



Closing the Gap Between Historical Digital Map Libraries & Spatial Data Infrastructures

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Closing the Gap Between Historical Digital Map Libraries & SDI

MOTIVATION

- Internet is and will be the powerful tool which gives way to different online communication options on geographical approaches.
- Historians and documentary experts need to access remotely to the cartographic heritage, that can be compiled in a single place to facilitate the access and comparison.
- They have established a number of well-defined international standards.





Closing the Gap Between Historical Digital Map Libraries & SDI

DIGITAL MAP LIBRARIES (DML)

- 2006.- **Digital Map Libraries (DML):**
 - Access to old maps through a single geoportal
 - Thousands of maps stored in the cartographic collections
 - Stakeholders are libraries and archives
 - Keep the geographic component as a common link



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DIGITAL MAP LIBRARIES (DML)

- 2007.- Useful similarities in conformance to:
 - Agreements (Geospatial vs Culture)
 - Services (OGC vs OAI)
 - **Standards (ISO19115 vs MARC)**
- Take into account technological and policy considerations
DML may be supported by the SDI guidelines!!



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THE DML PROTOTYPE

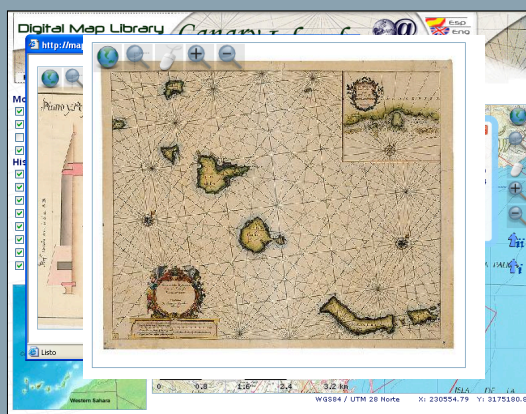
- The DML of the Canary Islands is a Internet portal with access to a Map Server and a Catalogue containing the historical maps and plans of the Canary Islands.
- DML services in a local SDI prototype. Visualization and query tools were used from standardized OGC Services.
- Methodology:
 - Digitization & Georeferencing,
 - Metadata creation & cataloguing,
 - Map Server & Web interface configuration



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THE DML PROTOTYPE



<http://www.digitalmaplibrary.org>



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THE DIGMAP PROJECT

- DIGMAP: “Discovering our Past World with Digitised Historical Maps”, but it could stand also for “digging on maps”!
- Project co-funded by the EC eContentplus Programme. It started in October 2006 and run for 24 months

Partners

- **Instituto Superior Técnico - IST (Portugal)**
- Technical University of Madrid - UPM (Spain)
- National Library of Portugal BN (Portugal)
- Royal Library of Belgium KBR (Belgium)
- Biblioteca Nazionale Centrale di Firenze - BncF (Italy)
- National Library of Estonia - NLE (Estonia)
- Bulgarian Academy of Sciences - IMI (Bulgaria)



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DIGMAP PROJECT

- DIGMAP was an initiative that developed solutions for georeferenced and distributed digital libraries, especially focused on old maps or related documents
- All the services were developed as web-services, available in the Internet through simple interfaces.
- Services for resource discovery are available through searching or browsing.



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DIGMAP METADATA REPOSITORY

- Maps in libraries = MARC Standards
- UNIMARC, MARC21, USMARC, IBERMARC, ...
- DIGMAP supports descriptions of resources created by libraries in traditional bibliographic metadata formats
- IST -> **REPOX**: XML metadata repository to store, preserve and manage metadata sets.



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DIGMAP METADATA REPOSITORY

- REPOX supports several exchange profiles for its records: ISO2709, MarcXchange, oai_dc,...
- Record changes: harvesting process to a periodic time
- The record versions are stored in a local XML file and can be accessed by a REST interface
- REST interfaces in the context of a SOA: more appropriate than traditional Web Services in terms of performance
- Record transfer between REPOX and data providers through OAI-PMH
- Management of metadata sets through an administrative user interface

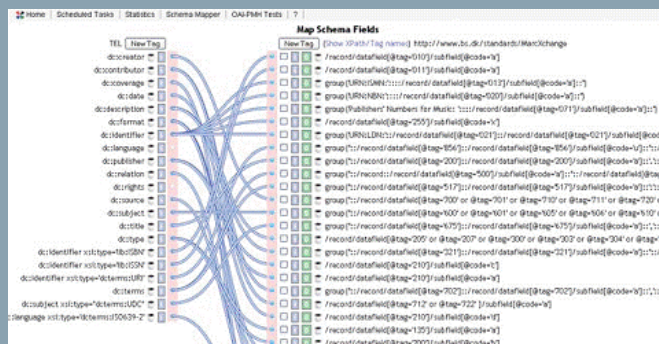


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DIGMAP METADATA REPOSITORY

- Two ways to provide crosswalks for a transformation metadata standards:
 - Send an XSLT file with the transformation
 - Map visually between tags of two formats



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STANDARDS (ISO19115 vs MARC)

- Maps in libraries = MARC Standards
- They are not comprehensible by geographic standards
- It is necessary to define the *appropriate* crosswalks
- DIGMAP did not deal with a crosswalk MARC - ISO19115

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STANDARDS (ISO19115 vs MARC)

- 2000.- CORC project firstly developed a converter among:
FGDC - Dublin Core - MARC21
- It is possible to *indirectly* link biblio- and geo- profiles
 - MARC 21 to Dublin Core
 - MARC21 to USMARC
 - FGDC to ISO19115
- Unfortunately, most of this previous works only provides a table containing the *relationships* among the standards.



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NEW CONCERNS & IDEAS

- New institutional initiatives:
 - CartoVIRTUAL initiative
 - Higher Geographical Council of Spain
 - IBERCARTO Working Group -> *Metadata Sustainability*
- Methodology in direct crosswalks (Nogueras-Iso, 2004):
 - Harmonisation
 - Semantic mapping
 - Additional rules for metadata conversion
 - Mapping implementation
- National Virtual Map Library in the Spanish SDI
- CartoRED: Latin American Consortium of DML



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UNIVERSIDAD POLITÉCNICA DE MADRID

GSDI 11 – The Global Data Infrastructure Conference

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