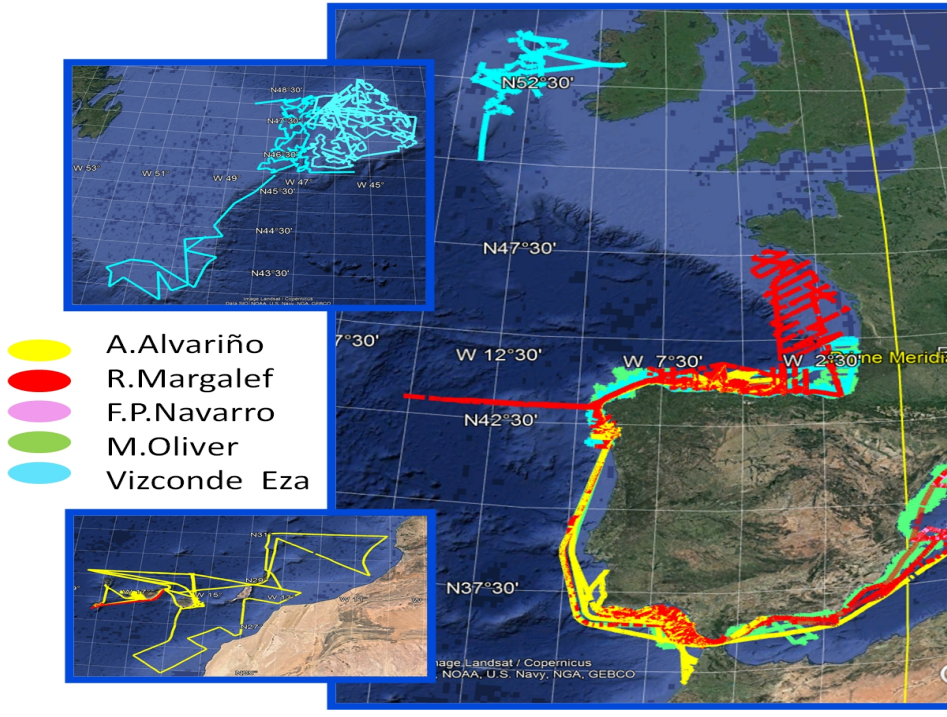
Harmonization and dissemination of TSG data from IEO research vessels: Integrating biogeochemical sensors for application in HAB data services.



Gonzalo González-Nuevo, Manuel Ruiz Villarreal, Luz García, David Marcote and Elena Tel

gonzalo.gonzaleznuevo@ieo.es

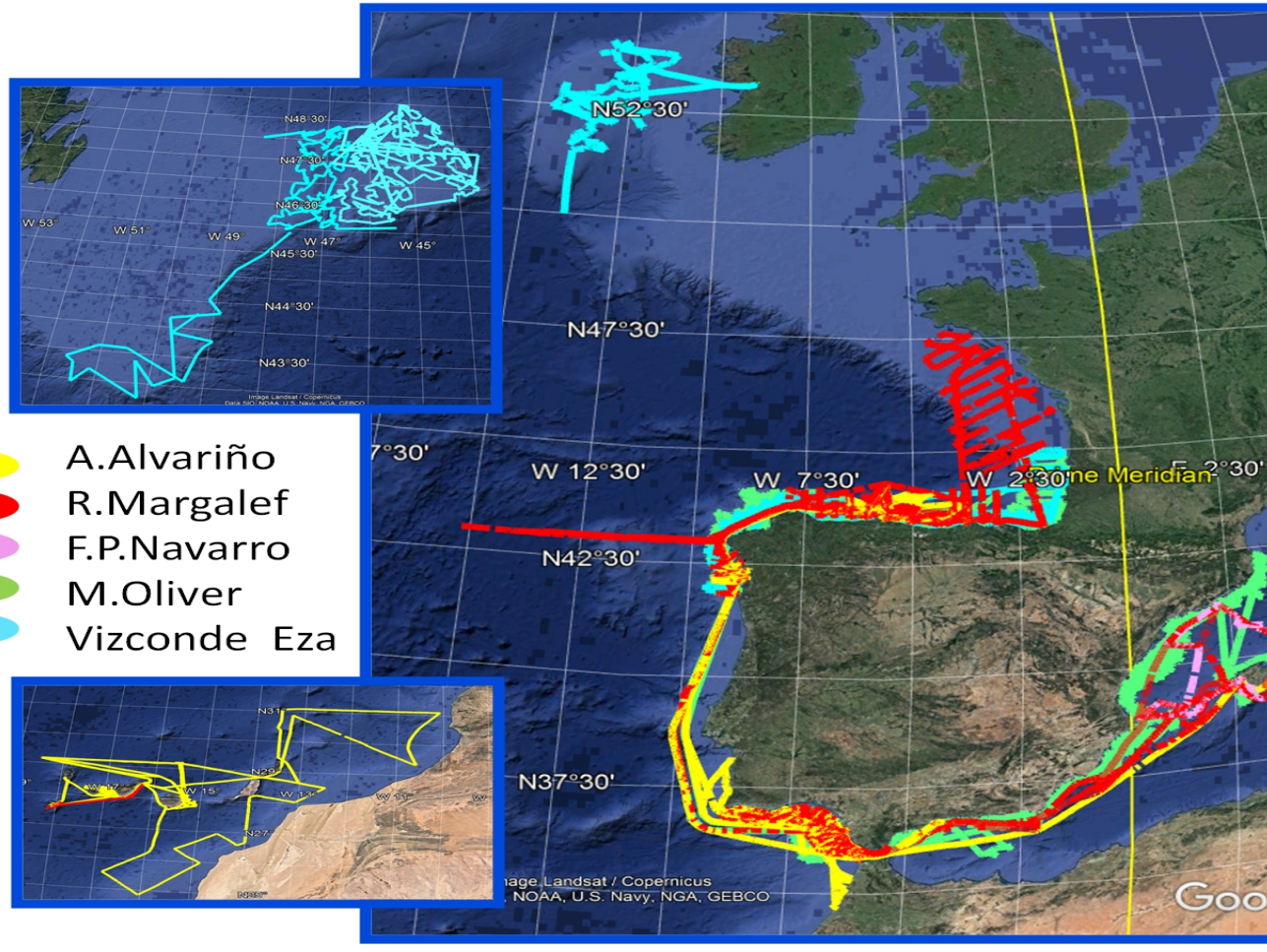
MyCoast MARRISK Interreg Atlantic Area European Regional Development Fund EUROPEAN UNION PRIMROSE Predicting the Impact of Regional Scale events on the Aquaculture Sector

IEO research vessels fleet

Navaz

Cruise activities

- Give response to institutional/ research/social demands
- Consolidate oceano-meteorologic observation ship-based network
- Develop of new technologies in the field of oceanography monitoring
- Creation of common data infrastructure platform
- Development of specific final user products



R. V. Lura

- Base port A Coruña
- Length 14 m
- TSG data
  - 2016-Actualidad
    - Monthly sections
  - 2019
    - Weekly sections

Sensors

SBE 21 Thermosalinograph

Fluorometer + Turbidimeter

Calibration: CTDs, salinometer

General Data Flow

Vessels

Data Processing

python™

OGC Data servers

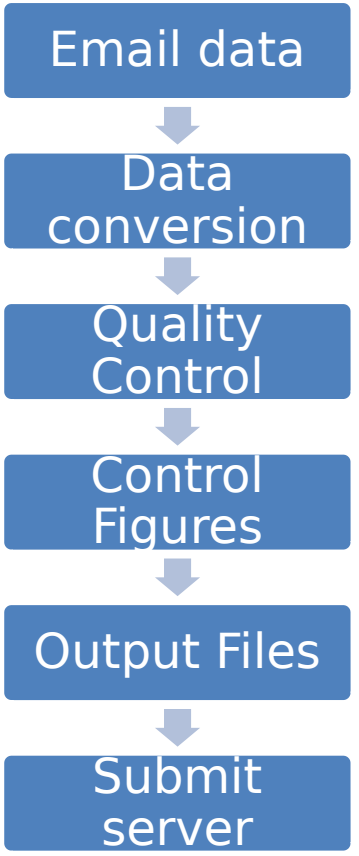
THREDDS

GeoServer

Final Users

Data processing system

- Reception of vessel data by email
- Data conversion
- Quality Control
- Control figures.
- Convert to output formats
  - netcdf
  - shapefiles (GIS)
- Submit to data servers
  - Thredds
  - Geoserver



General Data Flow

Vessels

Data Processing

python™

OGC Data servers

Database

PostgreSQL

PostGIS

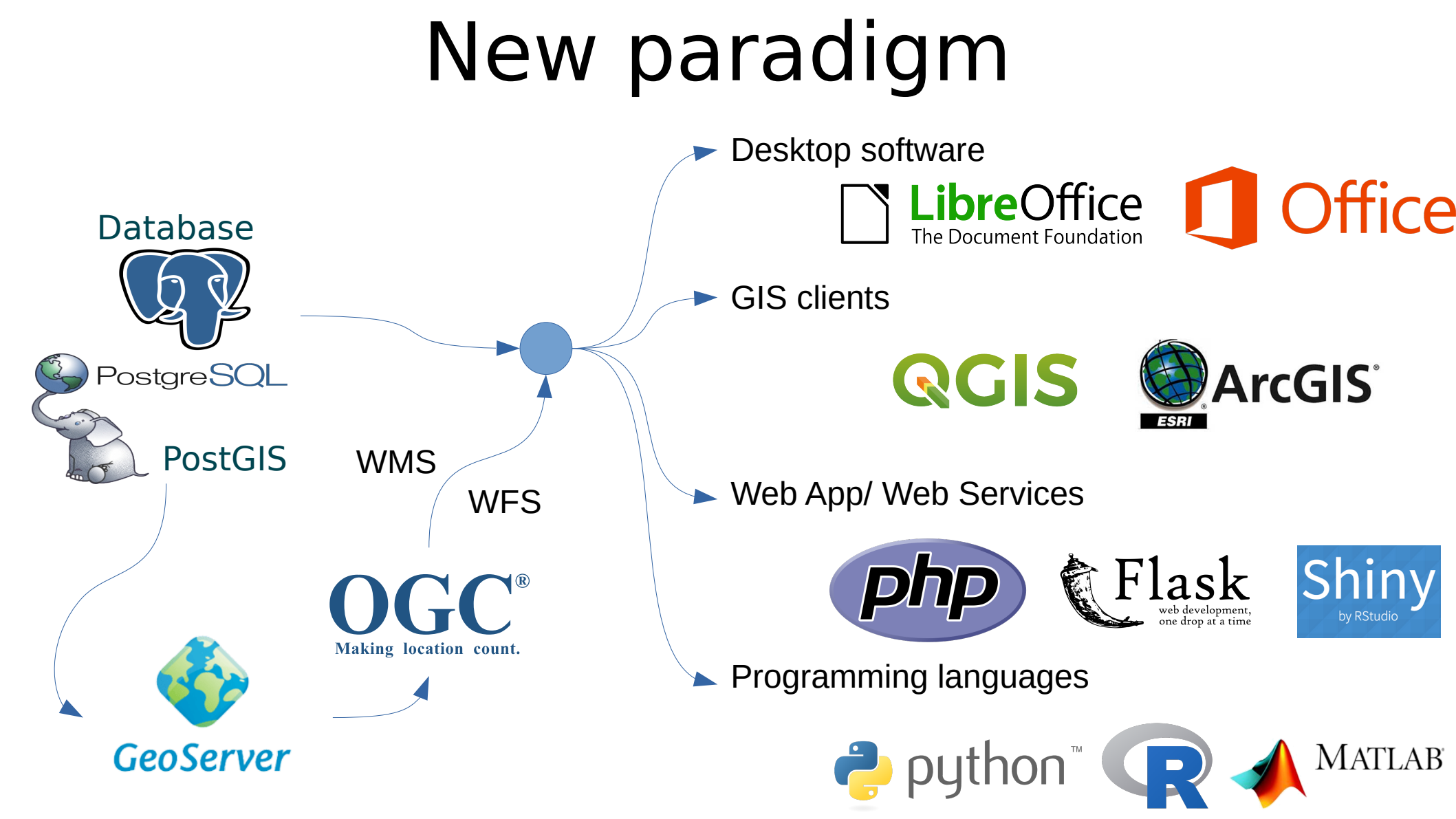
GeoServer

Final Users

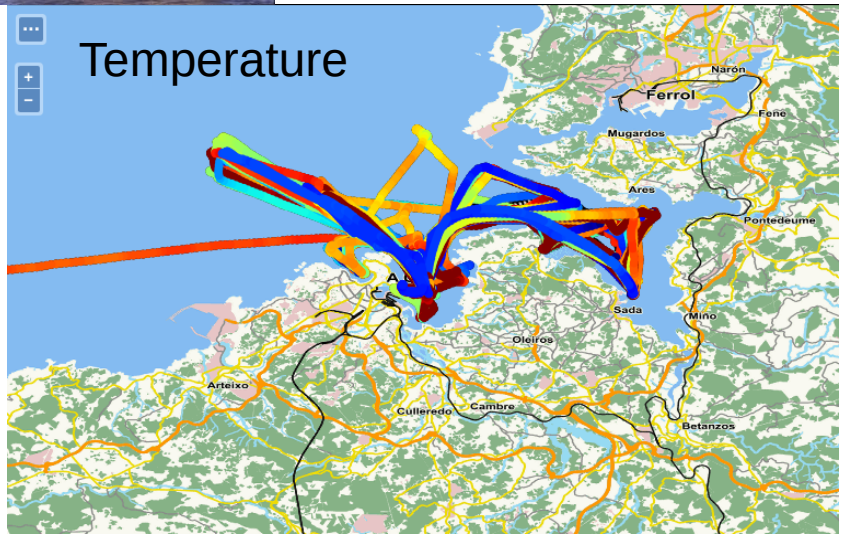
Adventages

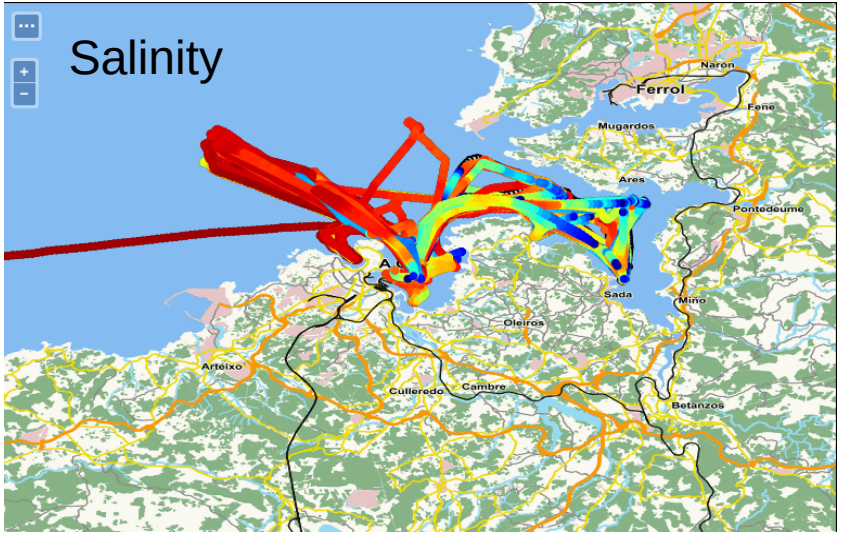
- Concentrate the programming efforts to data conversion, basic QC, and populate the database.
- Facilitate the application both automatic and supervised QC (on postgreSQL).
- The use of standard technologies reduce the efforts to programming data dissemination
  - Data compatible with GIS world
  - Facilitate graphical outputs
- Facilitate the integration with other data sources.
- Facilitate the development of interactive resources both graphics tools and data analysis products.

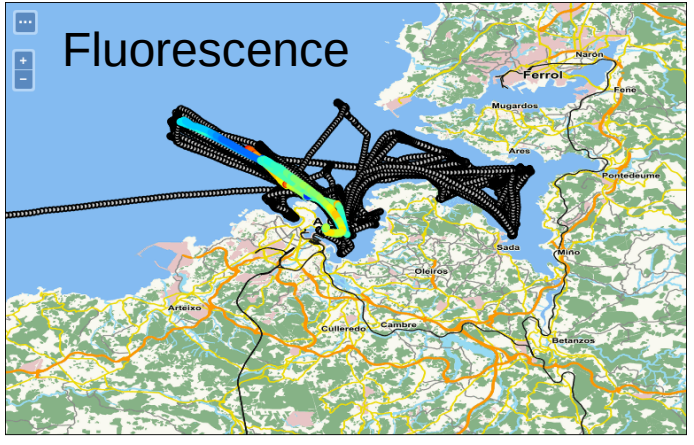
New paradigm

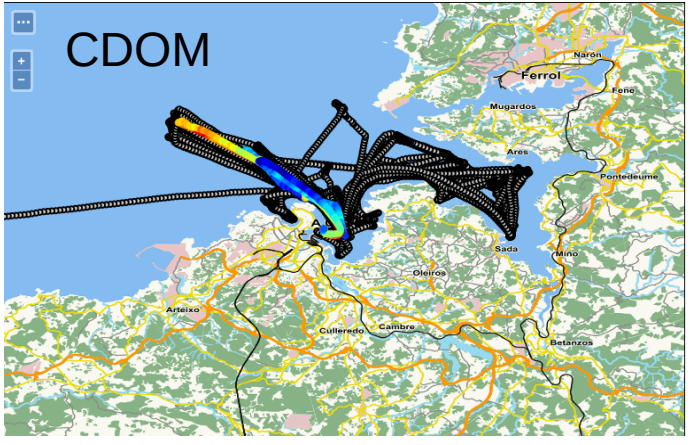


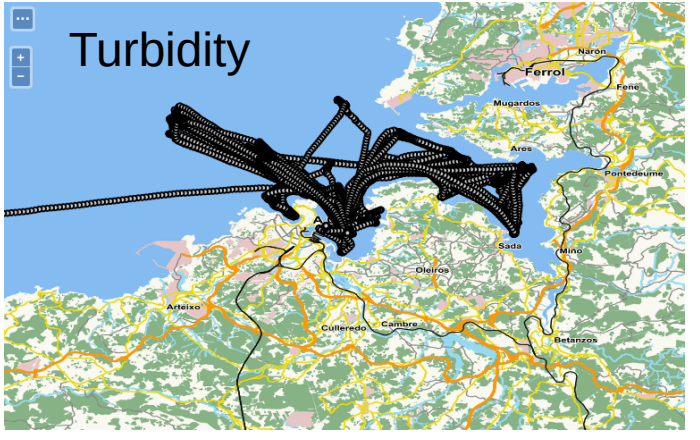
Geoserver (Openlayer)











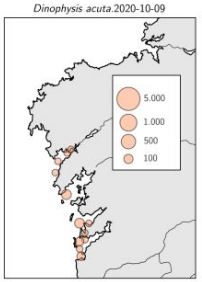
PRIMROSE
Predicting the Impact of Regional Scale events on the Aquaculture Sector

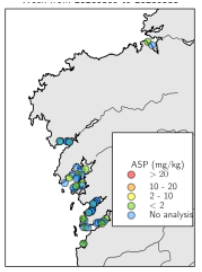
Predicting Risk and Impact of Harmful Events on the Aquaculture Sector

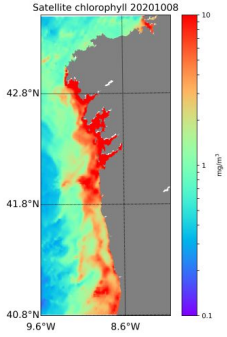
- Development of HAB prediction weekly bulletins
  - Integrate TSG in the bulletins with whole the available information.
- Facilitate the availability of TSG data
  - To validate or force the oceanographic models.
  - To facilitate the data analysis (e.g. HAB habitat modeling).

HAB bulletin

Observations



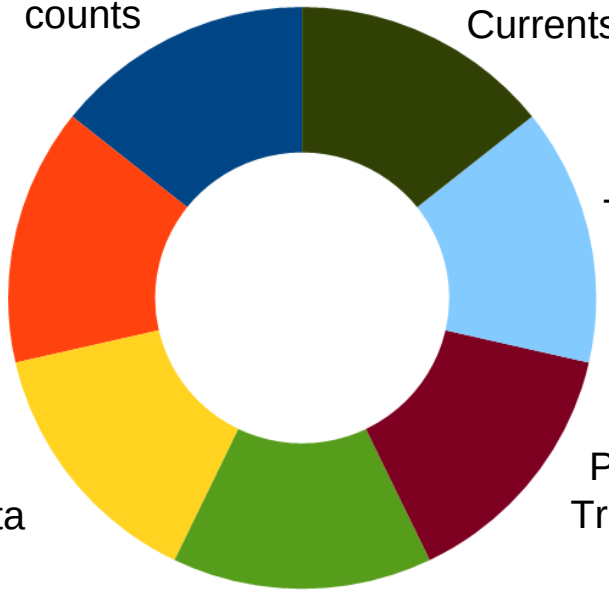




HAB Cell counts

Biotoxines

Satellite data

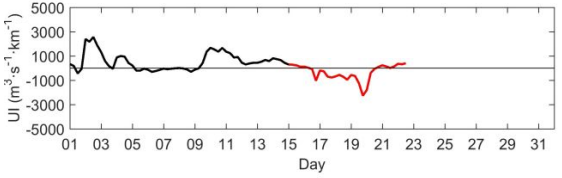


Surface Currents

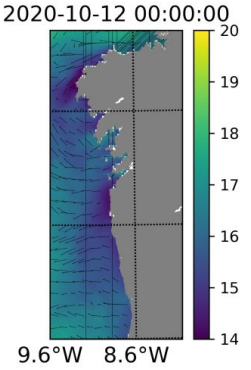
Temperatures

Particle Transport

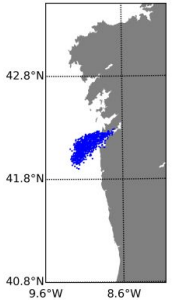
Upwelling Index



Eulerian Models

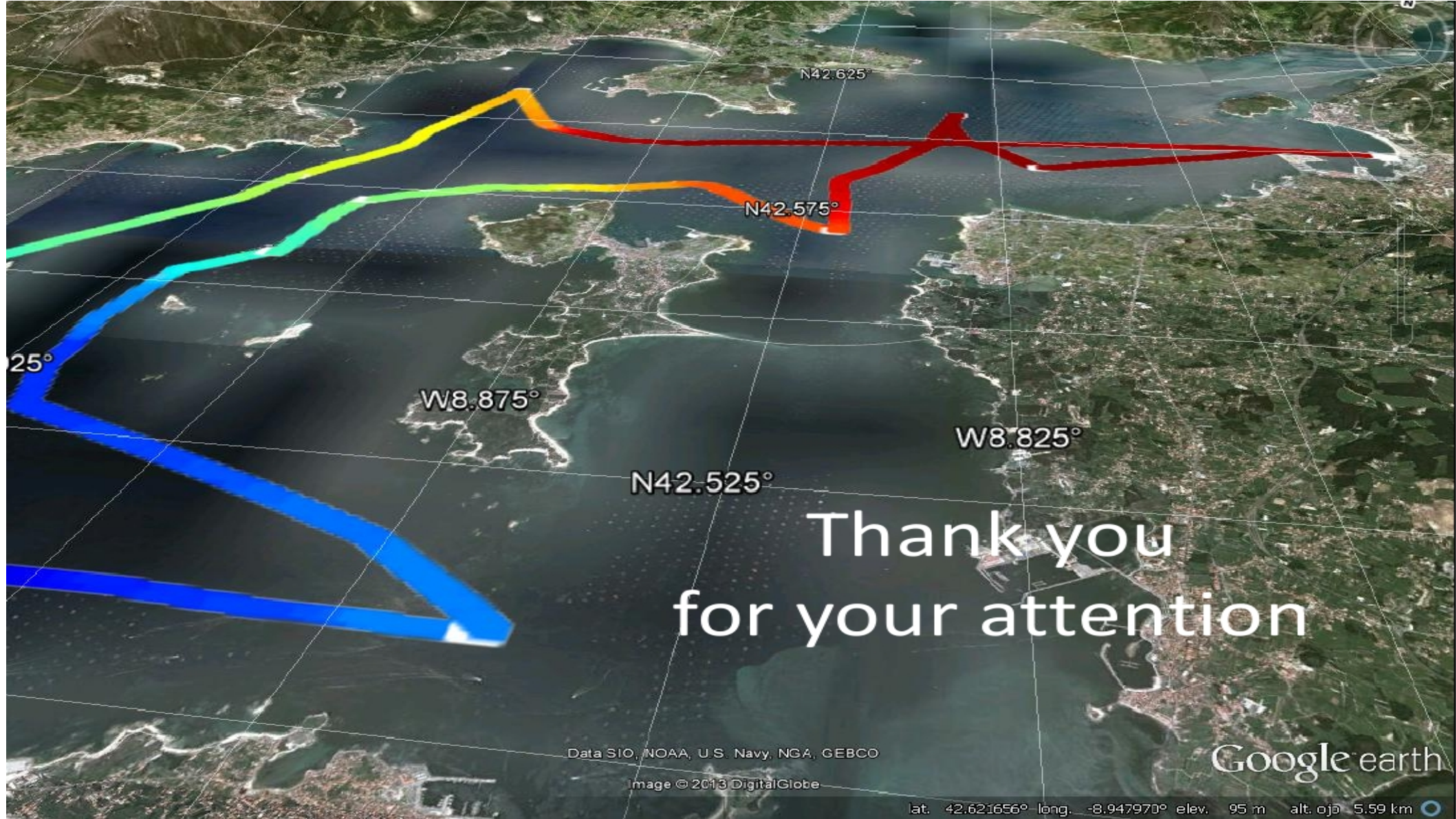


Lagrangian Models



Pending tasks

- Extend this methodology to the rest of the fleet
- Development of a web app to facilitate the application of supervised quality control.
- Development of a dedicated web portal to visualize and download the TSG data.
- Convert the HAB bulletins (pdf) to web app.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N42.575°
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W8.875°
W8.825°
N42.525°
Thank you
for your attention
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2013 DigitalGlobe
Google earth
lat. 42.621656° long. -8.947970° elev. 95 m alt. ojo 5.59 km