A SUCCESSFUL APPROACH TO PROVIDE CONSISTENT METADATA AND SERVICES FOR IMPLEMENTING INSPIRE

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METADATA IN SDI'S

WHY DO WE NEED THEM?

- Describing resources
- Discovering resources
- Supporting the usage of resources
METADATA IN SDI’S
RESOURCES CONCERNED

- Datasets
- Services
- Applications
- ...
INSPIRES GOAL: PAN-EUROPEAN ACCESS TO DISTRIBUTED SPATIAL DATASETS
INSPIRE ROADMAP

1. DESCRIPTION OF DATASETS WITH METADATA
INSPIRE ROADMAP

2. IMPLEMENTING OF VIEW SERVICES

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INSPIRE ROADMAP

2. IMPLEMENTING OF DOWNLOAD SERVICES
INSPIRE ROADMAP

3. DESCRIPTION OF SERVICES WITH METADATA
INSPIRE ARCHITECTURE
COLLECTING AND INDEXING OF METADATA

Exchanged via catalogue interfaces

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HOW CAN THIS INFRASTRUCTURE BE USED?
INSPIRE ARCHITECTURE

IMPLEMENTATION OF THE COUPLING BETWEEN SERVICE METADATA AND DATASET METADATA
BUT WHO DOES UNDERSTAND THIS?
IN GERMANY - ONLY A CHOSEN FEW PEOPLE
AND IN EUROPE?
NOTES

- The complexity of the service-oriented meta-model is enormous.
- It had never been proved before INSPIRE was implemented.
- It is fundamental for the infrastructure to implement the coupling between service metadata and data metadata in a stable and reliable way.
FOR WHICH USE CASE DO WE NEED THIS COMPLEX MODELLLED METADATA?
DISCOVERY

- In normal circumstances, search is based on typical *dataset metadata* like actuality, quality and data formats
- A list with access points like Download- or View-Services can be received by a second search request, which uses the intrinsic relation between dataset and service metadata
- It is of fundamental importance, that this relation is well maintained. The user or machine should get what he/it intents to get.
PROBLEMS AND POSSIBLE SOLUTIONS CONCERNING METADATA MANAGEMENT (1)

- People get lost in the complexity of the ISO19115
  
  Reduce the complexity of the ISO19115 to a minimum that is sufficient for the interoperability (e.g. the INSPIRE metadata profile)
PROBLEMS AND POSSIBLE SOLUTIONS CONCERNING METADATA MANAGEMENT (2)

- Metadata for datasets and metadata for services are independently maintained -> information is not in sync.

  Integrated data/metadata storage systems with service interfaces, that are able to interpret both data and its corresponding metadata

  Create most of metadata dynamically (on-the-fly) from the storage or the resource itself. This will help you to keep all the information up-to-date.
PRACTICAL EXAMPLES (1)
MAINTENANCE OF ONE METADATA RECORD FOR EACH DATABASE TABLE
PRACTICAL EXAMPLES (1)
METADATA COUPLING IN SERVICE CAPABILITIES
PRACTICAL EXAMPLES (2)

INTEGRATED DATA / METADATA MODEL - ALL INFORMATION IN ONE DATABASE ROW

Service Capabilities

WMS

Mapserver

WMS - configuration

Combined data / metadata table

PostGIS DB

http

ISO19139 file for each row

Java & php:
write mapfiles
read data
Map data → metadata
write ISO19139

read
write
RESULTS OF THE INTEGRATED APPROACH

- The coupling/relation between service metadata and dataset metadata is **always given and consistent**
- Standardized SDI's are able to use their discovery concept
- The metadata is as **actual** as possible
- There is only one single point of access to pull all needed information: The **URL for the GetServiceMetadata request**
TO BE DONE

- Data-storages should be enabled to manage both data and the corresponding metadata (e.g. extension of PostGIS geometry_columns table for standardized metadata and data-metadata mapping options)
- OWS software should be enabled to interpret this new integrated data/metadata model and automatically return a link to the standardized metadata record. Maybe via redirect or by generating own http representations.
CONCLUSION

THE INTEGRATION OF DATA AND METADATA IS THE ONLY CHANCE TO BUILD REAL SDI'S - WE MUSTN'T MISS IT!
ASPECTS FROM IMPLEMENTATION

- The effort and costs to implement such integrated components were extremely low.
- The maintenance process became much easier for the authorities and there are no errors anymore.
- With such a fundament, it is possible to generate INSPIRE View- and Download services (ATOM-Feeds) with a simple central proxy (facade).
INSPIRE GEOPORTAL: LAND USE DATA FROM GERMAN MUNICIPALITIES
SHORT LIVE DEMO

INSPIRE Catalogue
QUESTIONS?
THE END

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