OGC Meteorology and Oceanography Domain Working Group progress report

2nd Workshop on the use of GIS/OGC standards in meteorology

Marie-Françoise Voidrot-Martinez, Chris Little
Co-chairs OGC Met Ocean DWG

Outline

- MDWG creation
- WMO-OGC MoU
- Extension of the Met DWG to Met-Ocean DWG
- Works

March 2009 : OGC Met Domain WG creation

- Charter drafted by C. Little (UK Met Office) and A. Woolf (STFC RAL)
- Meteorology Domain Working Group created at the OGC Technical Conference in March 2009 in Athens
- Hydrology DWG created at the same meeting (Athens TC)

- Chris Little (UK Met Office) elected as chair MDWG (Athens TC)
- Marie-Françoise Voidrot elected as co-chair In June 2009 (Boston TC)

- A public email list open to everyone (OGC member or not) set up : https://lists.opengeospatial.org/mailman/listinfo/meteo.dwg
- A twiki space set up : http://external.opengis.org/twiki_public/bin/view/MeteoDWG/WebHome

- Facilitated a Memorandum of Understanding between OGC and WMO

OGC - WMO MoU

- WMO CBS, Croatia, 2009-04: strong support for MoU, Secretary-General asked to pursue
- 2009-09 MoU reviewed by WMO Legal Section
- Several email exchanges in October to finalise wordings
- Reached stability Monday 2 November 2009, sign very soon

- Encompasses : Meteorology, Hydrology, Climatology, Oceanography
  - Agrees to liaison between WMO Secretariat staff and OGC staff
  - Allows technical experts on each others' expert teams
  - Flexible – details in Annex that can be changed
  - People involved agree to each others rules. E.g.:
    - OGC has strong IPR processes
    - WMO as UN body has some legal immunities
  - No money involved
  - Can issue joint press releases to advertise work

Extension of the Met DWG to Met-Ocean DWG

- Boston TC (June 09) : Agreement to decide about the eventual extension of the Met DWG to oceanography at the Darmstadt TC (Sept 09)

- 2-9/09/2009 : Motion submitted to vote
- Unanimous consent to modify the Met DWG charter in order to encompass Meteorology and Oceanography into a unique MetOcean DWG under Earth Systems Sciences DWG coordination

- The charter has been updated and is available on the twiki.

Works :
First steps on WMS

OGC®

Helping the World to Communicate Geographically

06/08-09/01: Open Survey set up on OGC Twiki

- http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetQuestionnaire
- Survey announced by email on the OGC MDWG email list
- Survey presented at the EGOWS 2009 meeting
- On September 1st, there were 15 contributions :
  - 1 from an international organisation (EUMETSAT)
  - 6 from National Meteorological Services (DWD, Met Office, FMI, KNMI, Meteo-France)
  - 2 from a Regional Meteorological services (Servei Meteorològic de Catalunya (SMC), MeteoGalicia)
  - 4 from National environment Agencies or data centres
  - 1 from university department
  - 1 from private company
- A few more responses since September

Synthesis => issues

- A synthesis is available at :
  http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetQuestionnaireSynthesis

- 10 Main Issues
  1. Time handling (12 times)
  2. Bounding Box, Anti-Meridian, poles & Southern Hemisphere, Projections (6 times)
  3. Vertical coordinates (5 times)
  4. Metadata, search and filtering (4 times)
  5. Performance (4 times)
  6. Asynchronous and dynamic delivery (3 times)
  7. Styling (3 times)
  8. Security (2 times)
  9. Integration with other systems, such as WCS, GRIB, OpenDap (2 times)
  10. Cross section description (1 time)

Process to « interoperate around interoperability » 1-within the met ocean community

- Based on :
  - this synthesis,
  - the MDWG email list exchanges
  - the EGOWS 2009 conclusions
  - The 1st GIS/OGC standards applied to meteorology workshop working groups reports,

  the twiki defines an open space to prepare the work on many issues

- For instance :

  * Time handling :

    http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetTimeDefinition

  * Weather exchange Models:

    http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetWeatherExchangeModels

But also

  * Getcapabilities metadata:

    http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetGetCapabilitiesLayering

  * Controlled vocabulary :

    http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetOntologies

Process to « interoperate around interoperability » 2- with OGC standards experts

- Another initiative:

Examples of specific multi-dimensional meteorological visualisations were presented to the WMS SWG to check if:

- Can they be produced using ‘Best Practices’;
- Some evolution of the standard is necessary or more effective.

Process to « interoperate around interoperability »

- Teleconferences are planned to work on each issue (Mondays, 16UTC)

- To prepare for them, participants should identify :
  - the Met-Ocean needs concerning the issue
  - the different solutions with advantages and disadvantages…. especially in term of performance!

The Issues : performance ?

Performance!

- Performance and efficiency have to be a global permanent concern:
  - Meteorology has a permanent high rate of update of data
  - Meteorology and oceanography involve large amounts of data
  - Telecoms are often a bottleneck for our customers
- Requirements, goals,metrics could be agreed in terms of frames per second for animation, seconds delay permitted for query retrieval or display …

Performance Requirements, ECMWF WG report

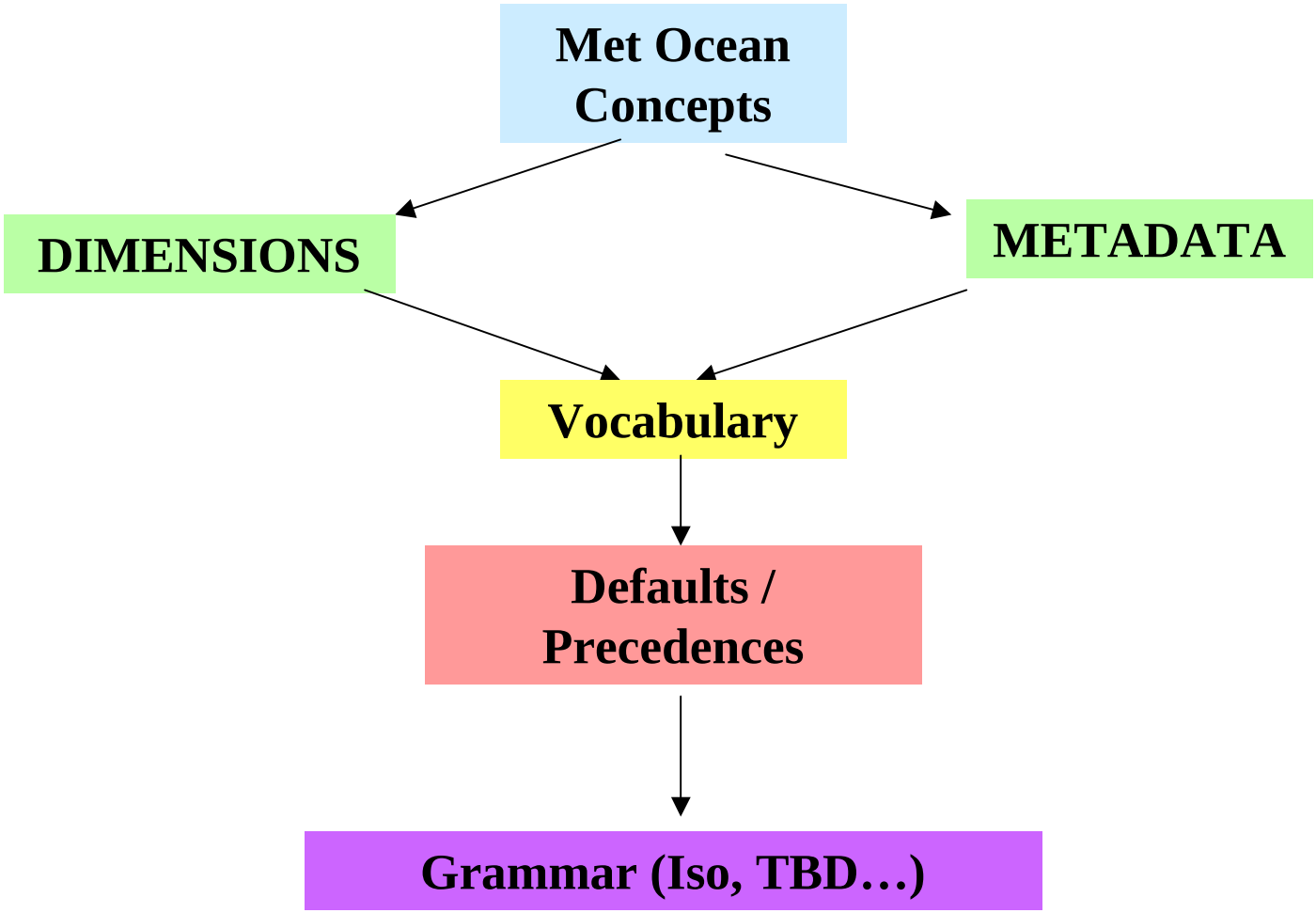
- No “one-size fits all” solutions.
- Two ends of the spectrum:
  - Small amount of users (forecasters) with access to large data, high interactivity
  - Large amount of users (mass), access to pre-processed data.
- Mass market (Web access)
- Decision makers
- Traders
- Researchers/scientists
- Operational forecasters

The Issues : Security?

Is security an issue for MetOceanDWG?

- Security is not specific to MetOceanDWG
- Needs could be explicited towards the Security Domain Working Group in charge of these matters : authentification, authorization, controlled access to data and metadata…

WMS issues working process



Work done on WMS

- Some input on twiki
- 2 teleconferences on time issue : summaries sent to the email list
- Email exchanges
- Frederic Guillaud will detail the progress on Tuesday afternoon
- More teleconferences to be held
- Final synthesis will be put on the twiki issue by issue

Interoperability Experiments

- Interoperability experiments can be set up and lead to contributions into the discussions, identification of new issues, or retex around performances

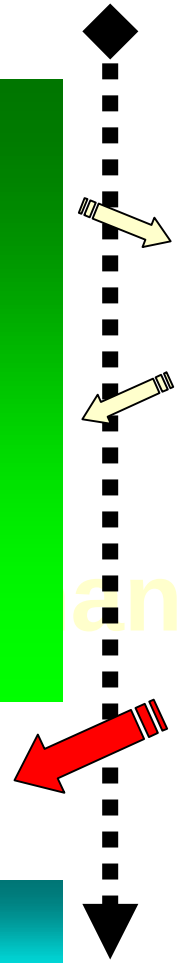
- Volunteers: http://external.opengis.org/twiki_public/bin/view/MeteoDWG/MetocWMS_IE_Volunteerings
- Environment Canada, Servei Meteorològic de Catalunya (SMC), DWD, Met Office, FMI, Météo-France, NOAA NGDC, Australian Bureau of Meteorology, University of Reading UK, Plymouth Marine Laboratory UK, MeteoGalicia, Magellium

Roadmap

MetOcean DWG working proposal

WMS

1. Time handling
2. Bounding Box, Anti-Meridian, poles and Southern Hemisphere, Projections
3. Vertical coordinates
4. Metadata, search and filtering
5. Asynchronous and dynamic delivery
6. Styling
7. Integration with other systems, such as WCS, GRIB, OpenDap
8. Cross section description (wait WMS 1.4?)



Models

What ?

How ?

To be defined

Andrew Woolf's presentation + Working group

WCS, WFS

Next steps

- **Working groups**

- **Next OGC Technical Comittee in Mountain View, California 7-11 December 2009**

Registration at http://www.opengeospatial.org/event/0912tc

Conclusion

- Public Websites :
  - OGC : (Standards, Programs, Press and Events announcements…)
    http://www.opengeospatial.org/
  - Met Ocean DWG Twiki :
    http://external.opengeospatial.org/twiki_public/bin/view/MetOceanDWG/WebHome
  - Met Ocean DWG email list :
    https://lists.opengeospatial.org/mailman/listinfo/meteo.dwg

- Meetings, Teleconferences,

The working resources and means are there
The charter is done, the OGC-WMO MoU is nearly there
Just get involved and do some good work!