



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE

Introduction to Feature & Coverage Portrayal Discussion

Ilkka Rinne / FMI

21st EGOWS, ECMWF, Reading, UK

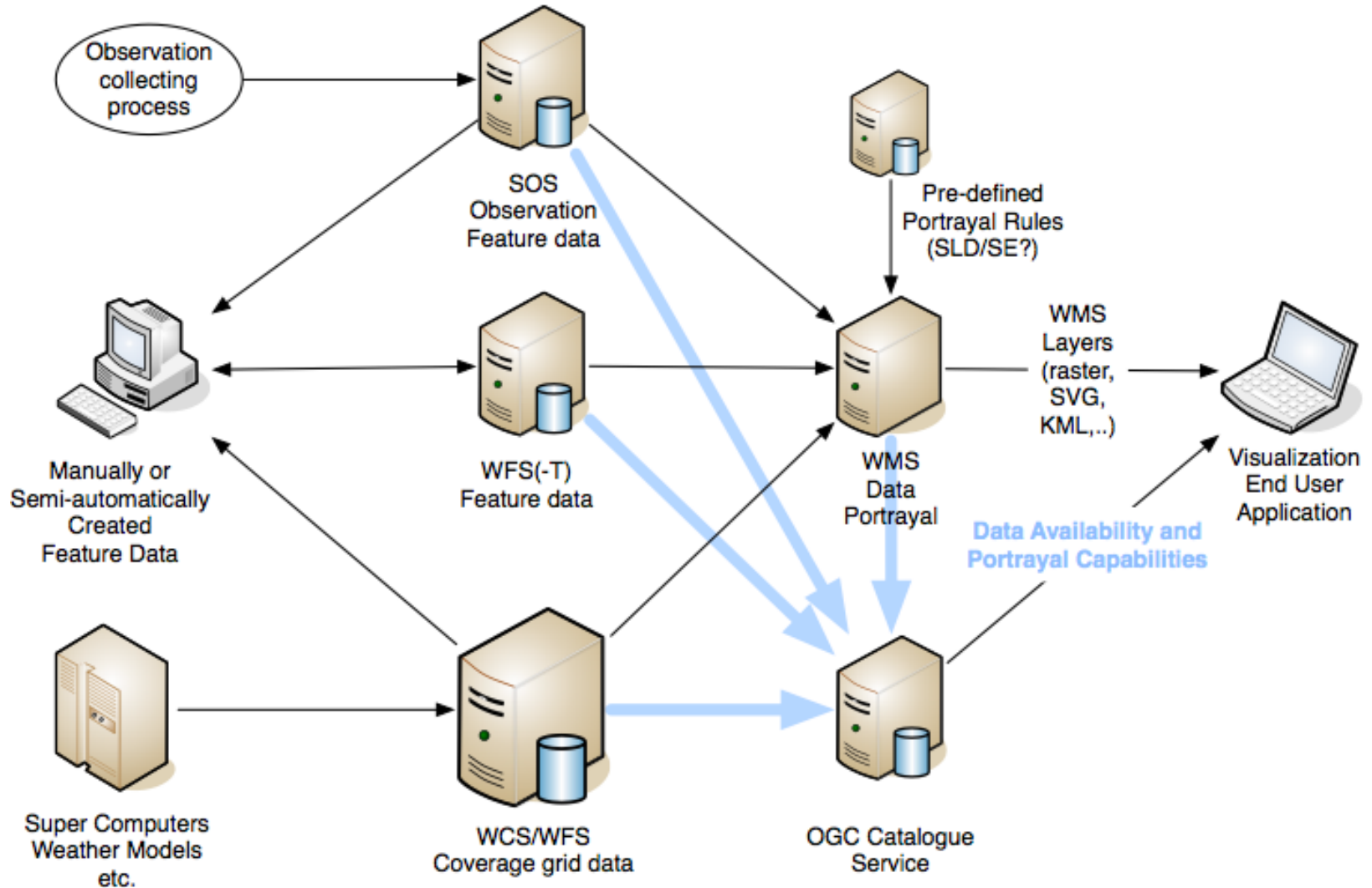


Feature & Coverage Portrayal in OGC?

- **Visualization of vector (typically GML Features) or raster (typically grid coverage) data.**
- **Typically WFS or WCS servers as back ends, WMS server as front end server.**
 - May also be combined to the same server
- **Create the data visualization as a service**
 - on the server,
 - with client styling preferences,
 - possibly even with client-provided data (source).
- **An extended WMS Service interface**



Component WMS model, Feature / Coverage Portrayal Service





Step 1: Common Visualization Rules

- **A lot of internationally agreed or legally mandated visualization rules for met data already exists, especially in aviation weather (ICAO, WMO)**
 - The end results are described, each software implementation must do re-invent the visualization code, even though the data formats are the same.
- **Possibility to share the common visualization rules for certain data in machine interpretable way**
 - Savings in the software development
- **Named styles: “I want this map displayed in ICAO SigWx style.”**



Step 2: Common Visualization Language

- **Not just named styles, let the user define the visualization rules (or at least parameters)**
- **More challenging technically, performance issues?**
 - For a limited set of expert users, not general public
- **“I would like to get the isoline pressure visualization from the latest ECMWF model run and our local model run with the same contouring parameters but with different line color, for overlay comparison.”**
 - Could we do this on-demand without transferring the actual model data over the network as we do now?
- **Visualization rule language?**



OGC Symbology Encoding Standard (SE)

- **Language for defining data-specific visualization rules**
 - “Draw all the PointObservation features with property “temp” with value > 30 with red dots”
 - “Draw the grid output of this WCS request with this kind of color map”
- **Not meteorology-specific, some (many?) required visualization techniques missing in the current standard version.**
 - Contouring missing entirely for example
 - Can it even be properly described at this level?
 - Opportunity to influence the next standard as it is being revised in OGC at the moment



OGC Styled Layer Descriptor (SLD)

- **Extend the WMS service to provide standardized layer styling rules**
 - Get descriptions of the pre-defined styling rules
 - Get a certain WMS layer with user-defined styling rules
 - Additional GetLegendGraphic operation
- **Also under revision by the OGC SLD/SE Standards Working Group currently**



Need for met data visualization examples

- **Real, typical data visualization cases**
 - With realistic source data provided in the data formats we use today (Grib, BUFR, NetCDF)
 - With good end result images provided
- **To evaluate the shortcomings of the current SLD/SE standards**
- **To let the SLD/SE Standards Working Group members play with the met data and get familiar with our visualization problems.**
- **Please contribute at the OGC MetOcean DWG public wiki:**
http://external.opengeospatial.org/twiki_public/bin/view/MetOceanDWG/FeatureAndCoveragePortrayal