JIIDE 2017

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d.gTerritório Direção-Geral do Território

INSTITUTO GEOGRÁFICO NACIONAL

GOBIERNO DE ESPAÑA MINISTERIO DE FOMENTO

POSEIDON, INSPIRE updated citizen science project

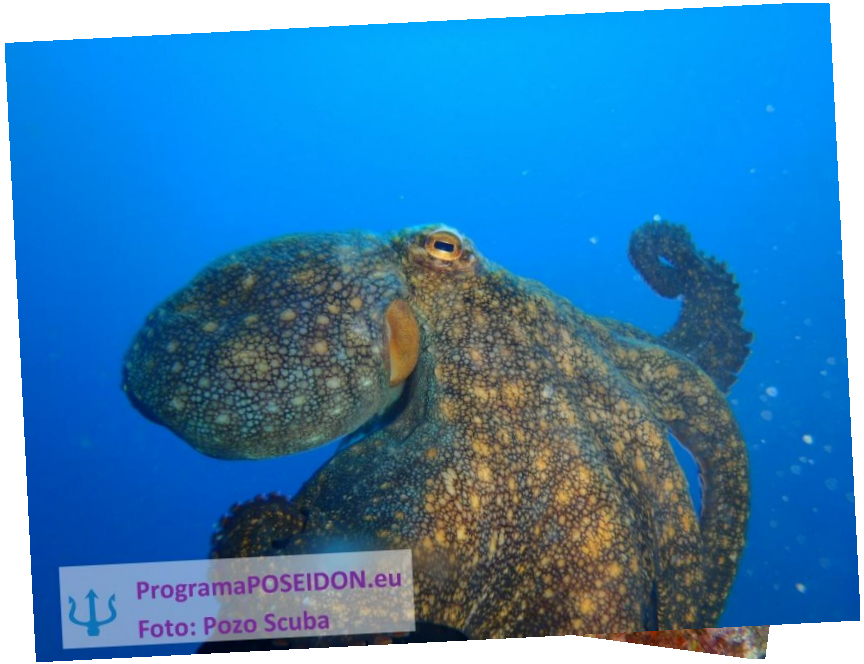
Andrej Abramić, Alejandro Garcia Mendoza, Ricardo Haroun Tabraue and José Juan Castro Hernández

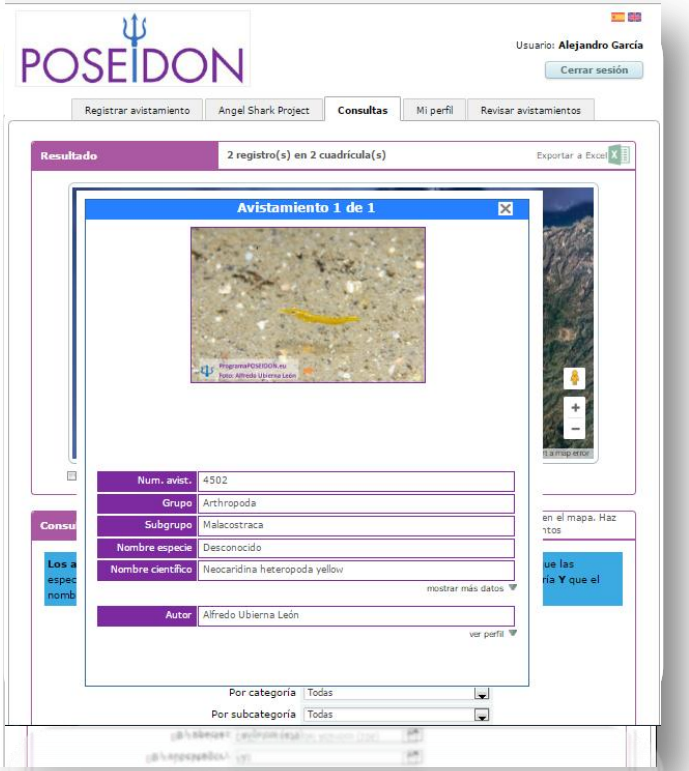
Programa POSEIDON

http://www.programaposeidon.eu

- Citizen Science project that deals with **marine biodiversity**;
- Project financed by *Fundación Biodiversidad,* **2014-2015**;
- Marine **species are reported** (photo, local name & location) by citizens and **validated by experts** (marine biologists - experts in sharks, invertebrates, fish….)
- Goal **obtain marine biodiversity data** within the citizen collaboration, increasing awareness on biodiversity issues

User interface





Current results

- Project finalized but **still running** (2014-2015), still we are obtaining new records, but intensity is decreasing (**need new push**)
- **Campaigns** to get to the **target citizens groups** (scuba divers, whale watchers…)
- Number of **“samples” > 8000, 7263 validated (3119 photos)**
- Number of **registered users > 400**
- **We believe that use of Programa Poseidon can go much further**

INSPIRE ?

- Why include **INSPIRE data management** into Programa Poseidon ?
- **NOT LEGAL/PROJECT REQUIREMENT**
- EcoAqua Institute of ULPGC - important **producer of the scientific marine/maritime data in the Macaronesia region**.
- The institute applies sharing data policy and in 2016 the goal is to apply **INSPIRE data management**.
- Motivation to be a **part of distributed Spanish SDI** & European SDI is **to increase visibility** of EcoAqua work and shared information
- **SDI/INSPIRE data management** we see primely as **a tool**
- **NO RESEARCH ON DATA SCIENCE**
- **To properly understand INSPIRE data management** methods,

To apply in our future international developments - searching for efficiency in development

PLASMAR www.plasmar.eu

POSEIDON
www.programaposeidon.eu

Open source/free of charge software

– no budget for tools

- Using **exclusively open source/free** of charge software
- Data management that can be applied **without elevated additional costs**
- to **understand and adopt** process:
  - metadata development & management
  - data harmonization
  - Development of the internet services - discovery, view and download

hale spatial data harmonisation

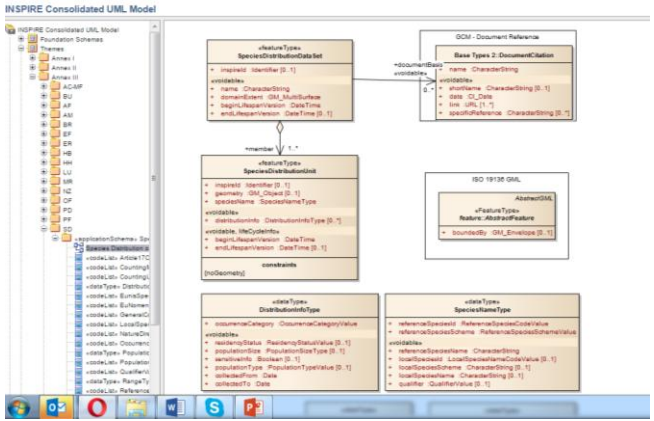
GeoNetwork opensource

GeoServer

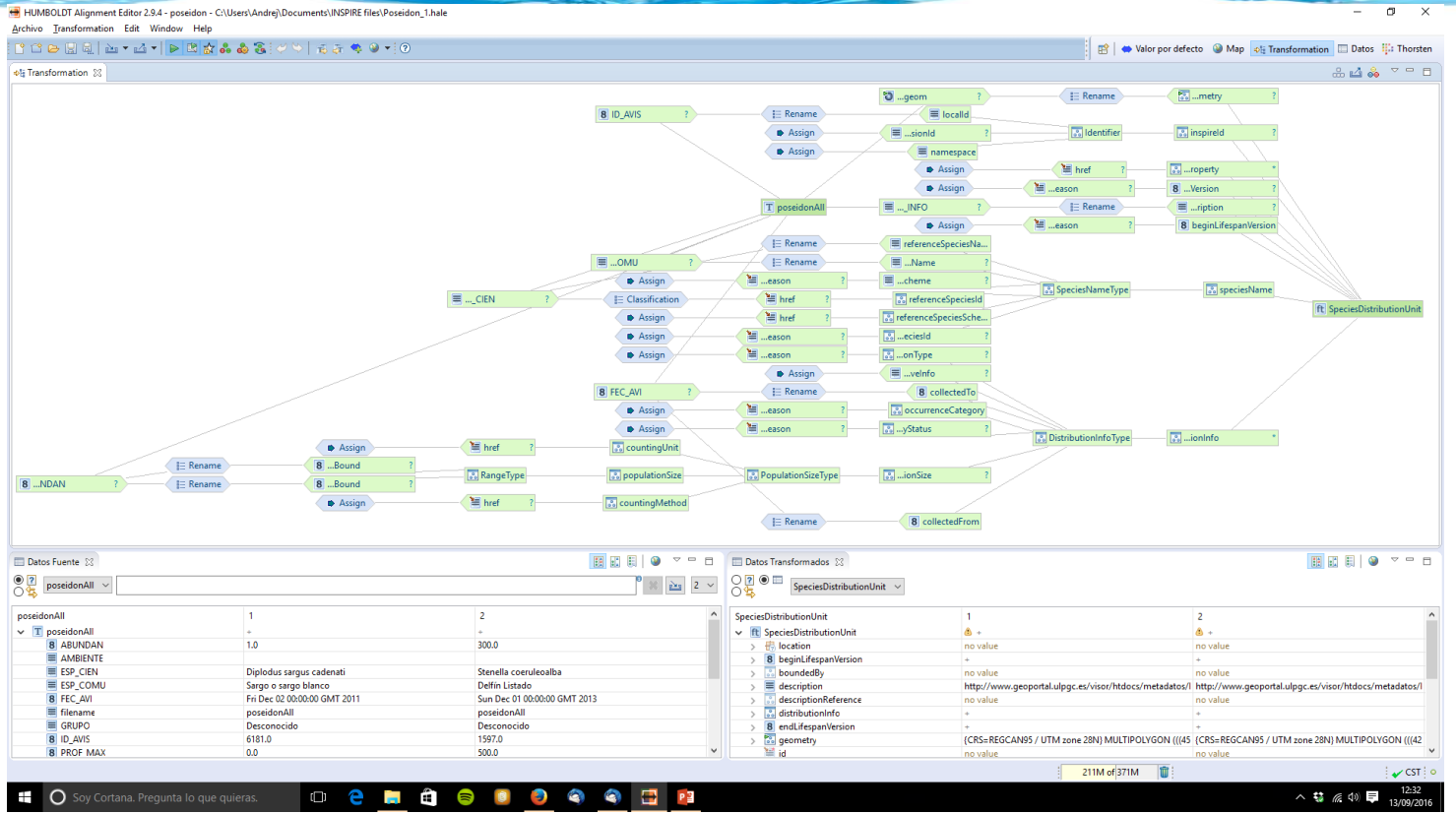
PostGIS

Data harmonization

- Original data base in MySQL , managed and shared also as .shp files
- Transformation done with **Humboldt Alignment Editor** (HALE)
- We used web tools offered through the INSPIRE web site/data specification corner
  - Technical guidelines DS documents /Interactive Data Specification
  - Mapping tables, HTML view of the UML models, application schemas (XSD) …



Transformation



Architecture applied

- What architecture to apply **: One – off** or transformation **On fly**
- **One-off** transformation + external web based services WMS/WFS
- **Even POSEIDON is not static data set (as bathymetry or geology data, weekly or even daily update) no need for One-the-fly** transformation
- **Monthly update** of INSPIRE data set – HALE provides support for One-off
- One –off **better performance** than On fly, **wider choice of software** components
- Duplicate, triplicate (our use case) copies of data base – **storage and management**

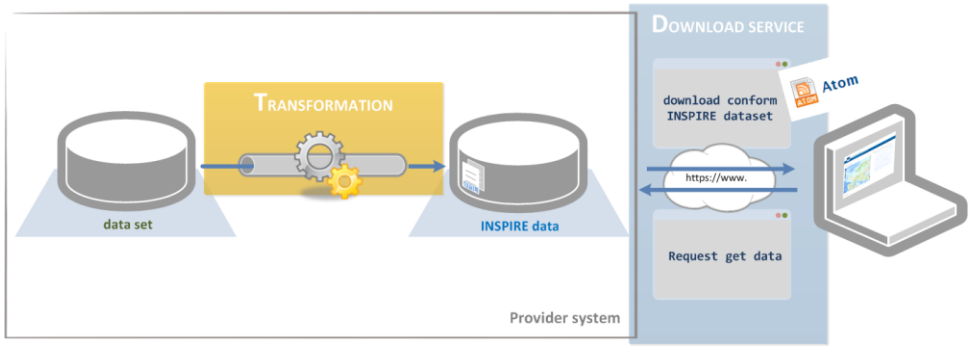


image by Chris Schubert

Developing view/download network services

- We use **GeoServer** with INSPIRE extension that provide support for extended capabilities **WMS & WFS** (WCS)
- First idea to serve **plane INSPIRE compliant data model** as a *.shp (WFS) – Following conceptual data model - quite simple solution – HALE is providing flat data model
- Not possible as *.shp, (*.dbf) not support more than 10 characters attribute name
- We needed to include the PostGIS data base as a **conversion data base**
  - Possible to serve plane gml file with all required atributes
  - Possible to serve complex structure gml file

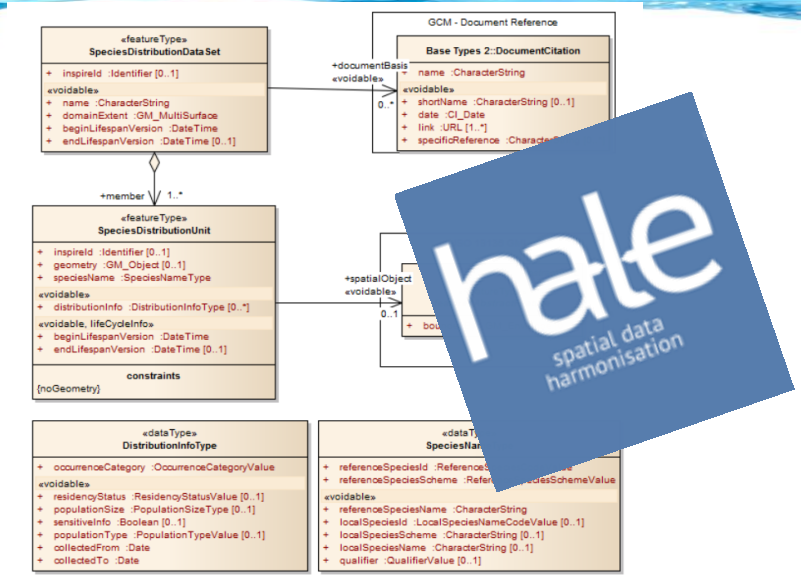
Developing discovery services

- Development of the metadata – with metadata editor – in xml need to embed manually reference system code, using the INSPIRE metadata editor
  - European Open Source Metadata Editor (EUOSME)
- Development of the catalogue CSW with GeoNetwork
- DISCOVERY – Finally connected to INSPIRE metadata catalog through national SDI (IDEE España)

Conclusions **Data Harmonization**

INSPIRE interoperability - Data Harmonization

- **Available tools** (no cost) and support more than satisfying, HALE, Data specification (corner) on INSPIRE web, Interactive data specs, INSPIRE cluster, Technical Guidelines
- Understanding *what need to be done and how* is **time consuming**
- **Expert knowledge needed** (+awareness what is actually available)
- **Planning INSPIRE data models** is a good solution for developing data flows within international project
- We can not expect from our partners to provide INSPIRE compliant data set without providing our **extensive support (providing courses and training)**



Conclusions **Network services**

- **Available number of tools** (no cost)
- **Easy to serve WMS, view network services**
- Complicate to serve **INSPIRE compliant WFS - include PostGIS data base** (use it only for the bridge to serve INSPIRE gml) – decrease robustness of the system
- Easy to serve **WFS for *INSPIRE liked data*** – **Flat data models** (without complex features). Easy to **transform into INSPIRE compliant file**
- **Download services – provide efficient data flows** – updated data – must - extremely useful in the projects
- Discovery services – metadata management
  - should be part of the project dissemination process

Thank you for your attention

….and patience

alejandro.garcia@ulpgc.es