Standards and business models transformations

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Collecte Localisation Satellite

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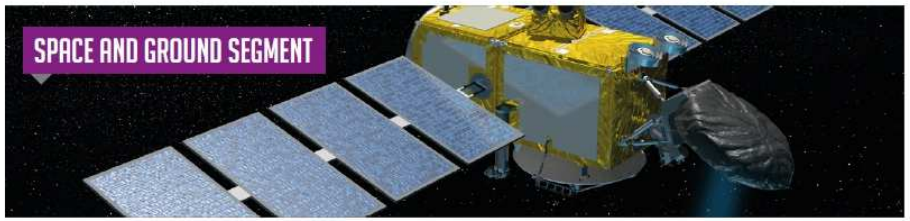
CLS Strategic sectors



Technical Solution Unit

- In charge of software developments
  - Data Management Team:
    - Spatial Data Infrastuctures:
      - EC/H2020 projects: CMEMS, Odyssea, Globaland...
      - CLS Internal project: Datastore
    - Big Data architecture

Business Model Transformation

- Make the data required by your users available through a robust, secure, standardized, distributed, interoperable service**: a single access point to data**
- How CLS became a data aggregator?

Typical context: before CMEMS

- Several productions centres, spread all over Europe in charge of products generation and dissemination
  - Private User management (several credentials)
  - Standalone product management
  - No external constraints
  - Different formats, NetCDF files (FTP access oriented)

Geographical location of CMEMS actors

CMEMS SDI: a data broker

From data production to downstream applications through standard web services

1 Web portal

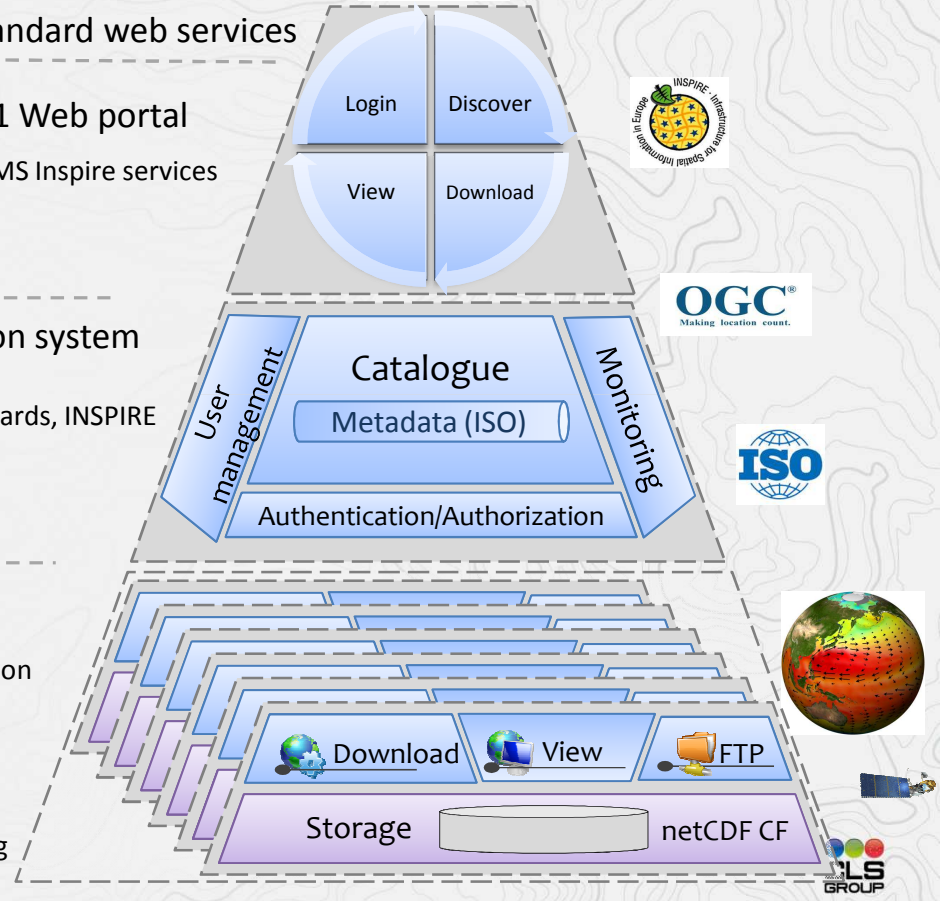
SSO to access to all CMEMS Inspire services

1 information system

- Centralized system
- Provide a catalogue build on OGC and ISO standards, INSPIRE
- Provide administration functionalities
- Provide a centralized authentication system

19 Dissemination units for 43 production centres

- Distributed systems over Europe
- Provide machine to machine interfaces to download and view data of production centres
- All DUs are connected to the centralized authentication system
- Authorization can be configured in the DU: a user profile can access certain datasets and not others
- All DUs are monitored centrally: system monitoring and transaction accounting



Product CMEMS paradigm

- The producer is still in charge of the product definition (driven by users' needs), the owner of the product, and:
  - makes the product compliant with COARDS-CF convention (format harmonization)
  - monitors the product quality and delivery SLA to the DU
  - Metadata product description
- A Dissemination Unit (DU):
  - in charge of the access to a product, SLA for users
  - with a centralized authentication/authorization
  - Hosted or not by the production centre
  - Shared open source implementation: **MOTU**, https://github.com/clstoulouse/motu
  - Download Python script: https://github.com/clstoulouse/motu-client-python

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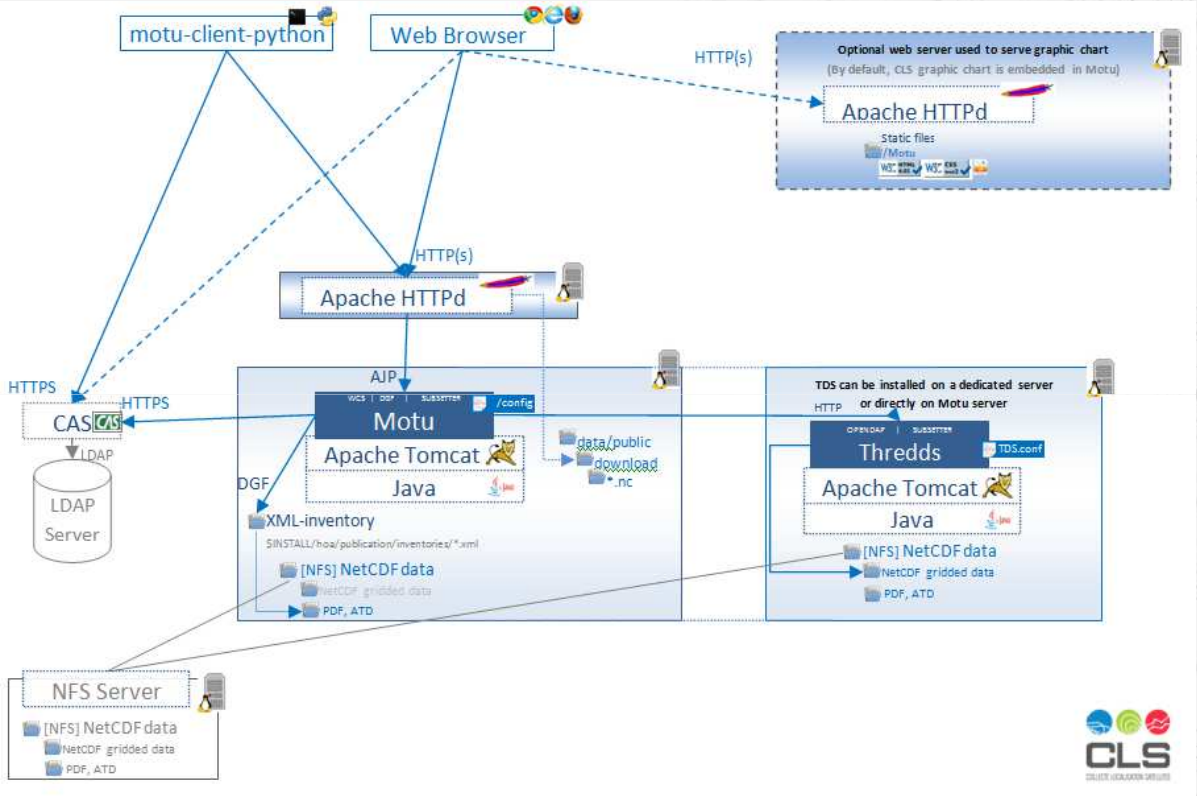
MOTU Architecture



MOTU is a layer above THREDDS

MOTU Description

- Advanced download service building on THREDDS data access:
  - Queue server: small, medium, big, user quota requests management
  - Geographical and time extractions of NectCDF variables thanks to their standard name
  - Selection of depth interval
  - Geographical boundaries management (over the dataset boundaries)
  - Request size threshold in place for local disk extraction
  - Dataset Metadata cache
  - Authentication/Authorization
  - Requests monitoring
- Standardized access:
  - HTTP/REST download API in asynchronous mode
    https://github.com/clstoulouse/motu#ClientsAPI
  - WCS 2.0.1 : interoperable OGC service
- Product description for consistency with CSW product metadata

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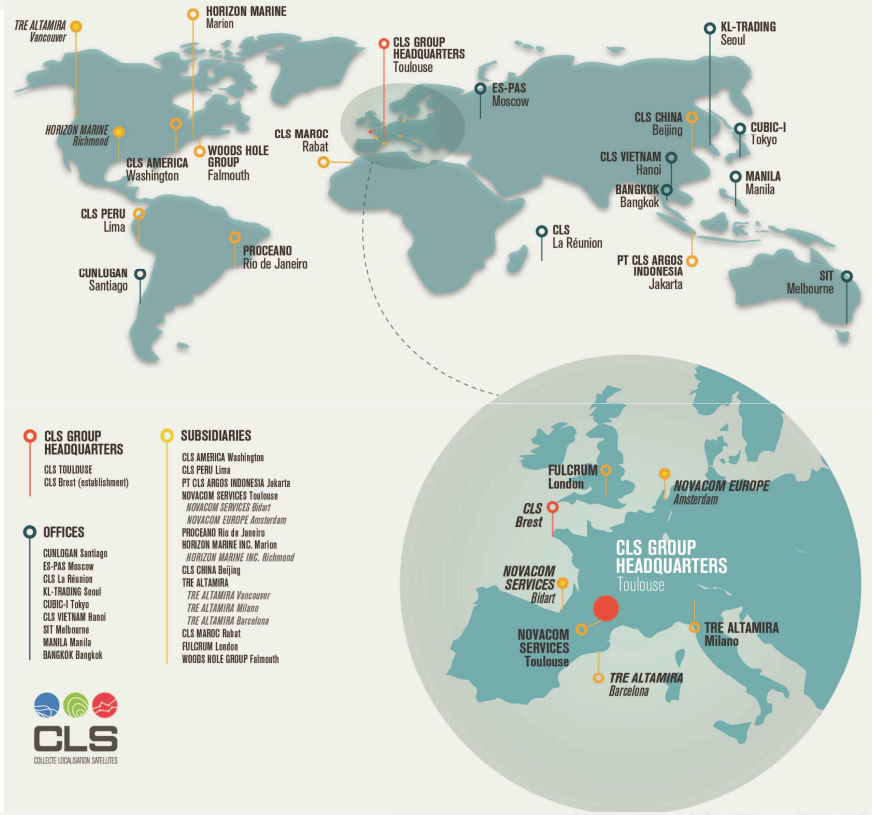
CLS Datastore: a data aggregator

- CLS aggregates a large set of data:
  - deploying a MOTU instance per data provider
  - Offering data storage for a local copy of datasets such as:
    - CLS products (public or restricted)
    - External products :
      - CMEMS products
      - Copernicus Land Monitoring service
      - ECMWF products
    - Who's next ?

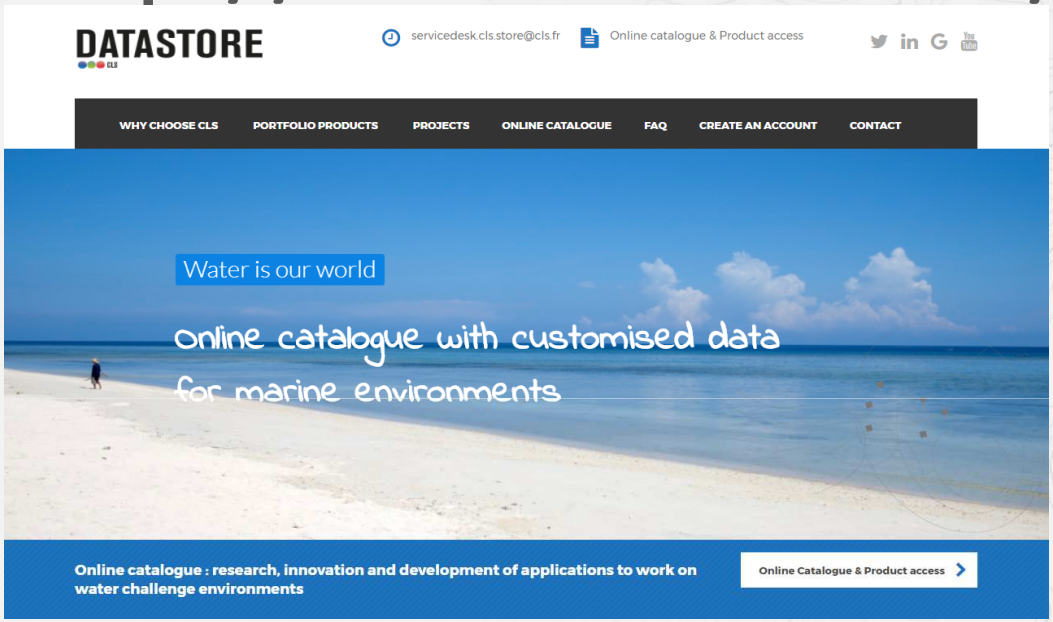
CLS Group data aggregation



26 *sites*

650 *people around the world*

http://datastore.cls.fr/



- Thanks for your attention
- Questions?
- Further questions: jzigna@cls.fr