The
ESSL Testbed

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This presentation

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- will start with some motivation for the Testbed
- will then explain the concept
- and finally show the current state of implementation

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but not before saying a few words about ESSL in general…

The European Severe Storms Laboratory

- is a non-profit research organization
- located in Wessling, Germany (at German Aerospace Center DLR)
- three goals:
  - Perform and support science (several projects)
  - European Severe Weather Database
  - European Conference on Severe Storms

- with a subsidiary:
  ESSL - Science and Training (Wiener Neustadt, Austria)
  - ESSL Testbed
  - other activities (research, support of research, training)

European Severe Storms Laboratory

ESSL

2012 ESSL Testbed

in cooperation with:

ZAMG
ZentralAnstalt für Meteorologie und Geodynamik

supported by:

WISSENSCHAFT · FORSCHUNG NIEDERÖSTERREICH

WIENER NEUSTADT

DLR German Aerospace Center

EUCLID
European Cooperation for Lightning Detection

Deutscher Wetterdienst

Die Österreichische Hagelversicherung

EUMETSAT

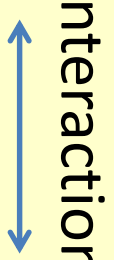
eumetcal

NIEDERÖSTERREICH HINEIN INS LEBEN.

Motivation for the ESSL Testbed

Offer a facility that serves two groups within the meteorological world:

- Researchers and developers of products to be introduced in the forecasting process
- Forecasters who use these products



want feedback from forecasters during the development process

want to be educated about new products and techniques

Motivation for the ESSL Testbed

Most efficient approach:

- bring R&D and forecasters physically together, and let them work together in a setting that approaches “true forecasting operations”

Example of this approach:

- Hazardous Weather Testbed (Spring Program) of NOAA

Hazardous Weather Testbed (NOAA)

- Experimental Forecast Program (12-24 hours)
- Experimental Warning Program (nowcasting)
- GOES-R Proving Ground

Motivation for the ESSL Testbed

Additional benefits:

- Demonstrate new developmental products internationally
- Obtain independent recommendations on the developmental product
- Enhance forecasters' overall skills of handling severe weather through education from and interaction with international experts

The Testbed concept

- central location
- in the European severe weather season
- Participation:
  1 week on-site &
  1 week online
- 5 weeks

ESSL Research and Training Centre
Wiener Neustadt (Austria)

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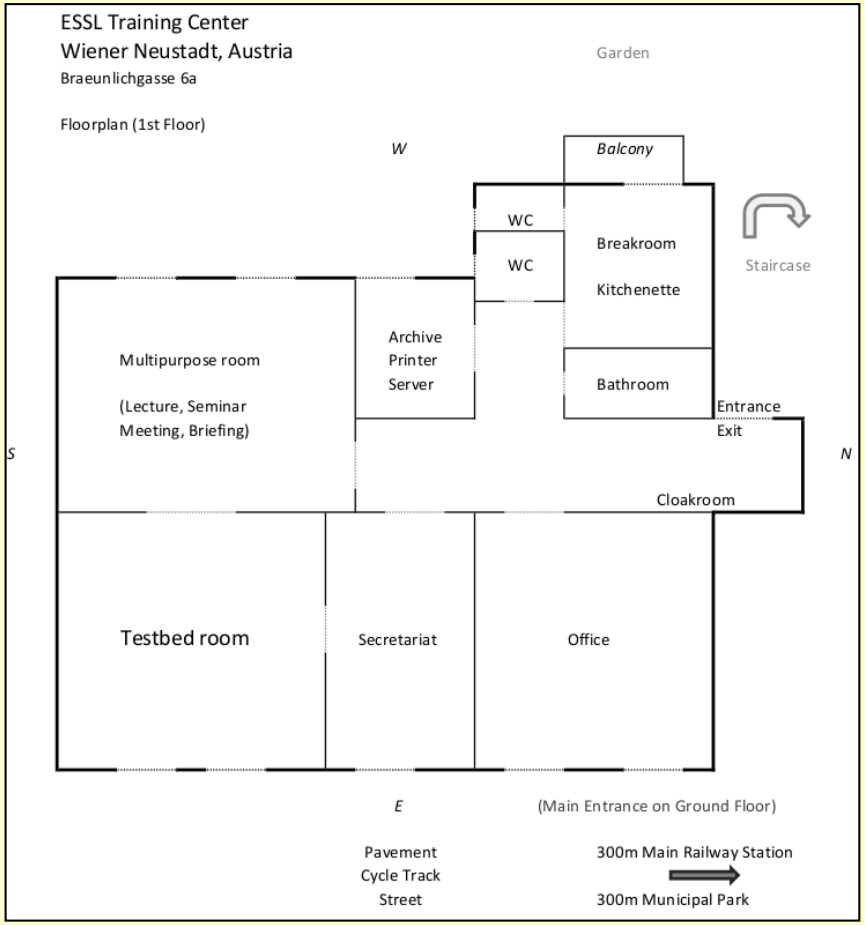

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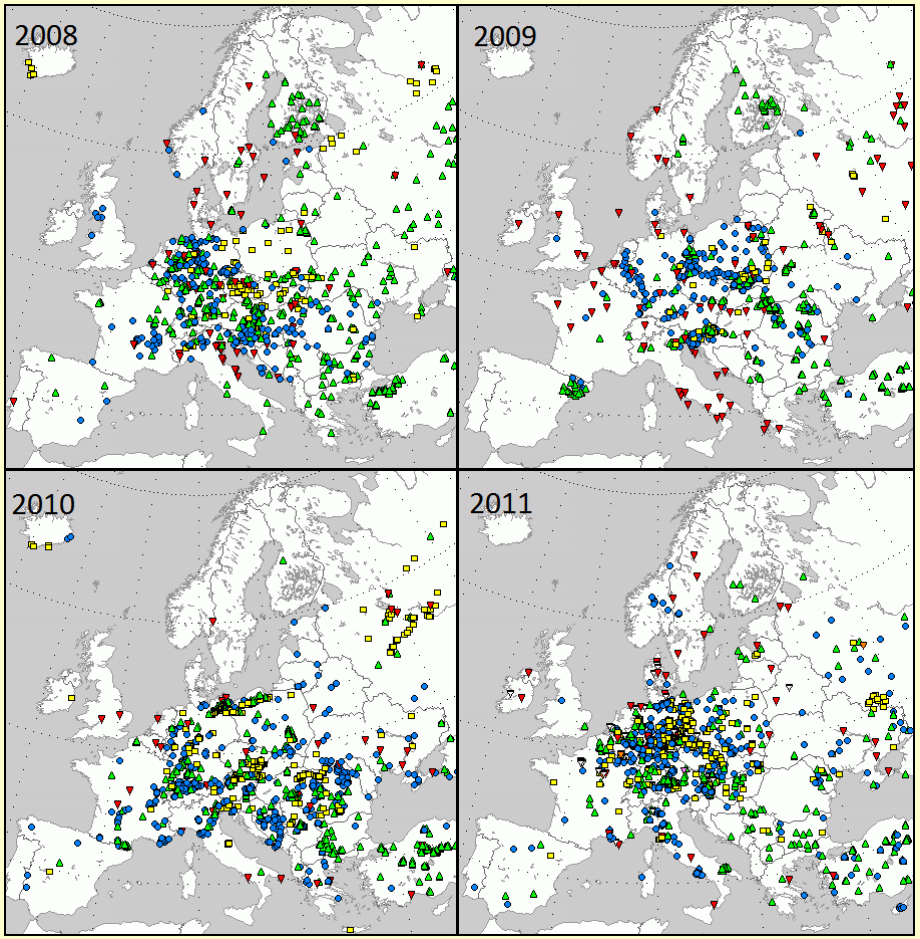

Severe weather reports in the month of June
from European Severe Weather Database (www.eswd.eu

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online-component supported by EUMETCAL

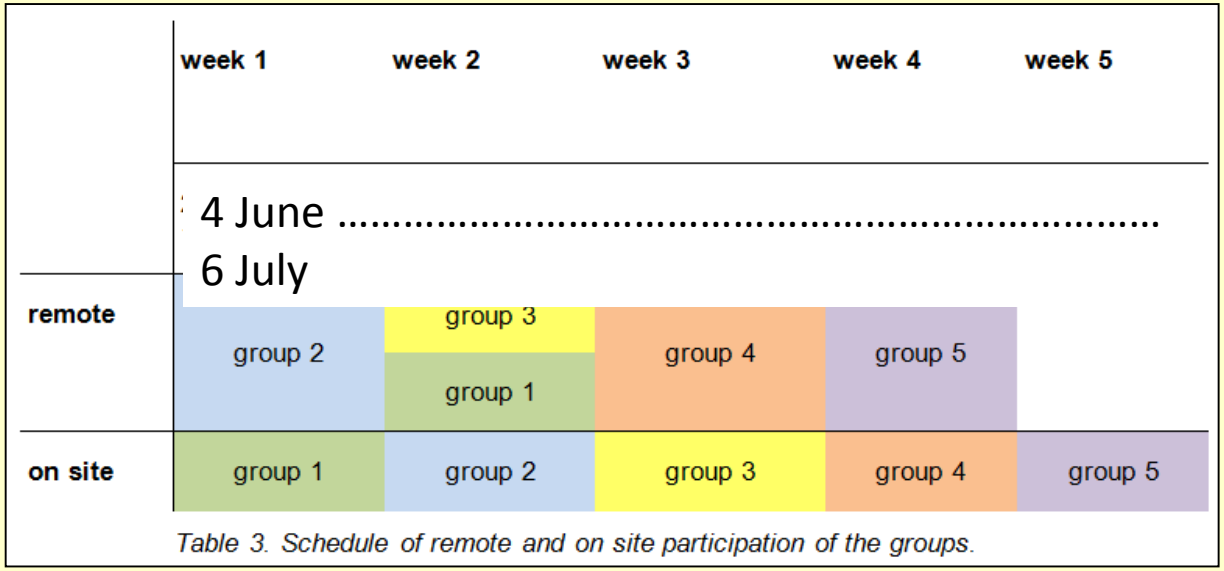


Table 3. Schedule of remote and on site participation of the groups.

Three steps

Forecasting *using experimental products*

- Probabilistic forecasts of lightning, flooding, and severe weather (3-48 hours ahead, 2-5 days ahead)
- Nowcasting, preparing “watches” (0-3 hours ahead)

Verification

- How good were the experimental forecasts?
- How good were the experimental “watches”?

Evaluation *through questionnaires output to Testbed log*

- How helpful was product X? What were its strengths?
- How can it be improved?
- Specific questions the developer is interested in

The Testbed concept

Daily programme

Local time	Activity
08:30	1a. Forecast session
10:30	2. Verification session
11:00	Online daily briefing
11:30	Lecture of the day
12:30	*Lunch break*
13:45	3. Evaluation session
14:15	1b. Nowcast session or work with a prepared case
17:30	*End of the day*

remote participation part

Basic meteorological data available

NWP: (web-based model comparison page)

- Global: ECMWF, GFS
- Regional: ALARO, COSMO-EU
- Local: COSMO-DE (COSMO-DE-EPS as test product)

Satellite:

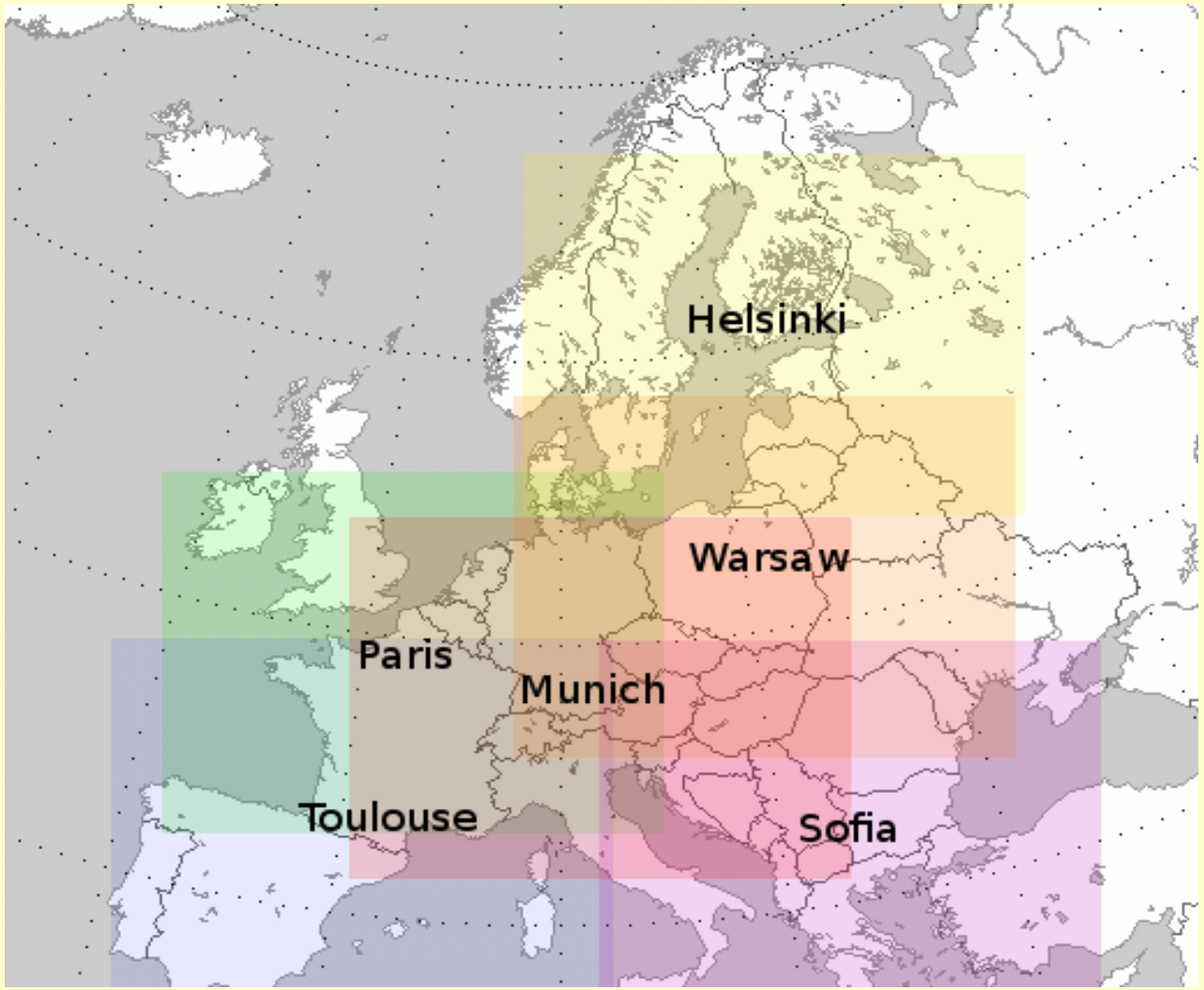
- Meteosat VIS, IR (10.8), WV, IR-BT (sandwich as test product)

Radar composites:

- Central-EU (ZAMG/AustroControl); West-EU, Germany (DWD); Nordic countries (FMI website)

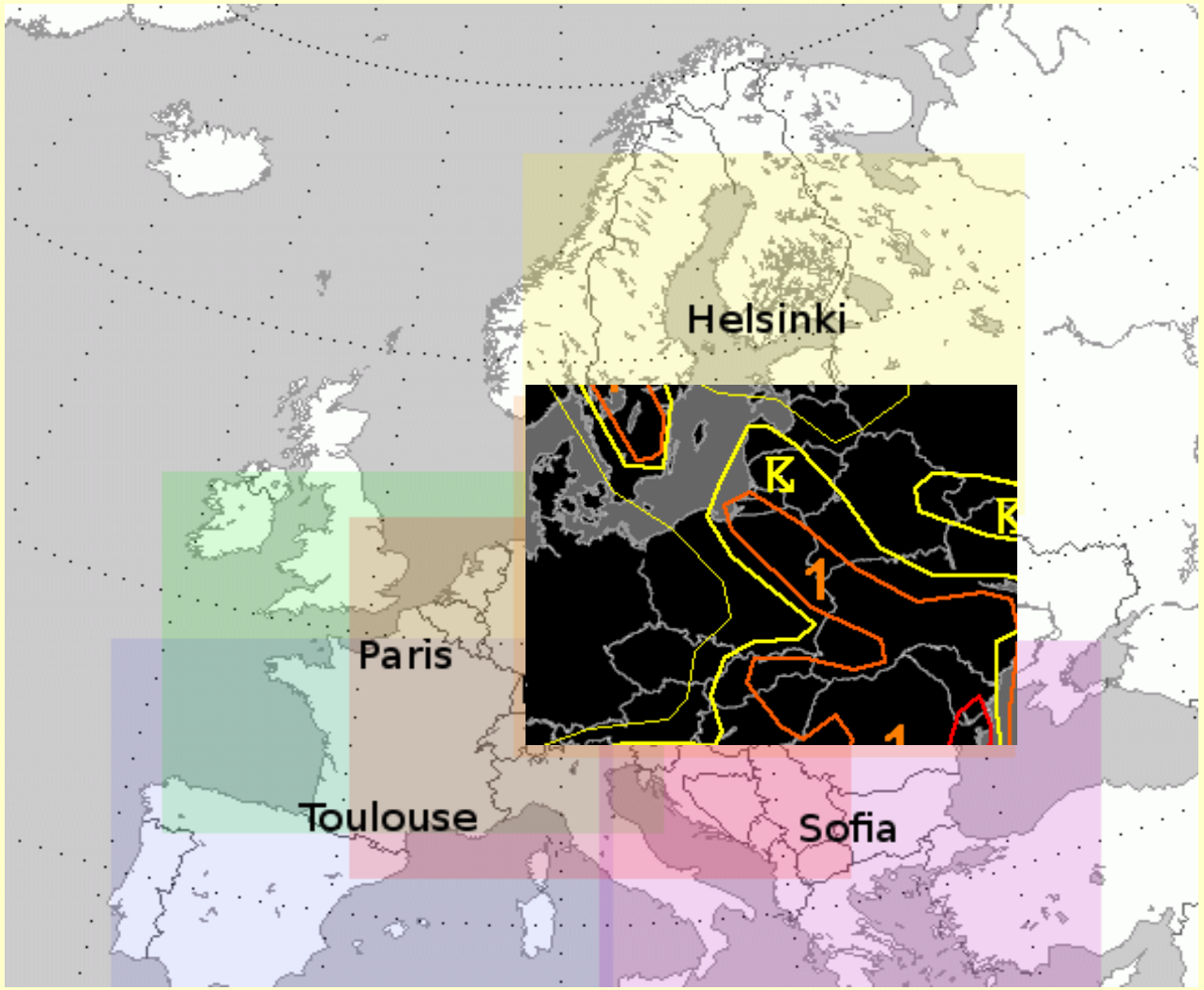
Surface observations

Forecasting



6 sub-domains to make experimental forecasts for

Forecasting



6 sub-domains to make experimental forecasts for

Products to test

- Extreme Forecast Index (ECMWF)
- Cb-TRAM & Rad-TRAM (DLR)
- EUCLID lightning detection network (EUCLID)
- ESSL hail parameter (ESSL)
- COSMO-DE-EPS selected visualizations (DWD)
- Sandwich product (Setvák)
- possibly more upcoming…

Participants

- Participants from the following countries have (pre-)registered:

Poland, Switzerland, Austria, Germany, Czech Rep., Finland, Portugal, Netherlands, Serbia, Slovenia, Lithuania, Latvia, United Kingdom, United States, Italy, Bulgaria, Slovakia.

- A number of people receive support from EUMETSAT, from WMO, or from ESSL.

- A few names of people coming from overseas:
  - Jim LaDue (NOAA/WDTB)
  - Patrick Marsh (NOAA)
  - Johannes Dahl (ESTOFEX/NCSU)

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- some more names (very incomplete list):

- Christoph Gatzen (ESTOFEX), Hans Volkert (DLR), Jochen Kerkmann (EUMETSAT), Fernando Prates (ECMWF), Oscar van der Velde (ESTOFEX), David Schultz (Univ. Manchester), Georg Pistotnik (ESSL)…

remotely:
Martin Setvák (CHMI), Caroline Forster (DLR)

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-

these people will give “expert lectures”

  - Johannes Dahl (ESTOFEX/NCSU)

Questions, suggestions … ?

Photo courtesy of Walter Stieglmair