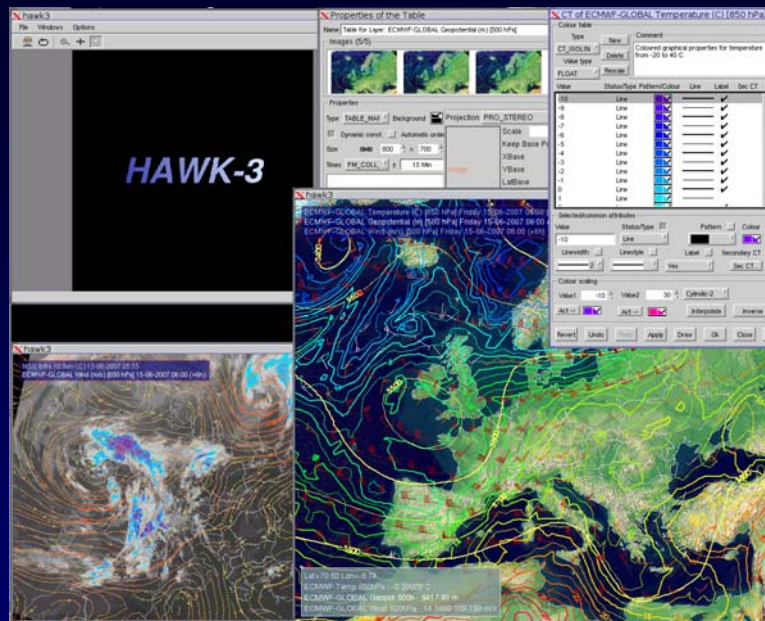


Recent Developments at OMSZ HAWK-3

Márk Rajnai, Miklós Vörös



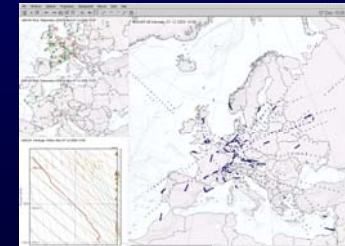
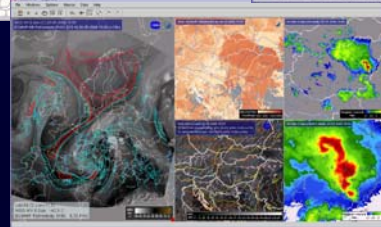
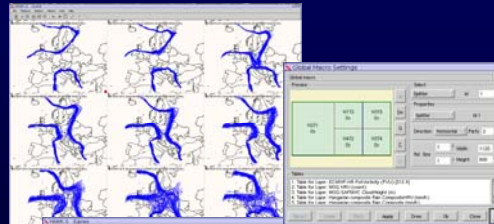
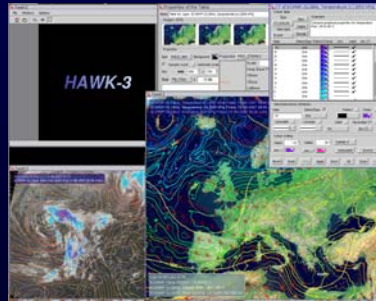
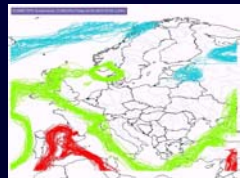
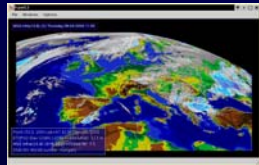
Main Points

Hungarian Advanced Workstation

- State two years ago / Milestones
- New features
 - Radiosonde and AMDAR data as vertical profile (also on map)
 - Lightning data
 - Pictures (pregenerated images and webcams)
 - Printing
 - Others...
- Plans



Milestones



2005

2006

2007

2008

2010

2D NWP fields

SYNOP

Multi pane windows

Radiosonde

Operational

tool

Project
launch

Radar

Streamlines

'Global macros'

AMDAR

Satellite

many GUIs

Auto data refresh

Lightning

Scanning

Users

Shared memory

Pictures

Zooming

Language support

...

Printing

Image saving

Product generation

Parallel computing

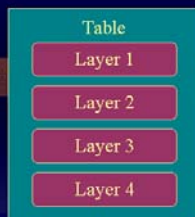
...



State two years ago

HAWK-3 – Features

- Data – view separation
 - Tables define the view
 - Layers provide the data
 - A table can hold any number of layers
 - Layers can be moved among tables

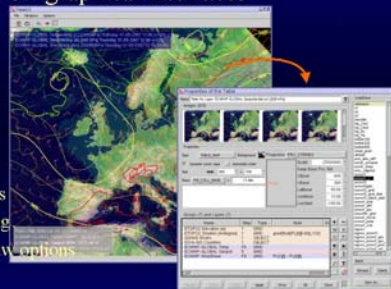


Recent developments at the Hungarian Meteorological Service

EGOWS 2006

New Features New graphical interfaces

- toolbar GUI for:
- 'Tables'
- 'Layers'
- Colour Tables
- Time selecting
- Scan and Draw options

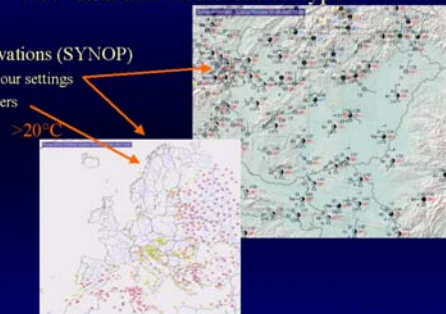


Recent developments at the Hungarian Meteorological Service

EGOWS 2007

New Features New data and visualisation type

- Observations (SYNOP)
 - Colour settings
 - Filters



Recent developments at the Hungarian Meteorological Service

EGOWS 2007

New Features Other expansions

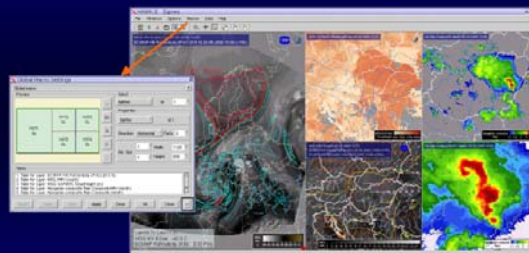
- Users
 - own macros, colour settings
 - profile for scan/draw settings
 - write protection with password
- Looping
- Time synchronised windows
- Automatic resolution map background
- Product generation mode



Recent developments at the Hungarian Meteorological Service

EGOWS 2007

New Features Multi pane windows - 'global macros'



Recent developments at the Hungarian Meteorological Service

EGOWS 2008

Short term Plans

- Additional data types: TEMP, AMDAR, Lightnings on map
- TEMP, AMDAR on Emagram
- Pictures as layers in the HAWK
- Printing (Postscript, raster)



Recent developments at the Hungarian Meteorological Service

EGOWS 2008



New Features

Radiosonde and AMDAR measurements

- Read from NetCDF
- Visualized on thermodynamic diagram (Emagram, Stüvegram, Tephigram, Skew-T)
- Convective stability parameters are calculated
- Forecasted vertical profiles are also displayable
- Visualized also on map

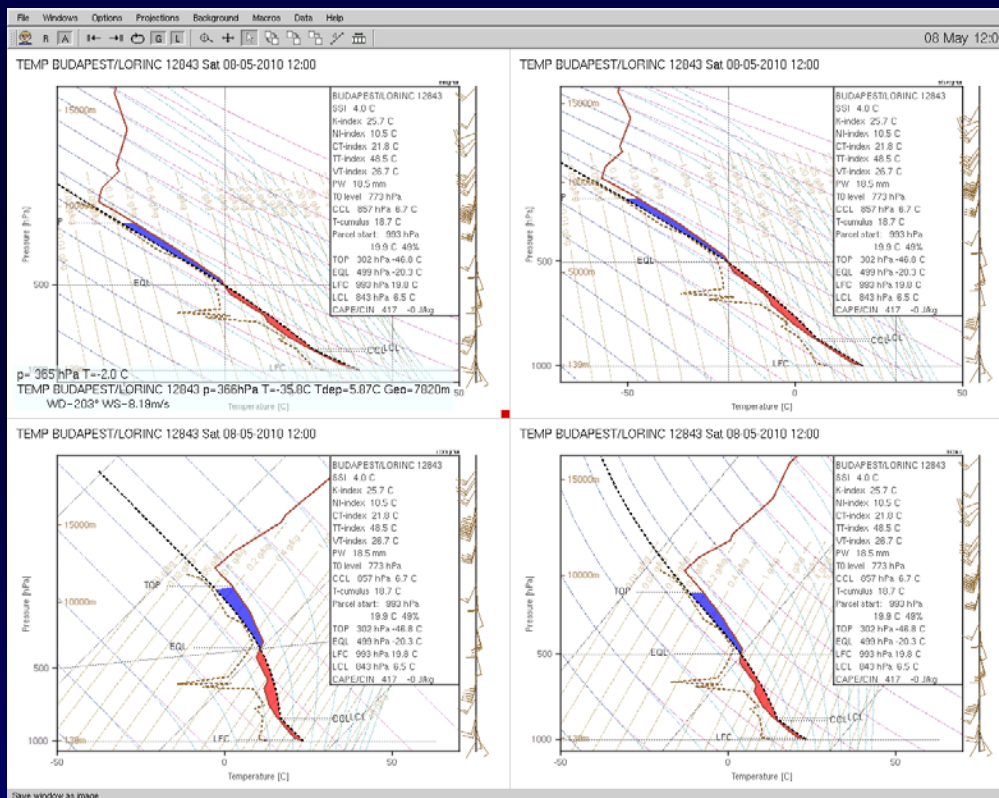
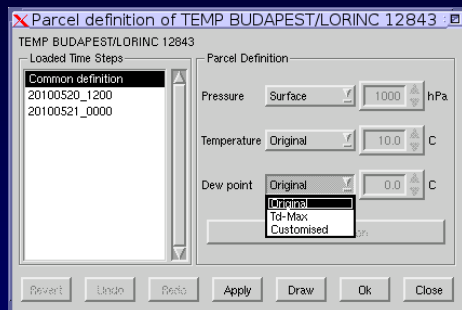


New Features

Radiosonde and AMDAR measurements

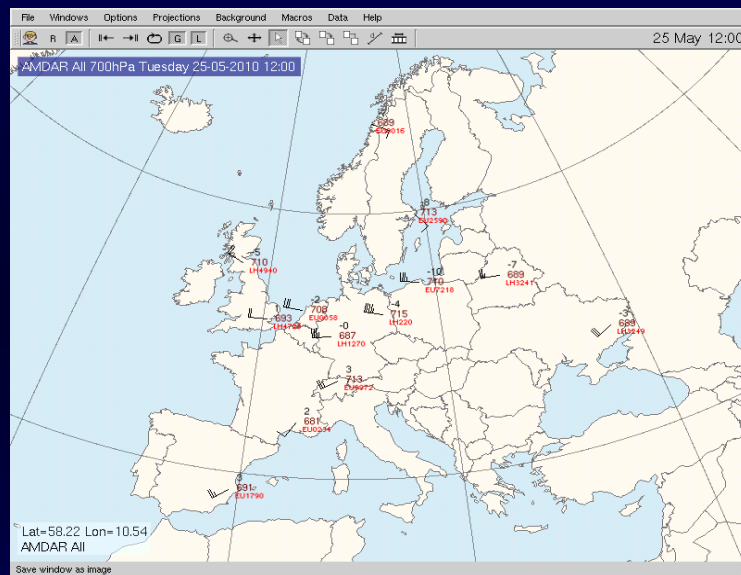
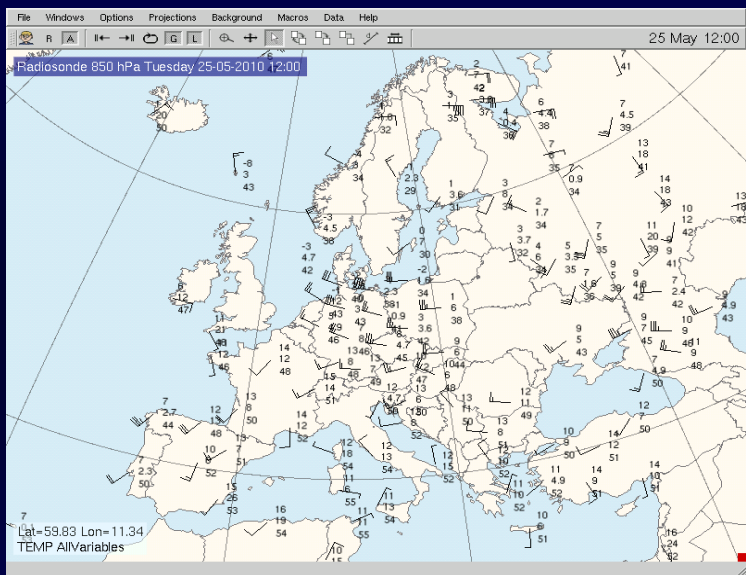
The same profile in four different diagrams

- Tinted areas indicate accelerating and slowing sections of lifting parcel
- Parcel definition (starting height, temperature, humidity) can be set by the user



New Features

Radiosonde and AMDAR measurements



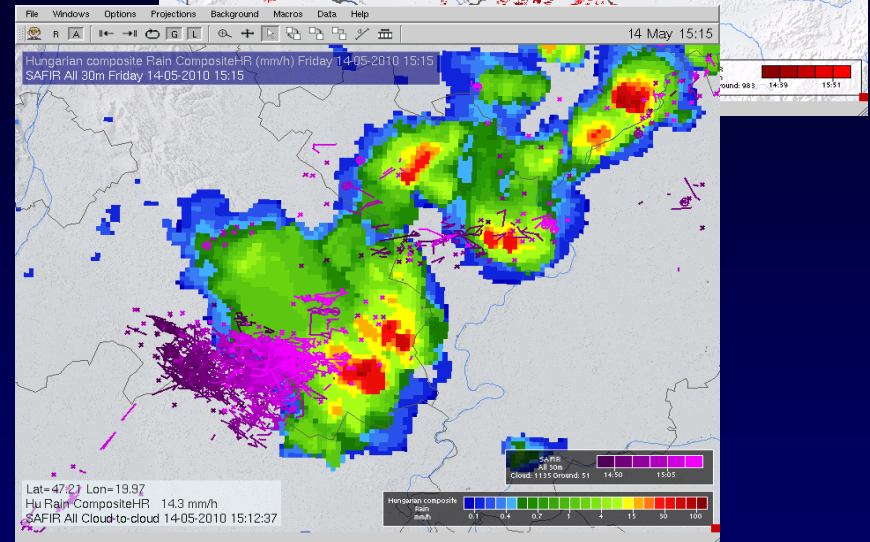
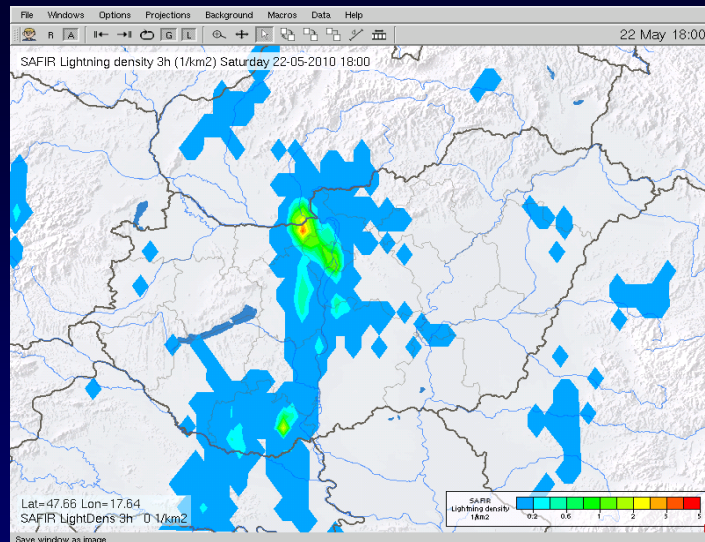
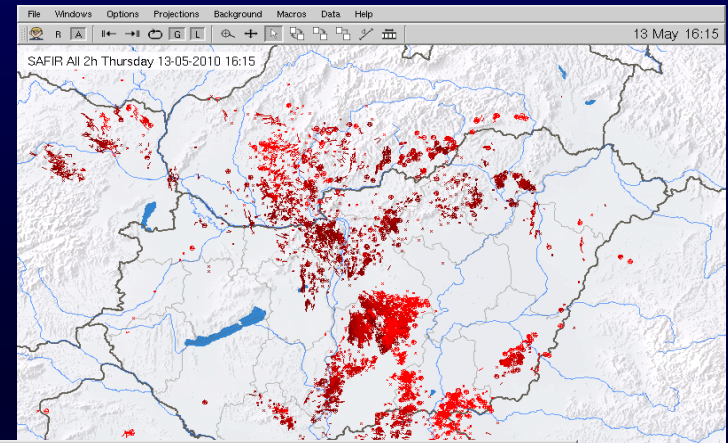
Radiosonde and AMDAR measurements
at 850 and 700 hPa pressure levels



New Features

Lightning data layer

- Different symbols for cloud to cloud and cloud to ground lightnings
- Colours may denote time of the lightning
- Arbitrary time interval
- Lightning density can be calculated



New Features

Picture as data layer

Source

- Webcamera
- Images generated by other applications

Rescaled view

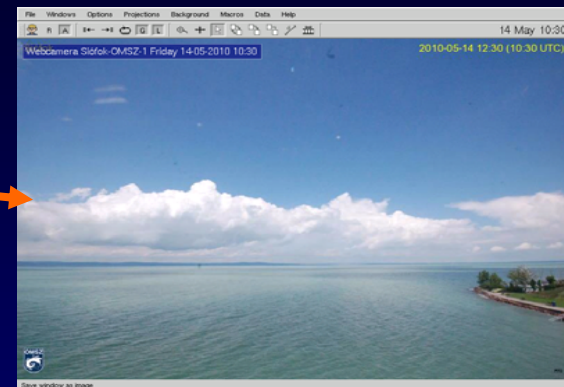
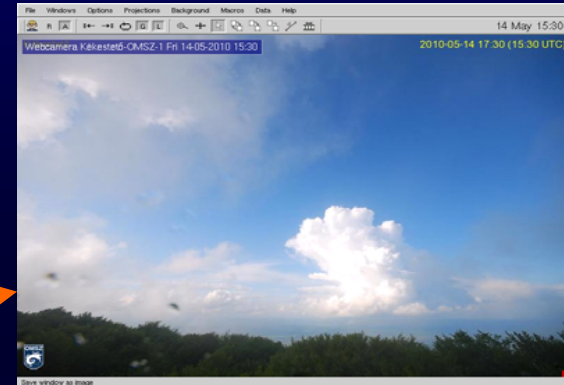
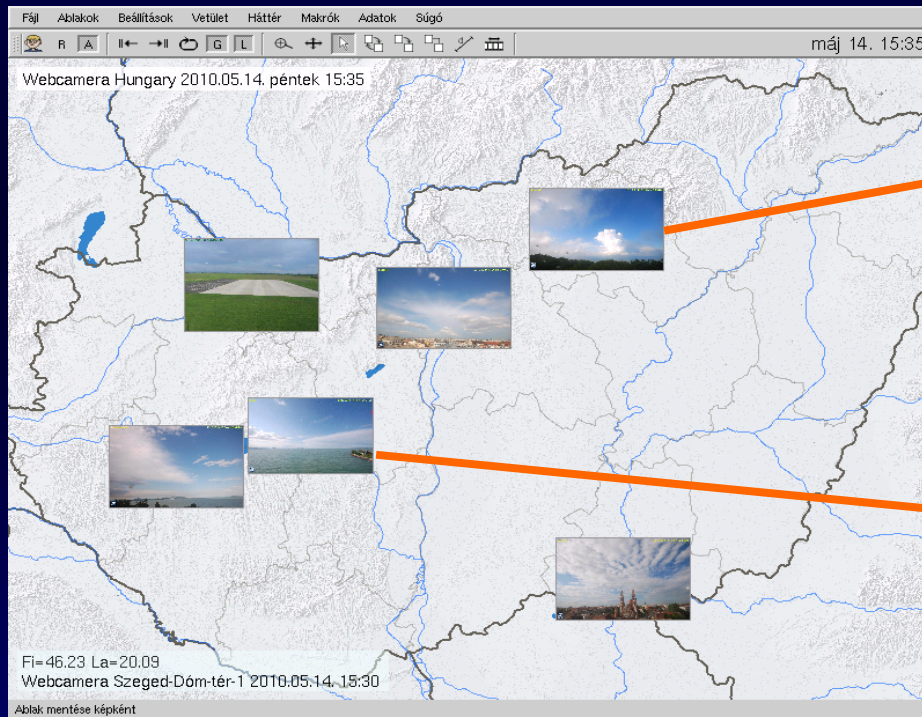
- In separate window
- On map:
 - if images refer to geographical positions
 - several images can appear on one map
 - pictures can be combined with other data layers (eg. radar, satellite, SYNOP...)



New Features

Picture as data layer

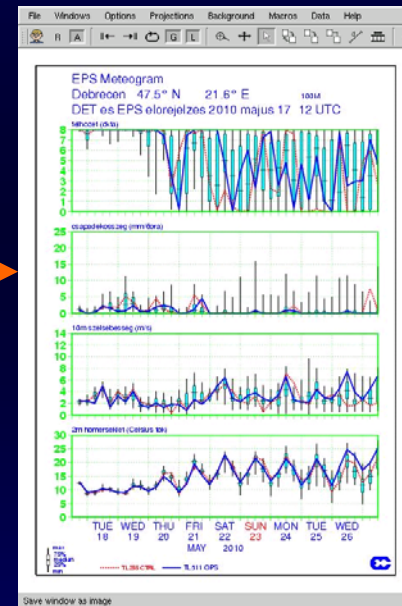
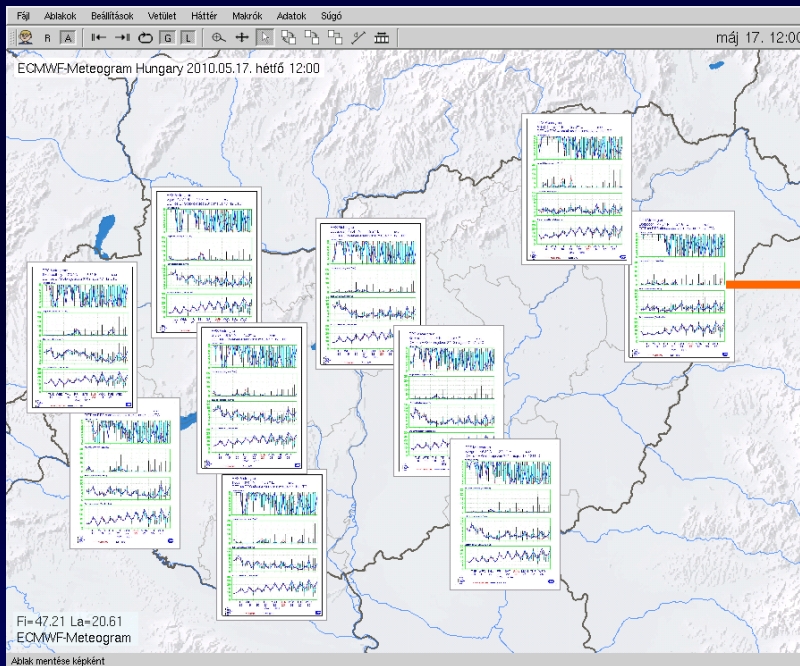
Webcams



New Features

Picture as data layer

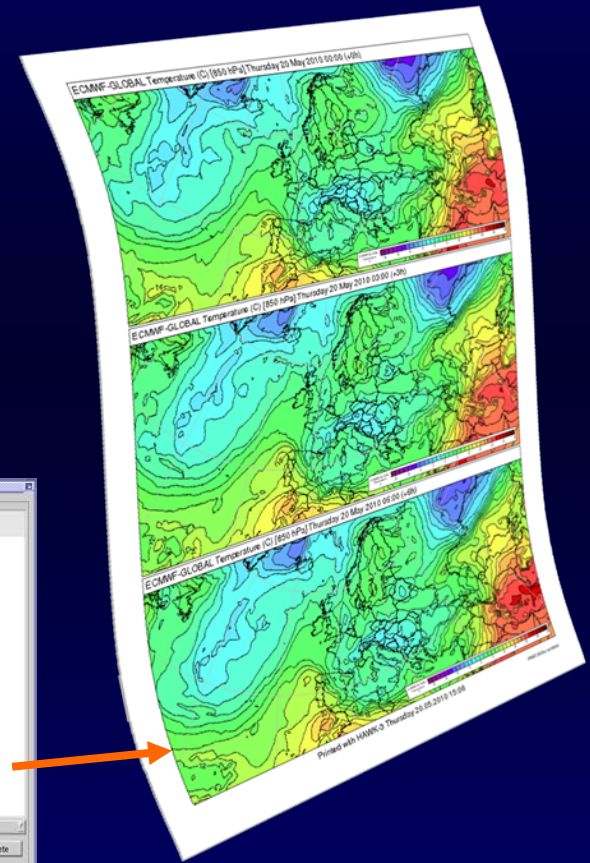
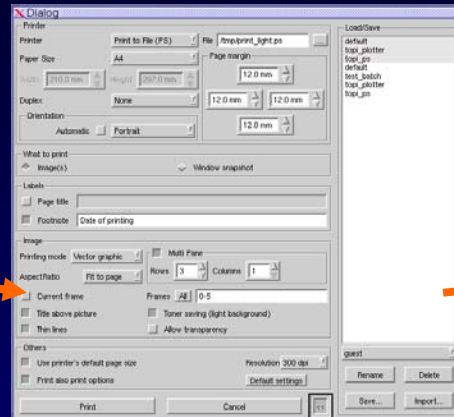
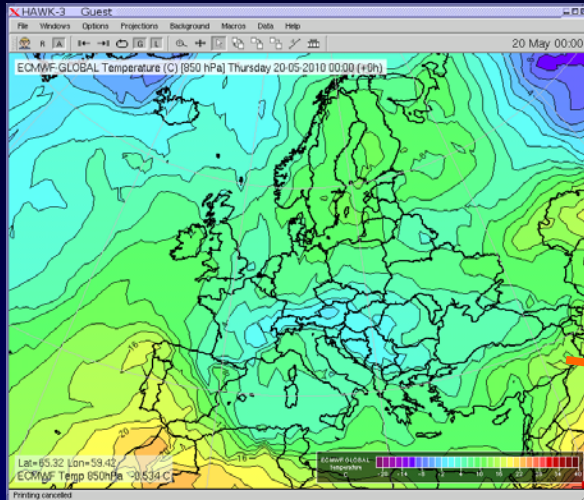
Plume diagrams for some places (made by Magics)



New Features

Printing

- Vector graphic and raster mode
- Time series
- More pictures on one page
- Even from command line – possibility for automated printing



New Features

Other improvements

- Parallelizations
 - for satellite and radar image projecting
 - for isoline calculation
- Quick change of map projection and background settings
- Import HAWK-2 colour settings
- Distance estimation
- Some new functions for data layer calculating (eg. synop2grid)
- Display values of grid data
- Controllable wind barb density (beside automatic)



Short term Plans

- Further parallelizations (for drawing)
- Surface weather analysis
- Vertical spatial cross section
- Easier visualization of ad-hoc and archive data



Thank you for your attention



