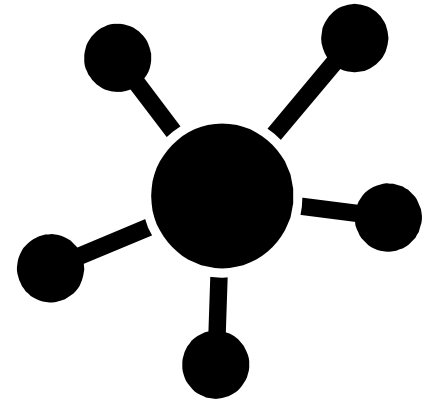
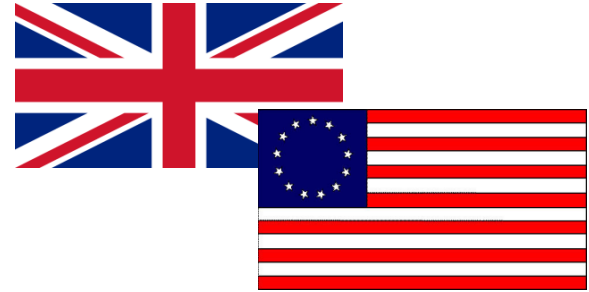


Applying the Levels of Conceptual Interoperability Model to a Digital Library Ecosystem: a Case Study



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Georgian Papers Programme



How to measure Interoperability

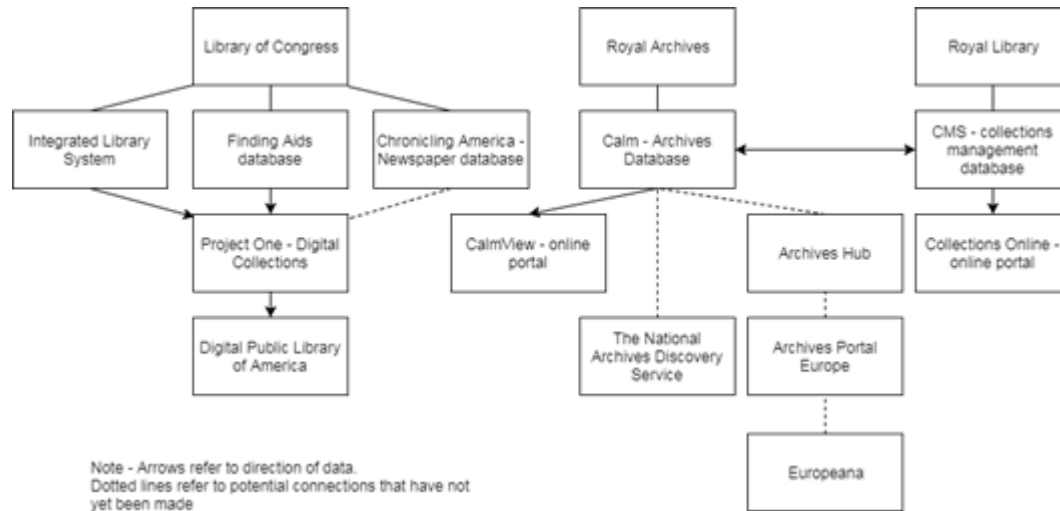
- Levels of Interoperability for Dublin Core Metadata
- Metadata harmonization
- Qin and Zang - repository, item, or schema level interoperability
- Levels of Conceptual Interoperability Model



A case study

- Georgian Papers (George I, II, III, and IV)
- George Washington Papers
- British Satirical Prints
- Revolutionary War-era Maps
- 18th cent. American newspapers
- Rare books from Royal Library (UK)





Digital Library Ecosystem for the Georgian Papers Programme

Levels of Conceptual Interoperability

Level	Layer Name	Description of level
L6	Conceptual	Interoperating systems at this level are completely aware of each other's information, processes, contexts, and modeling assumptions.
L5	Dynamic	Interoperating systems are able to re-orient information production and consumption based on understood changes to meaning, due to changing contexts.
L4	Pragmatic	Interoperating systems will be aware of the context (system states and processes) and meaning of information being exchanged.
L3	Semantic	Interoperating systems are exchanging a set of terms that they can semantically parse.
L2	Syntactic	Have an agreed protocol to exchange the right forms of data in the right order, but the meaning of data elements is not established.
L1	Technical	Have technical connection(s) and can exchange data between systems
L0	No	NA

Level	Layer Name	Contents defined	Description of level	Example(s)
L6	Conceptual	Documented conceptual model	Interoperating systems at this level are completely aware of each other's information, processes, contexts, and modeling assumptions.	
L5	Dynamic	Effect of information exchanged	Interoperating systems are able to re-orient information production and consumption based on understood changes to meaning, due to changing contexts.	PERICLES project
L4	Pragmatic	Context of information exchanged	Interoperating systems will be aware of the context (system states and processes) and meaning of information being exchanged.	ontologies
L3	Semantic	Content of information exchanged	Interoperating systems are exchanging a set of terms that they can semantically parse.	common semantic model
L2	Syntactic	Format of information exchanged	Have an agreed protocol to exchange the right forms of data in the right order, but the meaning of data elements is not established.	common syntax within systems (i.e. XML, JSON)
L1	Technical	Symbols of information exchanged	Have technical connection(s) and can exchange data between systems	HTTP, FTP connection within system
L0	No	NA	NA	

Applying the Levels of Conceptual Interoperability

Level	Layer Name	Contents defined	Description of level	Example(s)
L4	Pragmatic	Context of information exchanged	Interoperating systems will be aware of the context (system states and processes) and meaning of information being exchanged.	ontologies
L3	Semantic	Content of information exchanged	Interoperating systems are exchanging a set of terms that they can semantically parse.	common semantic model

In the context of the Georgian Papers Programme

Further Explorations



- Issues with the names of some levels (eg. semantic interoperability)
- Research is limited in scope
- Other examples of interoperability models such as IIIF may provide more fodder for research