Standards and business models transformations

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Collecte Localisation Satellite
CLS Strategic sectors

- SUSTAINABLE MANAGEMENT OF FISHERIES
- ENVIRONMENTAL MONITORING
- ENERGY AND MINING
- FLEET MANAGEMENT
- MARITIME SURVEILLANCE
- SPACE AND GROUND SEGMENT
Technical Solution Unit

• In charge of software developments
  – Data Management Team:
    • Spatial Data Infrastructures:
      – 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](https://github.com/clstoulouse/motu)
  – Download Python script: [https://github.com/clstoulouse/motu-client-python](https://github.com/clstoulouse/motu-client-python)
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
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