



*Norwegian  
Meteorological Institute  
met.no*

# Diana - status and recent developme

Lisbeth Bergholt

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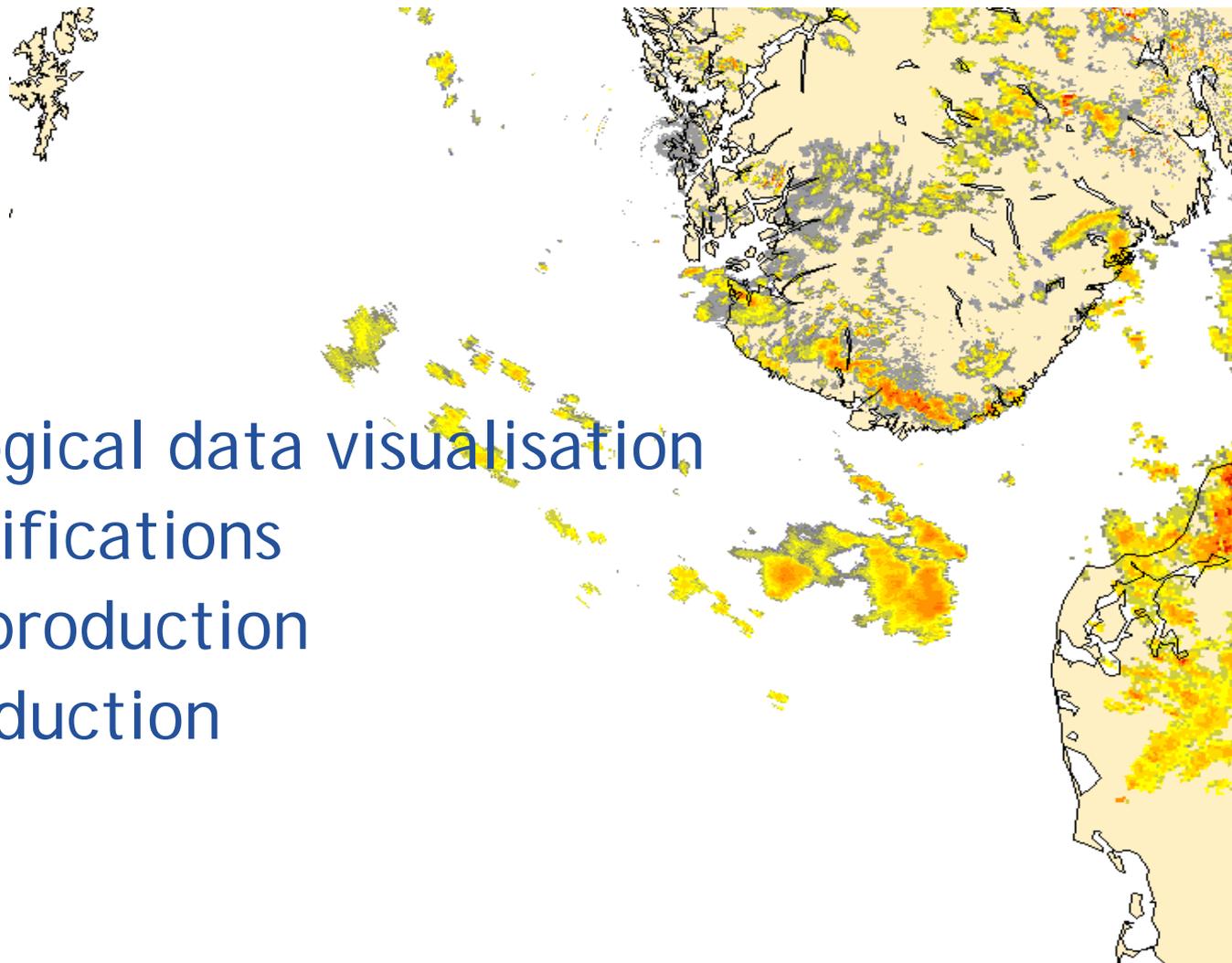


# Outline

- Diana - a meteorological workstation
  - Features
- Recent developments in Diana
  - Improved building system
  - New field editing
  - More data formats
- Diana - an open source project
  - Experiences



# Diana - a Meteorological Workstation

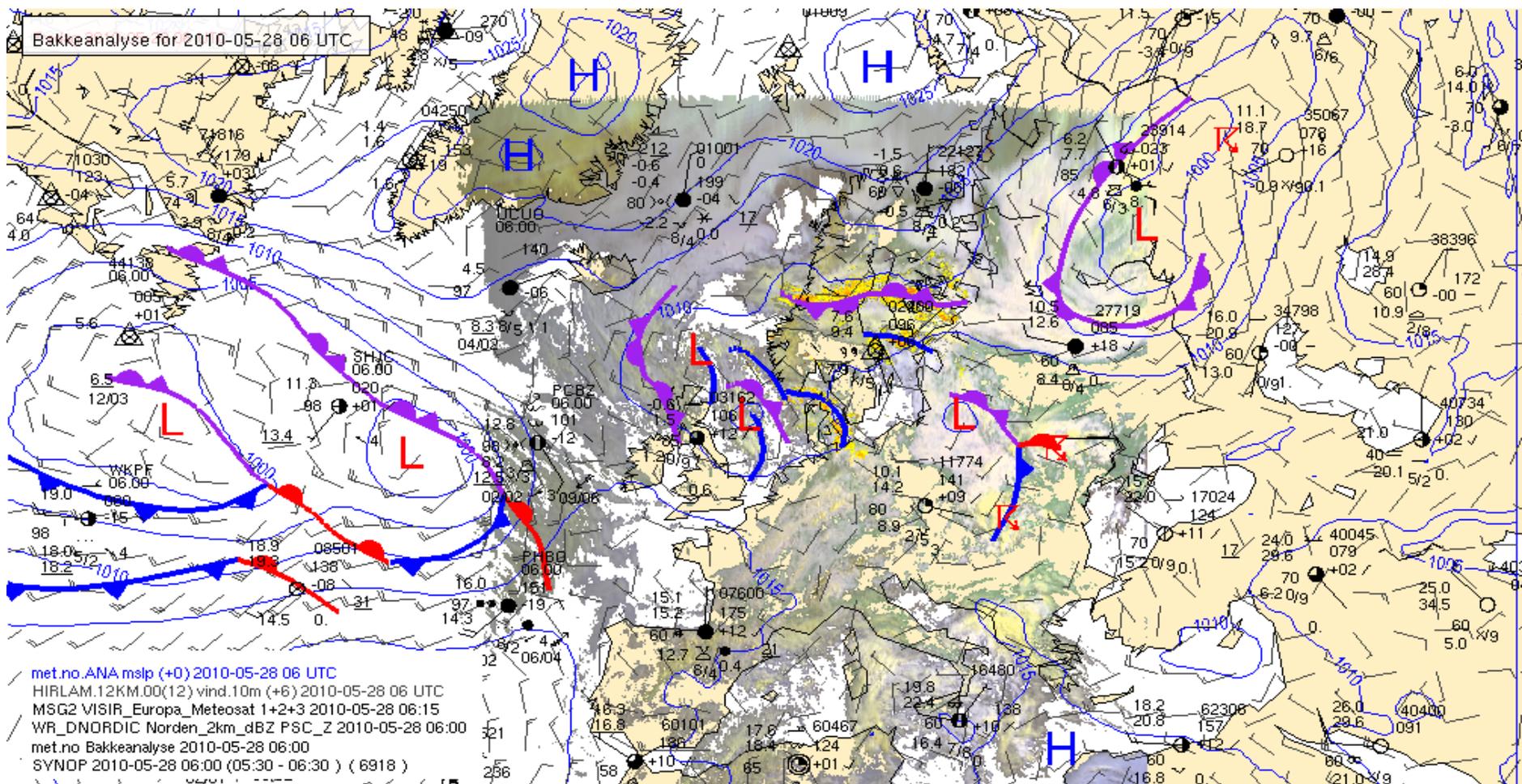


Providing:

- Meteorological data visualisation
- Field modifications
- Forecast production
- Batch production

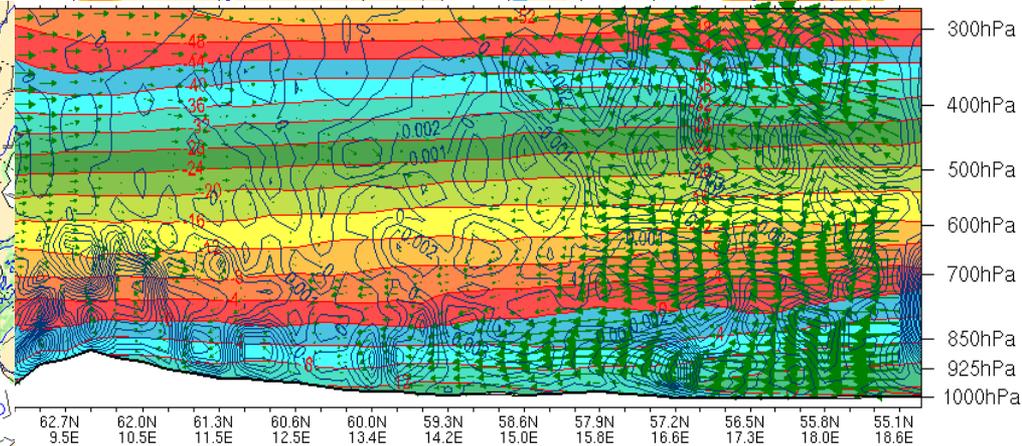
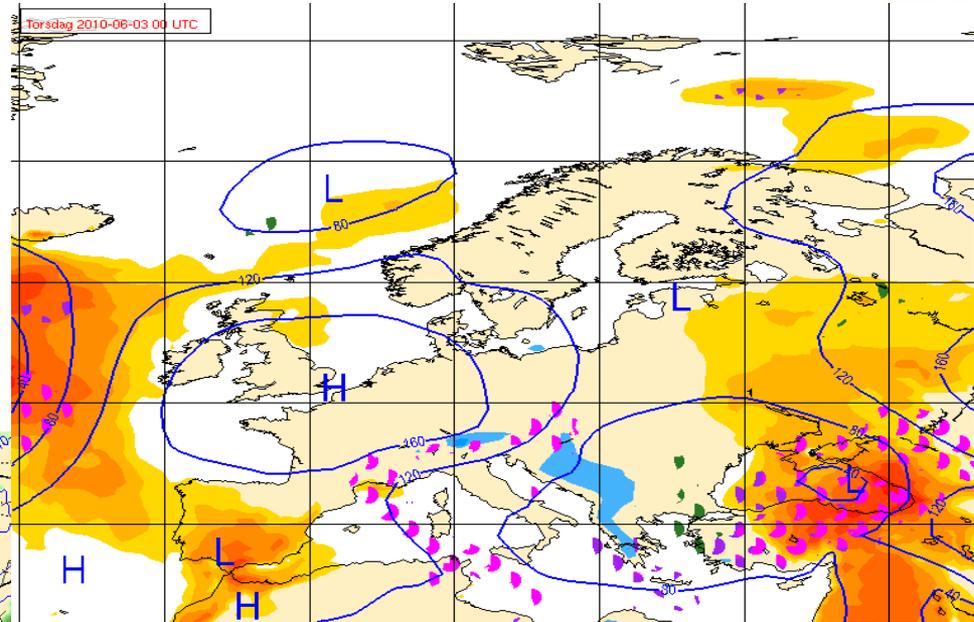
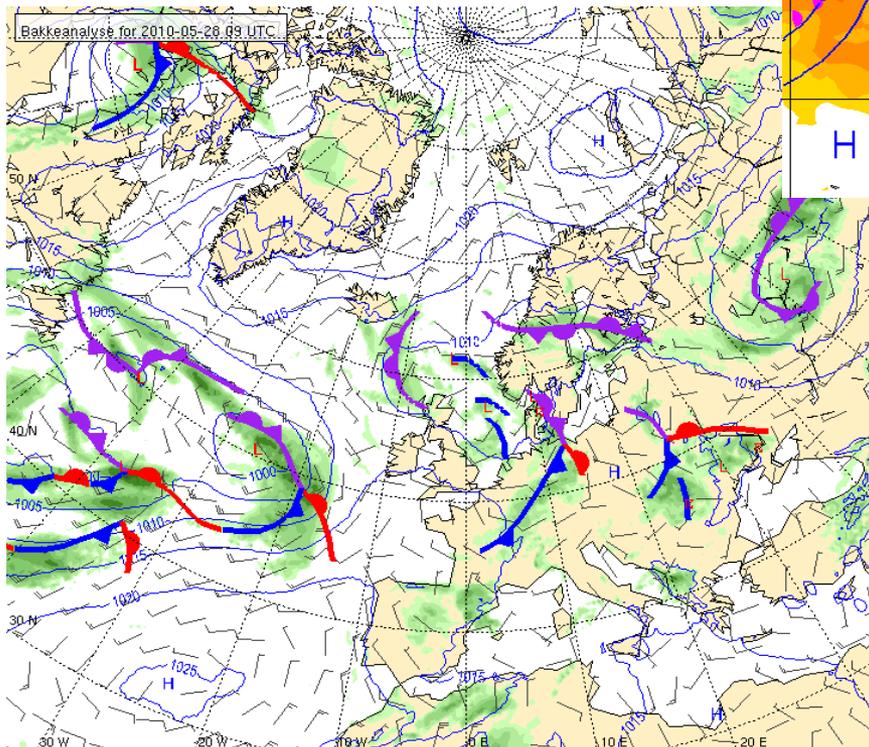


# NWP, satellite, radar, obs, fronts, etc.





- Combinations of different layers
- Animations
- Cross sections
- Forecast index



B(X225,Y171)-(X300,Y96) Temp(C) (+66) 2010-05-30 18:00:00  
B(X225,Y171)-(X300,Y96) VT+OMEGA (+66) 2010-05-30 18:00:00  
B(X225,Y171)-(X300,Y96) Omega (+66) 2010-05-30 18:00:00



# Programming environment

- Platform - Ubuntu, Fedora, Suse
- C++
- Qt - GUI, window handling, etc.
- OpenGL (Mesa3D)
- Other open source libraries (fonts etc.)
  
- Available under the Gnu General Public License (GPL)



# What characterizes Diana?

- Small development group (~4 developers)
- Developed in close cooperation with forecasters and researchers
- Relatively lean, stand alone
- Open source
  - Released as open source in 2006





# Recent developments

## Improved building system

- Autotools, configure based installation
- More platform independent
- .deb package generation

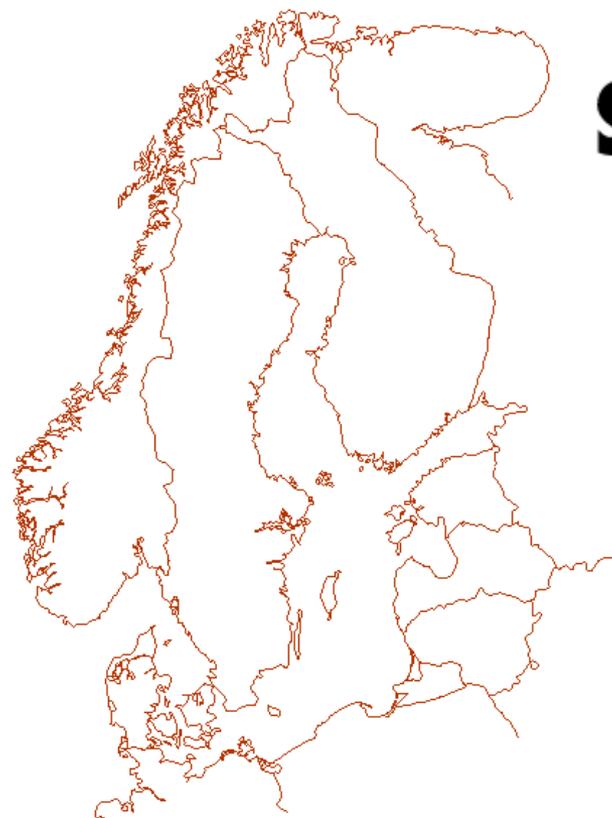
## New field editing

- Product generation from a gridded database
- Forecasters manually correct the database
- Operational since November 2009



# More data formats

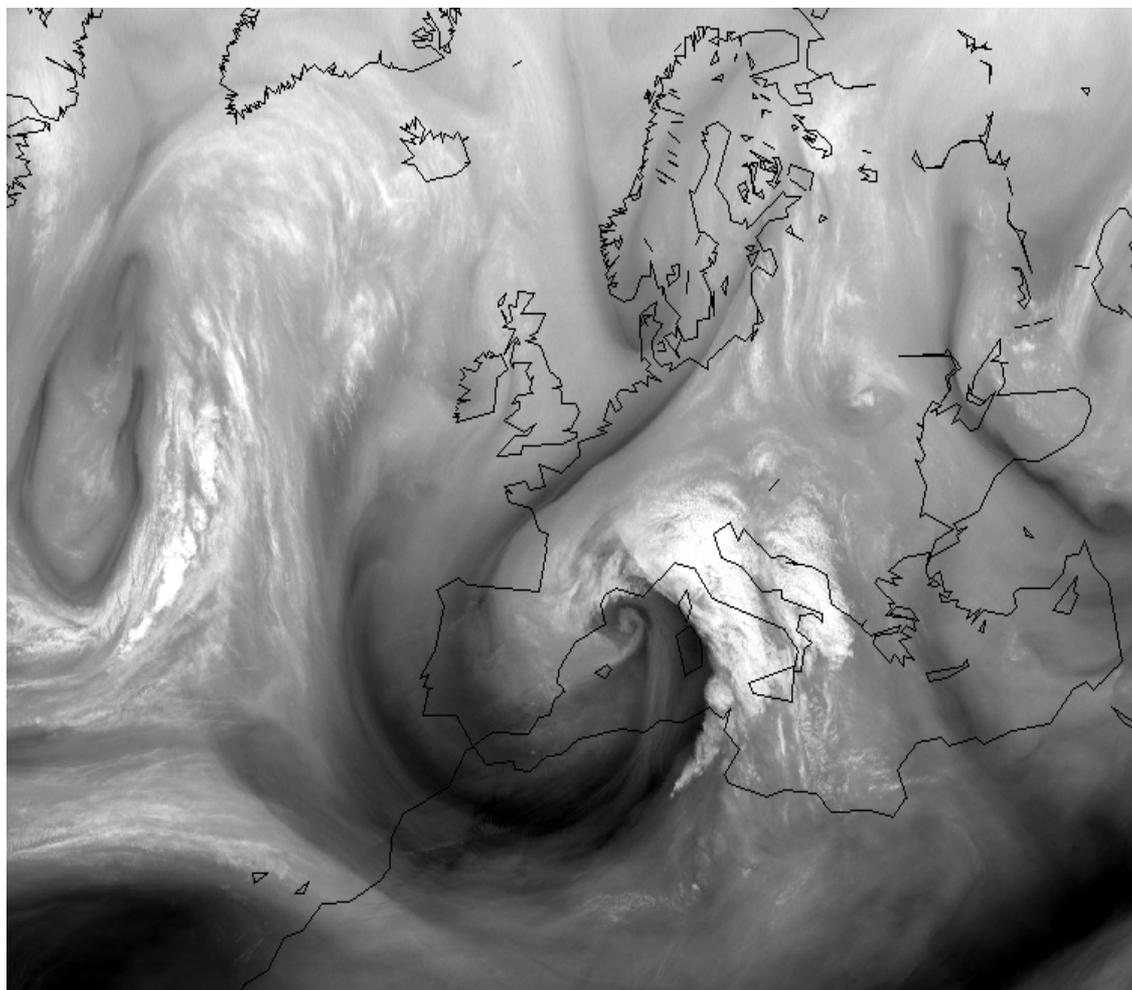
- Formal cooperation with SMHI
  - (Swedish Meteorological and Hydrological Institute)
- Contributions from SMHI
  - Data formats
    - Shape
    - Geotiff
    - Grib1
    - HDF5
  - Forecast production
    - More symbols etc.
  - Bugfixes



**SMHI**



# Contribution from SMHI - geotiff images in Diana





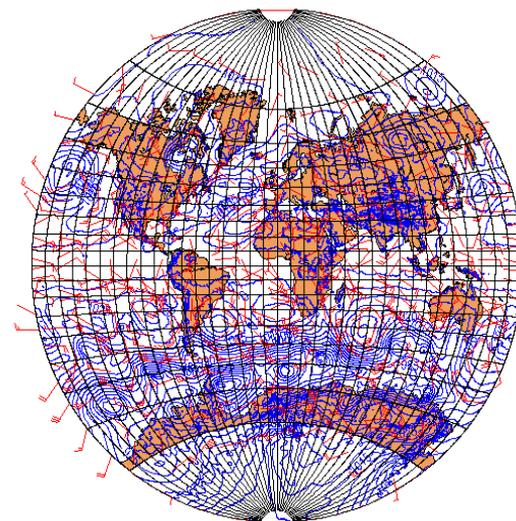
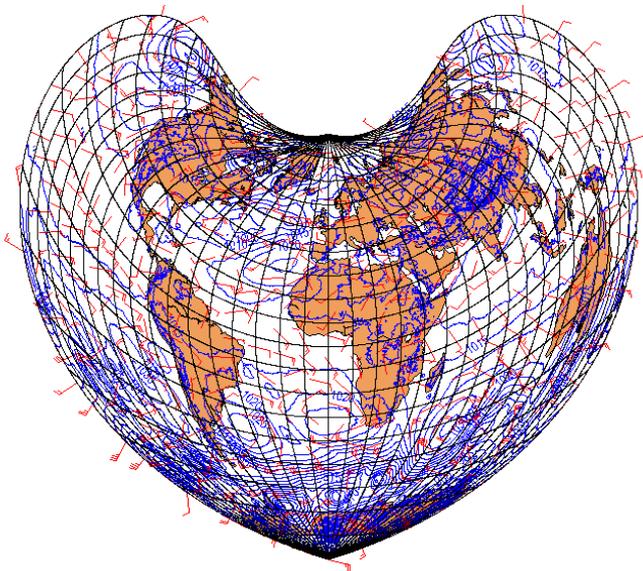
## More data formats

- Work in progress
  - Diana will use the fimex-library to read gridded data
- Fimex
  - File Interpolation, Manipulation and EXtraction library for gridded geospatial data
  - Reads NetCDF, NcML, grib1/2 (and felt)
  - Common Data Model version 1 from Unidata
  - An open source project at met.no
  - <https://wiki.met.no/fimex/>



# Projections

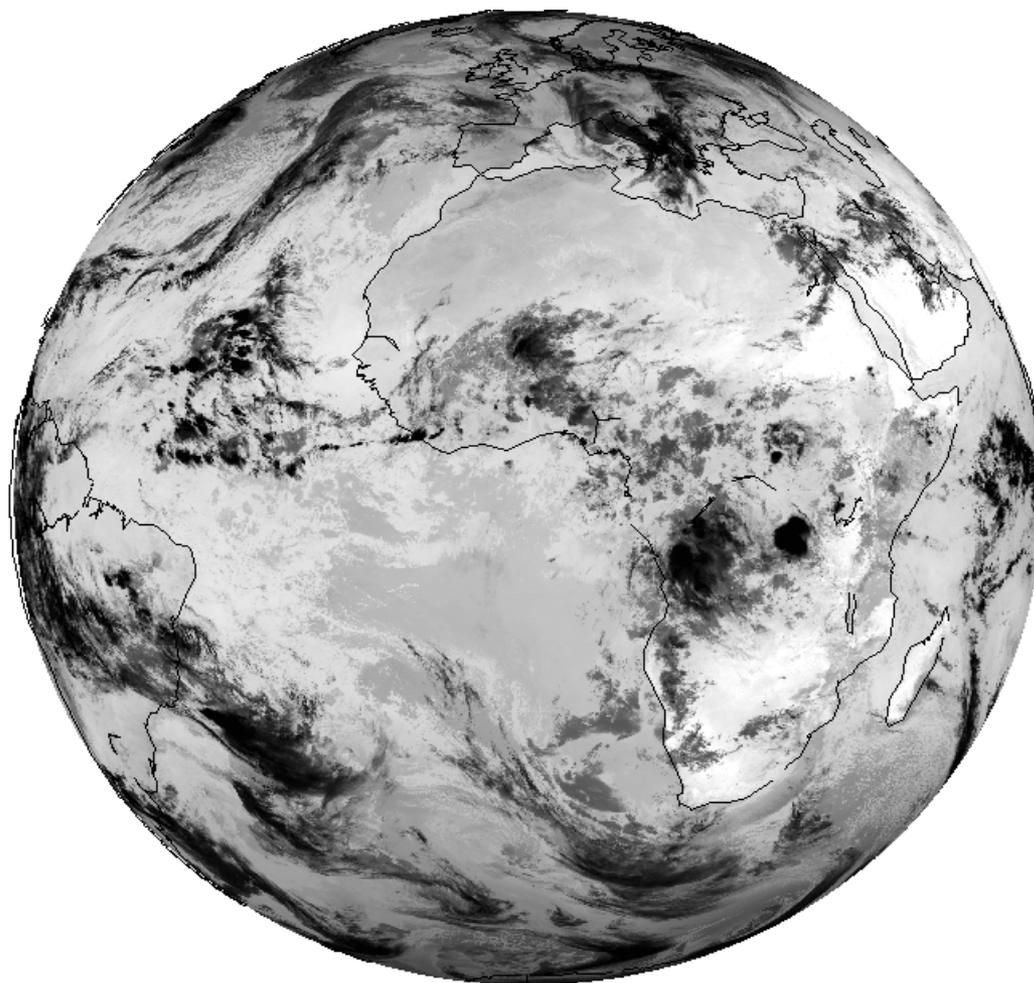
- PROJ.4 -  
Cartographic  
Projections Library



- More projections  
available
- Standard format



# GEOS projection





# Why is Diana open source?

Others were interested in Diana.  
How should we mark it?

- Commercial application?
  - Customers would expect support
  - Diana would need customization
- Open Source?
  - No formal obligations
  - Customization done by users
  - Contributions



## Diana released under the Gnu GPL

- Others can use, develop and distribute the code
- Others can sell the software and support
- They can not include the code in other programs under an incompatible license

For details on the GPL see:

<http://www.gnu.org/licenses/gpl.html>





## Snowball effect at met.no

- More Open Source projects
- Met.no uses Open Source software wherever possible
- Met.no encourages developers to participate in Open Source projects
- Open Data Policy





# Software and data policy at met.no

All data and software produced at met.no are paid for by the public and should be freely available to the public

## - Example yr.no:

- Weather forecasts
- Point forecasts in XML
- Observations in XML
- NWP in grib
- etc

The screenshot shows the yr.no website interface. At the top, there is a search bar with the text "Søk blant 7 millioner værvarsel i Norge og hele verden:" and a "VÆRSØK" button. Below the search bar, there is a navigation menu with "Mine steder" and "Norge" selected. The main content area displays a table of weather forecasts for various locations in Norway, including Oslo, Vegfll, Movatn, Vegfll fjellkirke, Mørje, Glitterheim, Bergen, Stavanger, Trondheim, Tromsø, Copenhagen, and Stockholm. The table shows the day of the week, the location, and the forecast for Monday, Tuesday, and Wednesday. A map of Norway is shown to the right of the table, with weather icons indicating the forecast for each location. The bottom right corner of the screenshot shows a "Spør" button and a small image of a person.

| My list           | Monday | Tuesday | Wednesday |
|-------------------|--------|---------|-----------|
| Oslo              | ☀️ 5°  | ☁️ 5°   | ☁️ 7°     |
| Vegfll            | ☀️ 1°  | ☁️ 2°   | ☁️ 4°     |
| Movatn            | ☀️ 2°  | ☁️ 3°   | ☁️ 5°     |
| Vegfll fjellkirke | ☀️ 3°  | ☁️ 2°   | ☁️ 0°     |
| Mørje             | ☀️ 6°  | ☁️ 5°   | ☁️ 6°     |
| Glitterheim       | ☀️ 8°  | ☁️ 6°   | ☁️ 6°     |
| Andre steder      | Monday | Tuesday | Wednesday |
| Bergen            | ☀️ 5°  | ☀️ 7°   | ☁️ 4°     |
| Stavanger         | ☀️ 4°  | ☁️ 6°   | ☁️ 4°     |
| Trondheim         | ☀️ 4°  | ☀️ 7°   | ☀️ 5°     |
| Tromsø            | ☁️ 3°  | ☀️ 2°   | ☁️ 3°     |
| Copenhagen        | ☀️ 7°  | ☁️ 6°   | ☁️ 6°     |
| Stockholm         | ☀️ 3°  | ☀️ 8°   | ☁️ 4°     |



# How to get started with Diana?

- Information and download
  - <http://diana.met.no/>
- Download from
  - <https://svn.met.no/diana>
- Questions or contributions
  - Send an email to [diana@met.no](mailto:diana@met.no)

Thank You!