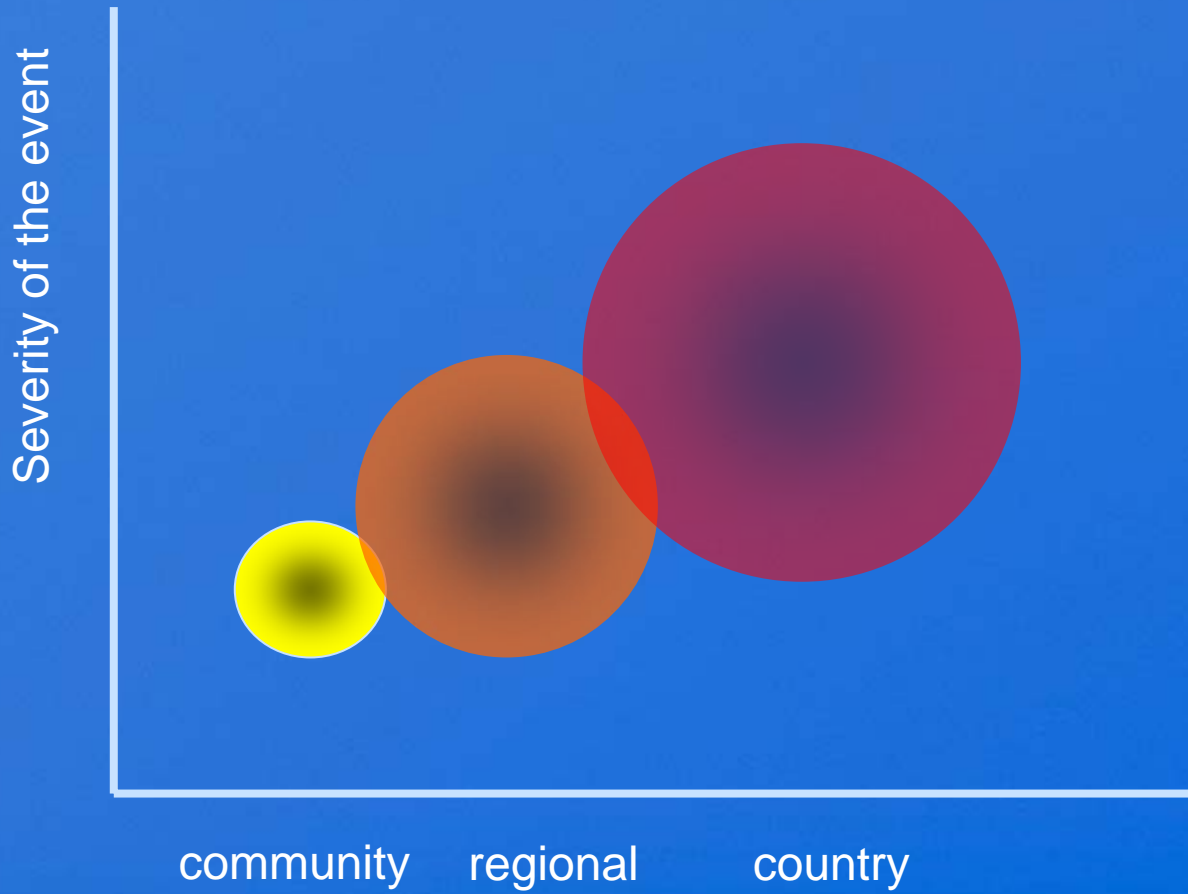


www.archiv-poetzi.at

Damages

- Niederösterreich 2 – 4 Mio €
 - Oberösterreich 1 – 2 Mio €
 - All of Austria 1 fatality
-
- Present concept: „red“
 - Damages and warnings in neighbouring countries: „orange“

Natural catastrophies – extent of damage



Who knows how much?



competence
of single
actors



Complexity of the event



European Civil Protection

News and emergencies

Civil Protection ▶

Marine Pollution ▶

Chemical Accidents ▶

Links

Funding opportunities ▶

▶ **Community Mechanism for Civil Protection**

▶ MIC Daily

▶ Emergencies

▶ CECIS

▶ Training and exercises

▶ International Cooperation

▶ National authorities and structures

▶ GDACS Global Disaster Alert and Coordination System

▶ UNDP Disaster Risk Index

▶ Links



The Monitoring and Information Centre (MIC)

What is it?

The Monitoring and Information Centre (MIC), operated by the European Commission in Brussels, is the operational heart of the [Community Mechanism for Civil Protection](#). It is available on a 24/7 basis and is staffed by duty officers working on a shift basis. It gives countries access to the community civil protection platform. Any country affected by a major disaster – inside or outside the EU – can launch a request for assistance through the MIC.



The role of the MIC

During emergencies the MIC plays three important roles:

Communications hub: Being at the centre of an emergency relief operation, the MIC acts as a focal point for the exchange of requests and offers of assistance. This helps in cutting down on the [30 participating states'](#) administrative burden in liaising with the affected country. It provides a central forum for participating states to access and share information about the available resources and the assistance offered at any given point in time.

Information provision: The MIC disseminates information on civil protection preparedness and response to participating states as well as a wider audience of interested. As part of this role, the MIC disseminates early warning alerts ([MIC Daily](#)) on natural disasters and circulates the latest updates on ongoing emergencies and Mechanism interventions.

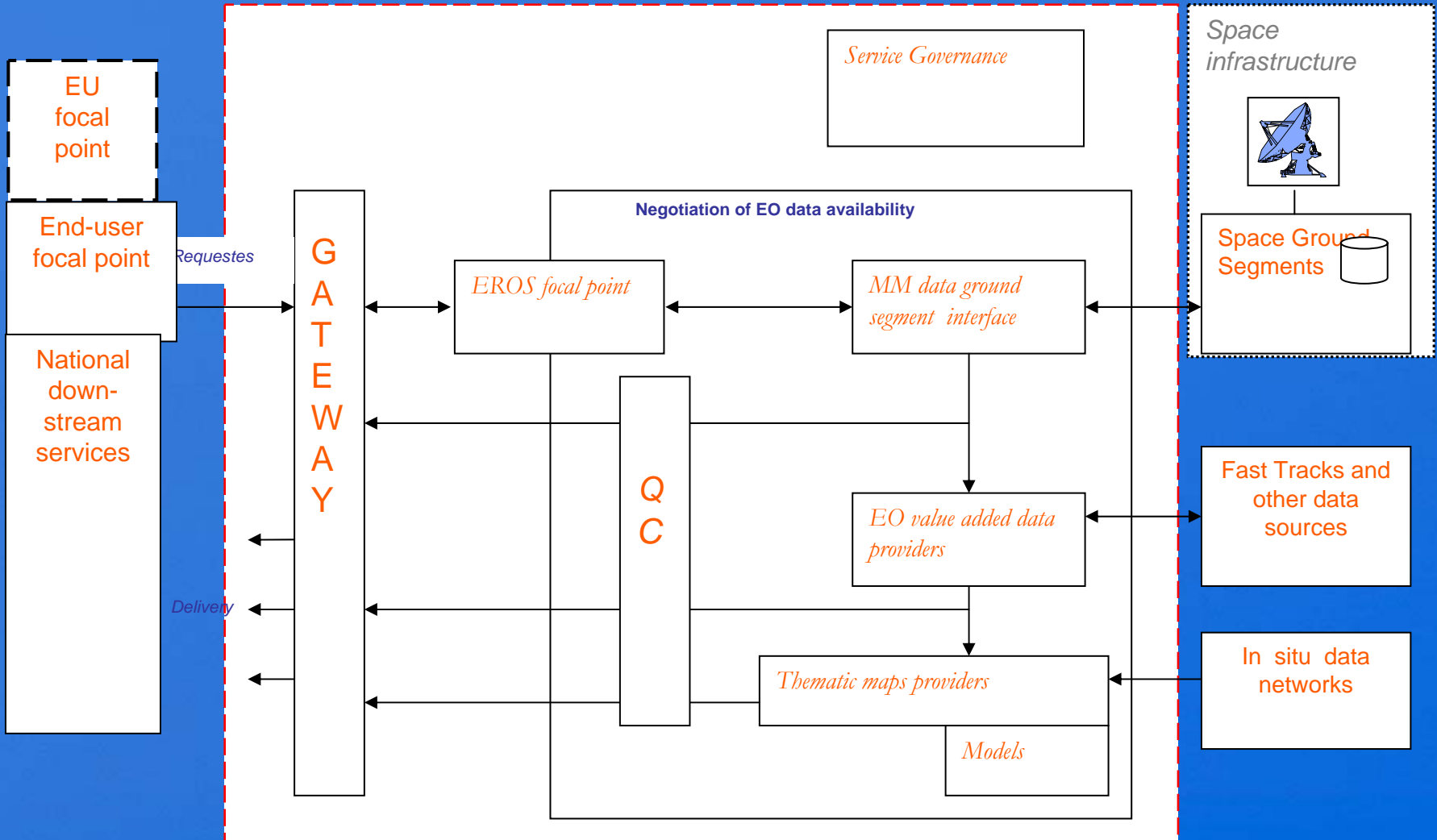
Supports co-ordination: The MIC facilitates the provision of European assistance through the Mechanism. This takes place at two levels: at headquarters level, by matching offers to needs, identifying gaps in aid and searching for solutions, and facilitating the pooling of common resources where possible; and on the site of the disaster through the appointment of EU field experts, when required.

Activation of the Mechanism – the MIC at work

Inside the EU

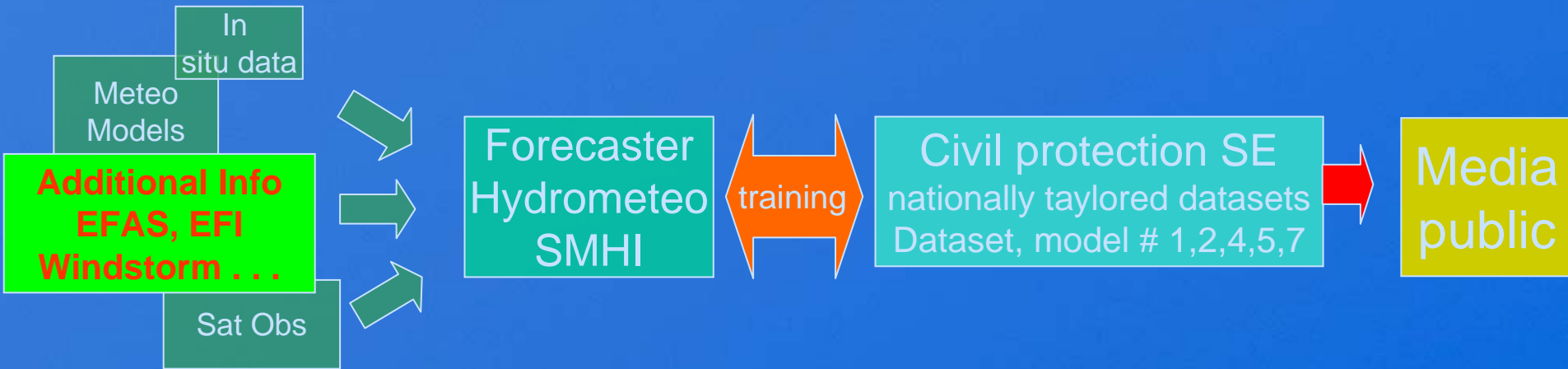
The Mechanism can be activated through the MIC by any participating state seeking prompt international assistance following a major disaster. A state usually calls on the Mechanism when the effects of the disaster cannot be matched by its own civil protection resources.

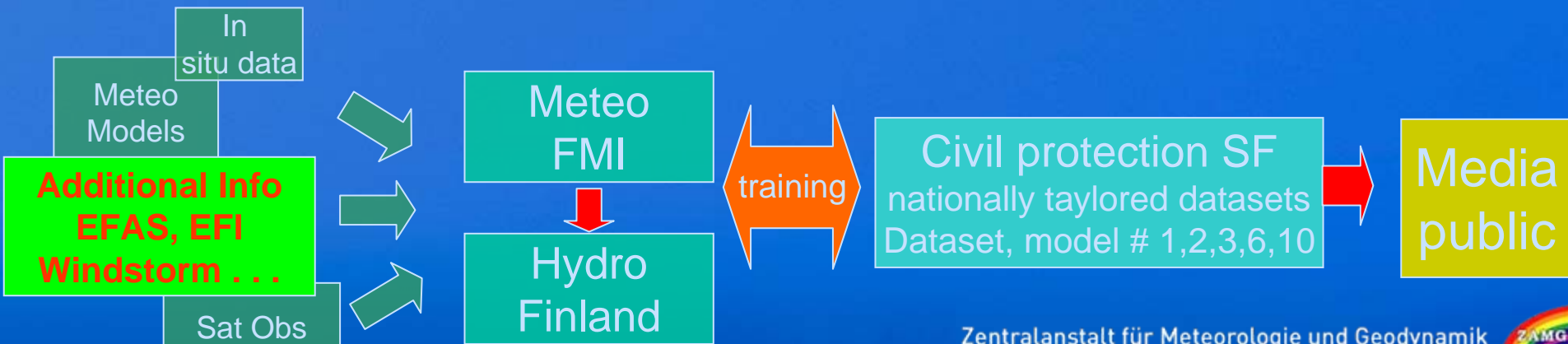
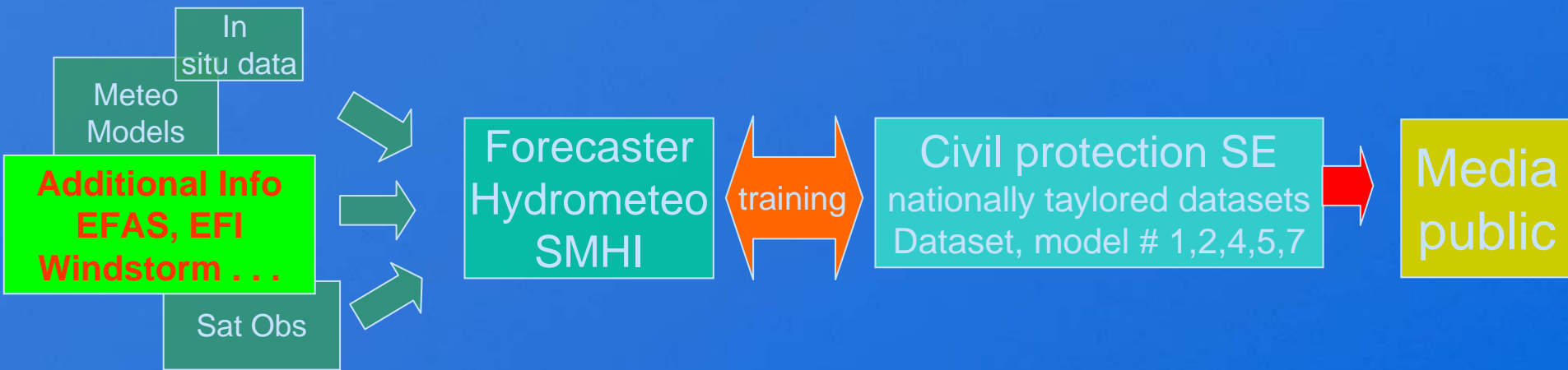
GMES - Emergency Response Core Services

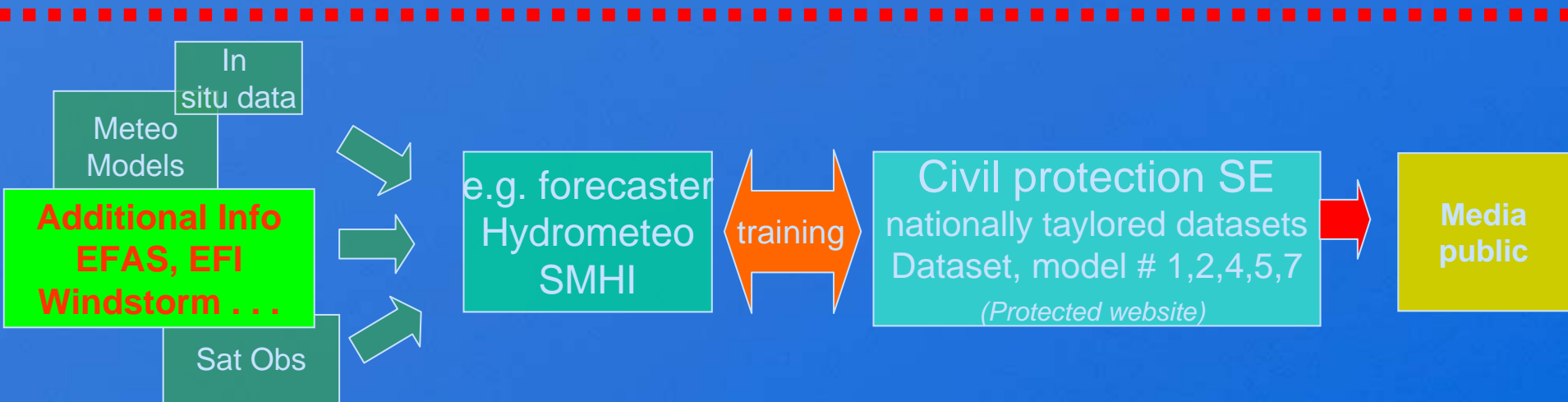
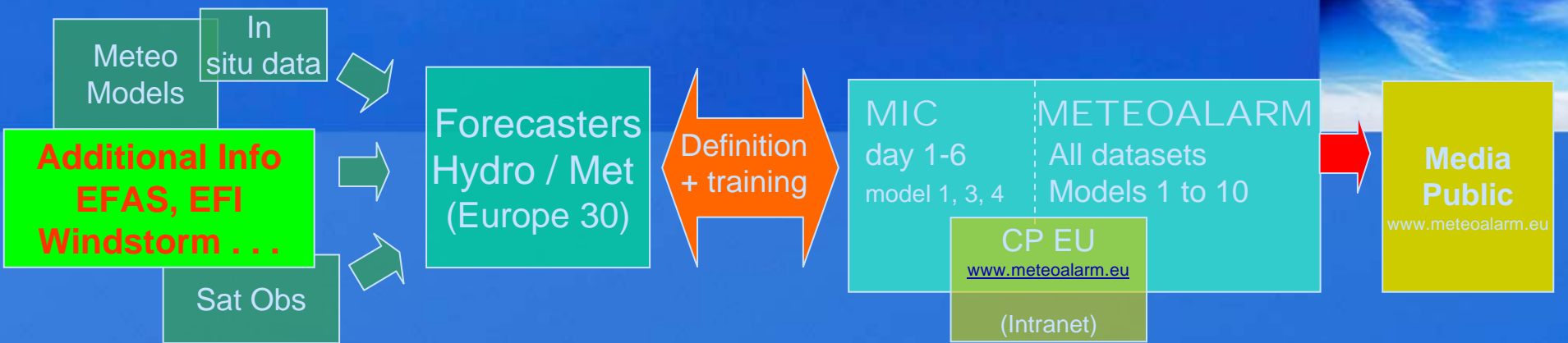


Emergency Response Core Services

Europäische Warnstrukturen







Website for Civil Prot. / MIC



What? Allows access for CP to datasets from neighbouring countries
gives MIC a condensed overview of all necessary sets of data

How? Passwordprotected
Defined user rights by different countries for their Civil. Prot (levels)
enhanced activities from level orange onwards

When? Starts as overview for MIC and gets enlarged according to the request
of different countries



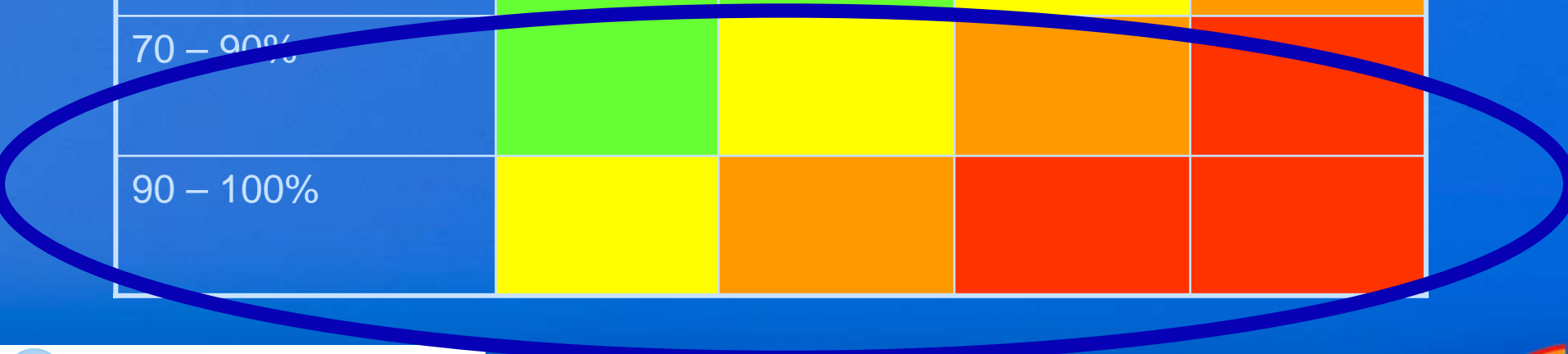
possible warning parameters / meteorological features

	Day 0	Day +1	Day +2	Day +3	Day +4
Rain	Green	Yellow	Yellow	Orange	Green
Snow/Road conditions	Green	Green	Green	Red	Orange
Wind	Green	Light Green	Orange	Yellow	Green
Cloudiness (Sat obs)	10	90	100	100	100

Information for civil protection



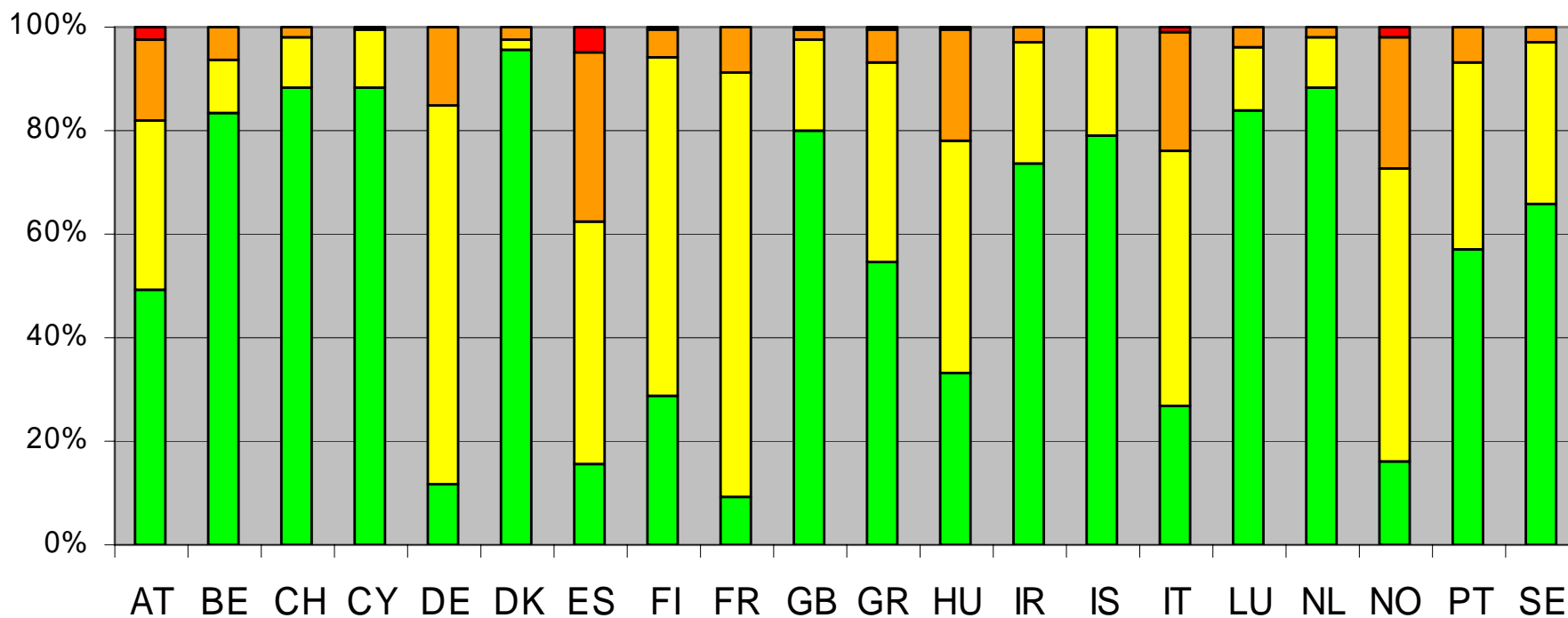
Impact (return period) →	>20/year	20/year + area criteria + other factors	10/year + area criteria + other factors	1/year + area criteria + other factors
Probability ↓				
1-30%				
30 – 70%				
70 – 90%				
90 – 100%				



Statistics February – October (all parameters)



percentage of shown country colors



Forecasters forum

Topic: High temperature = (too) high number of warnings
posted on 25.06.2007 10:36:54 by [Emmanuel Leqrant](#)

Dear All,

Summer has just started. These last days we have already experienced a high number of cases with orange for high temperature. Even today red for one country, orange for 3 countries (see attached image).
Is the current weather situation so unusual in central and southern Europe that would imply almost the same level of risk as during the 2003 and 2006 heat waves in western Europe ? It doesn't seem so. Clearly, the risk is to be orange for most of the summer period even if the summer is just normal (remember: the average temperature from mid-July to mid-August is significantly higher than the current one). And if we do so, we loose the idea of warning, we weaken our position also for the other parameters warned in meteoalarm.
This also shows that sending automatic e-mails to our press officers in case of severe situation may be premature.

Attached Images:
[high-temp-warnings.gif](#) []

Attached Documents:

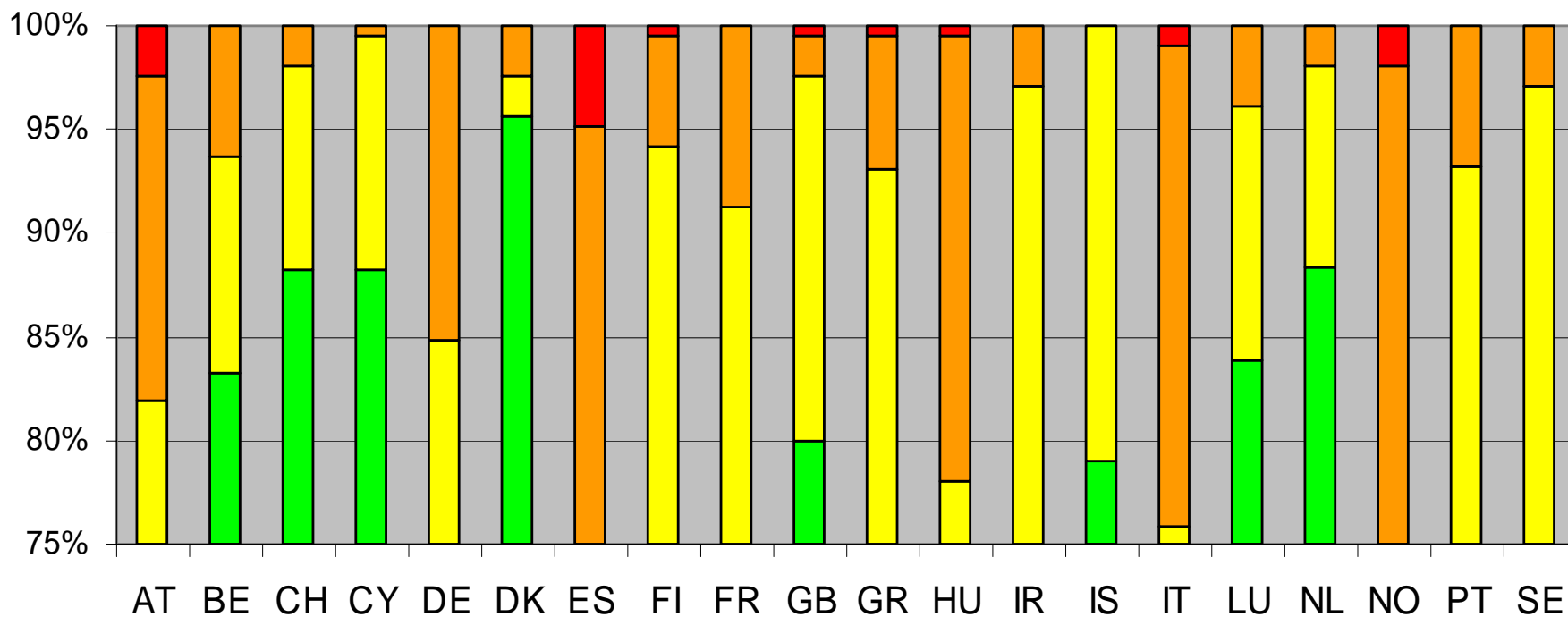
Replies

Author	Header
Michael Staudinger	Re:High temperature = (too) high number of warnings Posted: 29.06.2007 09:46:38
	Hi Emmanuel you are for sure right about the comparison to the heat wave 2003 and that "red" is some different thing. Orange might have fit the situation better, but 45 deg is for sure a problem, even in Greece or southern Italy. Was in Spain these days, were people from Valencia complained, that their sudden (regional) heat wave with 43 deg was not warned for by public authorities. What concerns the messages to the press officers - they will for sure not be automatic, triggered only in cases when large areas (= high number of regions) of Europe are orange or red. Texts will be written by Frank, support from all countries concerned is highly appreciated. best regards Michael to all who havent yet: pls do provide your press mail officers adress to Karin!
	Attached Images:
	Attached Documents:
	<input type="button" value="edit..."/>
Author	Header
Vasileos Chalkis	Re:High temperature = (too) high number of warnings Posted: 29.06.2007 11:02:02
	Dear all, this heat wave was a clear "red" situation for Greece. The temperature not only reached 44oc (=1% of frequency for Attiki, East Sterea e.t.c. according to the climatological values-time series of more than 50 years used!) it overpassed 46oC, but also it was greater than 43oc during 3 or 4 days continuously. The situation was worse than previous heat waves! I think it was well estimated as "red" and "orange" in other regions. Kind Regards, Anastasia
	Attached Images:

Statistics February – October (all parameters)



percentage of shown country colors



Rain

Level 4 (red) warnings

Element	[%]	No
AT	0.39	8
HU	0.07	1
ES	0.02	2
NL	0.00	0
LU	0.00	0
NO	0.00	0
PT	0.00	0
GB	0.00	0
CH	0.00	0
SE	0.00	0
IT	0.00	0
IS	0.00	0
DK	0.00	0
CY	0.00	0
BE	0.00	0
FI	0.00	0
FR	0.00	0
GR	0.00	0
DE	0.00	0
IE	0.00	0

Level 3 (orange) warnings

Element	[%]	No
HU	4.53	65
AT	1.66	34
ES	0.87	96
CH	0.86	7
DE	0.80	21
GR	0.73	24
IT	0.66	27
GB	0.30	10
IE	0.26	2
BE	0.17	3
PT	0.07	3
FR	0.04	8
NO	0.00	0
SE	0.00	0
IS	0.00	0
CY	0.00	0
DK	0.00	0
FI	0.00	0
LU	0.00	0
NL	0.00	0

Level 2 (yellow) warnings

Element	[%]	No
IT	11.42	466
GR	7.64	250
ES	4.76	525
GB	4.70	154
PT	4.48	199
CH	3.18	26
AT	3.17	65
BE	2.75	48
IE	2.38	18
DE	1.52	40
CY	1.49	3
LU	1.46	6
DK	1.29	21
NO	1.26	49
HU	1.11	16
NL	0.98	12
SE	0.95	79
IS	0.32	7
FI	0.00	0
FR	0.00	0

Level 1 (green) warnings

Element	[%]	No
FI	100.00	8796
FR	99.96	19172
IS	99.68	2174
NL	99.02	1218
NO	98.74	3846
DK	98.71	1612
LU	98.05	402
DE	97.68	2563
IE	96.82	731
SE	96.29	8041
CY	95.54	193
BE	95.53	1668
CH	95.47	780
GB	95.00	3116
AT	94.78	1943
ES	94.35	10405
HU	94.29	1353
PT	92.56	4115
GR	90.37	2957
IT	85.47	3487

thunderstorms



Level 4 (red) warnings

Element	[%]	No
HU	0.49	7
AT	0.15	3
NL	0.00	0
LU	0.00	0
NO	0.00	0
PT	0.00	0
GB	0.00	0
CH	0.00	0
SE	0.00	0
ES	0.00	0
IT	0.00	0
IS	0.00	0
DK	0.00	0
CY	0.00	0
BE	0.00	0
FI	0.00	0
FR	0.00	0
GR	0.00	0
DE	0.00	0
IE	0.00	0

Level 3 (orange) warnings

Element	[%]	No
HU	11.15	160
IT	2.75	112
LU	2.44	10
BE	2.18	38
DE	1.83	48
AT	1.76	36
GR	0.83	27
FR	0.71	136
CY	0.50	1
NL	0.41	5
ES	0.40	44
FI	0.07	6
GB	0.06	2
SE	0.00	0
CH	0.00	0
IS	0.00	0
DK	0.00	0
IE	0.00	0
NO	0.00	0
PT	0.00	0

Level 2 (yellow) warnings

Element	[%]	No
HU	23.41	336
DE	14.02	368
IE	11.52	87
AT	11.02	226
GR	10.91	357
IT	10.17	415
BE	8.08	141
CY	7.43	15
LU	6.83	28
IS	5.64	123
CH	2.94	24
ES	2.39	264
PT	1.96	87
NL	1.30	16
FI	1.19	105
GB	0.67	22
SE	0.14	12
NO	0.00	0
DK	0.00	0
FR	0.00	0

Level 1 (green) warnings

Element	[%]	No
DK	100.00	1633
NO	100.00	3895
FR	99.29	19044
GB	99.27	3256
FI	98.74	8685
NL	98.29	1209
ES	97.21	10720
SE	97.09	8108
CH	96.57	789
PT	95.14	4230
IS	94.36	2058
LU	90.24	370
CY	89.11	180
BE	88.20	1540
IE	87.95	664
AT	87.07	1785
GR	87.01	2847
IT	84.63	3453
DE	84.15	2208
HU	64.95	932

Snow

Level 4 (red) warnings

Element	[%]	No
AT	0.15	3
ES	0.02	2
NL	0.00	0
LU	0.00	0
GB	0.00	0
NO	0.00	0
PT	0.00	0
SE	0.00	0
IT	0.00	0
CH	0.00	0
IS	0.00	0
DK	0.00	0
CY	0.00	0
BE	0.00	0
FI	0.00	0
FR	0.00	0
HU	0.00	0
GR	0.00	0
DE	0.00	0
IE	0.00	0

Level 3 (orange) warnings

Element	[%]	No
DK	1.04	17
ES	0.82	90
FI	0.63	55
LU	0.49	2
AT	0.39	8
IE	0.26	2
DE	0.23	6
SE	0.06	5
FR	0.06	11
IT	0.05	2
PT	0.00	0
GB	0.00	0
CH	0.00	0
NO	0.00	0
IS	0.00	0
BE	0.00	0
CY	0.00	0
GR	0.00	0
HU	0.00	0
NL	0.00	0

Level 2 (yellow) warnings

Element	[%]	No
FI	11.29	993
NO	8.60	335
DE	2.55	67
ES	2.08	229
IE	1.72	13
SE	1.39	116
BE	1.15	20
IT	1.08	44
HU	0.84	12
GB	0.76	25
CH	0.73	6
AT	0.49	10
PT	0.00	0
IS	0.00	0
DK	0.00	0
CY	0.00	0
FR	0.00	0
GR	0.00	0
LU	0.00	0
NL	0.00	0

Level 1 (green) warnings

Element	[%]	No
NL	100.00	1230
IS	100.00	2181
FR	99.94	19169
GB	99.24	3255
HU	99.16	1423
LU	99.02	406
AT	98.98	2029
DK	98.96	1616
CH	98.78	807
GR	98.75	3231
IE	97.48	736
BE	97.31	1699
DE	97.22	2551
PT	97.10	4317
ES	97.09	10707
CY	97.03	196
IT	96.42	3934
SE	95.78	7999
NO	91.40	3560
FI	88.09	7748

decision tree for „red“

criteria at one point/station



no red / lower level



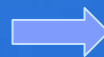
area criteria (parameter) met?



no red / lower level



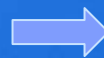
extreme impact possible ¹



no red / lower level



Pos feedback from civ pro?



no red / lower level



„red“

optional steps

¹ might be caused by a combination of parameters

Expert team for „red“

- Senior forecaster (teamleader)
- Member of the board
- Expert on clima / statistics
- Contact point to the media
- Civil protection

decision tree for „orange“

criteria at one point/station



no orange / lower level



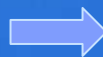
area criteria (parameter) met?



no orange / lower level



extreme impact possible ¹



no orange / higher or lower level



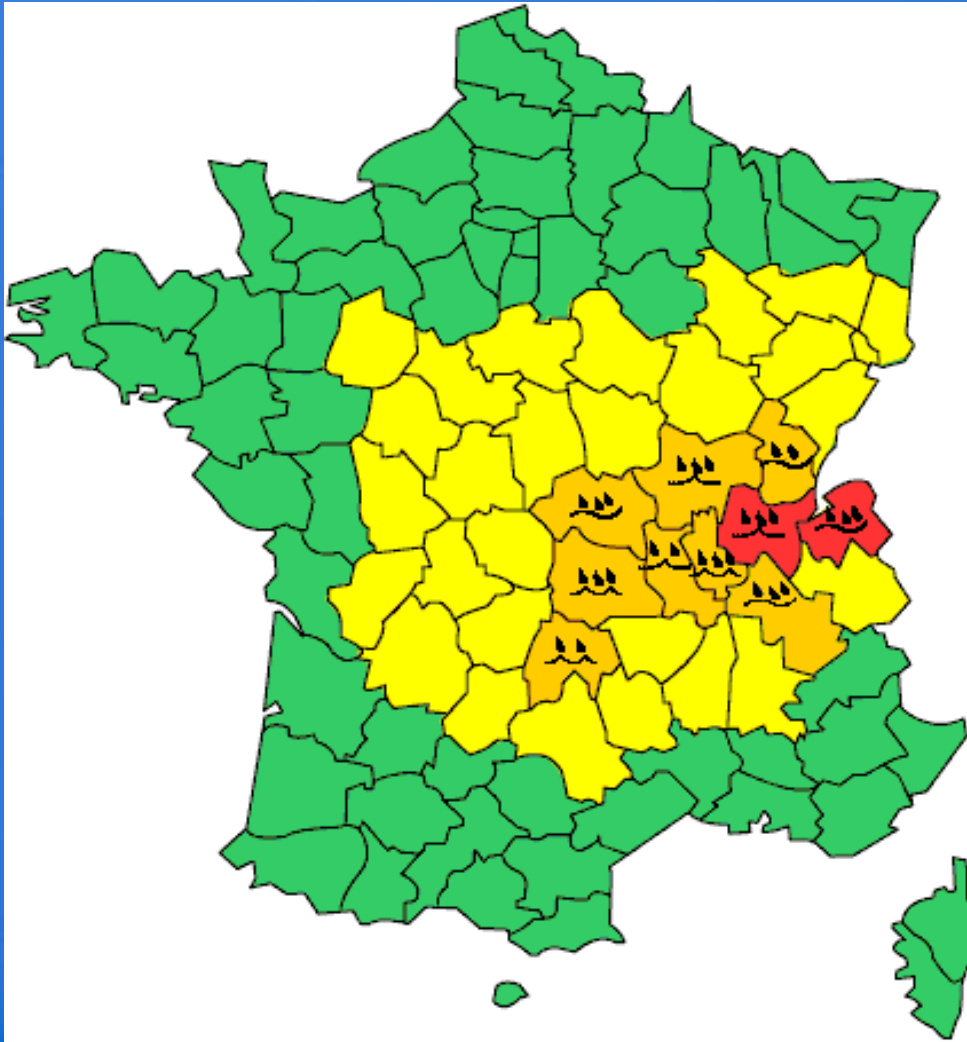
„orange“

optional steps

¹ might be caused by a combination of parameters

Meteo – Hydro Warnungen

e.g. Combined precipitation / flood warnings




France:
SCHAPI system

Platform for
Experts on

Meteorology
Hydrology
Civil protection
Relieve units










<http://wetterbox.kso.ac.at>



wetter-box

user hochwasser

08:53 UTC
02-05-2006

<h3>Letzte Hochwasserwarnung ZAMG-HYDRO</h3>  <p>HOCHWASSERWARNUNG!</p>	<h3>HYDROGRAPHIE Homepage</h3>  <p>Amt der Kärntner Landesregierung, Hydrographischer Dienst Tel 0463 536 31614</p>	<h3>5-Tages Prognose Kärnten</h3> <h4>WETTER-PROGNOSE für KÄRNTEN (5Tage)</h4>  <p>update 08 und 15 Uhr www.zamg.ac.at Wetterdienst Klagenfurt</p>
<h3>Wetterwarnungen ZAMG</h3> <p>Klick zur aktuellen</p> <h2>Wetterwarnung für Österreich</h2>  <p>Zentralanstalt für Meteorologie & Geodynamik ZAMG www.zamg.ac.at</p>	<h3>Wetterwarnungen METEORISK</h3> <p>Klick zur aktuellen</p> <h2>Wetterwarnung für den gesamten Alpenraum</h2>  <p>METEORISK www.meteorisk.info</p>	<h3>Aktuelles Satellitenbild (halbstündlich)</h3> 
<h3>Aktuelle Niederschlagsdaten</h3> 	<h3>Aktuelle Abflussdaten der Flüsse</h3> 	<h3>Wetterkarte</h3> <p>Klick zur aktuellen</p> <h2>Wetterkarte</h2>  <p>Deutscher Wetterdienst www.dwd.de</p>

© KSO & ZAMG Klagenfurt
queried 02-05-2006 09:03 UTC, 722

CamVis
Meteo Cams Visualization System



Zentralanstalt für Meteorologie und Geodynamik
Wetterdienst Klagenfurt
Tel 0463 41443 13



Amt der Kärntner Landesregierung
Hydrographischer Dienst
Tel 0463 536 31814

180a

HINWEIS - VORWARNUNG

an die Medien, ausgegeben am 06.11.2007 09:38 Uhr

Starkniederschlag

In den nächsten Stunden anhaltender Niederschlag, bis 18h großflächig im gesamten Einzugsgebiet der Drau 80 bis 100 l/m₂ zu erwarten,

Hochwassergefährdung

Draugebiet

Aktuelle Situation: erste Überschwemmungen

Weitere Entwicklung: steigender Pegel (HQ50) in Villach

Alarmierungsgrad / Maßnahmen: Evakuierungen im unmittelbaren Nahbereich der Drau (HQ50) notwendig

Die nächste Information erhalten Sie um 15 Uhr!

Ergänzende Angaben finden Sie im Internet:

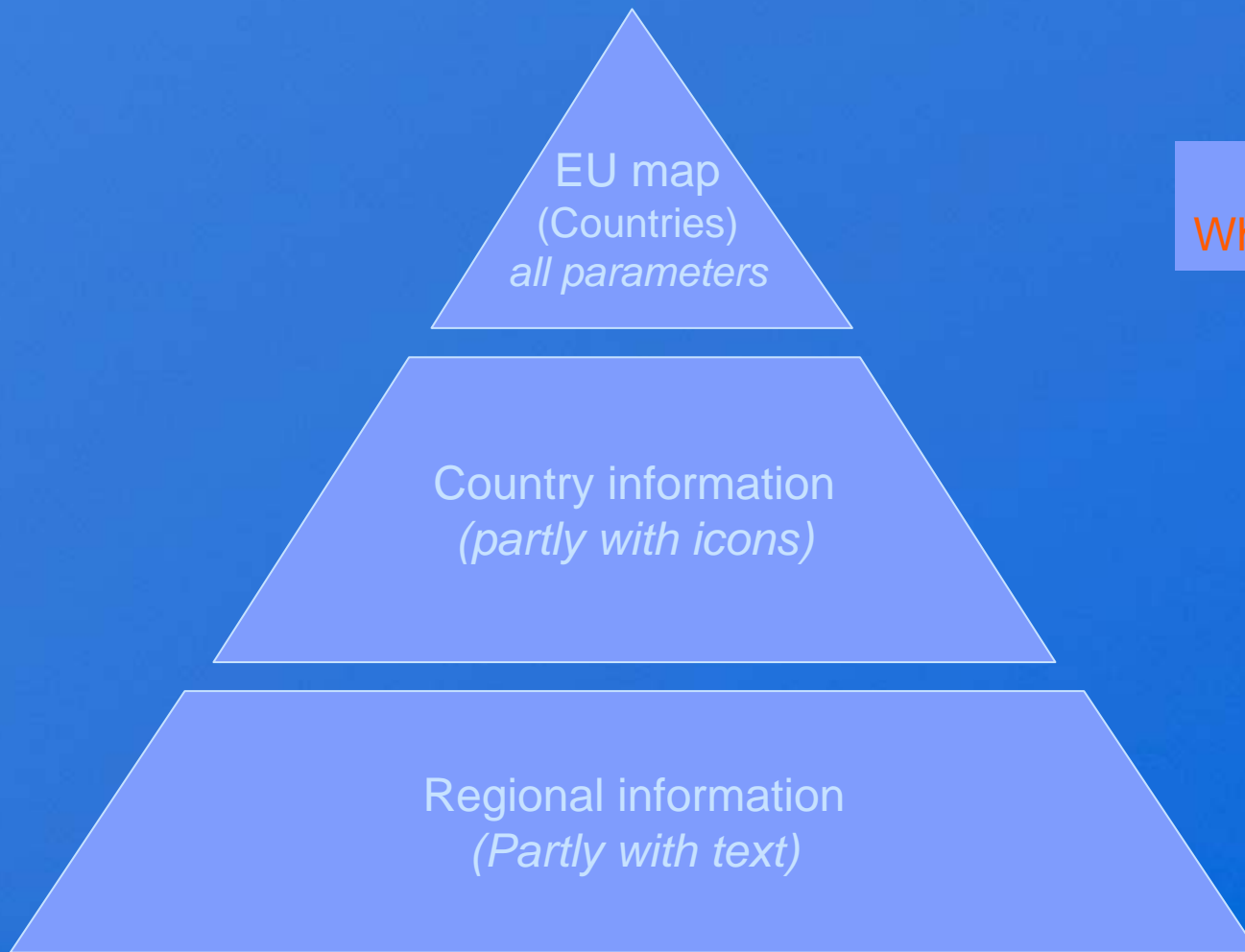
ZAMG Wetterdienst Klagenfurt: <http://hochwasser.kso.ac.at>

Hydrographischer Dienst Kärnten: <http://www.wasser.ktn.gv.at/Hydrographie>

METEOALARM Pyramid of information - present



Problems:



Regional info?
Which parameter/country?

Missing icons

Missing texts

METEOALARM Pyramid of information - future



Solutions:



No oversizing of regional info

**More info through icons
Potential risks less visible**

**available info
made visible**



- Which products help users in providing early warnings?
- What should be expected for 3 days, 1 week, 1 month
- How important post processing/calibration of model data
- Verification for early warning:
 - Extreme / rare events
 - sample size
 - observations – do we know what happened?
 - extrapolate from moderate events
 - what scores to use?
- how should case studies be used (consider false alarms and missed events)?



- Which products help users in providing early warnings?
- What should be expected for 3 days, 1 week, 1 month
- How important post processing/calibration of model data
- Verification for early warning:
 - Extreme / rare events
 - sample size
 - observations – do we know what happened?
 - extrapolate from moderate events
 - what scores to use?
- how should case studies be used (consider false alarms and missed events)?



- Awareness for details of damages and potential preconditions
- Needed: Networks between civil protection & meteorologists
- Feedback mechanism about damages to NMHS / member states / ECMWF
- Case studies on all aspects of skill needed (hit, missed, FA, corr rejection)
- Dependence on consequences of climatic changes / adaptation

Merci for your attention!

