



Royal Netherlands
Meteorological Institute
*Ministry of Infrastructure and the
Environment*

OGC at KNMI : Current use and plans

- 4th Workshop on the use of GIS/OGC standards in meteorology
 - 4th of March 2013,
Reading
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ADAGUC

- Cooperative project finished end of 2008
- Demonstration project
- OGC webservices (WMS,WCS) for data in NetCDF4/HDF5 files
- Web portal:
 - Layers from several services
 - Download data through WCS interface
- WMS/WCS service component
- ADAGUC Product Standard for metadata; storage in NetCDF4/CF
- Demo site: <http://adaguc.knmi.nl> (2009)

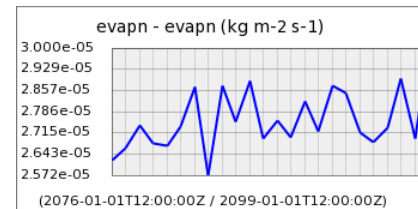
A good start!

Atmospheric Data Access
for the
Geospatial User Community



ADAGUC web service component (Server)

- Serves WMS 1.1.1 on NetCDF4 and KNMI-HDF5 data files
- Field data: Models, radar, satellite incl. RGB
- Swath data: SCIAMACHY, ASCAT
- Point data
- Styling: contouring, shading, wind barbs, wind vectors;
 - Can also be auto detected by using CF *standard_name*
- GetFeatureInfo - extended for extra features:
 - › image/png: Time series graph →
 - › text/xml: GML
 - › application/json: JSON
- WMS extensions of ncWMS: COLORSCALERANGE, NUMCOLORBANDS
- Access of (remote) data through OpenDAP





ADAGUC web portal component (Viewer)

- WMS 1.1.1 portal based on ExtJS (3.4)
 - Display legends, select styles, select dimensions
- Mapping component is plain JavaScript
- Can use GetFeatureInfo for information (and time series graph)
- Enables download/manipulation from WCS services
- Portals main purpose:
 - A simple way of combining layers from various WMS services.
- Visible via <http://adaguc.knmi.nl>, with demonstration data (including realtime rain radar products)



Available Web Map Services

CINESAT

Cinesat RGB data

- Cinesat RGB data
 - Air polar/subtrop (24h)
 - High Clouds (day)
 - High clouds/fog (24h)
 - HRVIS comb
 - Ice Water Snow (day)
 - Low clouds (night)
 - RGB 10m9/9m7/9
 - Vulkaanas (24h)
 - Water vapour (24h)

Layers & Styles

Style: auto/rgba

- Ice Water Snow (day) (time)

Dimensions

time

Date: 2013-03-01 Time: 13:30:00

auto update animate

Map

Menu Baselayers

Layer: Ice Water Snow (day) Time: 2013-03-01T13:30:00Z

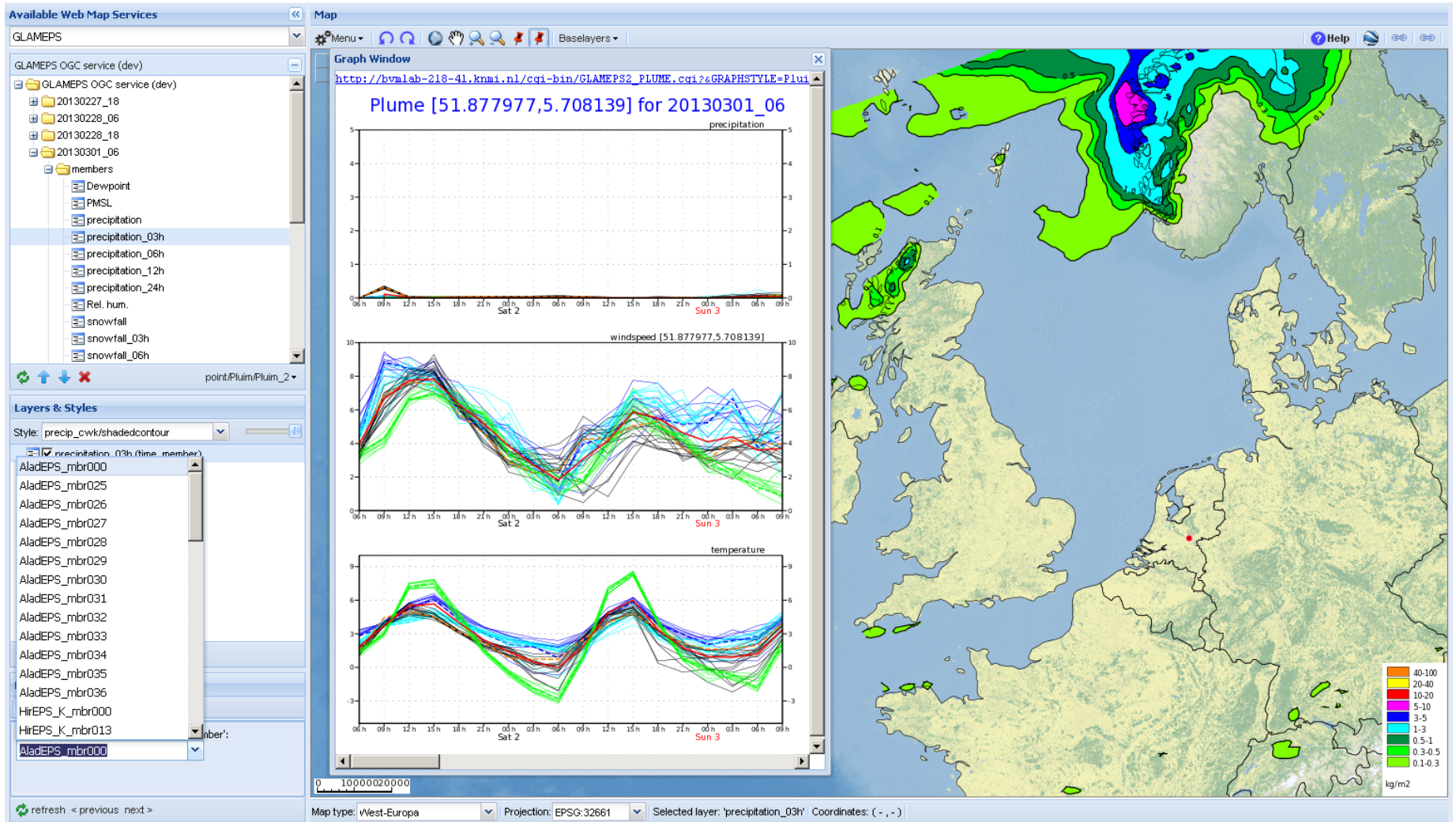
0 2500000000

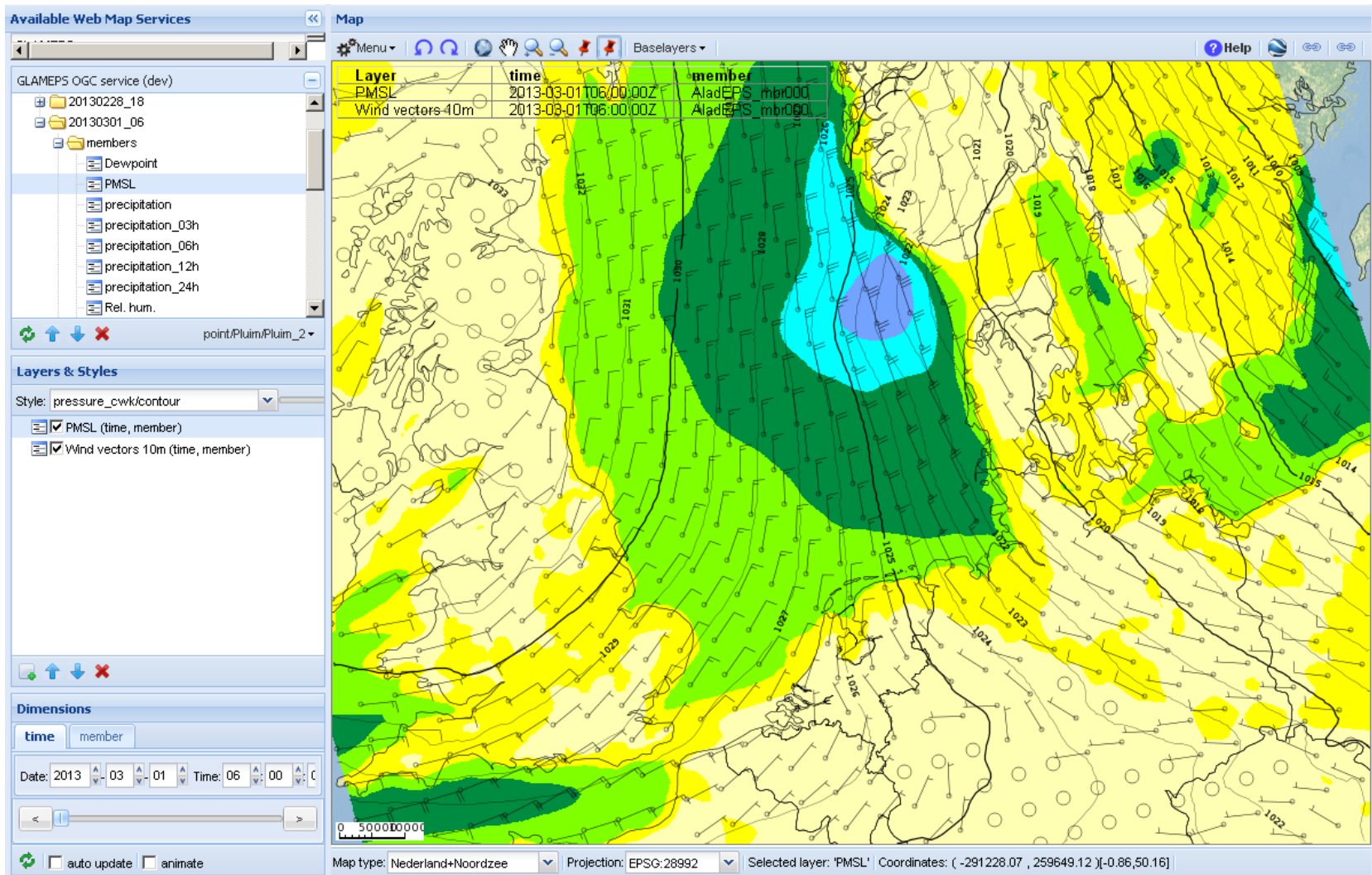
Map type: Europa+N.Atl.Oc. Projection: EPSG:32661 Selected layer: 'Ice Water Snow (day)' Coordinates: (3259664.07 , -1021373.42) [22.63,61.12]



Internal applications: GLAMEPS

- Local area model ensemble, running at ECMWF with 54 members.
- GRIB data conversion to CF-NETCDF4
- Map visualisation of individual member data, ensemble mean/standard deviation and probabilities of exceedance.
- Extra features:
 - timeseries display
 - plume graphs
 - wind roses
 - statistical bar charts
- Data for plume graphs etc is delivered by GetFeatureInfo in JSON or XML.
- Portal may prove to be too “spartan” (or generic)



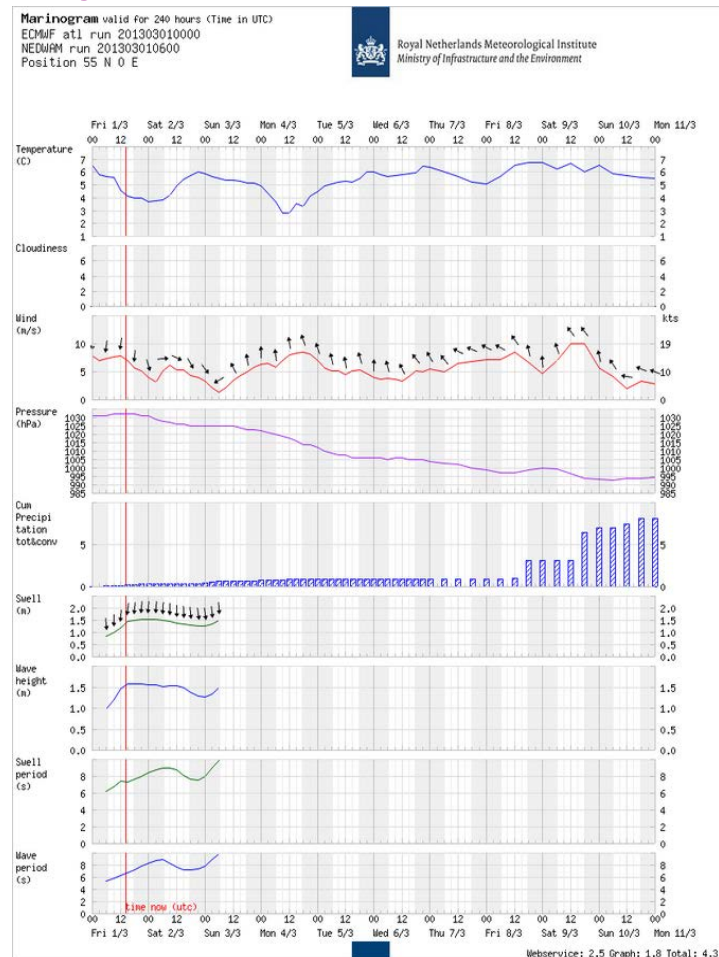




Internal applications: "GPS" project

- Make weather data available anywhere, Dutch maritime services for a start.
- Data: GRIB converted to CF-NETCDF
- Uses ADAGUC WMS as data resource
 - Generate on-the-fly map products
 - Raw data accessible via GetFeatureInfo in PHP, JavaScript and Python (GML, JSON)
- Custom timeseries based on JSON in PHP →

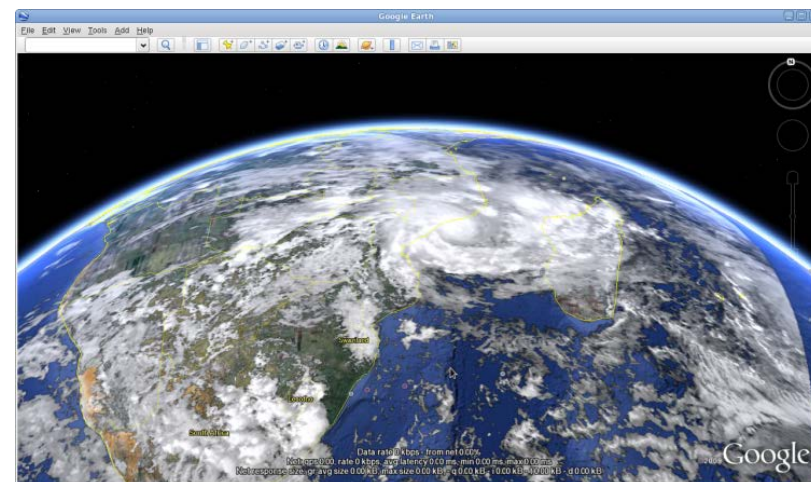
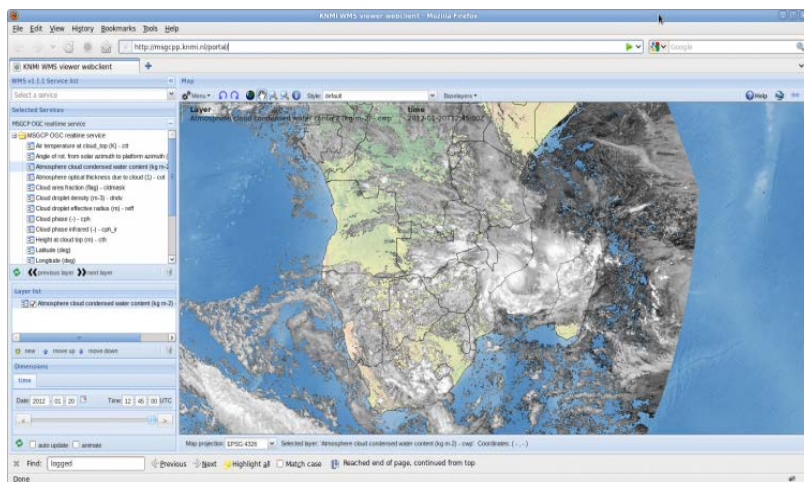
**Single configuration for maps
and data services**





External applications: MSG CPP

- MSG Cloud Physical Properties
- Part of EUMETSAT CM-SAF
- Web portal for viewing of MSGCPP products: <http://msgcpp.knmi.nl>
- Real-time data and archived data
- Basic ADAGUC portal
- Various methods of access : WMS, WCS, OpenDAP, FTP





External applications: ENES climate4impact portal

- ENES Portal Interface for the Climate Impact Communities
<http://climate4impact.eu>
- Currently a working prototype: access and visualize CMIP5 data
- Data discovery and access via Earth System Grid Federation
- ADAGUC Portal used as a mapping component
- ADAGUC WMS webservice for visualisation
- ADAGUC WCS webservice for data tailoring
- OpenDAP distributed data sets
- PyWPS used for transformation of data

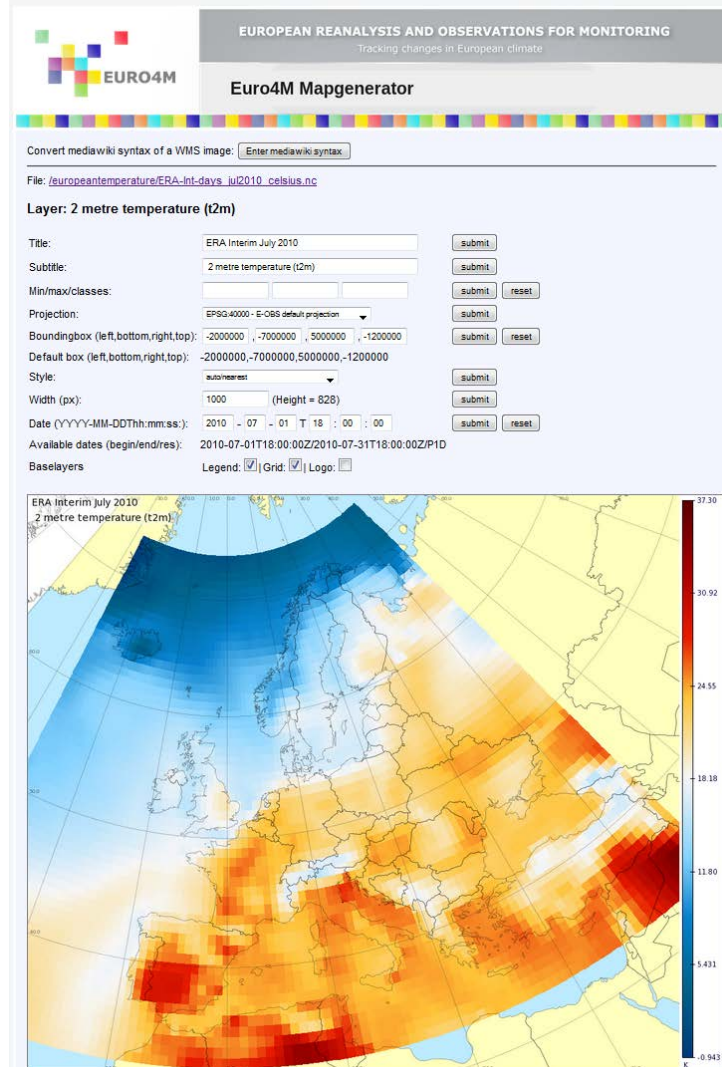
- Project will be continued





External applications: EURO4M

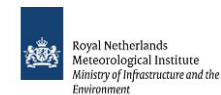
- **E**uropean **R**eanalysis and **O**bservations **f**or **M**onitoring
- Site: <http://www.euro4m.eu>
- Presentation site and preparation site.
- Climate Indicator Bulletins with graphics and maps <http://cib.knmi.nl/>
- Maps are prepared in a *mapeditor* using WMS
- MediaWiki with embedded ADAGUC portal component accessing WMS services.





External applications: KNMI Data Centre

- Portal for KNMI data:
<http://data.knmi.nl>
- Storage, catalogisation and publication of data and metadata
- All sorts of data
- Accent on metadata and searchability
- NetCDF4 (and HDF5) data can be (pre)viewed with ADAGUC portal component and web service (by data file for now, soon WMS access to data sets)
- CSW Catalog server



KNMI Data Centre - Observations & computational models

Home About KNMI Data Centre Catalog

Home > Results

The KNMI houses a wealth of data based on observations and computational models. These are accommodated in this data centre.

Which

Filter term

Advanced >

Where

Netherlands

Europe

World

Coordinates >

When







From

To

Advanced >

Datasets

Results 11 - 20 of 24 Page 1

	Title	Name ▲	Version	Where	When	Availability
	Title:	Long term average 1981-2010 - Average monthly temperature		Where: 	When: 1981-01-01 - 2011-01-01	
	Name:	Tg3				
	Version:	4				
	Title:	Long term average 1981-2010 - Average yearly temperature		Where: 	When: 1981-01-01 - 2011-01-01	
	Name:	Tg4				
	Version:	4.01				
	Title:	Long term average 1981-		Where: 		



Plans:

- ADAGUC components are widely applicable; development continues
- Update ADAGUC to WMS 1.3.0 and support INSPIRE view services
- Stronger decoupling of mapping component and portal: light embeddable WMS viewer with API (jQuery based)
- Refactor portal: ExtJS4, multiple map windows, cleaner code
- WMC support in portal
- Increase usability for operational applications
- Release web service and portal software as open source
- Workshop “Application of ADAGUC service and portal”: a 3 day hands-on workshop in June (mainly aimed at developers)

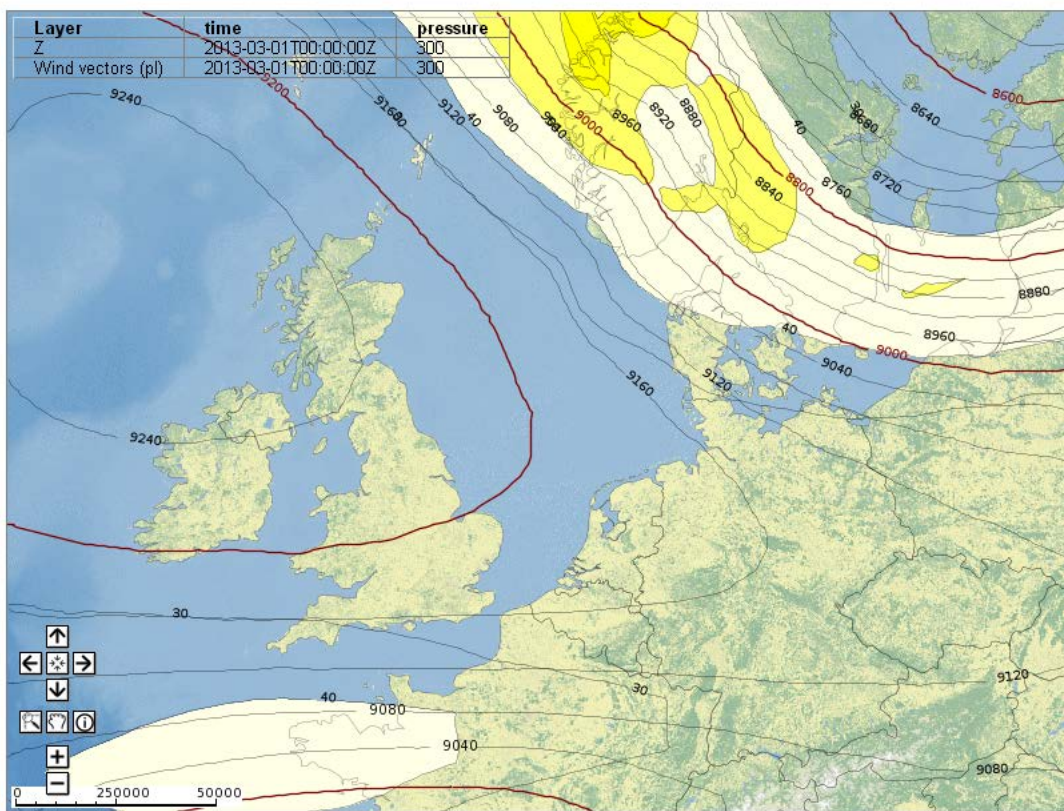


Runtime: 2013-03-01T00:00:00Z Timestep: < >

small medium large

PMSL/U10 temp precip jet

Nederland Nederland+Noordzee West-Europa Europa Europa+N.Atl.Oc.





Plans: WMS 1.3.0/INSPIRE

- Support for WMS 1.3.0 is crucial for:
 - Wider applicability
 - Follow MetOcean DWG Best Practices
 - Comply to Dutch WMS profile
 - Inspire VIEW service is WMS 1.3.0 based
- INSPIRE:
 - Mandatory services at end of 2013:
 - › VIEW service
 - › DISCOVERY: Metadata through CSW service
 - › DOWNLOAD: ATOM feed, later WCS
 - Features:
 - › Present weather data, Climatology, Station metadata, Seismic risk map





Wrap-up

- OGC Web services approach is very usable and good base for INSPIRE compliance
- External (pseudo) standards like OpenDAP, NetCDF, CF Conventions, METCE , etc. are very valuable
- MetOcean DWG work is important for us

Let's continue sharing our work
There is so much we can do!