LOUD: Catalyst of Convergence

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LOUD : Catalyseur de Convergence

PhD Thesis

Linked Open Usable Data for Cultural Heritage: Perspectives on Community Practices and Semantic Interoperability

Supervised by:

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Agenda

LOUD: Catalyst of Convergence

- Interlinking data on the web
- Linked Open Usable Data (LOUD)
- LUX, LOUD in action
- Conclusion

Interlinking Data on the Web

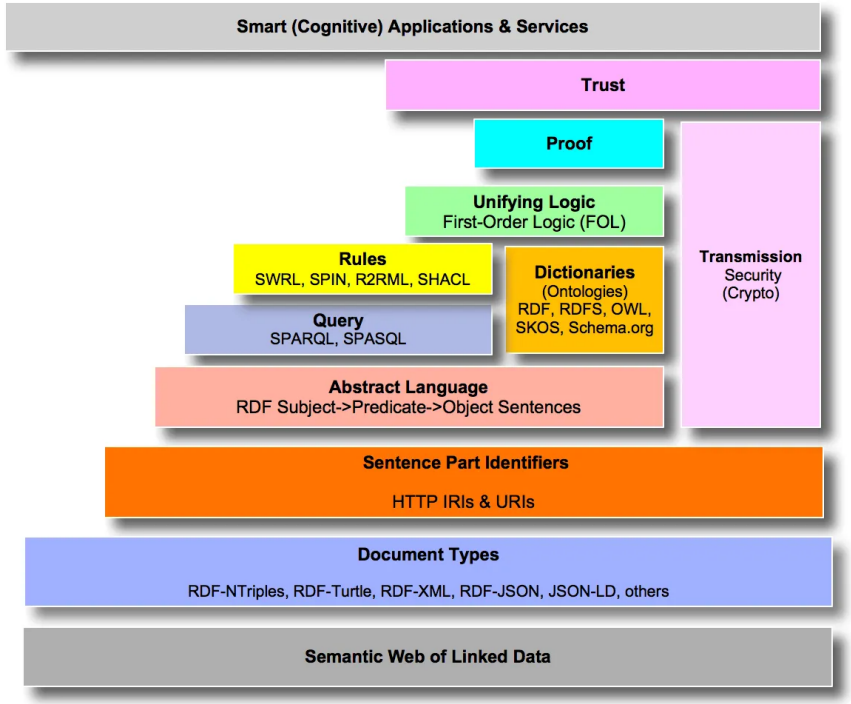
An open vision of the web

> The [World Wide Web] project merges the techniques of information retrieval and hypertext to make an easy but powerful global information system. The project started with **the philosophy that much academic information should be freely available to anyone**.

[Berners-Lee 1991]

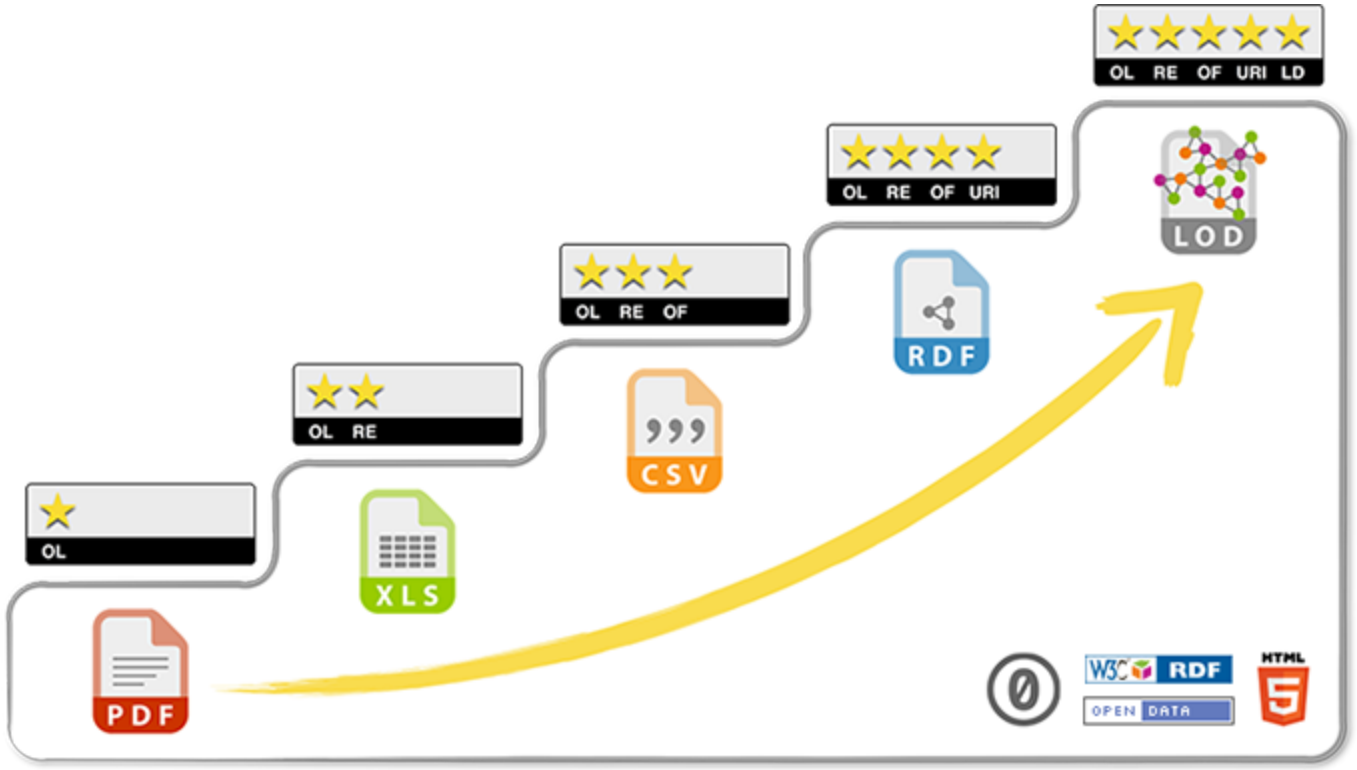
The Semantic Web or *the Web of Data*

The Semantic Web is an extension of the World Wide Web, through standards, to make it machine-readable.



Tweaked Semantic Web Layer Cake [Idehen 2017]

Linked Open Data (LOD)



5-star deployment scheme for Open Data: https://5stardata.info/

Linked Open Usable Data (LOUD)

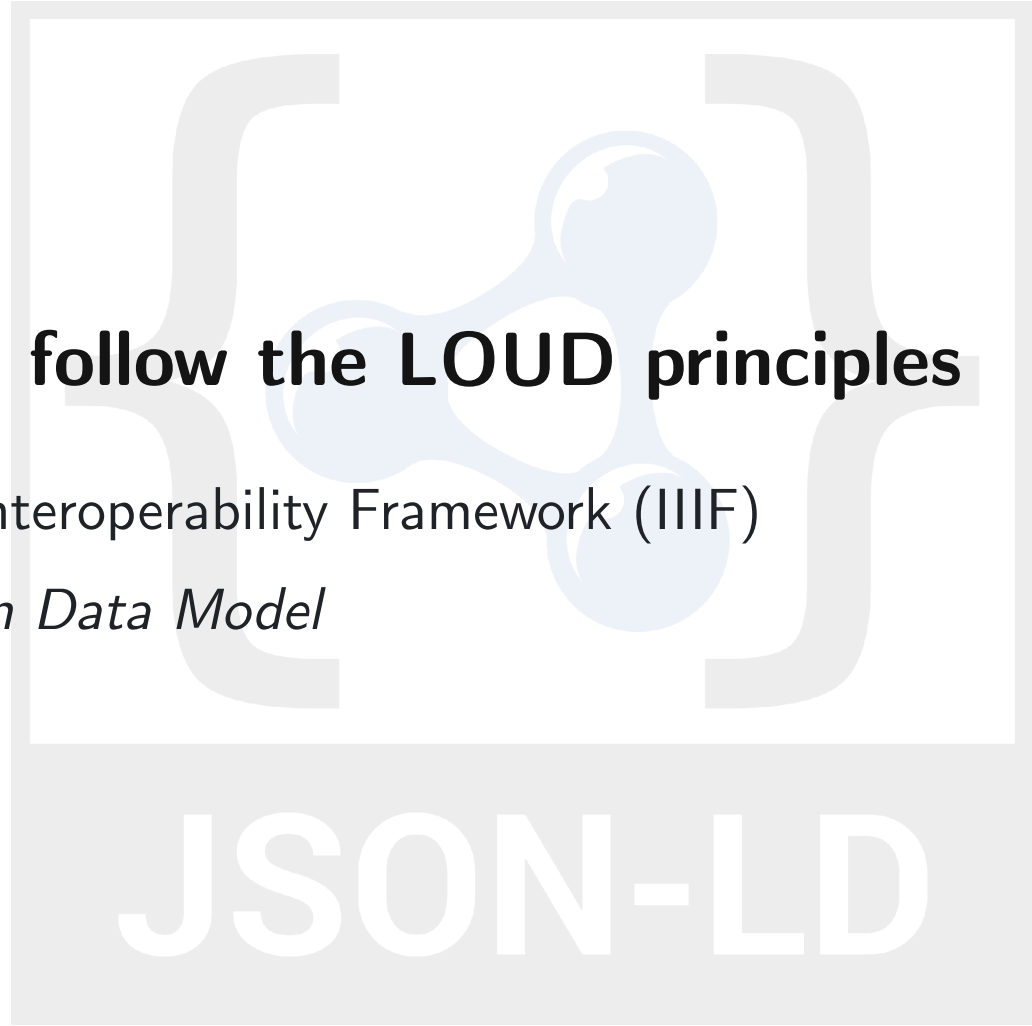
Linked Open Usable Data (LOUD)

LOUD

- LOUD's goal is to **achieve the Semantic Web's intent on a global scale in a usable fashion** by leveraging community-driven and **JSON-LD**-based specifications.
- It has five main design principles (https://linked.art/loud/) **to make the data more easily accessible to software developers**, who play a key role in interacting with the data and building software and services on top of it, and to some extent to academics.

[Sanderson 2019]

Linked Open Usable Data (LOUD)



Specifications that follow the LOUD principles

- International Image Interoperability Framework (IIIF)
- *W3C Web Annotation Data Model*
- Linked Art

LOUD-driven Communities

IIIF and Linked Art: social fabrics of sound socio-technical practices

- Synergy of effective social and technical integration with an emphasis on usability
- Collaboration beyond technical boundaries
- Inclusivity and diversity in participation
- Openness and friendliness as core values
- Commitment to transparency
- Organisation of online and face-to-face meetings

[Newbury 2018; Raemy 2023]

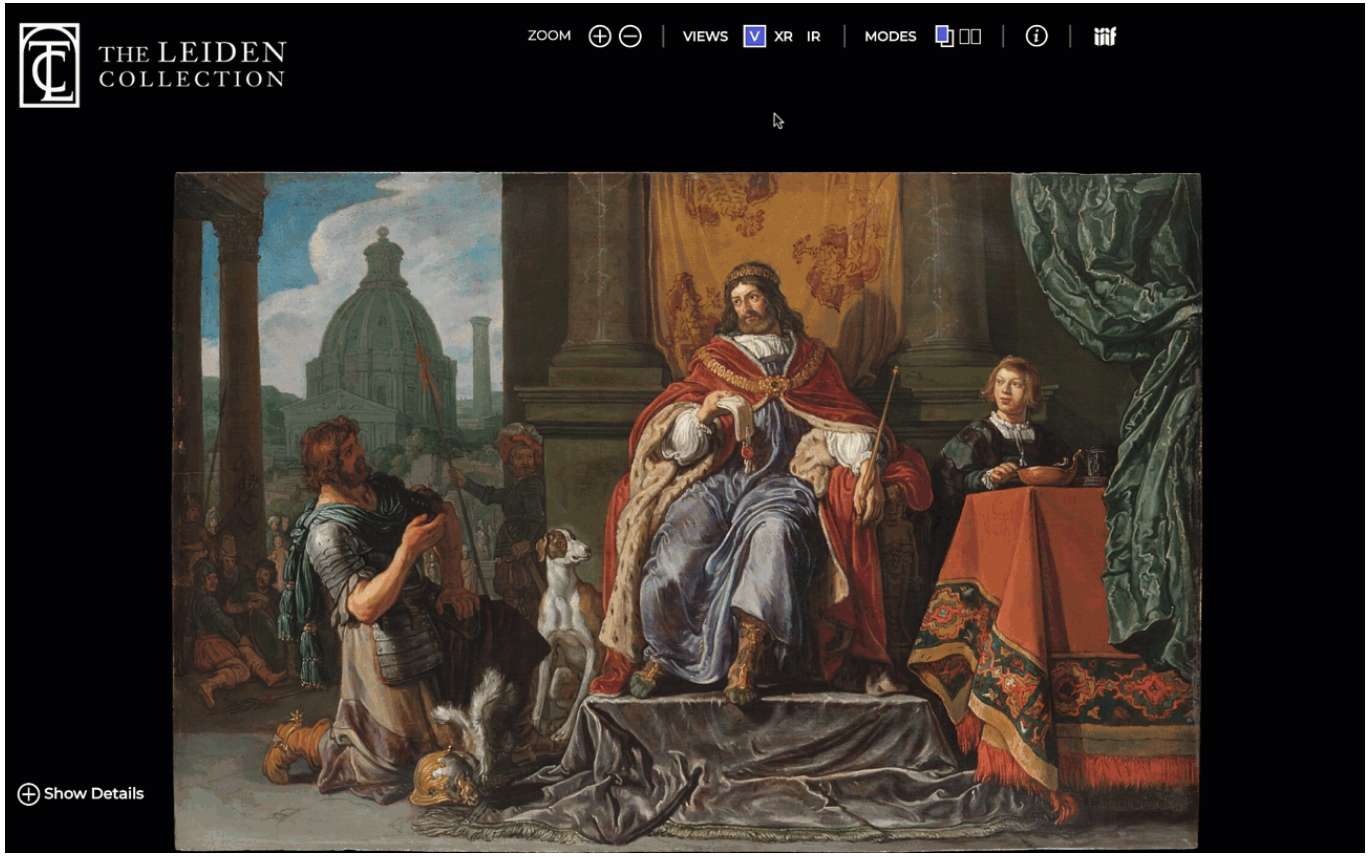
International Image Interoperability Framework (IIIF)

IIIF

- A model for presenting and annotating content
- A global community that develops shared application programming interfaces (APIs), implements them in software, and exposes interoperable content

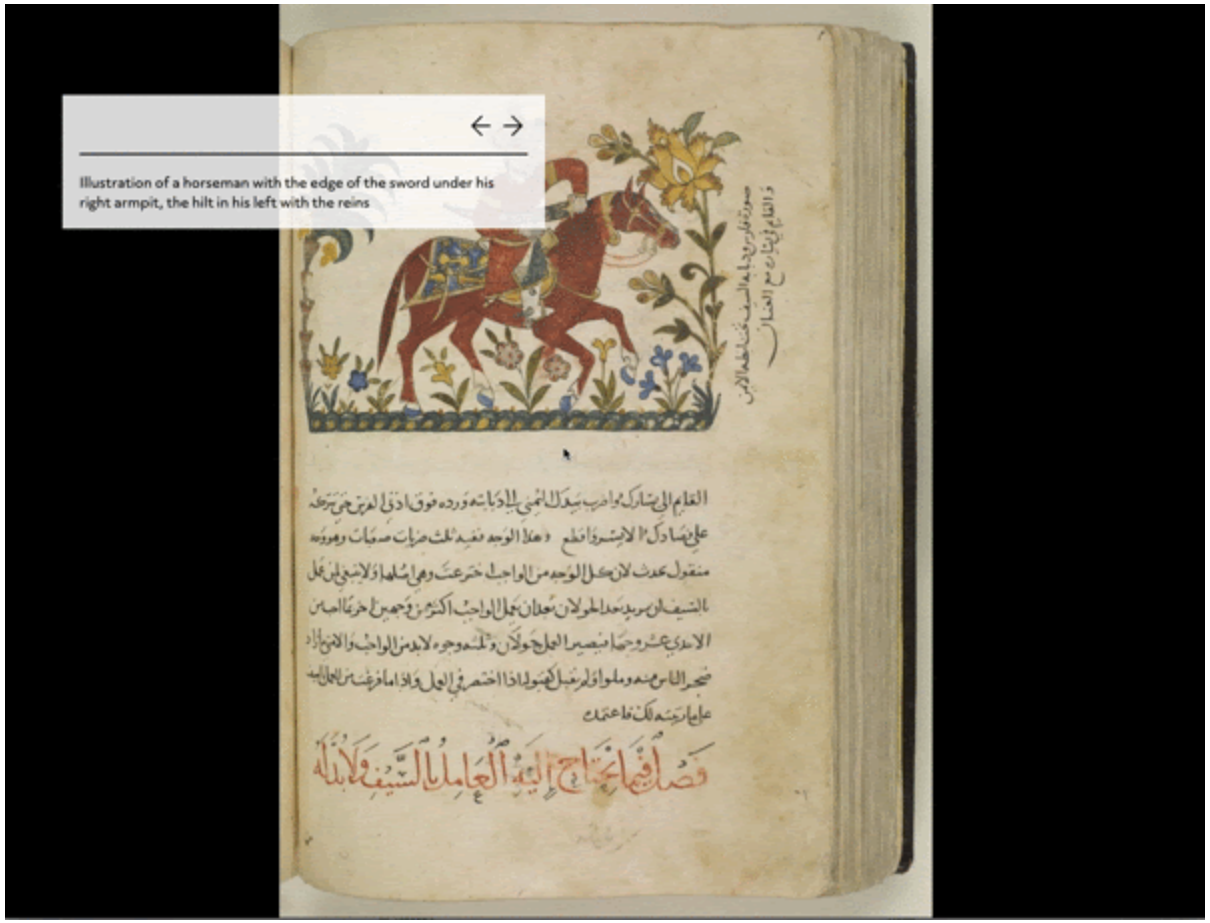
https://iiif.io

IIIF – Use Case



https://www.theleidencollection.com/viewer/david-and-uriah/

IIIF – Use Case



Storiiies: http://storiiies.cogapp.com/

Linked Art

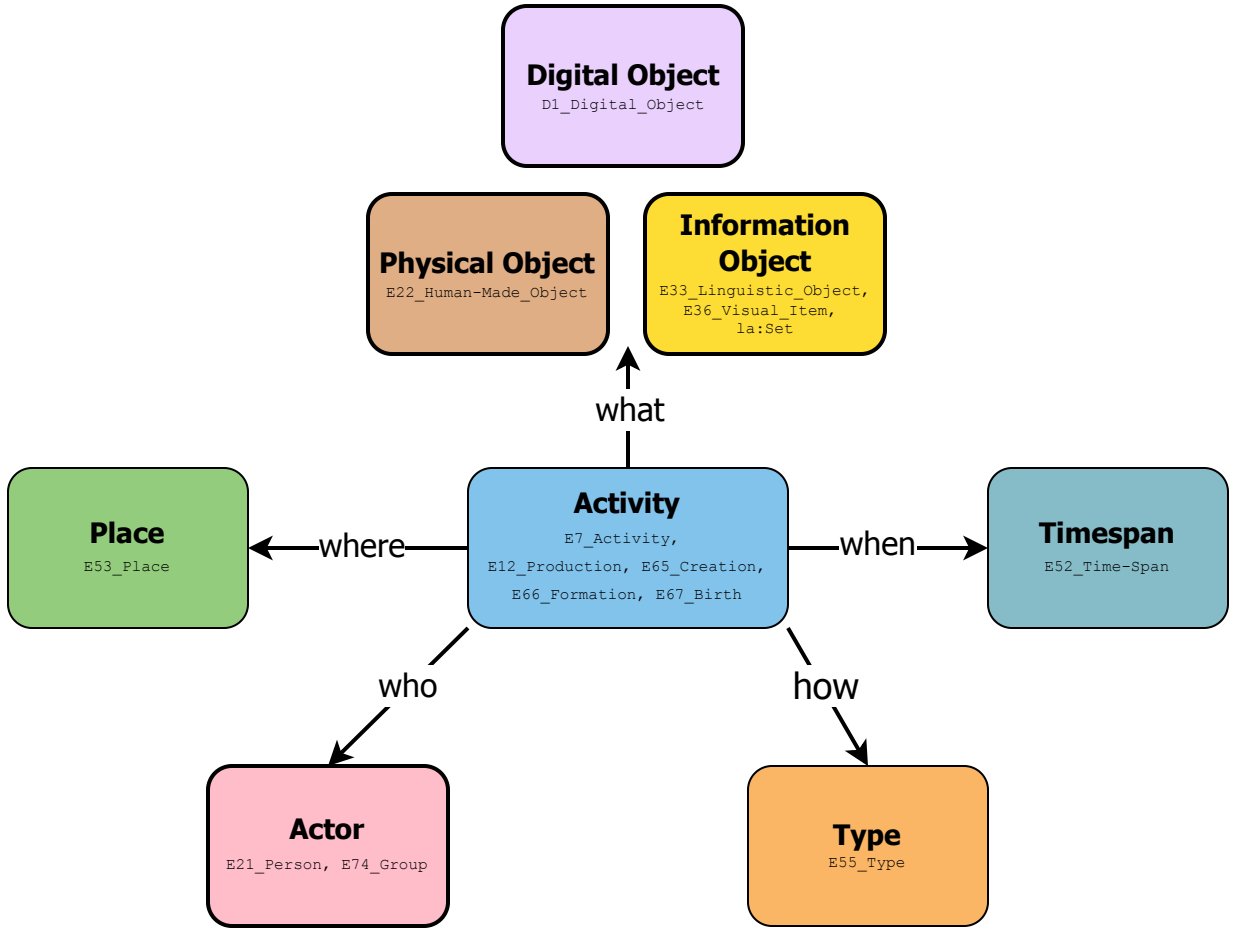
Linked Art is a community and a CIDOC (*ICOM International Committee for Documentation*) Working Group collaborating to define a metadata application profile for describing cultural heritage, and the technical means for conveniently interacting with it (the API).

https://linked.art

Linked Art

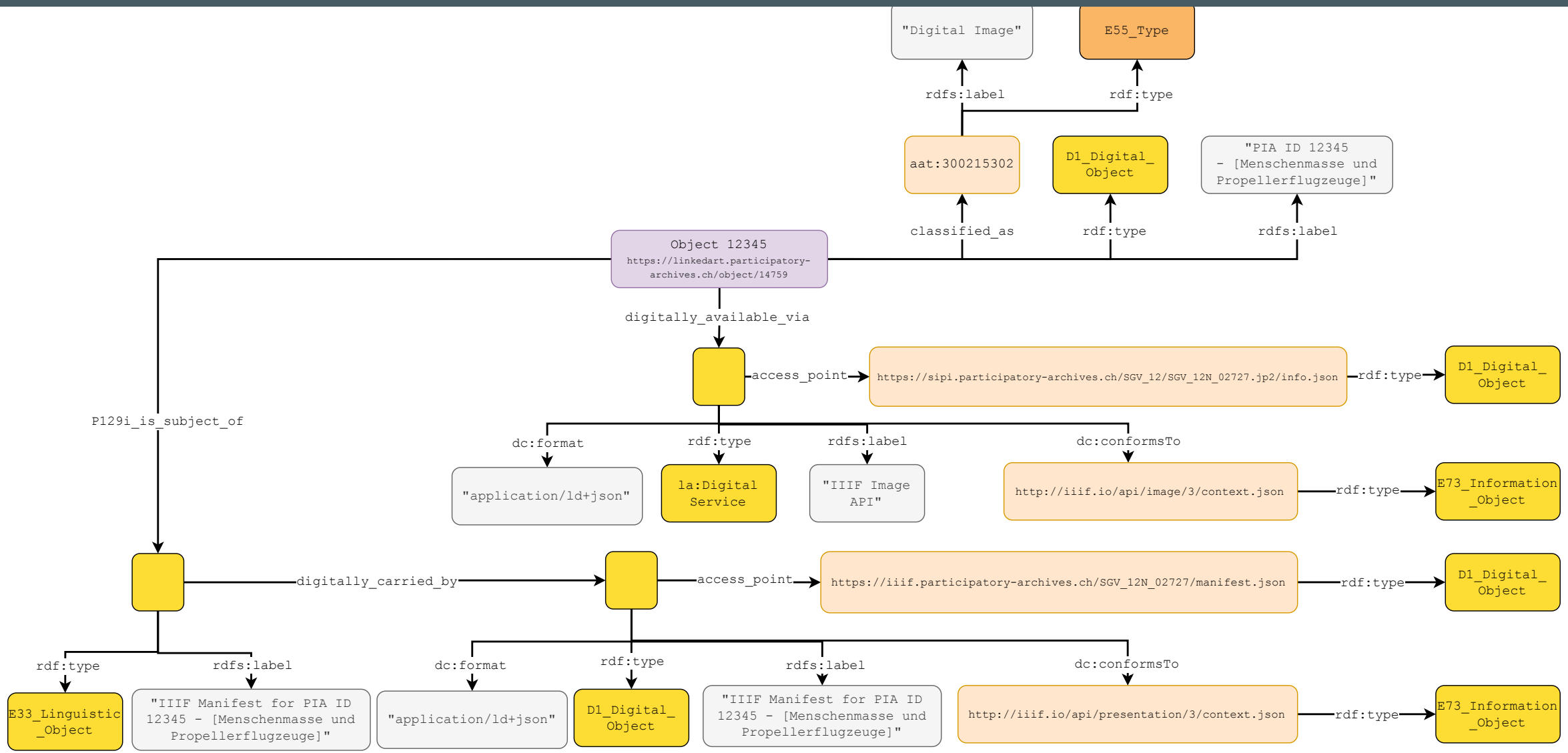
Level	Linked Art
Conceptual Model	CIDOC Conceptual Reference Model (CRM)
Ontology	RDF encoding of CRM 7.1, plus extensions
Vocabulary	Getty Vocabularies, mainly the Art & Architecture Thesaurus (AAT), as well as the Thesaurus of Geographic Names (TGN) and the Union List of Artist Names (ULAN)
Profile	Object-based cultural heritage (mainly art museum oriented)
API	JSON-LD 1.1, following REST (representational state transfer) and web patterns

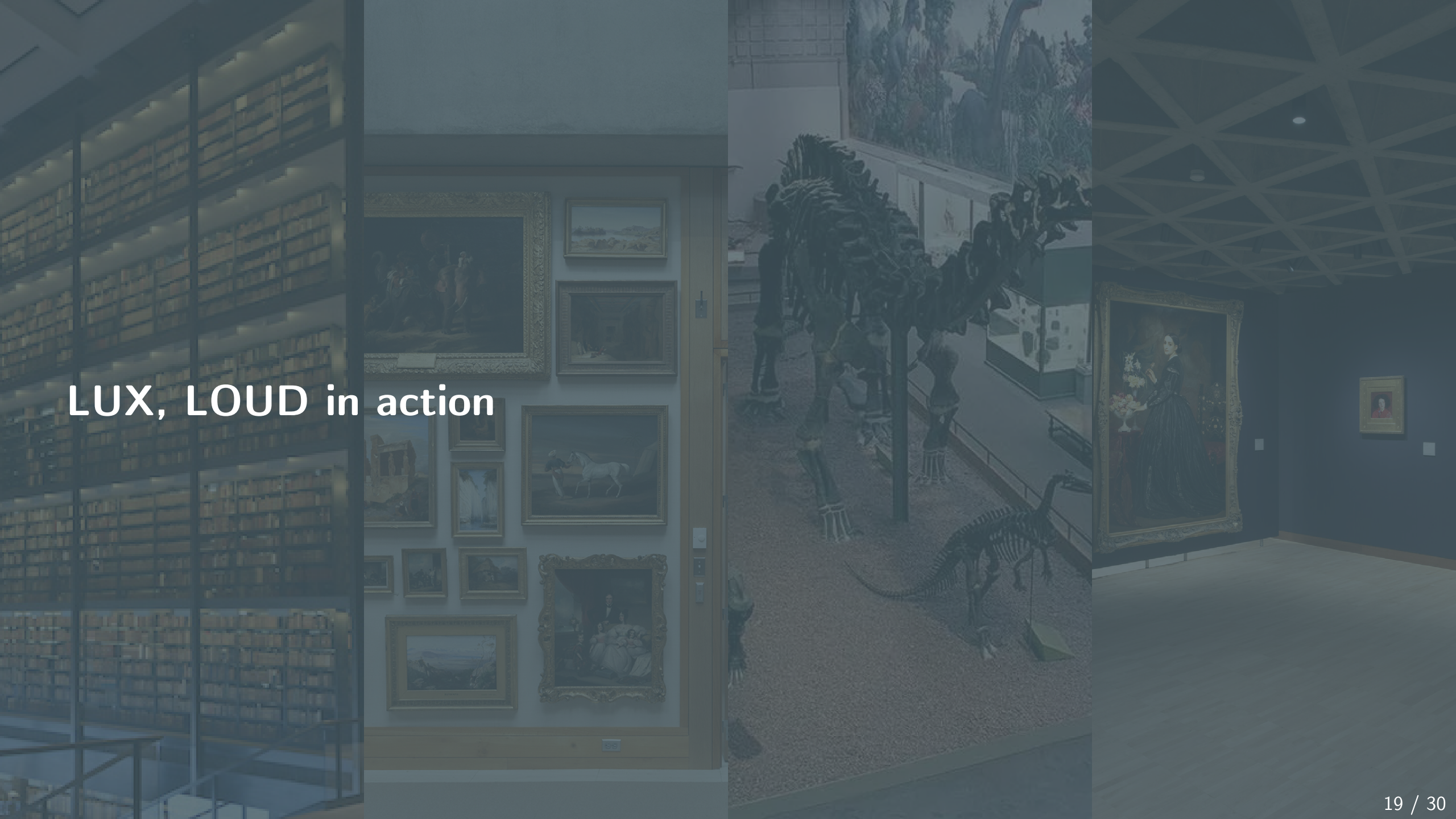
Linked Art



[Raemy et al. 2023, adapted from Sanderson 2018]

Linked Art Digital Integration (with IIIF)





LUX, LOUD in action

Yale Collections Discovery

LUX provides a unified gateway to more than 41 million cultural heritage resources held by Yale's museums, archives and libraries: Yale University Library, Yale Center for British Art, Yale Peabody Museum, Yale University Art Gallery.

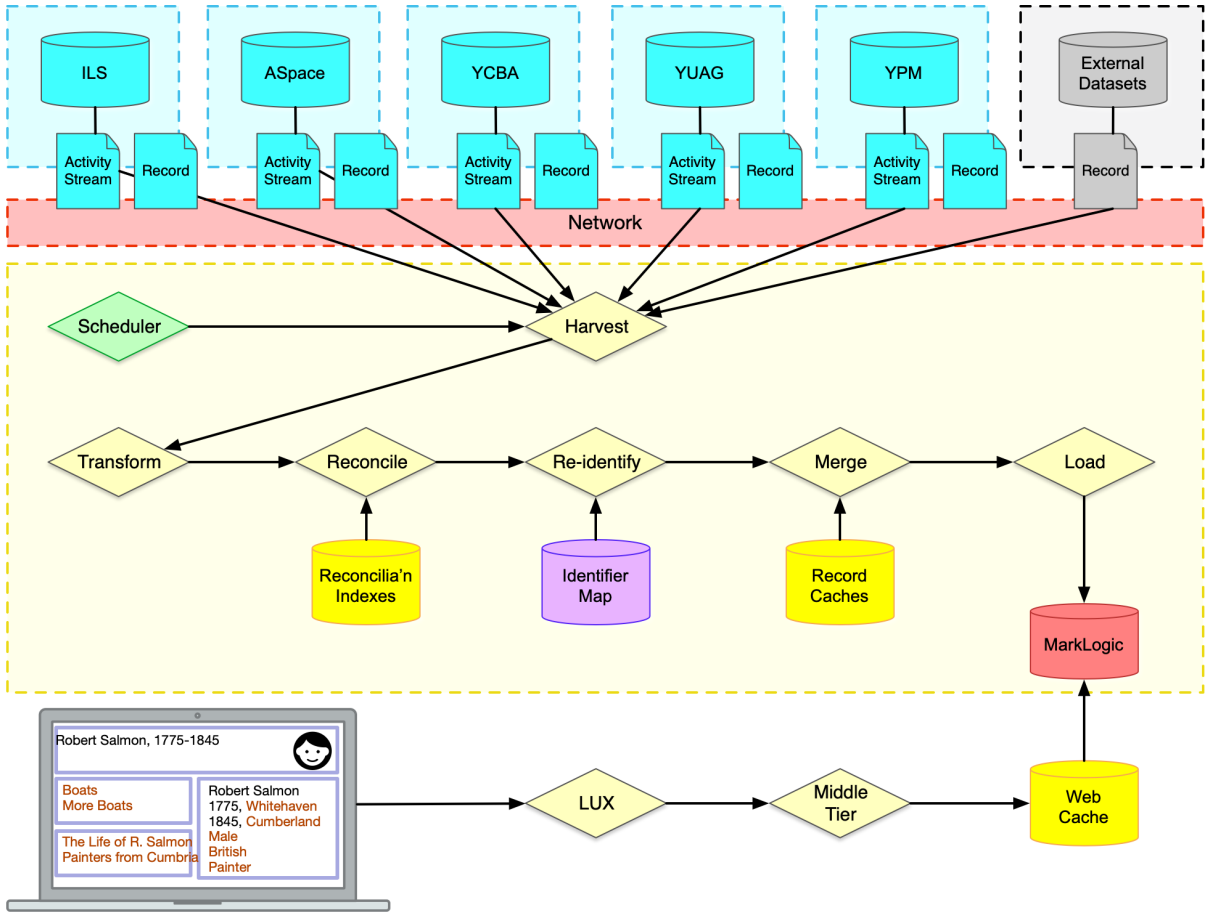
Built on open standards

- Linked Art, IIIF, W3C Activity Streams
- Widespread technologies: Python, JavaScript, Node.js, React, AWS
- Multimodal database (NoSQL): MarkLogic Server

https://lux.collections.yale.edu/

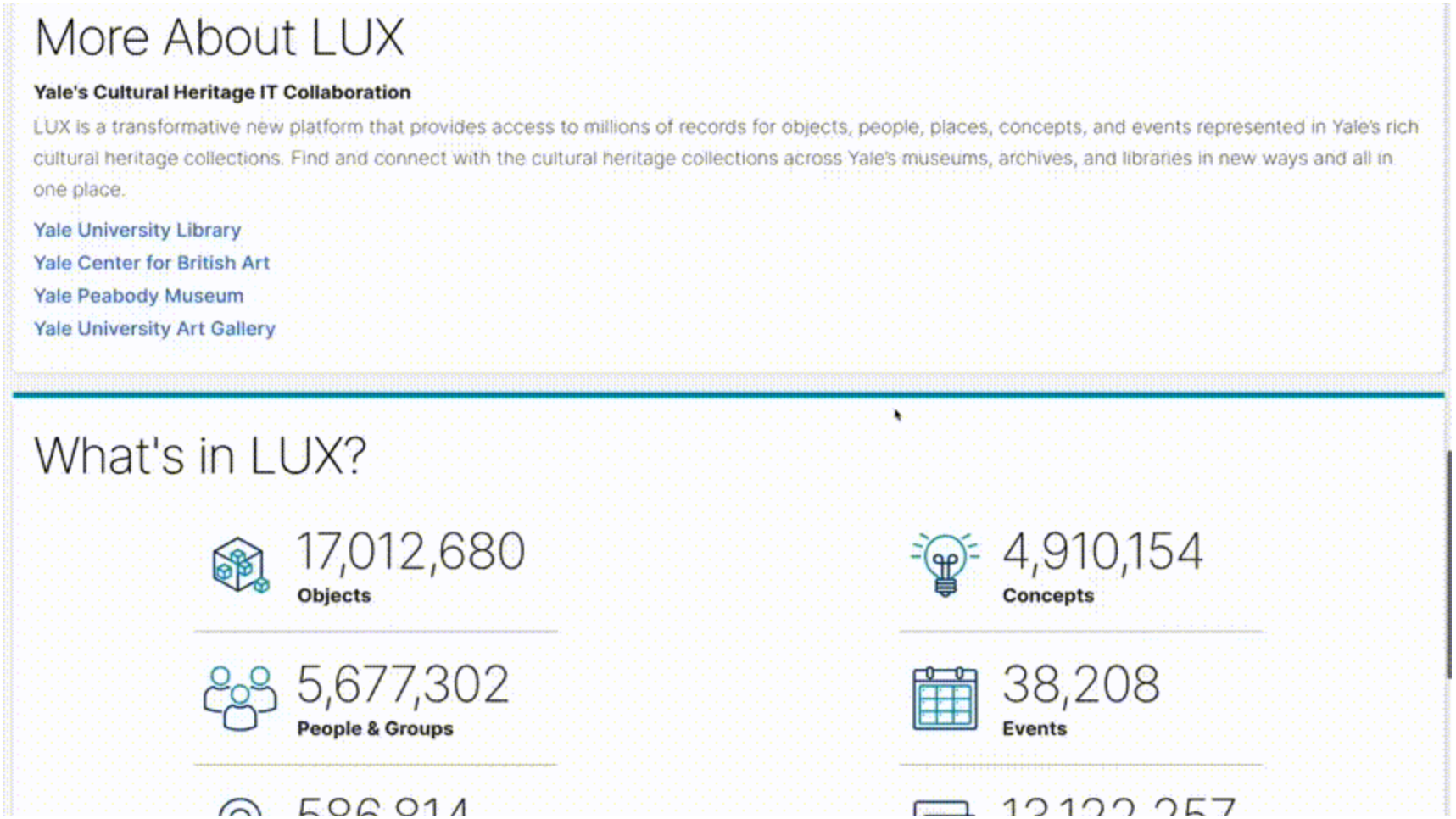
See Metcalfe Hurst [2023]

Data pipeline and architecture



[Raemy & Sanderson 2023]

LOUD in action



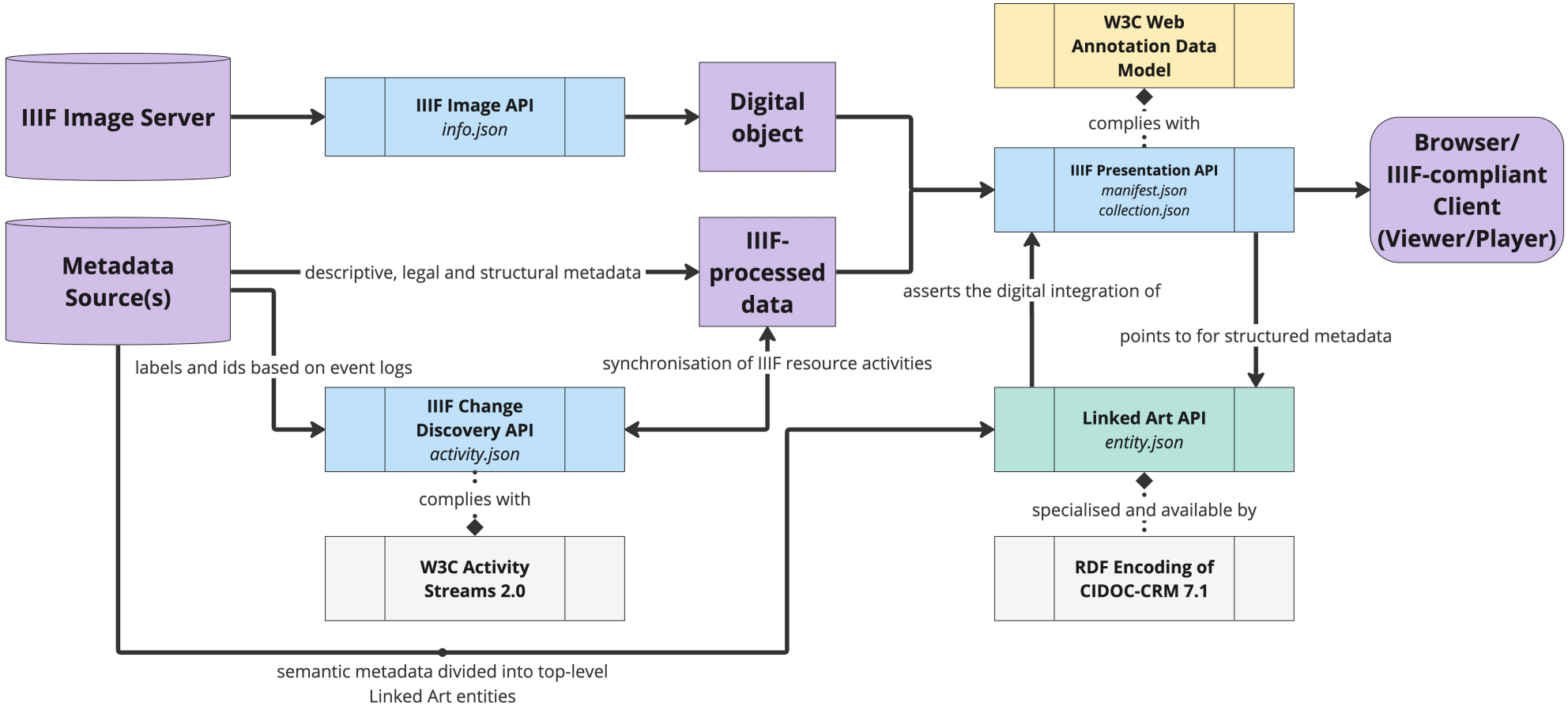
Link to optimised video resolution

Conclusion

Impact and perspectives

1. Improving interoperability and accessibility
2. Facilitating interdisciplinary collaboration
3. Enhanced understanding of cultural heritage
4. Improving research methods and data management
5. Promoting convergence between digital humanities and information science

LOUD-Driven Infrastructure



[Felsing et al. 2023]

Concluding thoughts

Towards collaborative and interoperable convergence

- Grassroots development of IIIF and Linked Art with collaboration and transparency are one of the key factors, but implementations are needed to be conducted in parallel (specifications versus demonstrability).
- LOUD standards, when used in conjunction, enhances semantic interoperability, even if it comes at the cost of ontological purity.
- LOUD practices and standards should serve as common denominators for cultural heritage institutions, public bodies as well as research projects.

References and Image Credits

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