Metadata on Biodiversity: Definition and Implementation

Etienne Taffoureau, BRGM

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Overview

> Context

- SINP & ECOSCOPE
- INSPIRE
- Biodiversity concepts

> Metadata on biodiversity

- Profiles definition
- Standards implementation
- Relation between the profiles
- Publication & Access

> Conclusions

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SINP & ECOSCOPE

- Two scientific infrastructures on biodiversity relying on different data sources and producers
- Main objective : document and share information on biodiversity in France
- Provide tools for metadata management
- **SINP** : Information system on nature and landscape
- **ECOSCOPE** : Observation for research on biodiversity data hub

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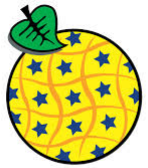
INSPIRE directive



- **Objective : to etablish a spatial infrastructure in Europe**
- **Different obligations, including :**
  - to do metadata related to datasets & services
  - to provide metadata through a discovery (web)service
- **Definition of ~20 metadata elements (mandatory & conditional)**
- **Implementation :**
  - ISO 19115 (datasets) and 19119 (services)
  - XML 19139 (exchange format)
  - CSW 2.0.2 ISO AP (discovery service)

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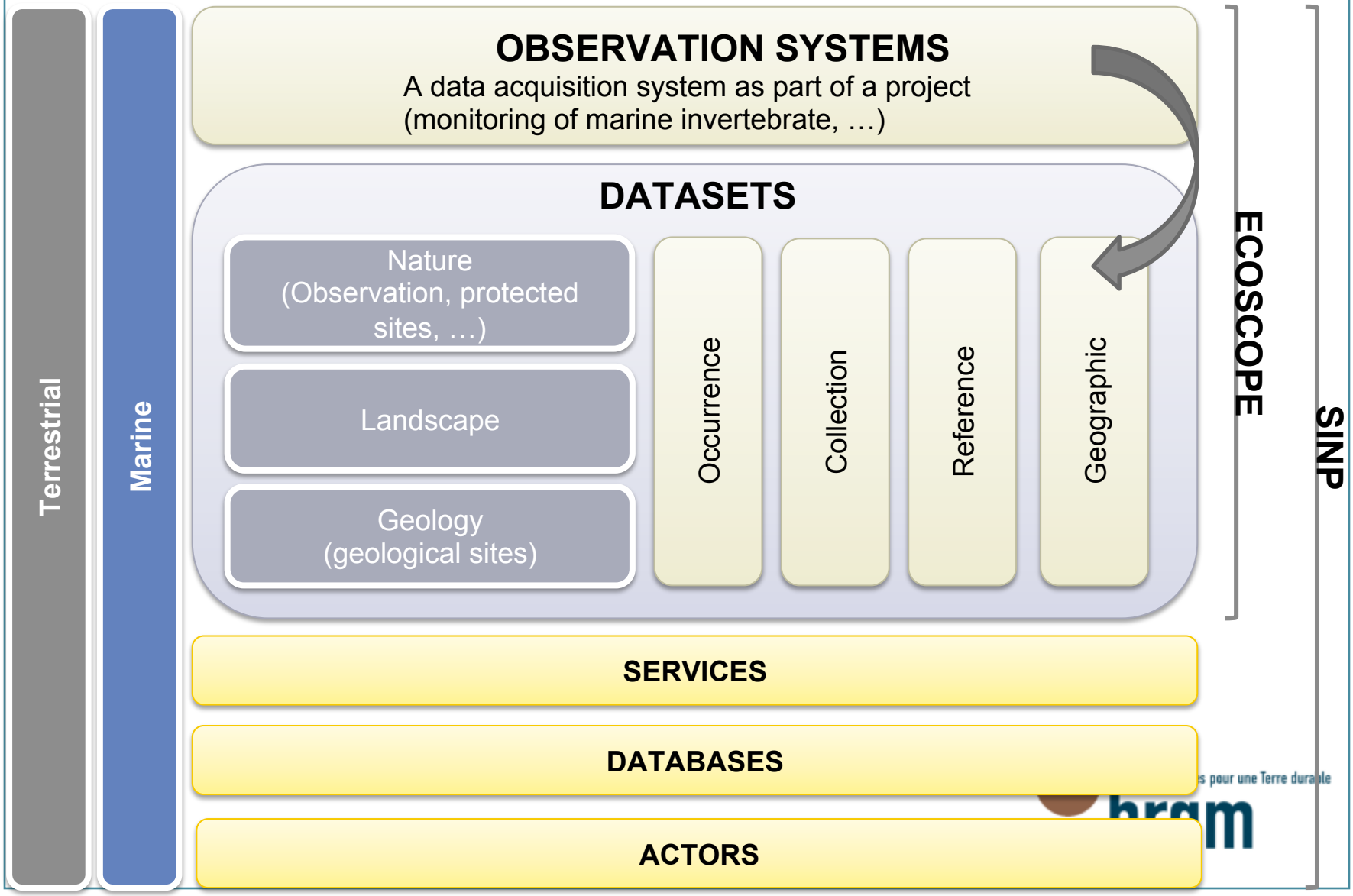
Biodiversity concepts



Metadata profiles - Definition

ECOSCOPE

- General description
- Taxonomic coverage
- Temporal coverage
- Geographic coverage
- Content
- Material and methods
- Maintenance & change history
- Distribution, access and use of the data
- Associated collection
- Additional information
- Contact data
- Contact metadata

SINP

- General description
- Point of contact
- Thematic
- Format
- Reference data
- Geographical features
- Constraints on access & use
- Distribution
- Quality
- Metadata

Choice of the metadata standards

- **It depends on :**
  - objective of the project
  - utilisation of the metadata
  - data type
  - level of details
- **We needs to have :**
  - an architecture arborescent & modular = flexible & adaptable
  - to ensure interoperability between the systems
    - metadata transfer
    - description of data organisation in the information system & their acquisition
- **Use of « eXtensibleMarkup Language (XML) » schema**
  - Content & structure definition
  - Transfert protocol (import/export)
  - Allows format conversion (interoperability)

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Metadata standards for SINP & ECOSCOPE

SINP

- **Extension of ISO 19115 & 19139 (XML implementation)**
- **XSD schema extended**
- **Description of spatial information**
- **INSPIRE compliant**

ECOSCOPE

- **EML (Ecological Metadata Language)**
- **Description of information acquired from ecological researches**
- **For observation & experimentation**

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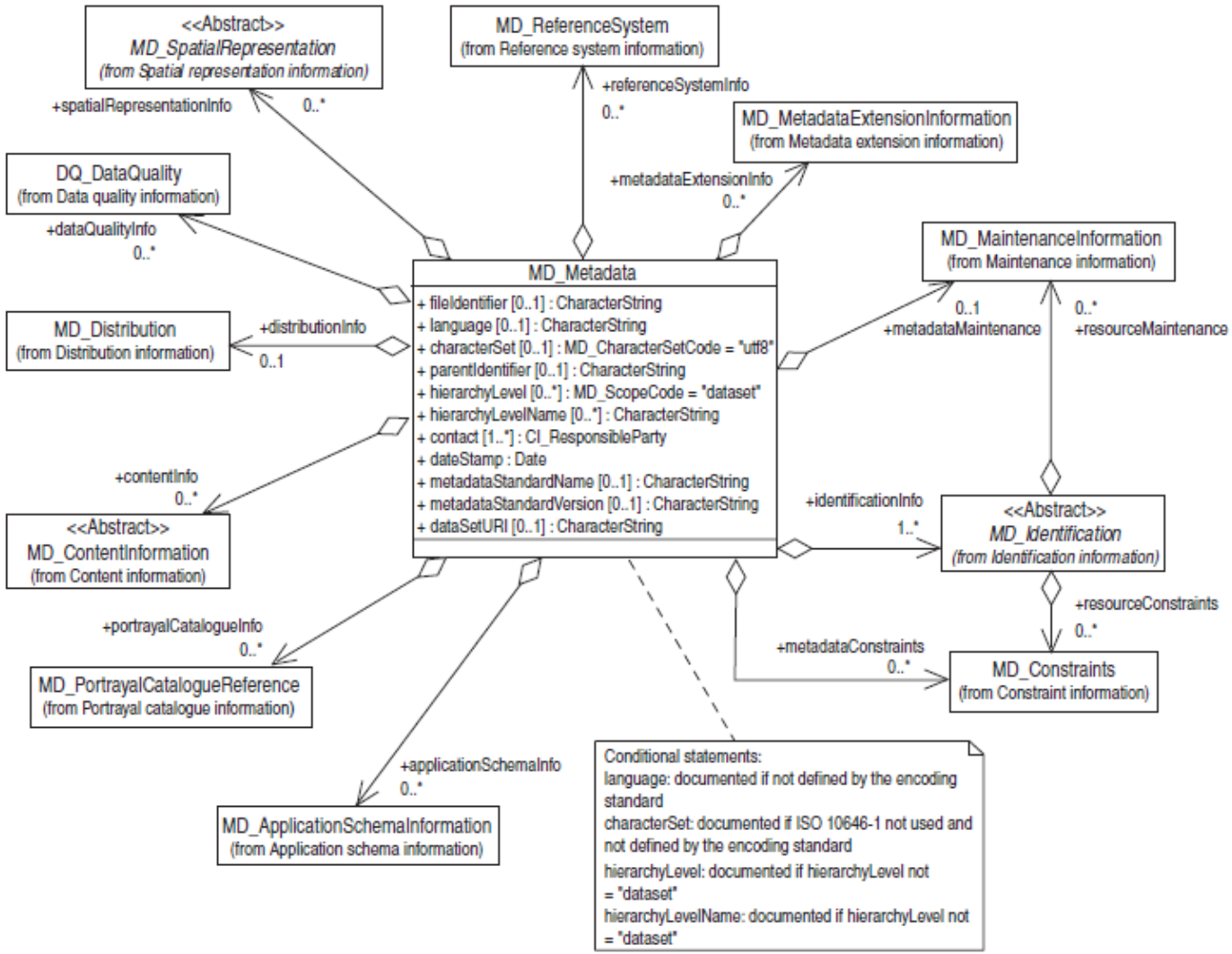
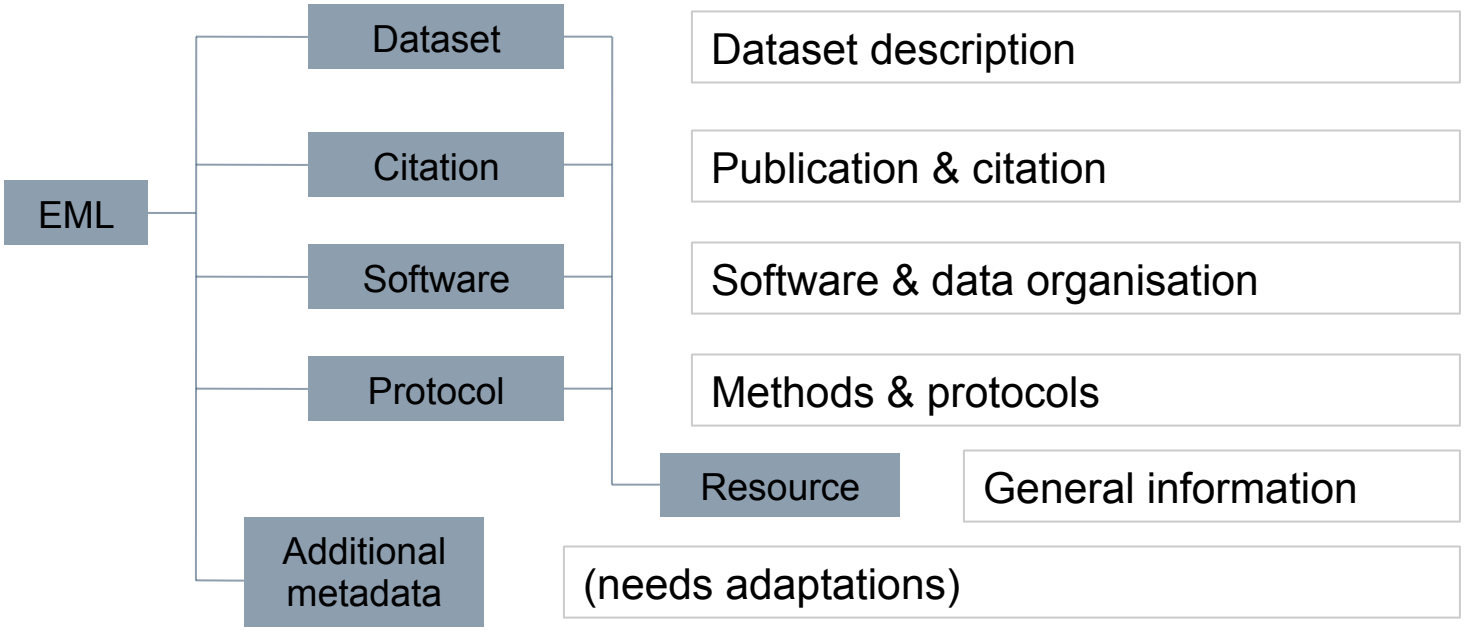
ISO 19115:2003 - UML diagram



EML (**E**cological **M**etadata **L**anguage)



Other modules :

eml-party – information related to persons, organisations, …
eml-entity – information related tofiles
eml-attribute – information related to attributes
eml-access – information related to access conditions
eml-distribution – information related to data distribution

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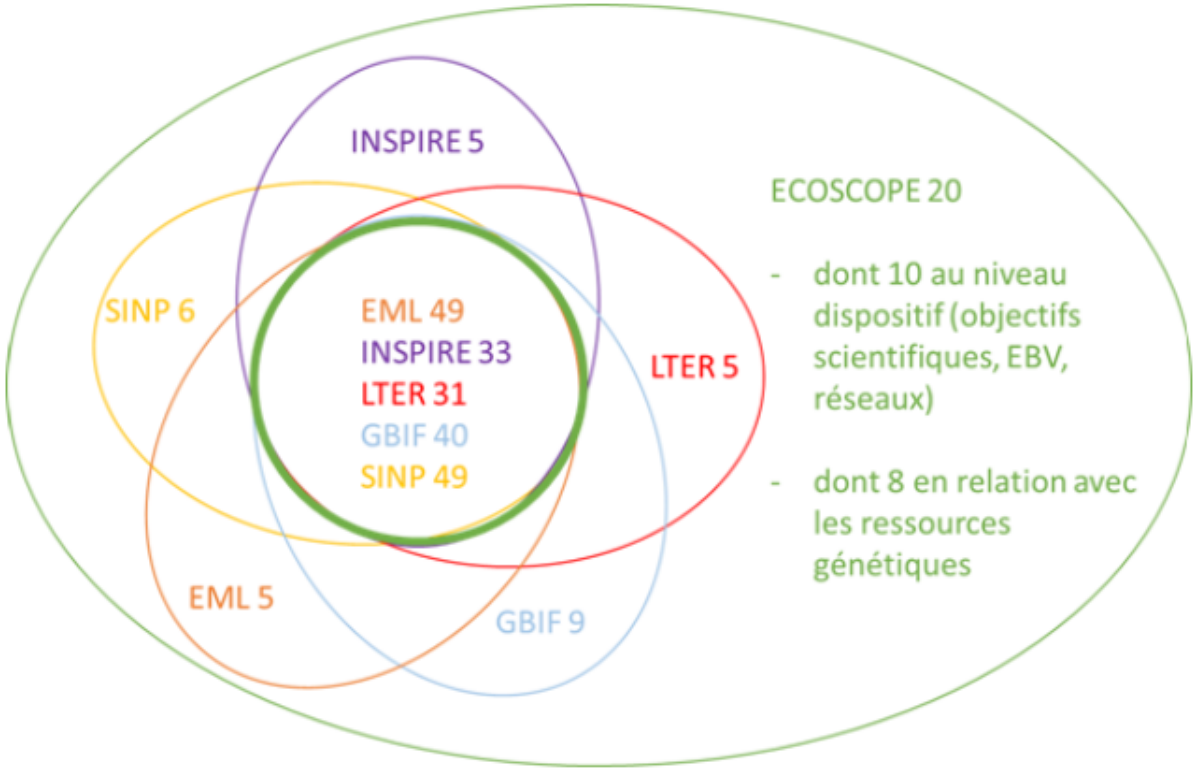
Relations between metadata profiles



> Mapping between the different metadata profiles

- Definition of the metadata elements
- Cardinality
- Lexicons

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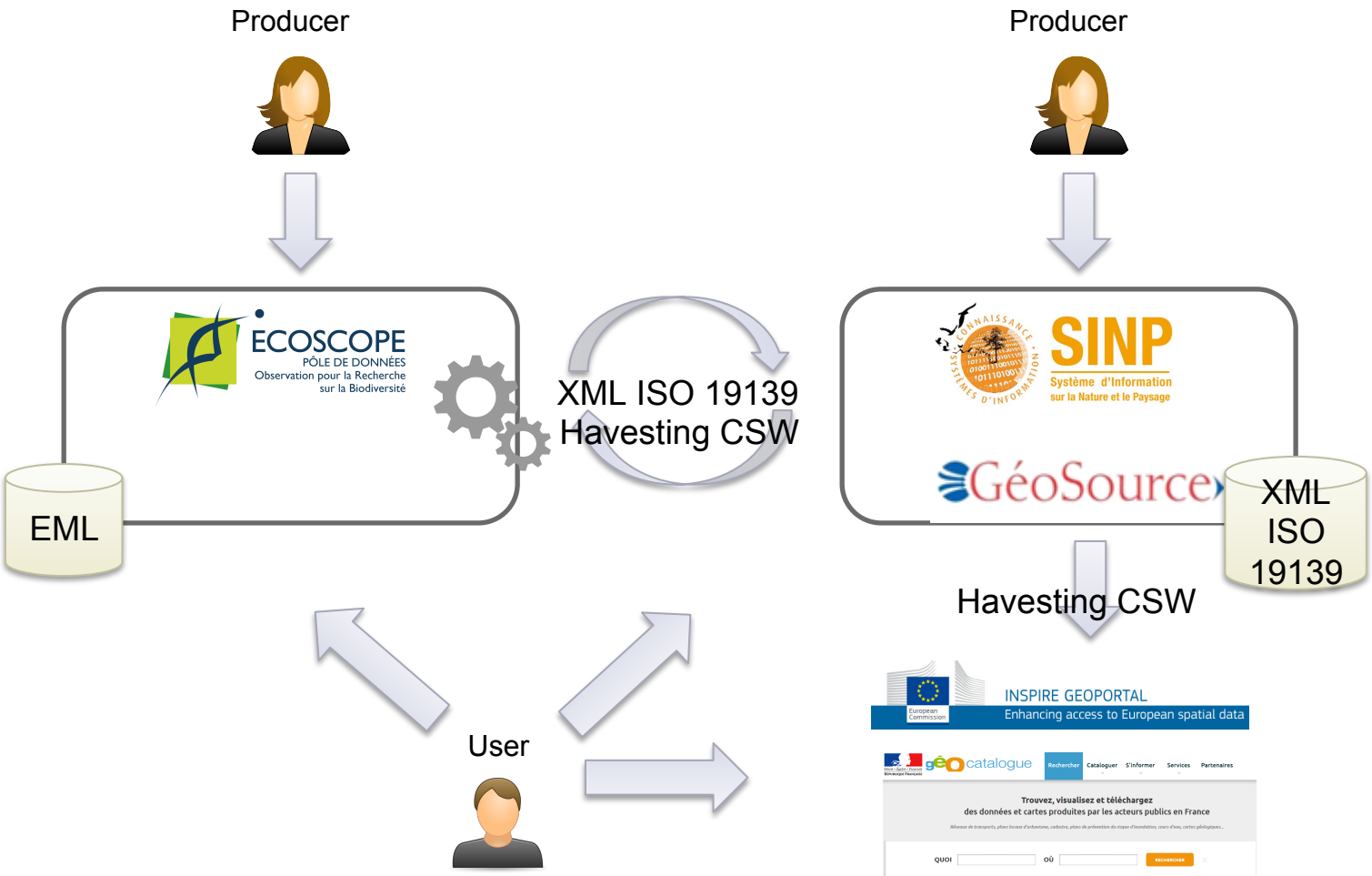
Publication & access of biodiversity information



Conclusions

- **SINP & ECOSCOPE have the same objectives but data sources & producers are different**
- **This has led :**
  - to define different metadata profiles
  - to use different standards
- **In order to describe data on biodiversity, ISO 19115 standard:**
  - is adapted for general & spatial information
  - but not for specific information (taxonomic information, actors, …)
- **Solutions :**
  - SINP : creation of an extension of ISO 19115
  - ECOSCOPE : utilisation of additional metadata elements of EML
- **In order to ensure interoperability it is necessary :**
  - to do a mapping between profiles
  - to provide conversion tools

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Thank you for your attention!

http://www.naturefrance.fr/sinp/
http://www.fondationbiodiversite.fr/fr/recherche/programmes-frb/ecoscope.html

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