

# Interoperability issues

SEMIDE – Expert workshop on metadata management & referential datasets

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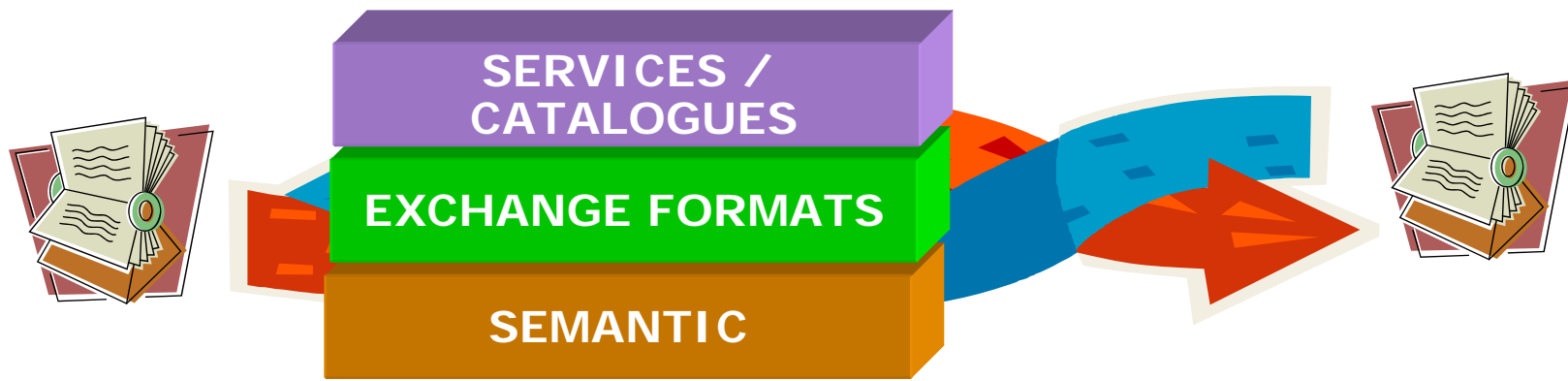


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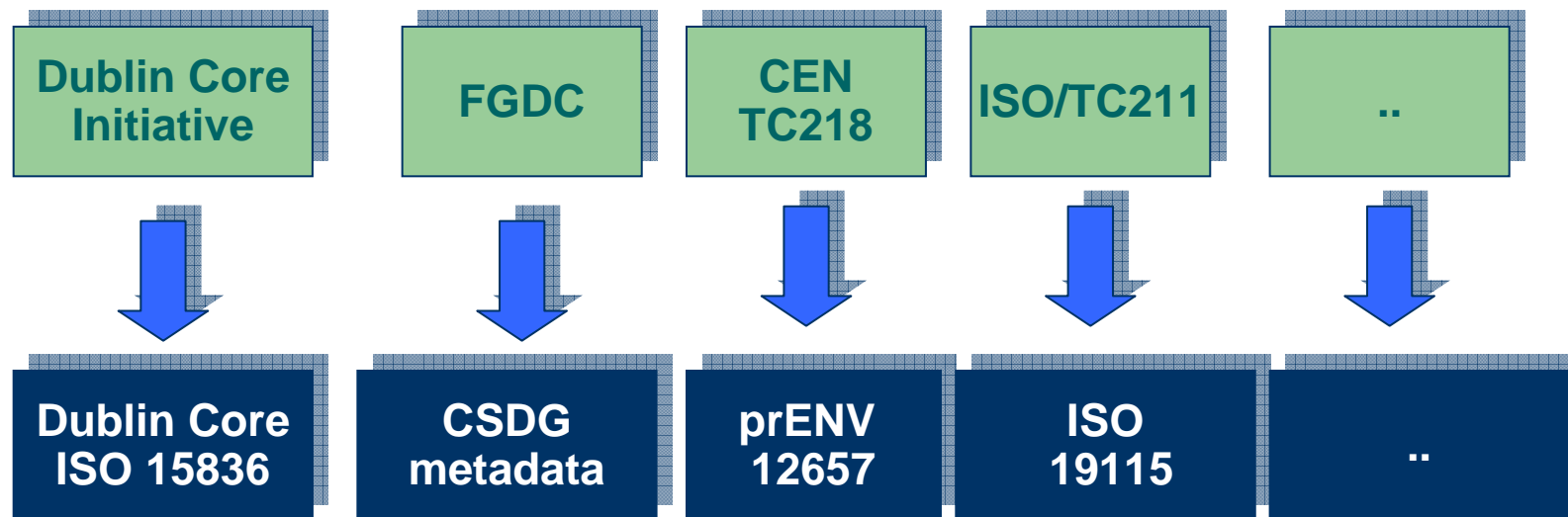
# Table of content

- **Semantic interoperability**
- **Technical interoperability**



Goal: use the same language to describe metadata

Among many norms ...



ISO 19115 is the most intensively used to describe geographic metadata

## ISO-19115 : defining a profile

- ◆ Allows to :
  - ◆ Refine mandatory / optional elements,
  - ◆ Add new metadata elements,
  - ◆ Define specific code lists.
  
- ◆ Profiling is intensively used :
  - ◆ France : ISO-19115 FR V2 now under revision,
  - ◆ Switzerland, Wallonian, Quebec, Australia (ANZLIC),...
  - ◆ Thematic profiles : geology GIC, Marine OHI, OGC for cataloguing,

## ISO-19115 : profiling limits

- Extra metadata elements won't be dealt by a metadata catalogue outside the profile scope
  - Ex : in the French profile it is possible to precise the text law responsible of an 'accessConstraints' (ISO 19115 element).
- Using code lists only having meaning at a specific level will loose its meaning outside of the profile scope
  - Ex : storing a river name (of name + code) has more meaning that only storing the river code.

### Exchange format

- ◆ Goal: use a unique structure to exchange metadata.
- ◆ Context: ISO 19115 is a conceptual/abstract norm and does not define exchange modality
- ◆ XML was the preferred format...
- ◆ Solution:... now everything is defined under ISO 19139

# Technical interoperability

## EXCHANGE FORMATS

### Old Geonetwork

```
<?xml version="1.0" encoding="ISO8859-1" ?>
<Metadata>
  <mdFileID>22</mdFileID>
  - <mdLang>
    <languageCode value="fr" />
  </mdLang>
  - <mdChar>
    <CharSetCd value="utf8" />
  </mdChar>
  - <mdContact>
    <rpIndName>Agence de l'eau Adour-Garonne</rpIndName>
    <rpOrgName>Agence de l'eau Adour-Garonne</rpOrgName>
    <rpPosName />
    - <rpCntInfo>
      - <cntAddress>
        <delPoint>90 rue de Férétra</delPoint>
        <city>TOULOUSE</city>
        <adminArea />
        <postCode>31078</postCode>
        <country>fr</country>
        <eMailAdd>contact@eau-adour-garonne.fr</eMailAdd>
      </cntAddress>
    </rpCntInfo>
    - <role>
      <RoleCd value="pointOfContact" />
    </role>
  </mdContact>
  <mdDateSt>2005-02-02 14:25:03</mdDateSt>
  <mdStanName>ISO 19115</mdStanName>
  <mdStanVer>FDIS</mdStanVer>
  - <distInfo>
    - <distTranOps>
      - <onLineSrc>
        <linkage>http://www.sandre.eaufrance.fr</linkage>
      </onLineSrc>
    </distTranOps>
  </distInfo>

```

### ISO-19139

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- Core smXML based instance document -->
- <MD_Metadata xmlns="http://metadata.dgiwg.org/smXML" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://metadata.dgiwg.org/smXML ..\smXML\metadataEntity.xsd">
  - <fileIdentifier>
    <CharacterString>ANZSA1000001233</CharacterString>
  </fileIdentifier>
  - <language>
    <CharacterString>en</CharacterString>
  </language>
  - <contact>
    - <CI_ResponsibileParty>
      - <organisationName>
        <CharacterString>Department of Primary Industries and Resources SA</CharacterString>
      </organisationName>
      - <role>
        <CI_RoleCode codeList="http://metadata.dgiwg.org/codelistRegistry?CI_RoleCode" codeListValue="pointOfContact">pointOfContact</CI_RoleCode>
      </role>
    </CI_ResponsibileParty>
  </contact>
  - <dateStamp>
    <Date>2004-03-12</Date>
  </dateStamp>
  - <metadataStandardName>
    <CharacterString>ISO 19115</CharacterString>
  </metadataStandardName>
  - <metadataStandardVersion>
    <CharacterString>2003</CharacterString>
  </metadataStandardVersion>
  - <identificationInfo>
    - <MD_DataIdentification>
      - <citation>
        - <CI_Citation>

```

### srcCatalog

```
<?xml version="1.0" ?>
<Metadata SYSTEM "http://www.esri.com/metadata/1.0" lang="fr">
  <Sync="TRUE">ISO 19115 Informations géographiques</mdStanName>
  <Sync="TRUE">DIS_ESR11.0</mdStanVer>
  <Sync="TRUE">dataset</mdHrLvName>
  <Sync="TRUE">20050224</mdDateSt>
  <rpIndName>Agence de l'eau Adour-Garonne</rpIndName>
  <rpOrgName>Agence de l'eau Adour-Garonne</rpOrgName>
  - <cntAddress>
    <delPoint>90 rue de Férétra</delPoint>
    <city>TOULOUSE</city>
    <postCode>31078</postCode>
    <eMailAdd>contact@eau-adour-garonne.fr</eMailAdd>
    <country>fr</country>
  </cntAddress>
  - <cntPhone>
    <voiceNum>+33(0)561363738</voiceNum>
  </cntPhone>
  </rpCntInfo>
  - <role>
    <RoleCd value="007" />
  </role>
</Metadata>

```

## ▫ Catalogue services

- ◆ Goal: use a unique formalism to allow metadata catalogue tools to exchange information
- ◆ Context: various techniques & norms exist:
  - ◆ Harvesting via specific software protocols: Geonetwork node,
  - ◆ OGC Catalogue Services Specifications : CSW mainly based on ISO 19115,
  - ◆ OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) based on Dublin Core,
  - ◆ ebRIM (e-business Registry Information Model),
  - ◆ Technical specification coming from data transfert: Z39.50 / SOAP / HTTP / CORBA ...
- ◆ Solution : OGC CSW is more and more used nowadays for geographic metadata catalogue tools.

# Semantic interoperability - Norms

- The interoperability “millefeuilles” :**
  - With examples of possible solutions at EMWIS level

