



IMPLEMENTATION OF THE ELEMENTS OF THE NATIONAL LEVEL METADATA INFRASTRUCTURE IN POLAND

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METADATA INFRASTRUCTURE

INTEROPERABILITY - STANDARDS

- Standardization of metadata records content (ISO or community profiles) – data model
- Standardization of services (OGC CSW) – communication infrastructure
- Standardization of protocols (CSW AP) – protocols and binding

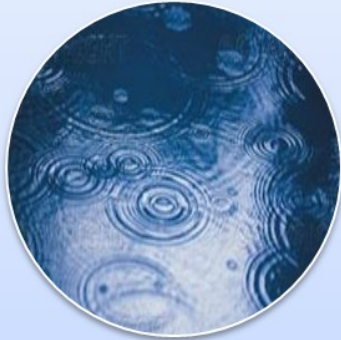


METADATA IMPLEMENTING RULES ACCORDING TO INSPIRE

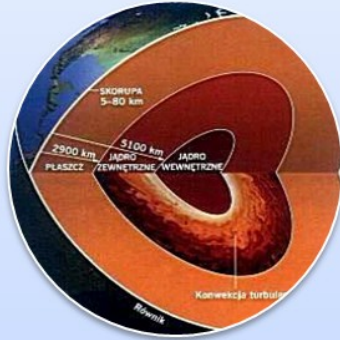
- „An ISO geographic information profile is a subset of one or several of the ISO geographic information standards.”
- „The profile would consist of a choice of the metadata elements available in ISO 19115.”



POLISH PROFILE - IDEA OF USE



Meteorologic
Profile



Geologic
Profile



Geodetic
Profile



other
profiles

National
Profile



METADATA IMPLEMENTING RULES ACCORDING TO INSPIRE – POLISH PROFILE

- Polish National profile:
 - a "level 0" profile
 - not using any extensions
 - declares some originally optional elements to be mandatory
 - designed by confining the 19115 and 19119 (19139) standards to 35 obligatory nodes



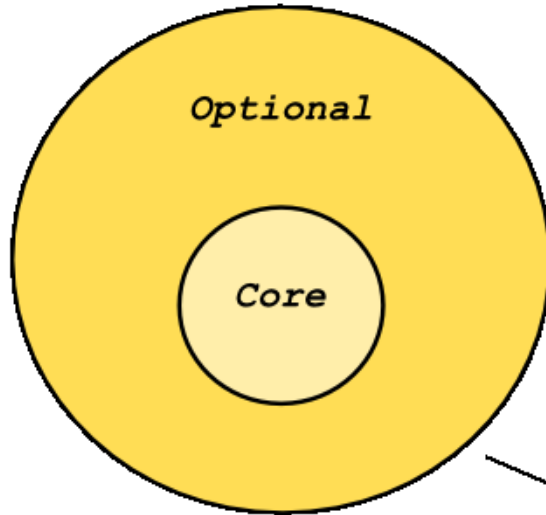
CONFORMANCE TESTING

- **Conformance class 1** - include ONLY the elements prescribed for the profile
- **Conformance class 2** - the elements prescribed for the profile and OTHER ISO 19115 and 19119 metadata elements identified as "optional" or "conditional" but not included in the profiles.

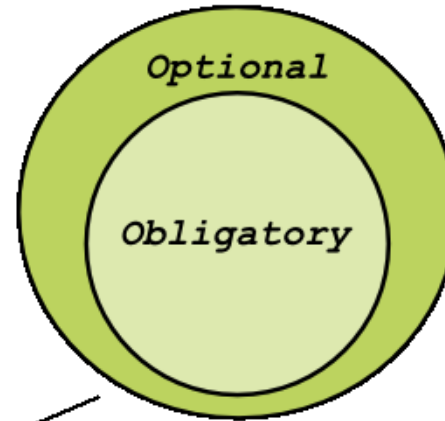


CONFORMANCE TESTING

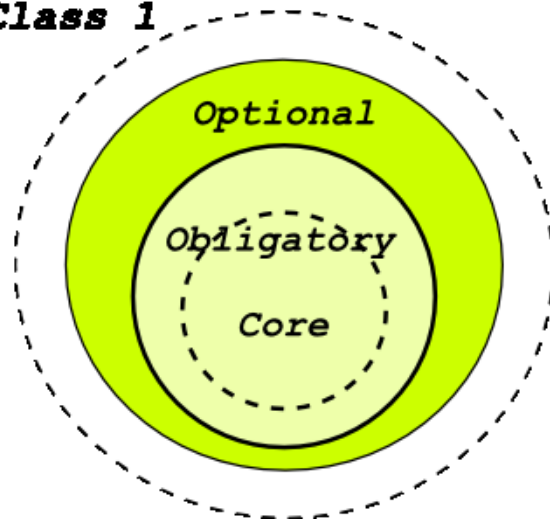
**ISO
(19139 + 19119)**



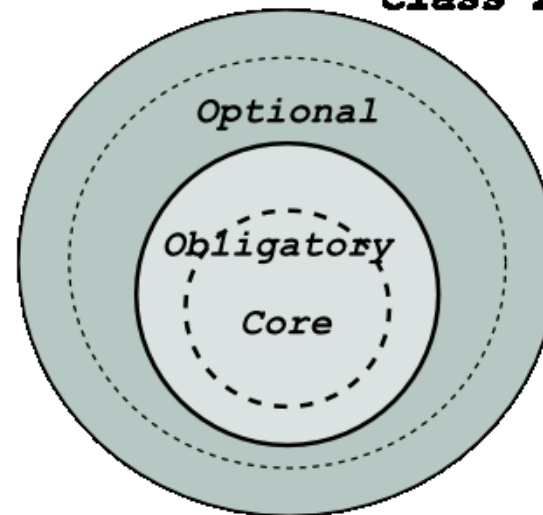
National Profile



**Conformance
Class 1**



**Conformance
Class 2**



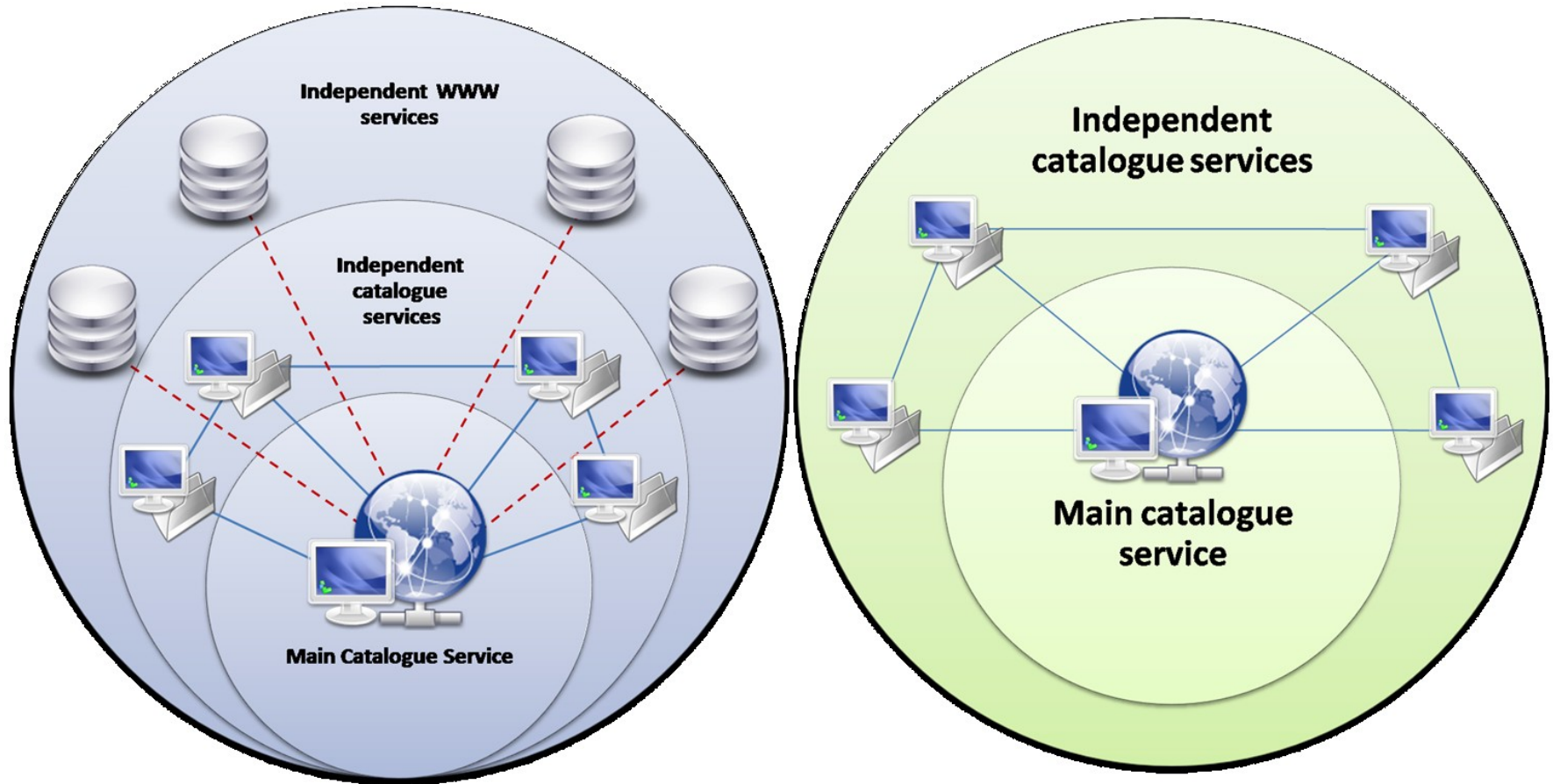
SOFTWARE RELATED TO METADATA PROCESSING

- Validator
- Editor
- Catalog server



METADATA INFRASTRUCTURE INTEROPERABILITY - ARCHITECTURE

Distributed search and harvesting



HARVESTING

- Metadata harvesting:
 - file catalog structures as data sources
 - other catalog services (server-to-server)
- Problems:
 - incremental metadata update
 - synchronization of data
 - file catalog structures not part of ISO standard
 - authorized access to transactional section of service



INTEROPERABLE METADATA INFRASTRUCTURE IN POLAND - PROBLEMS

- Legal constraints
 - Complex organization of the Surveying Service in Poland
 - Different, and often conflicting scope of responsibility of various authorities
- Data acquisition bottleneck
 - Different and incompatible interpretations of metadata
 - Heterogeneity of data sources
- Software and hardware
 - Incompatibilities between existing production systems



METADATA EDITORS

- Bridge between services and metadata
 - import/export of metadata
 - filters for profiles
 - batch mode operations for multiple files
 - support in introducing series

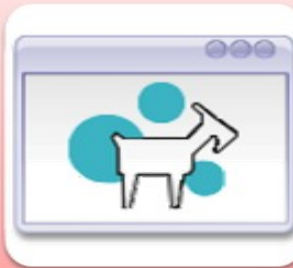


MEE2 AND DEEGREE



Functionality

- ISO 19139
- Polish National Metadata Profile



Administration

- Metadata Import / Export
- Service configuration

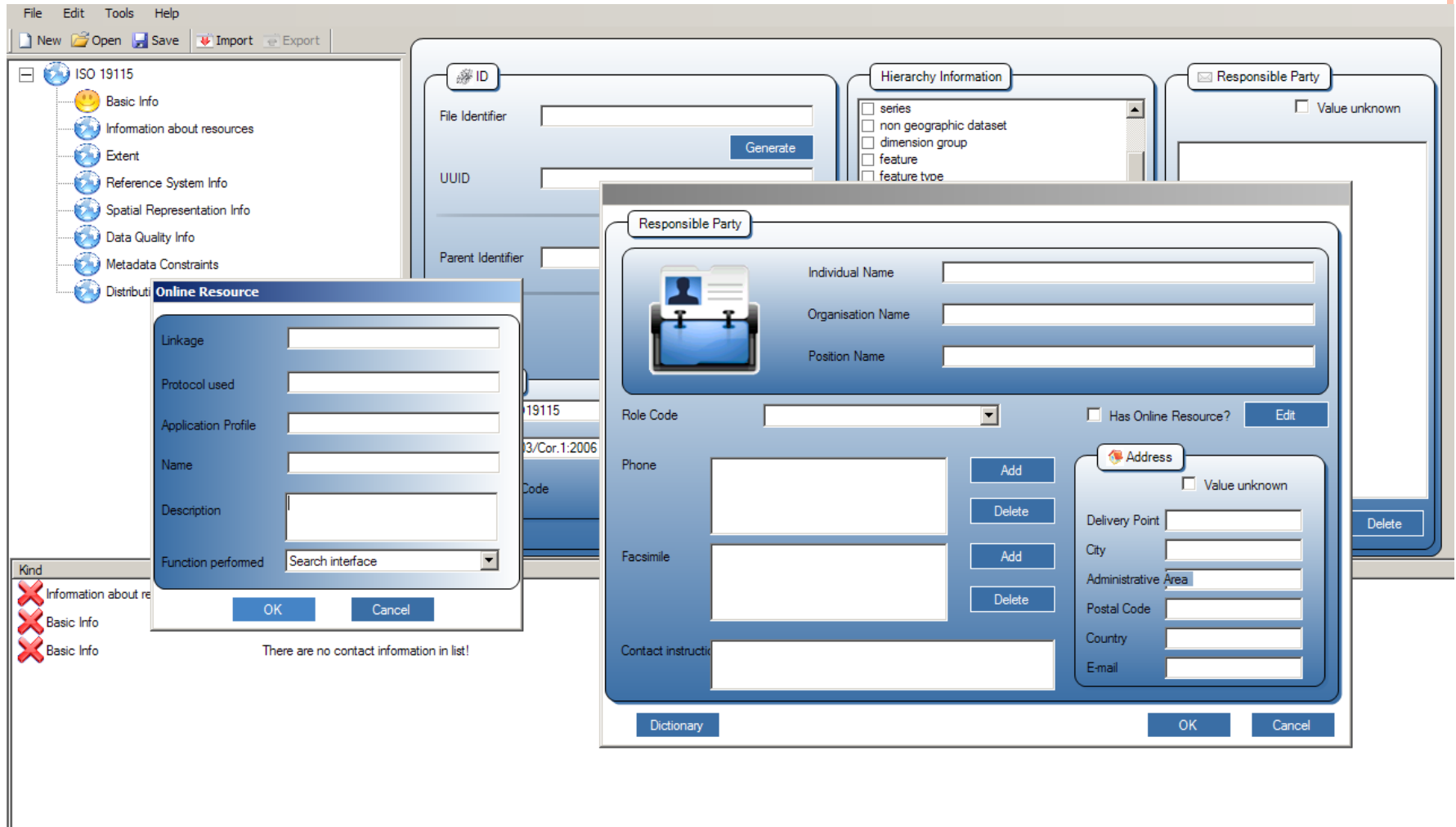


Security

- Transactions only by desktop administration



MEE2 AND DEEGREE



MEE2 AND DEEGREE

The screenshot displays the MEE2 software interface, divided into two main sections: CSW Configuration and Results.

CSW Configuration:

- URL:** ni.wroc.pl:8080/deegree-csw/services (with a green checkmark)
- Filter:** deegree CSW 2.0.2 (dropdown menu)
- Get Capabilities:** A button to retrieve capabilities.
- Capabilities Table:**

Method	Type
✗ ⚙ DescribeRecord	HTTP: Get
✗ ⚙ DescribeRecord	HTTP: Post
✗ ⚙ GetCapabilities	HTTP: Get
✓ ⚙ GetRecordById	HTTP: Get
✓ ⚙ GetRecordById	HTTP: Post
✓ ⚙ GetRecords	HTTP: Post
✗ ⚙ Transaction	HTTP: Post

Results:

File Identifier	Language	Data
{8E41FF20-873E-44F2-AEF9-5205E203D41C}	en	2006-12-15T00:00:00
{42AE2814-FCC1-4BC2-BAF4-CA3E55514997}	en	2004-04-20T00:00:00
{E370DE6C-DAB9-432B-9FB8-E33ECB1F2597}	en	2000-09-25T00:00:00
{E3B4E9FC-F6A6-4763-9628-4D4880EC3B83}	en	2003-01-01T00:00:00
{3660BCC5-8BCD-43DE-82F5-E4F87AF8CC3D}	en	2003-01-07T00:00:00
{FBC5EEA2-6160-4B64-BBC5-3B4B6D3782E5}	en	2003-01-01T00:00:00
{C6E36703-299C-4975-9729-10132135D624}	en	2003-01-01T00:00:00
{53F6B59D-F064-4809-B9B7-30F9A0F16FE4}	en	2003-01-03T00:00:00
{DA945A91-916A-4B49-8FEE-F0CFF87EEC73}	en	2003-01-01T00:00:00
{D5A26CA2-E847-467E-BDA0-DB20BAD7258E}	en	2003-01-08T00:00:00

Log:

```
<?xml version="1.0" encoding="UTF-8"?><csw:Capabilities xmlns:csw="http://www.opengis.net/cat/csw"
xmlns:deegree="http://www.deegree.org/csw" xmlns:ogc="http://www.opengis.net/ogc"
xmlns:ows="http://www.opengis.net/ows" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" updateSequence="0" version="2.0.0"><ows:OperationsMetadata>
<ows:Operation name="GetCapabilities"><ows:DCP><ows:HTTP><ows:Get xlink:href="http://localhost:8080/deegree-
csw/services" xlink:type="simple"/></ows:HTTP></ows:DCP></ows:Operation><ows:Operation name="DescribeRecord">
<ows:DCP><ows:HTTP><ows:Get xlink:href="http://localhost:8080/deegree-csw/services" xlink:type="simple"/><ows:Post
xlink:href="http://localhost:8080/deegree-csw/services" xlink:type="simple"/></ows:HTTP></ows:DCP><ows:Parameter
name="typeName"><ows:Value>csw:data</ows:Value><ows:Value>csw:data</ows:Value></ows:Value>
```

IMPLEMENTATION PROBLEMS

- Different approach to the implementation of the communication protocol
- Different format of responses from catalog services from different vendors (deegree, conTerra)
 - Different name spaces describing the input and output data

```
ns1:MD_Metadata xmlns:ns1="http://schemas.opengis.net/iso19115full">
  <ns1:fileIdentifier>
    <ns2:CharacterString
      xmlns:ns2="http://metadata.dgiwg.org/smXML">4208debb-0276-494e-bd0c-
      06dee1a12606</ns2:CharacterString>
    </ns1:fileIdentifier>
```



TESTING SET

- A testing dataset was prepared to verify the conformance of services to the profile requirements:
 - conformance with profile definition
 - conformance as a profile of the ISO geographic information series of standards
 - conformance conditions
 - whether a profile inherits the conformance requirements of base standards
 - additional constraints in a profile
 - extension within the context of a base standard
 - a profile including specialization



SUMMARY

- Two different proposals for metadata infrastructure architecture have been presented.
- The Polish national metadata profile has been introduced, along with the problems related to its creation and conformance testing.
- The metadata editor Mee2 was described, with the some conclusions from using it with the deegree server.

