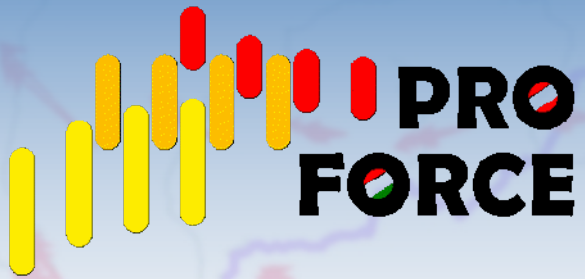
Bridging of Probabilistic Forecasts and Civil Protection



Clemens Wastl
ZAMG

25th ALADIN Workshop & HIRLAM All Staff Meeting 2015, 13-17 April, Helsingør

ZAMG OMSZ

Co-financed by the EU

European Commission

Content

- Motivation – Why PROFORCE ???
- General project information/participating partners
- Project objectives/task overview
- Model chain
- Webpage/webportal
- Application/training
- Case studies
- First success/publicity

Why PROFORCE ?

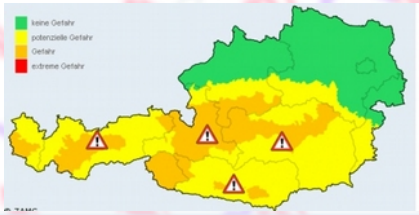
Severe Weather

Damage

Prevention and Preparedness

Crisis management

Weather forecasts Warnings



Project Information

- **Project logo:**

- **Project duration:** 24 months

  December 1st 2013 – November 30th 2015

- **Partners:** 4 partners from Austria and Hungary

  - ZAMG, meteorology Austria, lead partner
  - NOEL-CP, Provincial Government of Lower Austria, civil protection Austria
  - OMSZ, Hungarian Meteorological Service, meteorology Hungary
  - DMDSC, Disaster Management Directorate of Somogy County, civil protection Hungary

- **Website:** www.echo-proforce.eu

Project Objectives

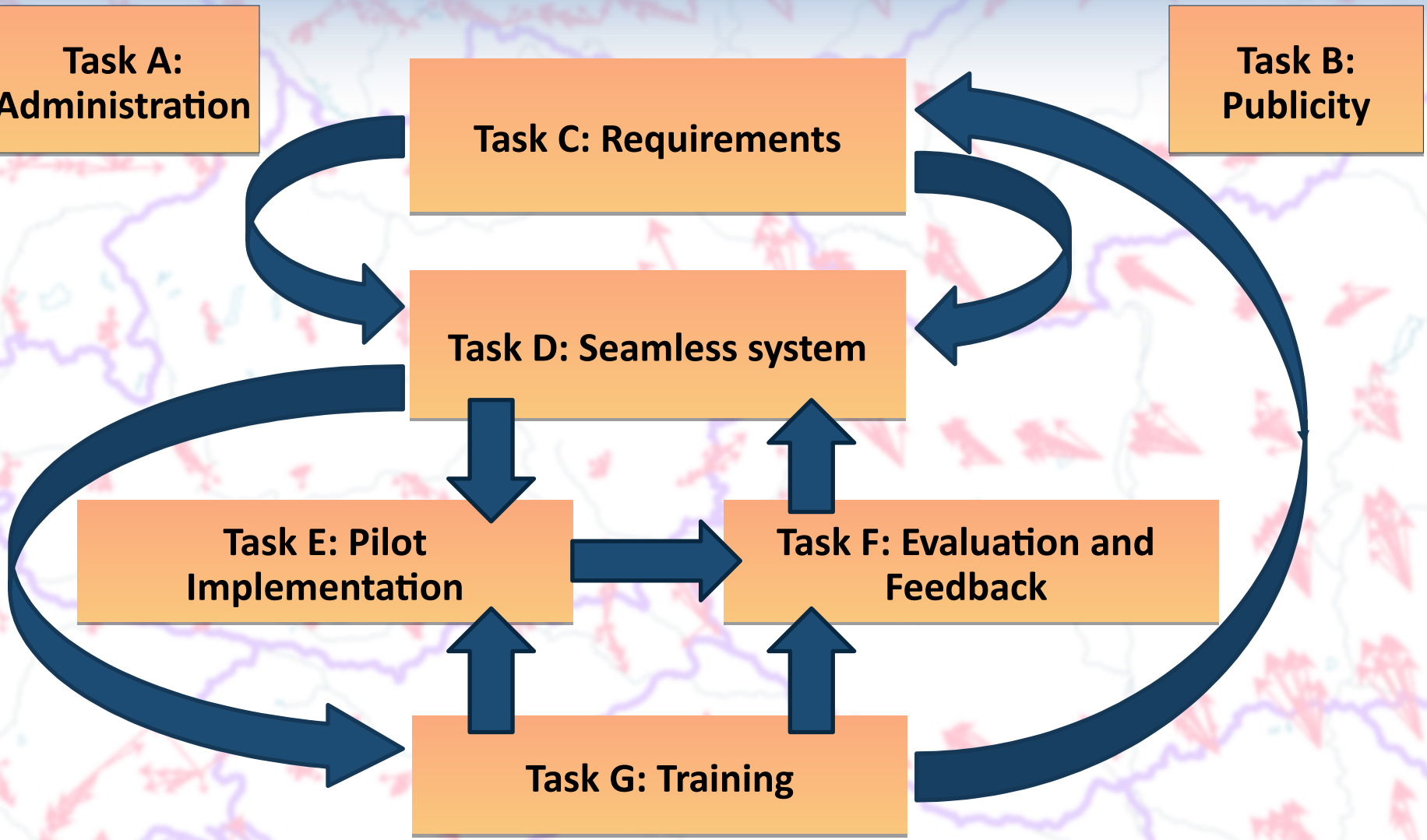
Set-up of an innovative probabilistic forecasting system in a seamless way from several days ahead (low spatial resolution) to several hours ahead (high spatial resolution)

Improvement in the accuracy and timeliness of severe weather warnings due to information about the uncertainty and predictability of severe weather events

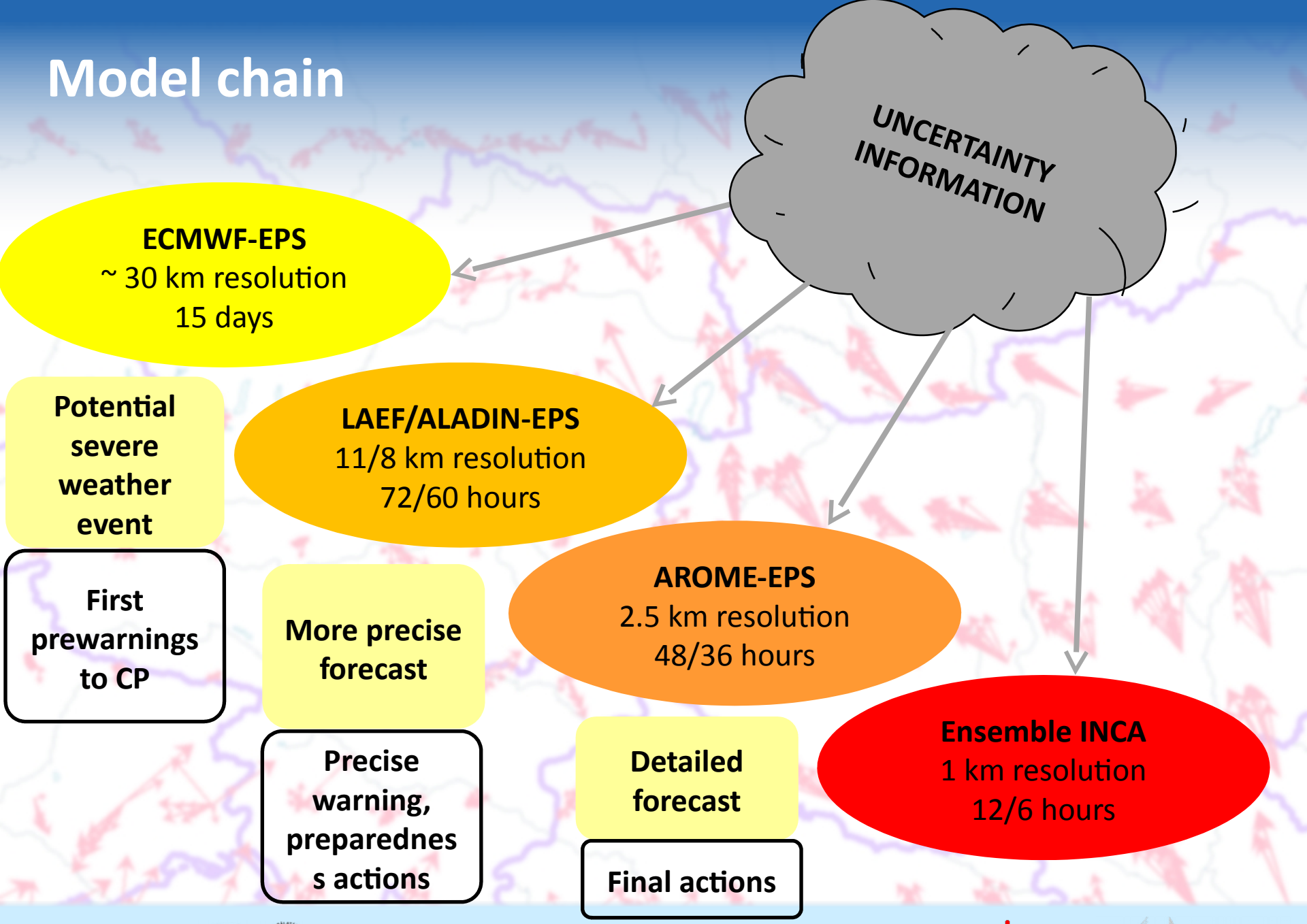
Improve preparedness and decision making procedures in civil protection agencies by using probabilistic forecasting system

Strengthen the cooperation between scientists and civil protection people and intensify the transnational cooperation between Austria and Hungary

Task overview



Model chain



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Webpage: www.echo-proforce.eu

PRO FORCE Bridging of Probabilistic Forecasts and Civil Protection

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Evaluation results

Details
Published: 26 March 2015

At the end of the midterm meeting in Budapest a short evaluation of the meeting…

Read more >>

Midterm meeting in Budapest (updated)

Details
Published: 20 February 2015

On 27 and 28 January, 2015 the PROFORCE midterm meeting took place at the Hungarian…

Read more >>

Joint Training Session

Details
Published: 20 June 2014

On 18 June, 2014 members of all four project partners came together in Balatonföldvár, Somogy…

Read more >>

Legal notice

PRO FORCE

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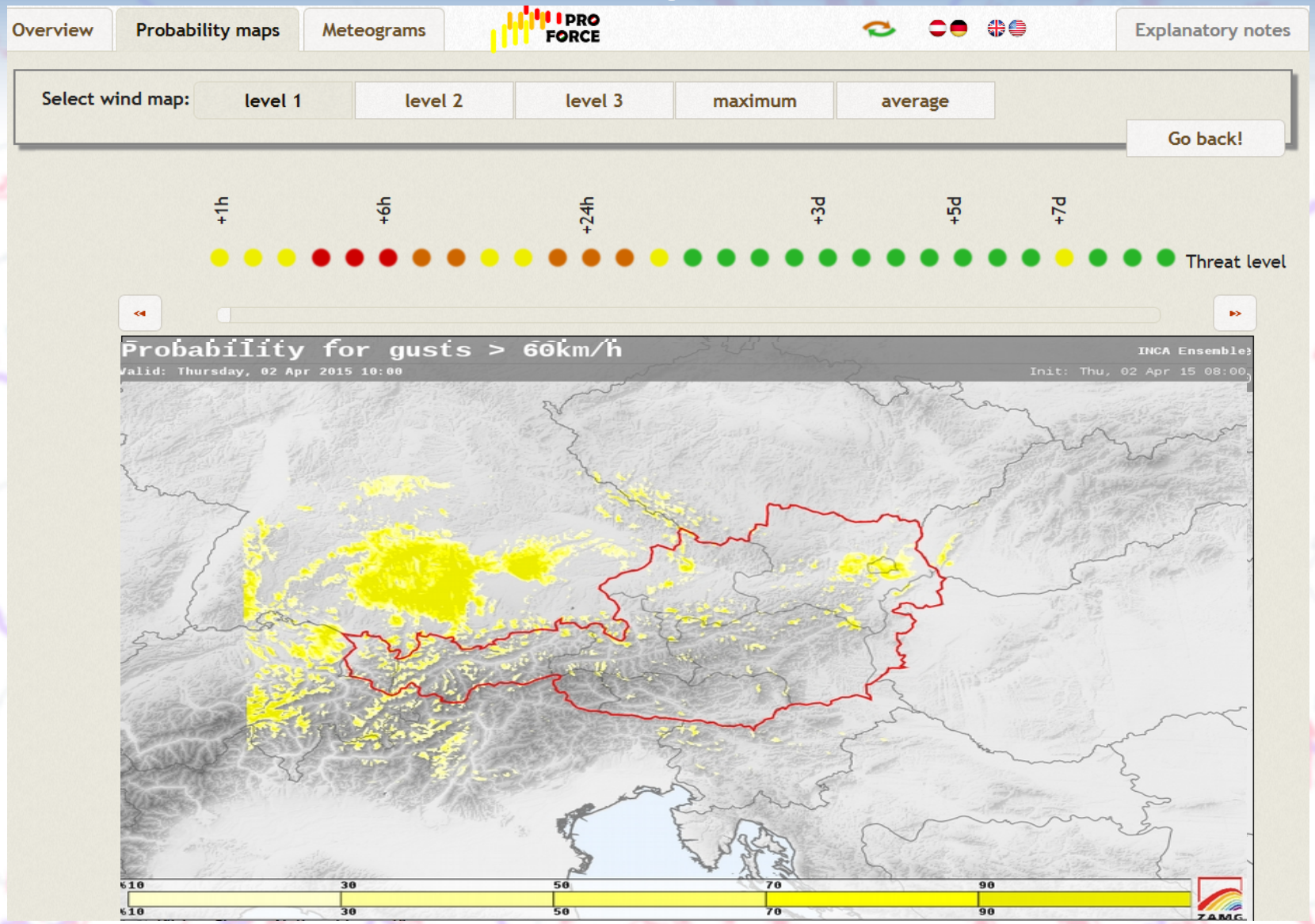
Login

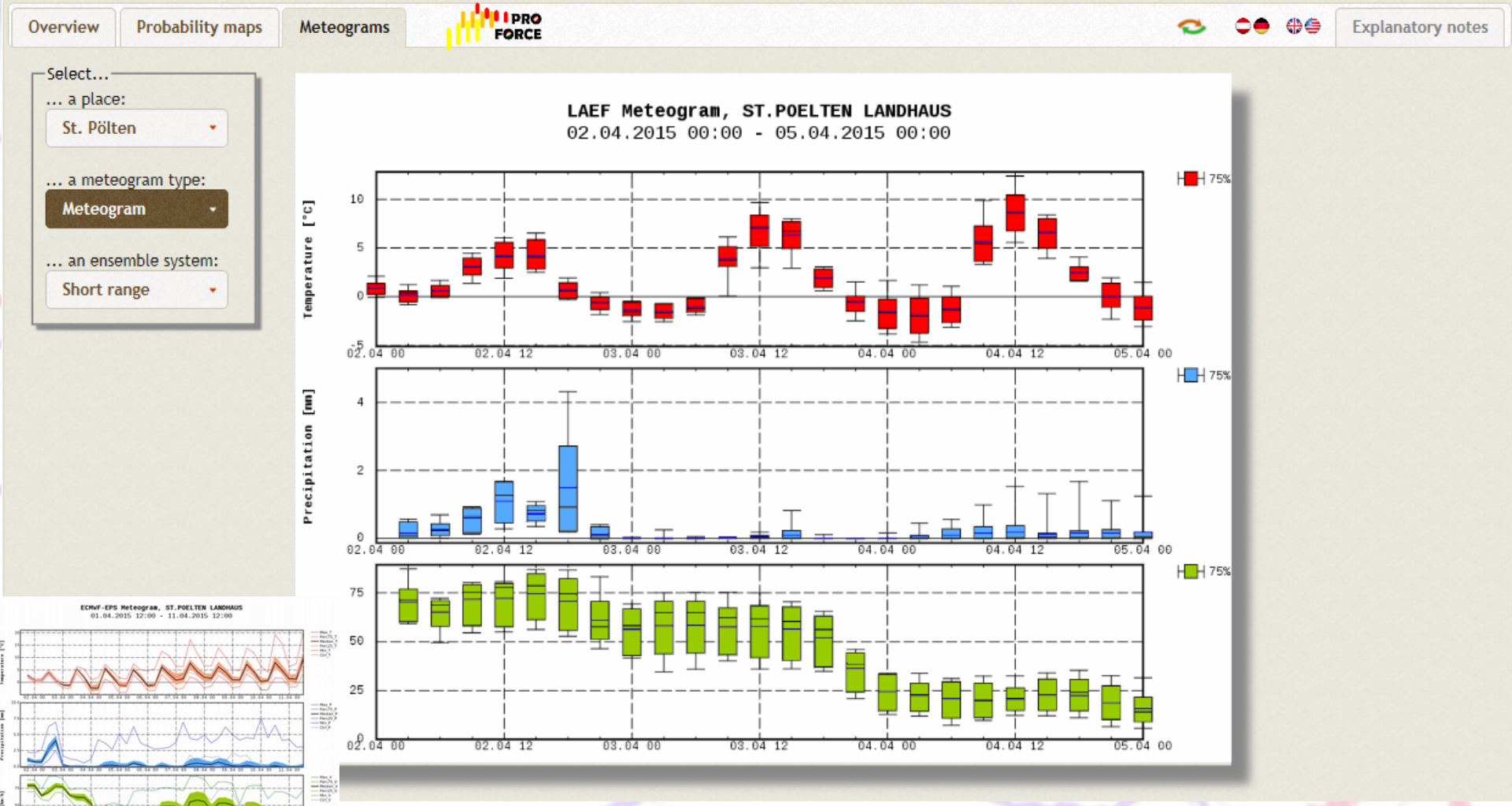
Hello, Zentralanstalt für Meteorologie und Geodynamik!

Log out

Webportal

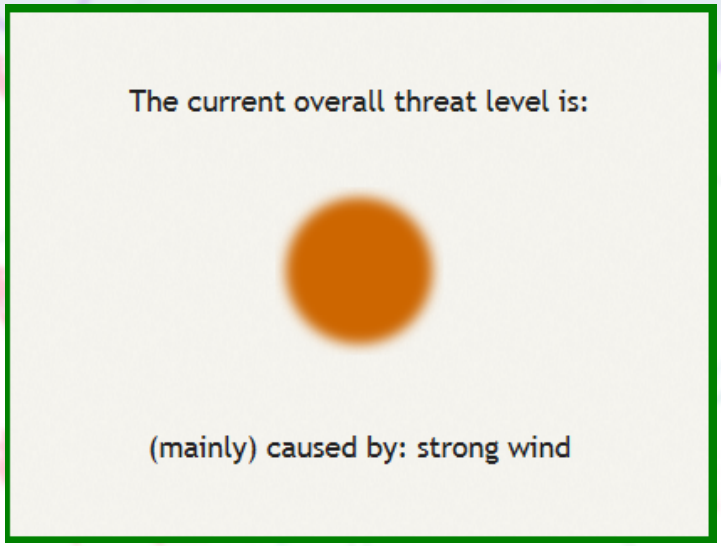

Overview
Probability maps
Meteograms
PRO FORCE
Explanatory notes
Select wind map:
level 1
level 2
level 3
maximum
average
Go back!
+1h
+6h
+24h
+3d
+5d
+7d
Threat level
Probability for gusts > 60km/h
INCA Ensemble
Valid: Thursday, 02 Apr 2015 10:00
Init: Thu, 02 Apr 15 08:00
10
30
50
70
90
ZAMG

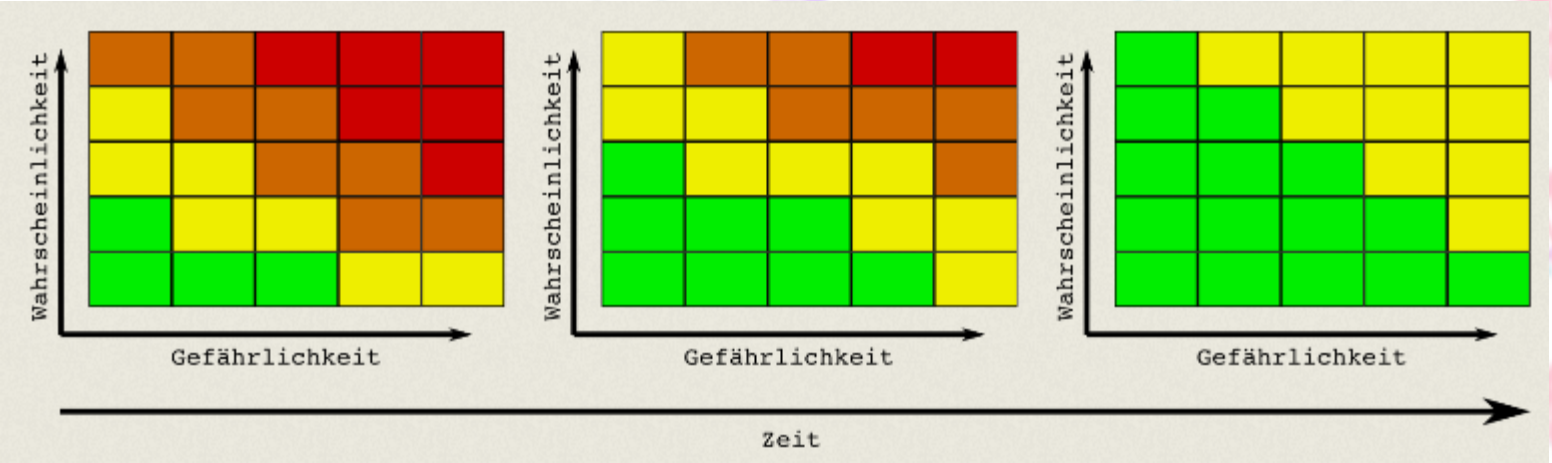
Webportal


Overview
Probability maps
Meteograms
PRO FORCE
Explanatory notes
Select...
... a place:
St. Pölten
... a meteogram type:
Meteogram
... an ensemble system:
Short range
LAEF Meteogram, ST.POELTEN LANDHAUS
02.04.2015 00:00 - 05.04.2015 00:00
Temperature [°C]
Precipitation [mm]
75%
02.04 00
02.04 12
03.04 00
03.04 12
04.04 00
04.04 12
05.04 00

Webportal

Threat level: In case of the main threat level indicator also the forecast time plays a role. The farther into the future the valid date lies the more severe a potential severe weather has to be to have an impact on the indicator. In doing so we acknowledge the general decay of forecast quality with increasing lead time.





Application

- **Optimize decision making procedures in terms of preparedness and awareness:**

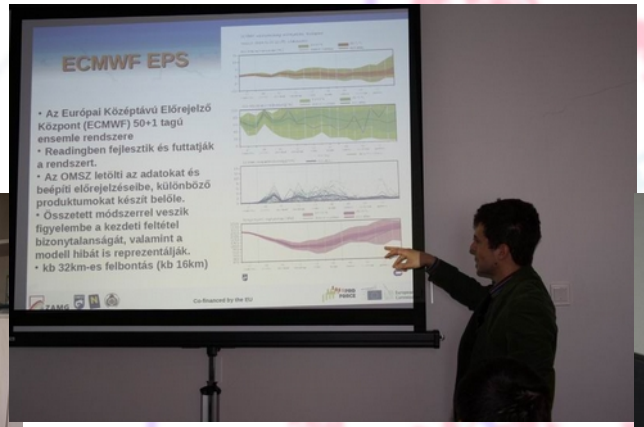
– in case of severe weather events

– in the course of mass events

Training

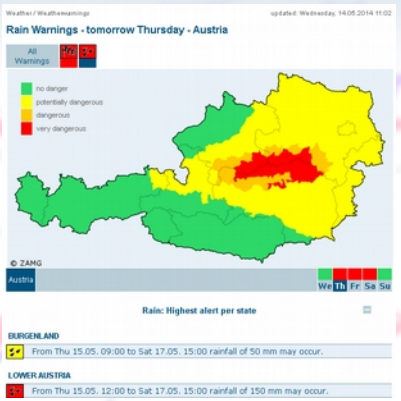
One key point of this project is the training of the CP people to get used to probabilistic forecasts:

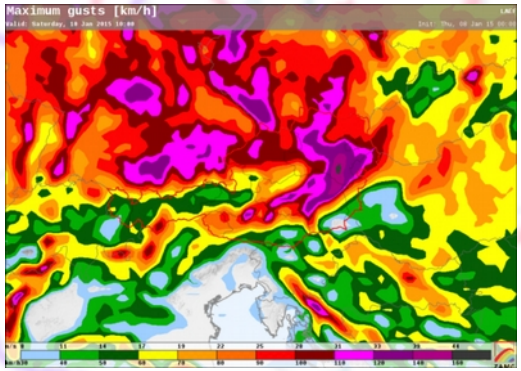
- Common trainings with model developers, forecasters and users in CP
- Transnational training sessions (one in Hungary, one in Austria)
- Integrate the feedback of the users to improve the system



Case studies

- **Storm Yvette 15. – 17.5.2014**
  strong storm affecting both countries, major damage due to high wind speeds (>120km/h) and heavy precipiation (~150mm/36h -> floodings)





- **Winter storms Elon and Felix 8. – 11.1.2015**
  gusts up to 130km/h over large parts of Austria, heavy damage to forests

- **Storm Niklas 30.3. – 1.4.2015**
  gusts up to 140km/h in the flat areas and 190 km/h in the mountains,
  up to 2m snow in the mountains - avalanches

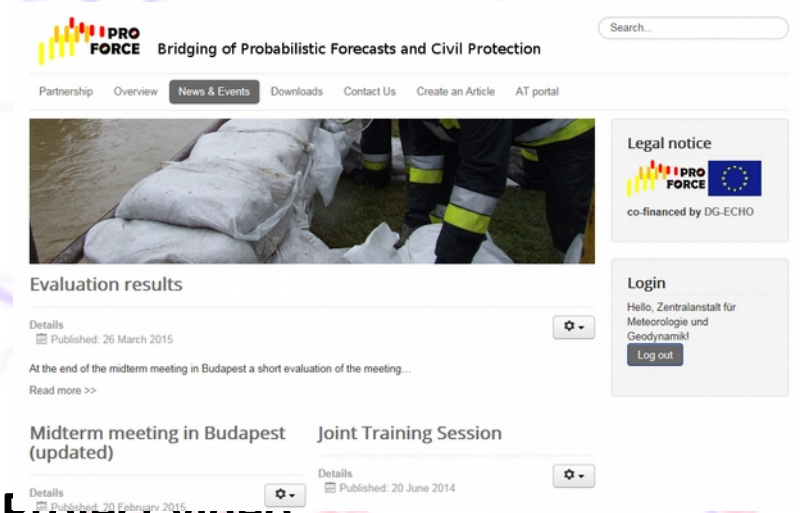
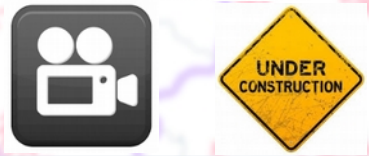
First sucess

- Simple idea: combine different EPS forecasts to one portal and provide it to CP users
- First use of probabilistic forecats in disaster management in both countries
- Extremely positive feedback of CP users
- The feedback of the users helped a lot to improve the webportal and to make forecasts more applicable and user-friendly
- With the help of EPS forecasts the 2014 Lake Balaton swimming contest (> 7000 participants) was postponed (strong gusts); first awareness already several days ahead
- Massive storm event „Niklas“ in March 2015 (gusts up to 140km/h in the flat areas, 190km/h in the mountains); CP agencies were informed several days in advance

Publicity

- **Project flyer**

- **Website** www.echo-proforce.eu



- **Project video**