Austrian AQD Reporting

Coupling WFS & SOS
AQD e-Reporting

- Requires yearly reporting of air quality data together with assessment methods and attainment of objectives
- Includes Up To Date (UTD) measurement data
- Requirement for provision of AQD data under INSPIRE 2007/2/EC. Implications:
  - Data models in accordance with INSPIRE, ISO and OGC Standards
  - Data made available via web services
AQD e-Reporting

Reporting Dataflows:
B. Zones and Agglomerations
C. Assessment Regime
D. Information about Assessment Methods
E. Primary data (both validated & UTD)
F. Generated Aggregated Data
G. Attainment of Environmental Objectives
Austrian AQD SOS implementation

UWEDAT

Austrian Nat’l AQ DB
Austrian AQD SOS implementation

WFS = Web Feature Service

AQD DB -> GeoServer

ETL Metadata

UWEDAT

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WFS

WFS
Austrian AQD SOS implementation

- AQD DB
- GeoServer
- ETL
- Metadata
- UWEDAT
- Austrian Nat’l AQ DB
- WFS

AQA DB structured in accordance with AQD e-Reporting and GeoServer
Austrian AQD SOS implementation

Stored procedures in AQD DB for the extraction of data from UWEDAT as required by AQD (ETL of Metadata)
Austrian AQD SOS implementation

- **AQL DB**
- **GeoServer**
- **WFS**
- **Mapping files to configure Geoserver to AQD Schema**

ETL Metadata

- **UWEDAT**
- **Austrian Nat’l AQ DB**
Austrian AQD SOS implementation

- AQD DB
- GeoServer
- WFS
- ETL Metadata
- UWEDAT
- DH
- Open UWEDAT
- SOS = Sensor Observation Service

Austrian Nat’l AQ DB
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- WFS

ETL Metadata

Austrian Nat'l AQ DB

CORBA Interface Measurements

Data Handler provides interface to existing data source. Simple Java interface can be implemented for different data sources.
Austrian AQD SOS implementation

**Data Handler Class** (Java) must be adapted in the following methods:
- Setter methods to parameterize data source connection
- Open & Close methods
- Filter methods to specify specific data point (~ ObservingCapabilities).
- getTimeSeries

TimeSeries class must also be configured in accordance with data to be served
Austrian AQD SOS implementation

First approach

Problem: how to keep features provided by both WFS and SOS (featureOfInterest and Process) aligned?
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## Overlap WFS & SOS

<table>
<thead>
<tr>
<th>WFS</th>
<th>Feature</th>
<th>SOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>getFeature</td>
<td>AQD_Sample</td>
<td>getFeatureOfInterest</td>
</tr>
<tr>
<td>getFeature</td>
<td>AQD_Process</td>
<td>describeSensor</td>
</tr>
</tbody>
</table>
Austrian AQD SOS implementation

Solution: Redirect for overlapping service requests (getFeatureOfInterest & describeSensor)
Austrian AQD URIs

WFS:
http://luft.umweltbundesamt.at/inspire/wfs?service=WFS&version=2.0.0&request=GetCapabilities

SOS
http://luft.umweltbundesamt.at/inspire/sos?service=SOS&version=2.0.0&request=getCapabilities
Conclusions

- GeoServer well suited for provision of INSPIRE Data
  - However not easy to configure, should find way to support each other
- Client side problems with complex features (but solvable)
- Lightweight SOSI from AIT configurable to various data stores
- Redirect of overlapping requests can be redirected between services
- Could make sense to put solution in the cloud and reuse across organizations
Contact & Information

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SOS URIs

http://luft.umweltbundesamt.at/inspire/sos?service=SOS&version=2.0.0&request=getObservation&offering=urn:any/identifier/03/0407/1/1&eventTime=2012-10-11T00:00/2012-10-12T00:00

http://luft.umweltbundesamt.at/inspire/sos?service=SOS&version=2.0.0&request=getFeatureOfInterest&featureOfInterest=AT.0008.20.AQ/SAM.10.VOR1.64300.5.2

http://luft.umweltbundesamt.at/inspire/sos?service=SOS&version=2.0.0&request=describeSensor&procedure=AT.0008.20.AQ/SP.P.10.VOR1.64300.5.2.5908