



Experiences in using simulator for convection and nowcasting training



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History of Weather Simulator

Since 1995 Nomek (Nordisk Meteorologisk Kompetensutbildning) courses are organised (EUMETSAT ↔ EUMETCAL)

Weather Simulator originally created in 2011 by
Heleen ter Pelkwijk (KNMI, The Netherlands)

2012 – Weather Simulator used in Nomek for the 1st time
(as a student)

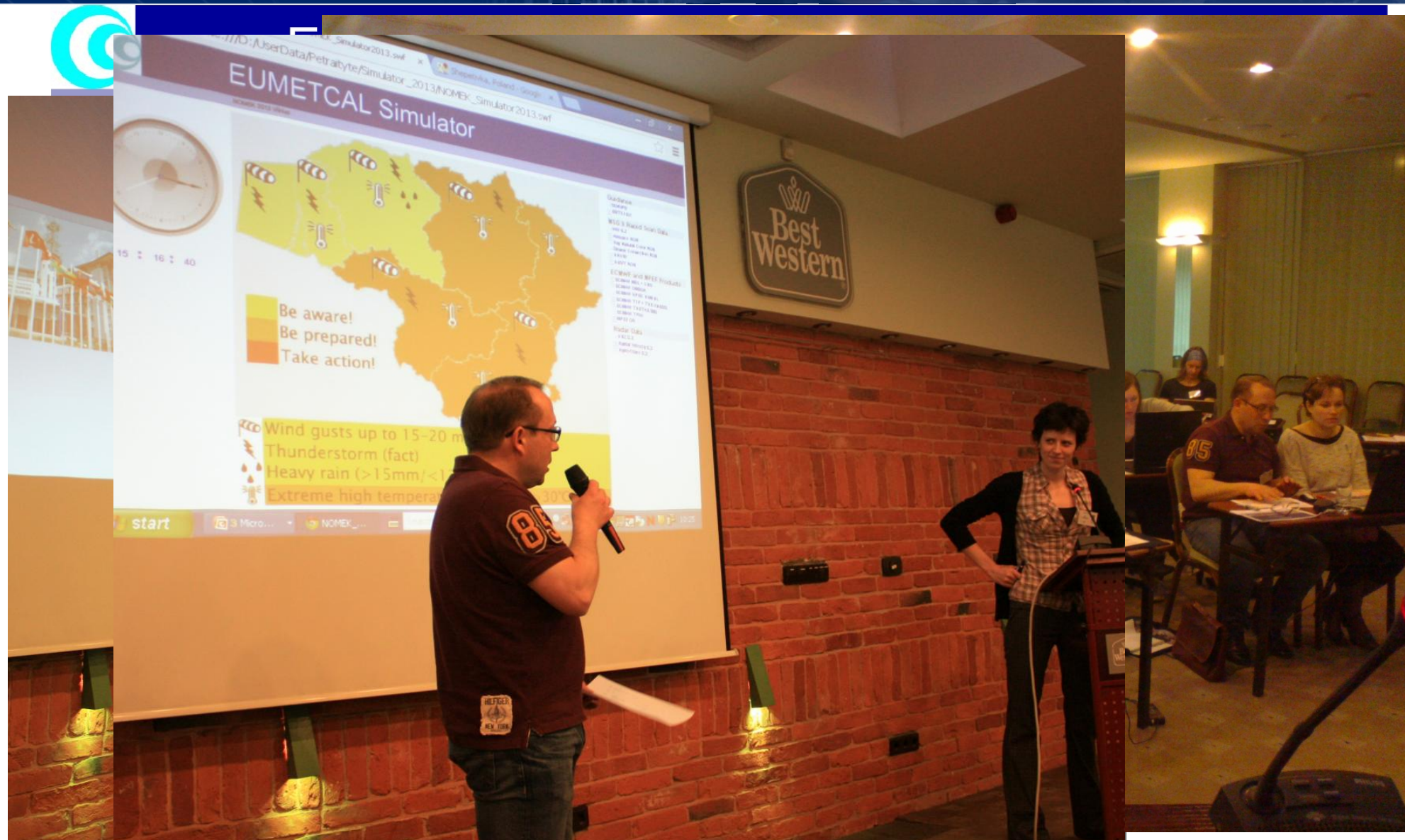


2013 – Nomek in Vilnius and Weather Simulator for severe
convection on **29 July, 2012**
(as an instructor)





Weather Simulator in Nomek 2013





Process...

step 1 of 3 – find a case

- Searching for an “interesting” weather event;
- Identifying the case;
- Fits or not (duration and purpose of the simulation);
- Collecting data;
- Preparing collected data;

Process... step 2 of 3 – Flash coding

Weather Simulator – Flash based technology

The screenshot displays the Adobe Flash IDE interface. The main workspace shows the 'Actions - FRAME' panel for 'ActionScript 3.0'. The code being written is as follows:

```
16 //Here we fill the Array addreses. The addreses of these images should be relative
17 //to the simulator and not to this MovieWindow otherwise the simulator will not work!
18 addresses.push("satpics/AIRMASSRS_0800UTC.png",
19 "satpics/AIRMASSRS_0805UTC.png",
20 "satpics/AIRMASSRS_0810UTC.png",
21 "satpics/AIRMASSRS_0815UTC.png",
22 "satpics/AIRMASSRS_0820UTC.png",
23 "satpics/AIRMASSRS_0825UTC.png",
24 "satpics/AIRMASSRS_0830UTC.png",
25 "satpics/AIRMASSRS_0835UTC.png",
26 "satpics/AIRMASSRS_0840UTC.png",
27 "satpics/AIRMASSRS_0845UTC.png",
28 "satpics/AIRMASSRS_0850UTC.png",
29 "satpics/AIRMASSRS_0855UTC.png",
30 "satpics/AIRMASSRS_0900UTC.png",
31 "satpics/AIRMASSRS_0905UTC.png",
32 "satpics/AIRMASSRS_0910UTC.png",
33 "satpics/AIRMASSRS_0915UTC.png",
34 "satpics/AIRMASSRS_0920UTC.png",
35 "satpics/AIRMASSRS_0925UTC.png",
36 "satpics/AIRMASSRS_0930UTC.png",
37 "satpics/AIRMASSRS_0935UTC.png",
38 "satpics/AIRMASSRS_0940UTC.png",
39 "satpics/AIRMASSRS_0945UTC.png",
40 "satpics/AIRMASSRS_0950UTC.png",
41 "satpics/AIRMASSRS_0955UTC.png",
42 "satpics/AIRMASSRS_1000UTC.png");
43
44 //Load all images
45 var i:int=0;
```

The 'script : 1' tab is active, showing the timeline for 'Scene 1' with a duration of 100 frames. The 'TIMELINE' panel at the bottom shows the timeline for 'Scene 1' with a duration of 100 frames. The 'OUTPUT' panel at the bottom shows the output of the code, indicating that the images are being loaded successfully.

The right-hand side of the IDE shows the 'PUBLISH' and 'PROPERTIES' panels. The 'PUBLISH' panel shows the 'Profile: Standard' and 'Flash Player 9' settings. The 'PROPERTIES' panel shows the 'FPS: 12.00' and 'Size: 800 x 715 px' settings. The 'SWF HISTORY' panel shows a list of published files with their sizes and dates.



Process... step 2 of 3 – Flash coding

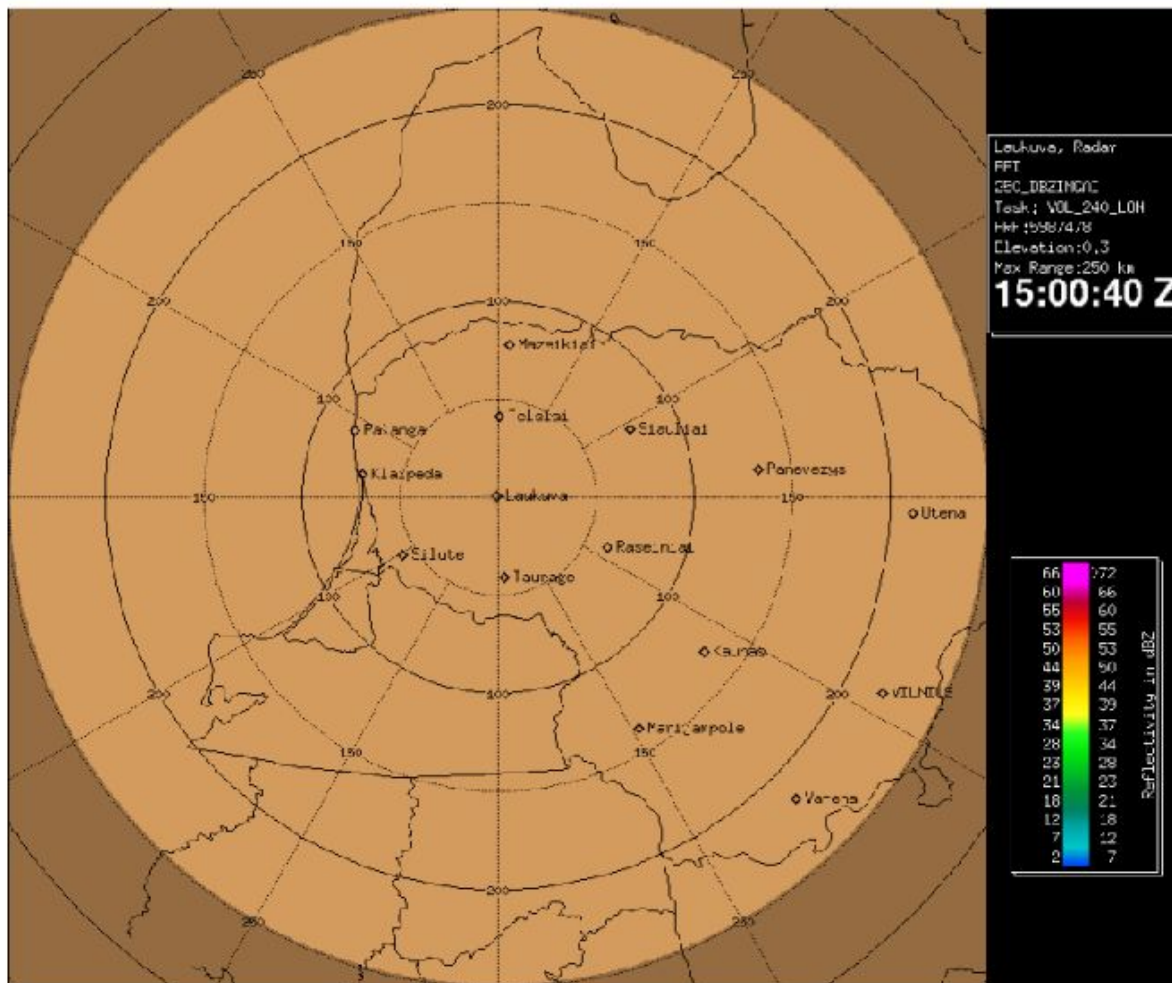


EUMETCAL Simulator

NOMEK 2013 Vilnius



15 : 1 : 21



Leikuvė, Radar
FFT
250_DBZING0
Task: VOL_240_LOH
Hr: 1998/4/18
Elevation: 0.3
Max Range: 250 km
15:00:40 Z

Guidance

- ☒ SGRIPS
- ☒ ESTOFEX

MSG 9 Rapid Scan Data

- ☒ WV 6.2
- ☒ Airmass RGB
- ☒ Day Natural Color RGB
- ☒ Severe Convection RGB
- ☒ HRVIS
- ☒ DUST RGB

ECMWF and MPFF Products

- ☒ ECMWF MSL + OBS
- ☒ ECMWF OMEGA
- ☒ ECMWF SPEC HUM BL
- ☒ ECMWF TFP + THICKNESS
- ☒ ECMWF THETA 850
- ☒ ECMWF TPW
- ☒ MPFF GII

Radar Data

- ☒ DBZ 0.3
- ☒ Radial Velocity 0.3
- ☒ Hydro-Class 0.3

New radar and satellite data
has arrived





Process...

step 3 of 3 – creating tasks

- What's the MAIN task ↔ purpose of the simulation;
- What are the additional tasks;
- Possible interactions during simulation:
 - Phone call from customer;
 - Weather briefing to authorities;
 - Phone call from media;
 -





Technical part of Weather Simulator

- Software to edit/create Flash coding (Adobe Flash Professional);
- Weather Simulator template;
- Knowledge of Flash coding (?)
- Explanations/help

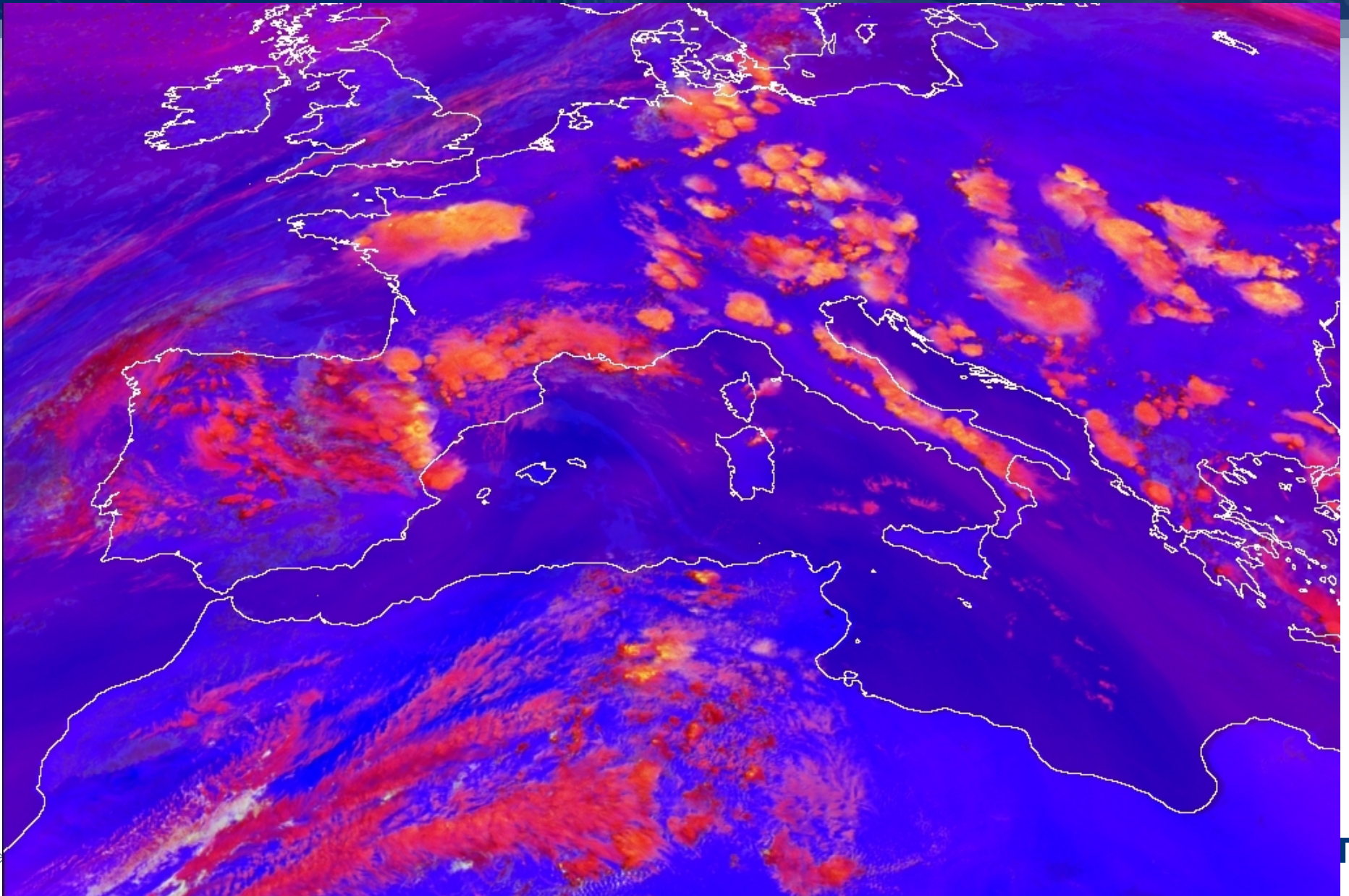


Why to use Weather Simulator for Convection cases?

- “The real live” is simulated;
- Working with “live data”;
- Different situation, different conditions;
- **Requires fast decision making;**
- Exercise which gives absolute freedom to feel confused, happy, skilled or less skilled



What to do when there is no convection..? Simulate it!





Future of Weather Simulator

Flash based technology (Flash coding)



JavaScript based technology (HTML coding)

A horizontal banner at the top of the slide. It features a row of various national flags on the left and right sides. In the center, there is a faint, blue-tinted image of a person working at a desk with a computer, and a satellite in orbit above a globe.

Simulating real live is fun!

Questions?

Thank you for your attention!

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