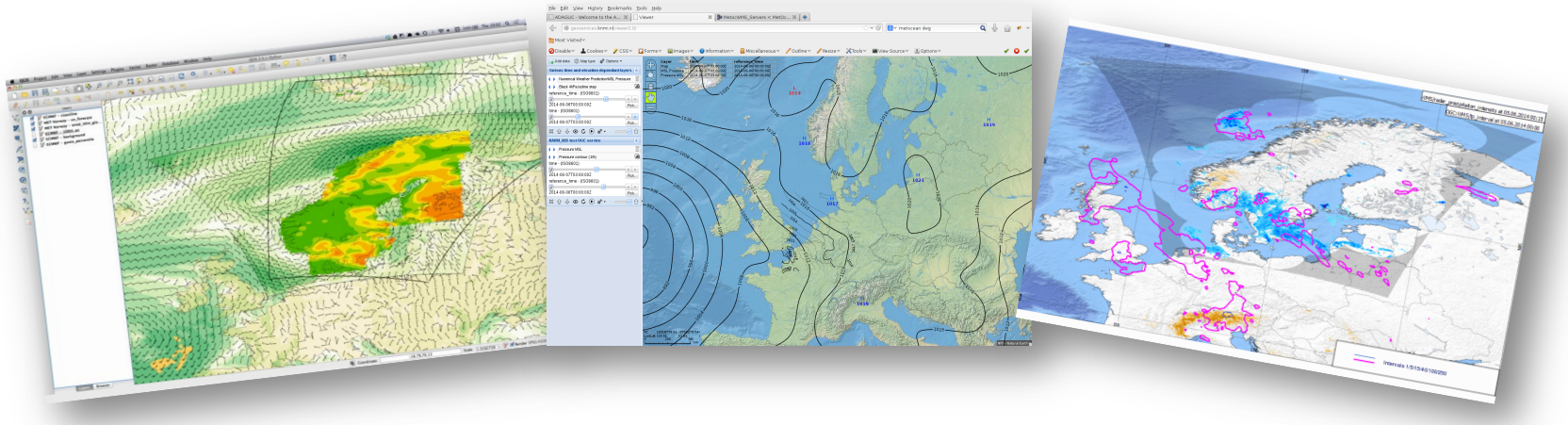


Interoperability testing between meteorological systems

Stephan Siemen

With contributions from
Ernst de Vreede (KNMI), Iain Russell (ECMWF),
Conny Claus (DWD), Jozef Matula (IBL), Michal Weis (IBL), …

Aim

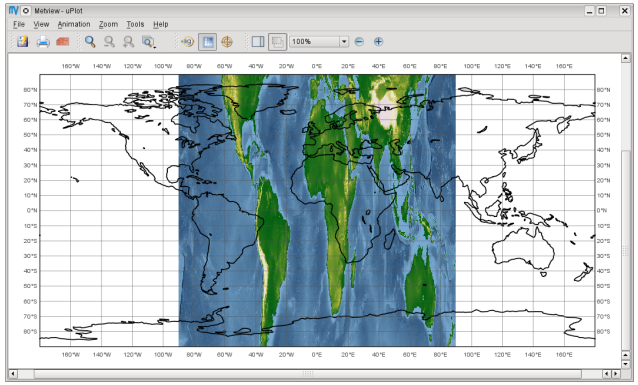
- Give feedback to each other WMS service and learn from feedback
  - Record problems and what works
  - Make snapshots

What did we do so far

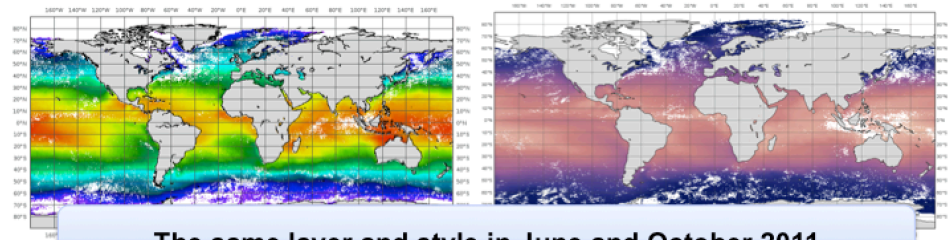
- In recent years this was organised as part of other meetings
  - Mainly EGOWS

- So far very mostly European participation
  - But we used servers from the USA in the past
  - How can we widen the participation?

What we saw in past years



- Changes between WMS 1.1 and 1.3 for setting of Bounding Boxes
- Various interpretations for time
  - What is “current”?
- Challenges in defining GetCapabilities
  - Describe wrong content
  - Too large – slow to parse
  - Meta data not there or out of date
- Styles were not consistent
  - Either change often
  - Sometimes even one colour shading



The same layer and style in June and October 2011

EGOWS 2014

June 2014, Oslo, Norway

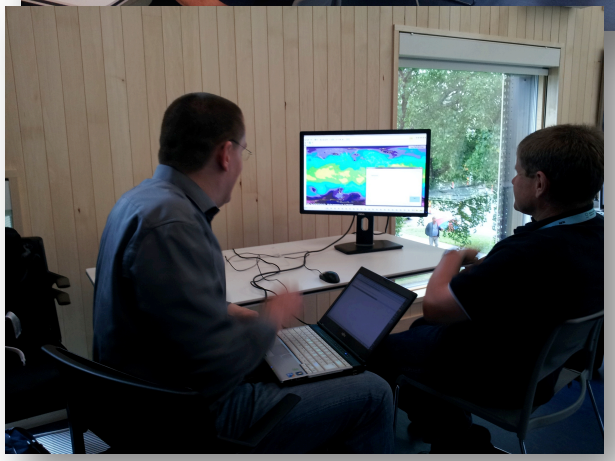
Participating WMS servers

- MetOcean DWG server list

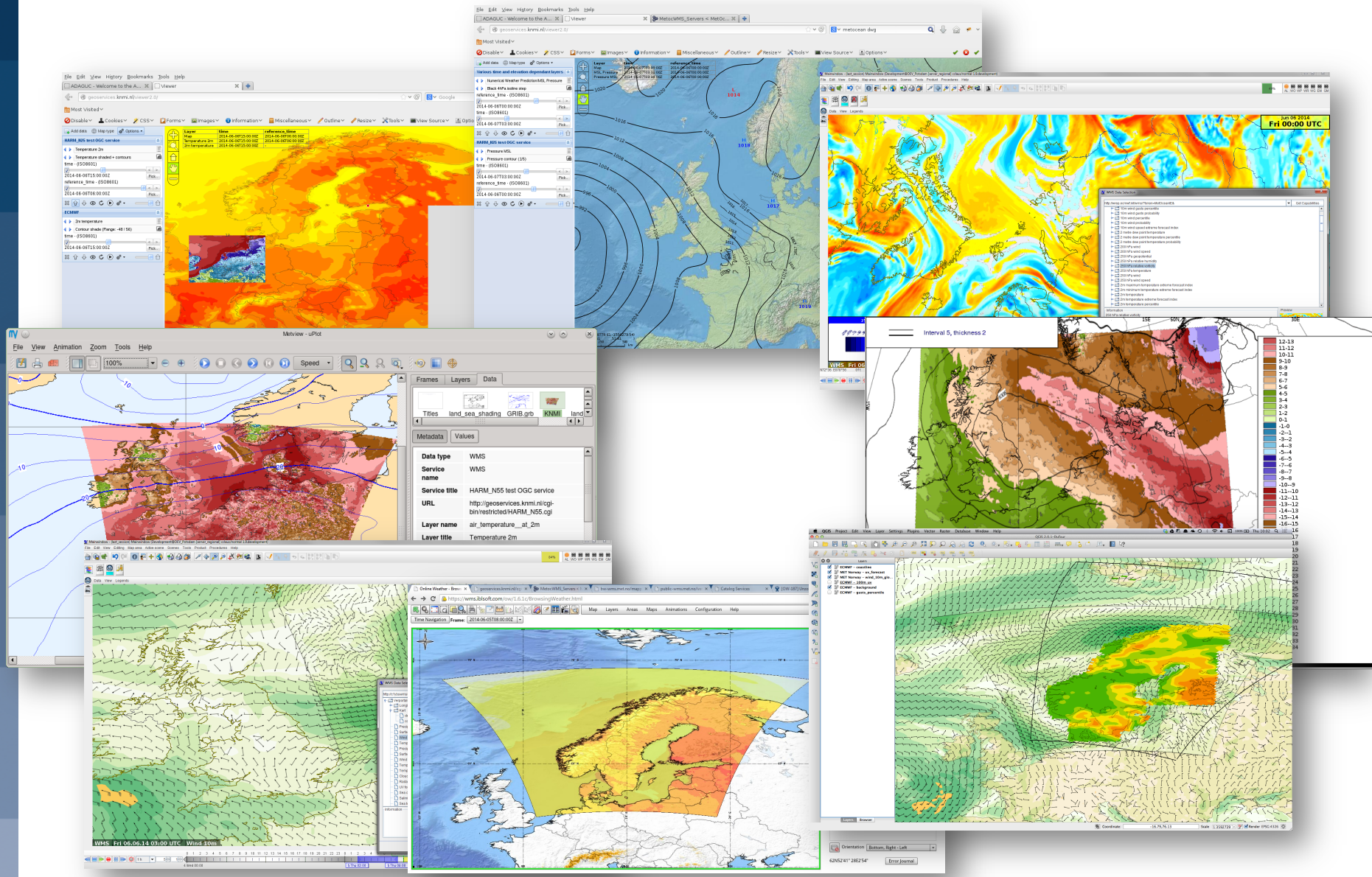
  http://external.opengeospatial.org/twiki_public/MetOceanDWG/MetocWMS_Servers
- Additional:
  - ECMWF
    http://wrep.ecmwf.int/wms/?token=xxx&request=GetCapabilities&version=1.1.1
  - MET Norway http://thredds.met.no/thredds/catalog/arome25/catalog.html
    - http://bw-wms.met.no/barentswatch/default.map?
      service=WMS&request=GetCapabilities&version=1.3.0
    - http://public-wms.met.no/verportal/verportal.map?
      service=WMS&request=GetCapabilities&version=1.3.0
    - http://bw-wms.met.no/mapproxy/barentswatch/wmts/1.0.0/WMTSCapabilities.xml
  - KNMI http://geoservices.knmi.nl/cgi-bin/restricted/HARM_N55.cgi
  - IBL http://ogcie.iblsoft.com/metocean/wms

Participating WMS clients

- NinJo 1.9 Development version
- Metview 4.4.7
- Visual Weather 3.6
- Online Weather 1.6
- KNMI ADAGUC 2.0 web interface

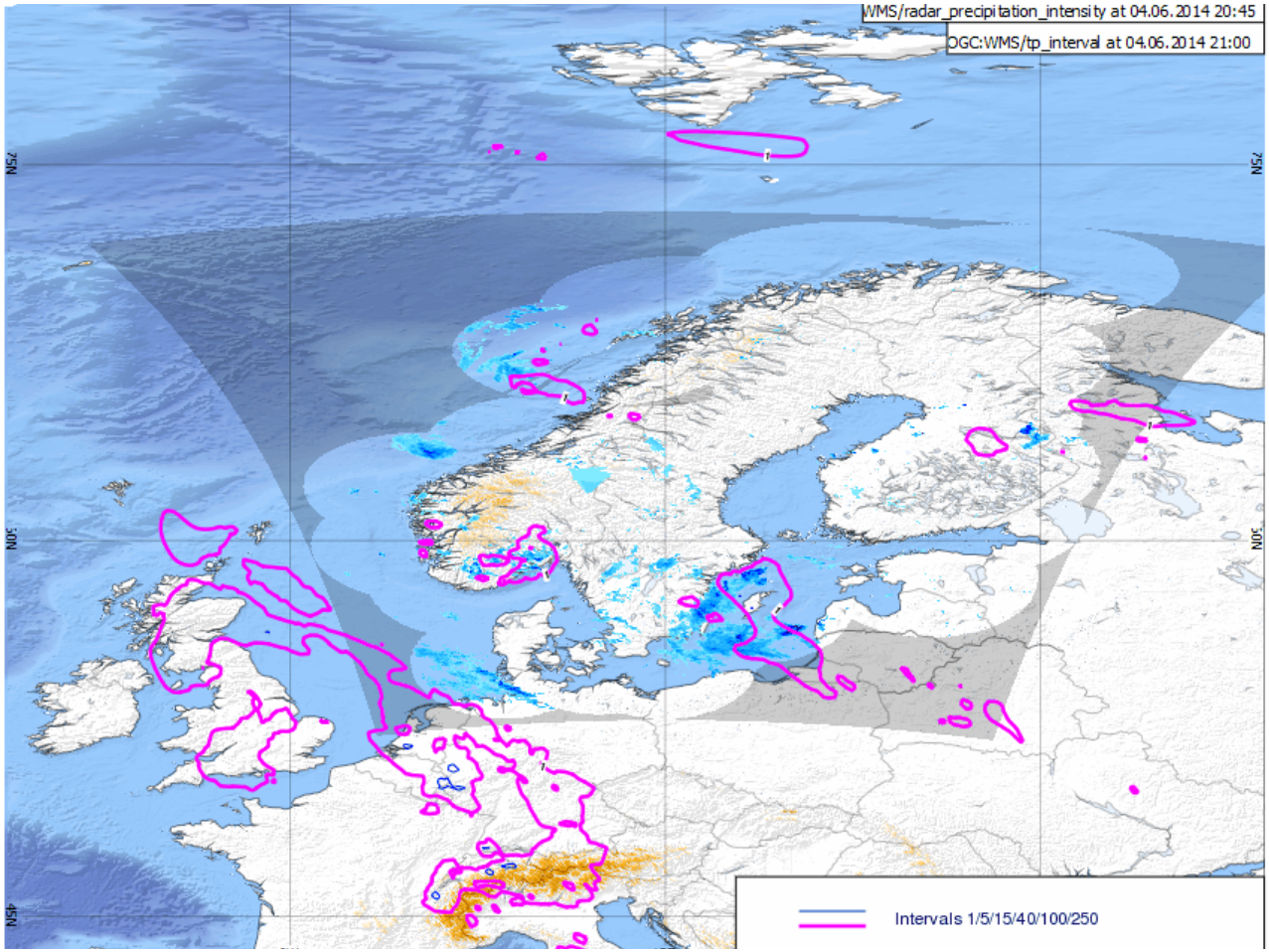


- qgis 2.0
- Google Earth 7.1.2



ECMWF EUROPEAN CENTRE FOR MEDIUM-RANGE WEATHER FORECASTS

VisualWeather showing ECMWF precip & MET Norway radar



Findings (1)

- Two participant WMS servers implement currently the new Best Practices recommendations (IBL, KNMI)
- Orientation and size of legends makes it difficult to place them in display
  - ECMWF & IBL are horizontal
  - KNMI are vertically oriented with a lot of whitespace
- Best Practices can perhaps clarify Req 37 for “units”
  - KNMI uses “hpa”
  - IBL uses “isobaric-surface” (inspired by other example in document “computed_surface”)
- No isolines makes it harder to overlay with other maps
  - e.g. MET Norway radar versus Arome model
  - e.g. what areas of no precipitation are not transparent
  - At least one needs to be flexible ;-)

Findings (2)

- **Some layers offer extended time frames for years (e.g. 1903-2037)**
  - **This is because some statistical layers are actually valid for a selected month irrelevant of a year**
  - **In WMS 1.1 it was not compulsory to give a year, but 1.3 requires a year in the date.**
  - **Does ISO 8601 have a solution for this?**
- **Projections need to be checked carefully**
  - **Best for this are coastlines**
  - **E.g. ECMWF ecCharts/WMS**
- **It would be useful to recommend all server for limited list of projections**

Findings (3)

- Some servers do not correctly express the projection extents (i.e. mapserver), meaning that a request using the default bounding box will fail
- Recommendation to show the extent of the data area
  - E.g. is hard to say if there is no precipitation or out of area.
- Do not cache maps which are sent as error (i.e. ones with error message)
- Styles in layers might not only be purely graphical
  - Some server also offer different interpolations methods of the data

Recommendations to MetOcean DWG

- It would be beneficial to organise a blog to allow everyone to contribute test cases without waiting for IE events
  - Best solution would be on “neutral” OGC side
- The Best Practice document should take the comments above into account
  - Clarify unit naming
  - Clarify more what should (and shouldn’t) happen in an error case
    - E.g. suggest not to send blank images as an error
  - Encourage layers to be more transparent for better overlays
    - Do not shade no-precipitation
    - Offer more contour line layers

So what next …

- We need to incorporate the comments
- More IEs with client & servers from outside the meteorological domain
- Test INSPIRE conformance?
- Should we think about WCS sessions?

- There will be an OGC session in the Visualisation in Meteorology week in Sep 2015 – we keep you posted …