

SOS implementation of a INSPIRE download service of near real time air quality data

Xalo Fernández Villarino

xfernandez@magrama.es

Cartography & GIS Unit

Ministry of Agriculture, Food and Environment of Spain

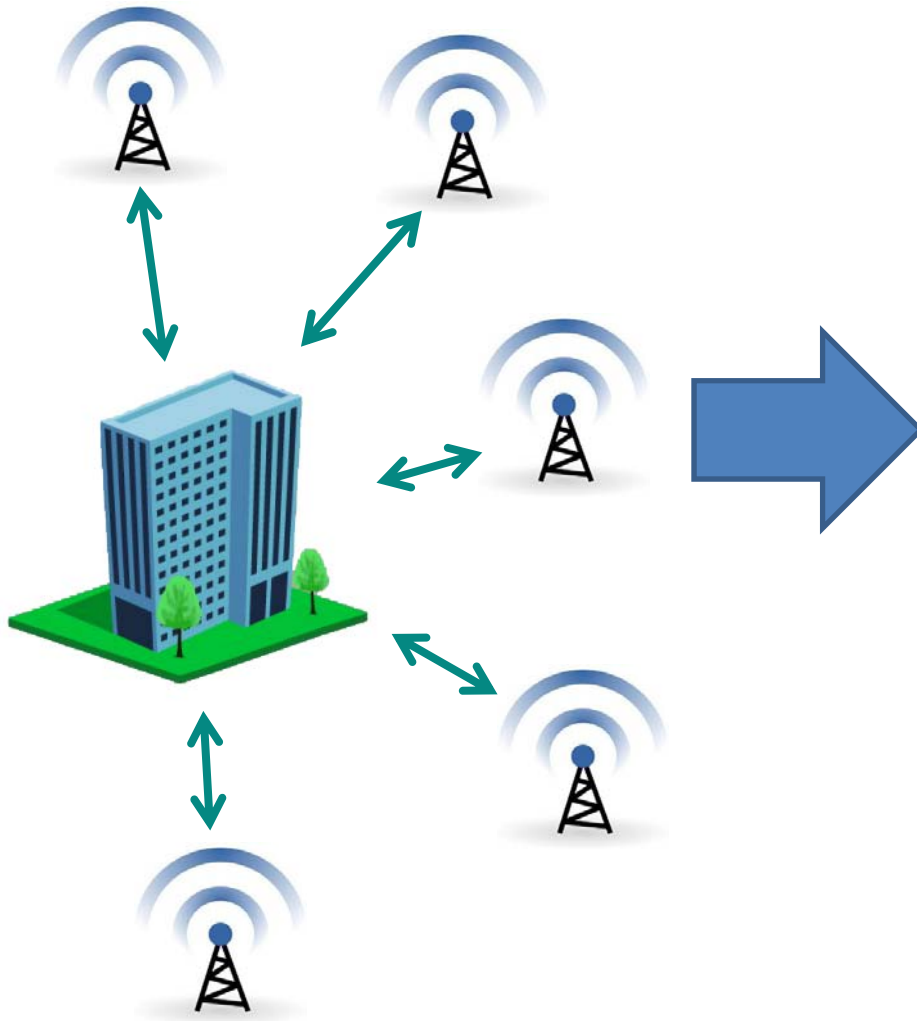


INSPIRE Conference 2016

Barcelona, 26th - 30th September



Context



INSPIRE services

- **View services**
 - real-time
 - non real-time



- **Download predefined datasets**
(non real-time)



- **Download direct access**
(real-time)

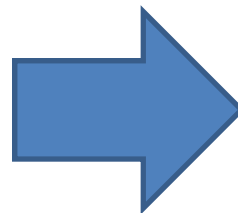


Spanish Air Quality network

- 883 stations
- 12 observables (air pollutants)
- Hourly update
- Hourly, daily and monthly timeseries

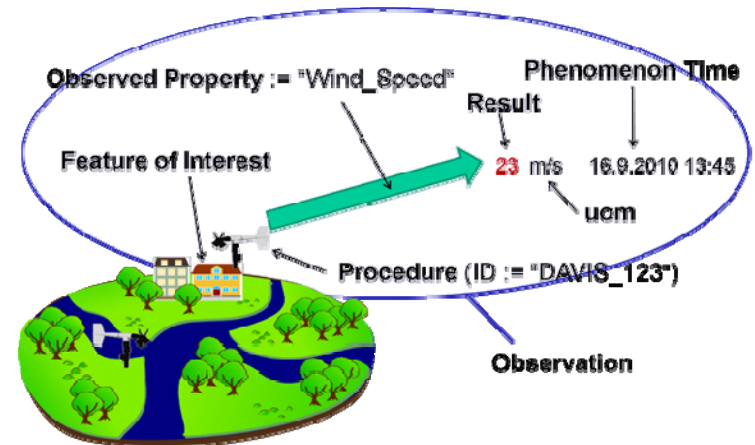
Around 150.000 new records per day

- We want INSPIRE compliant data delivery



SOS 2.0 specification

- OGC web service specification since 2012
- Part of the Sensor Web Enablement initiative
- Observations focused specification
- Download service specification



- Data encoding according to *Observations & Measurements (O&M) model*



ISO 19156



INSPIRE Data Specifications

- NOT INSPIRE compliant still but...



MIG: MIWP7a



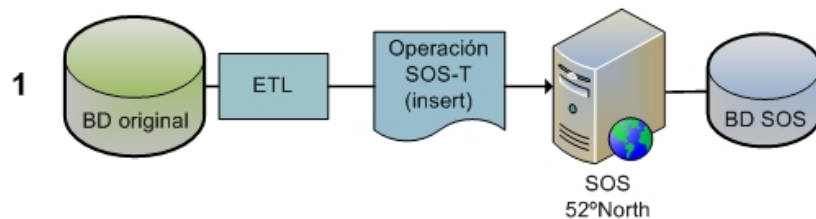
Extend download services
technical guidance to include SOS

Challenges faced

- Some constraints on data source load and maintenance:
 - Fixed original data model with no possibility of any change
very different data structure from SOS data model
 - No ETL tool available
- Need of unique and invariant feature IDs

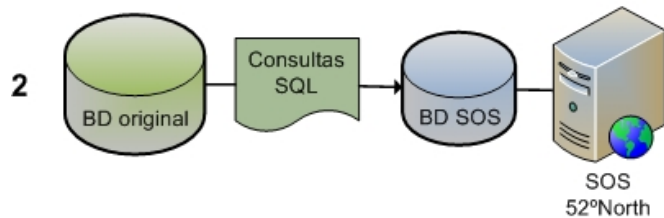


Datasource maintenance



• Application independent

- Data duplication
- ETL needed



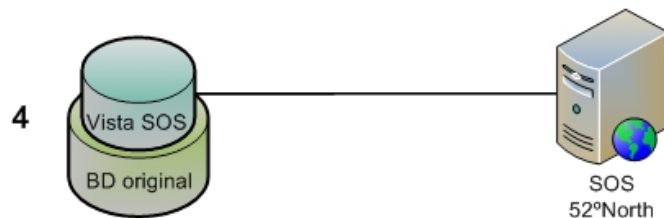
• No extra software needed

- Data duplication
- Software data model dependent



• No data duplication
• Direct connection

- Inefficient in case of complex transformation



• No data duplication

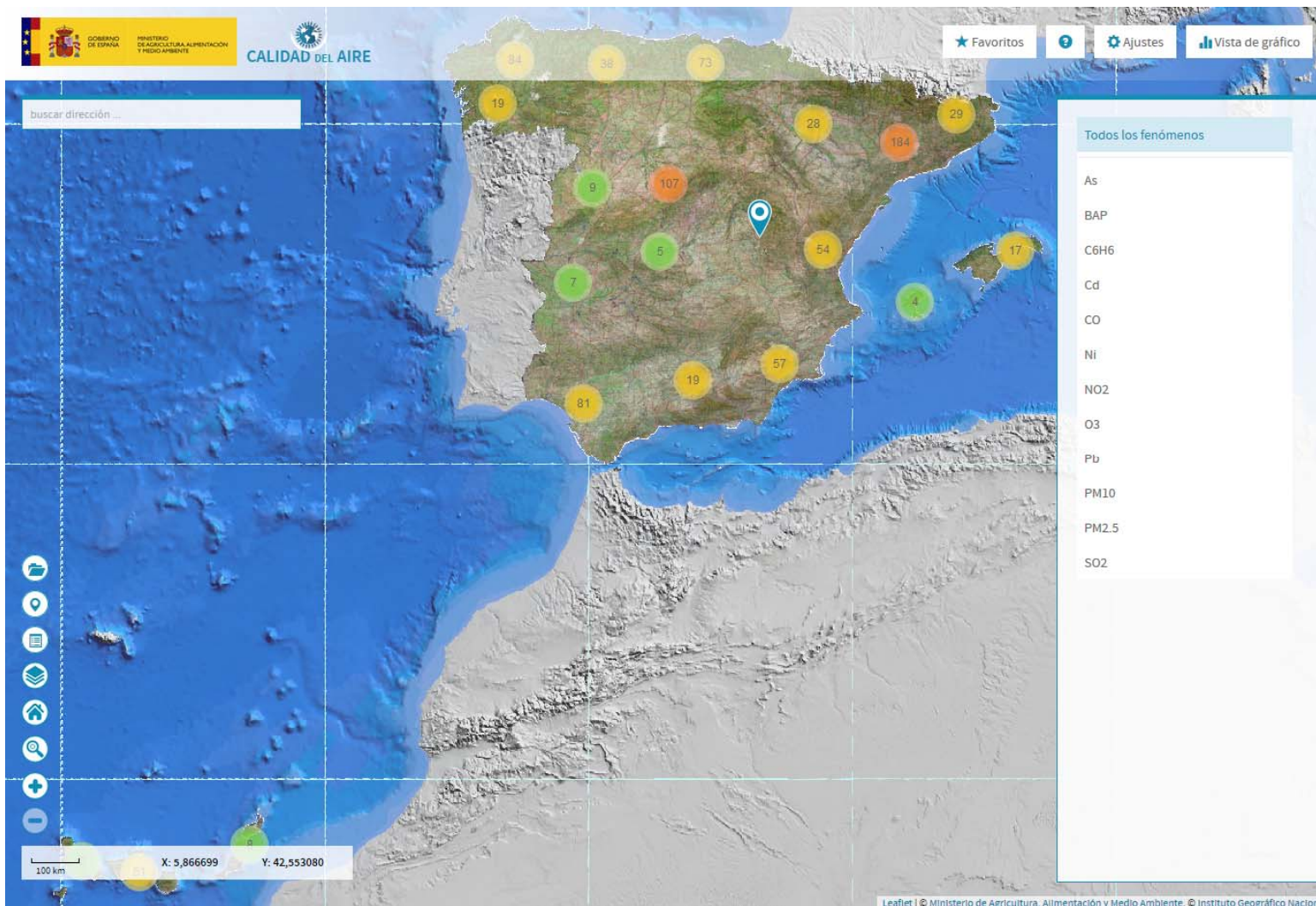
- Performance?

Best solution should be decided in a case by case basis, depending on initial constraints.

Feature IDs

- Feature (procedure, observable property, feature of interest, observation and offering) IDs should be unique, invariant and URIs
- URN template: `urn:magrama.gob.es/ca/[featureType]/[ID]`
- Where [ID] is the unique numeric internal database identifier
- In the case of observation features:
$$[ID] = f(\text{procedure, observable property, timestamp})$$
- Easily convertible in URLs if data should be published as LinkedData in the future

beta video



Thank you for your attention



INSPIRE Conference 2016
Barcelona, 26th - 30th September

