Using the Open Archives Initiative - Object Reuse and Exchange (OAI-ORE) to Support e-Science

Making the Web Work for e-Science
December 8, 2008
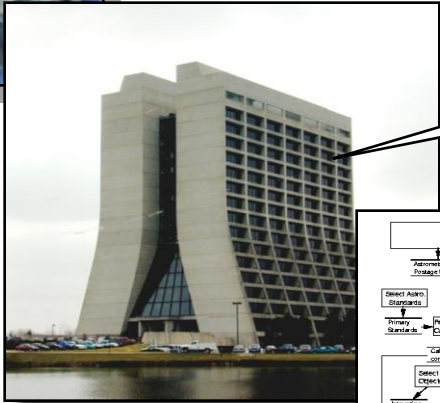Sayeed Choudhury
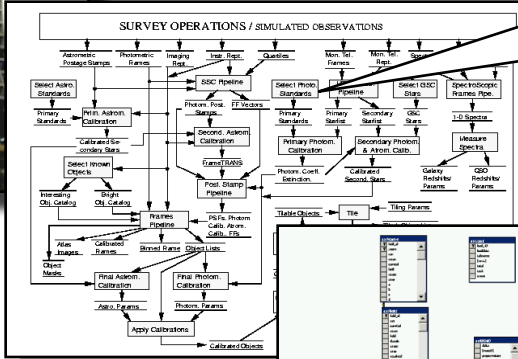Sheridan Libraries, Johns Hopkins

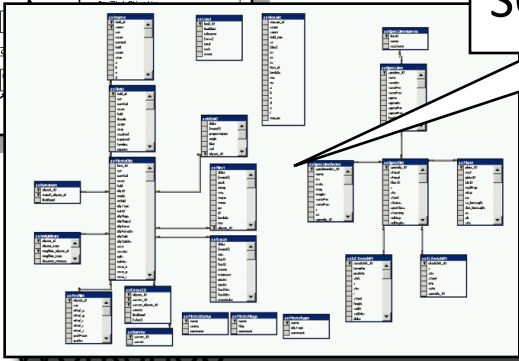# Data Flow (Levels of Data)

Pixel data collected by telescope

Sent to Fermilab for processing

Beowulf Cluster produces catalog

Loaded in a SQL database

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Data curation problem

- Research communities publish peer-reviewed journal papers that describe highly processed data.

- Long-term preservation and curation systems for digital journal content, *including the digital data presented only graphically*, are not currently in place.

- The research cannot be verified and the results cannot be easily compared to other data in order to broaden impact.

- Public funds invested in scientific research do not have maximum return on investment. Essential legacy datasets may be lost.

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Approach

- Integrate digital data management into the publication process (data capture, review, metadata tagging and validation, storage).

- Exploit emerging information technology standards for managing distributed data collections, including digital journals.

- Provide multiple access methods to digital data to maximize visibility and re-use.

- Exploit information management and curation experience in the university libraries and build on long-term institutional commitments to preservation.

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Framework
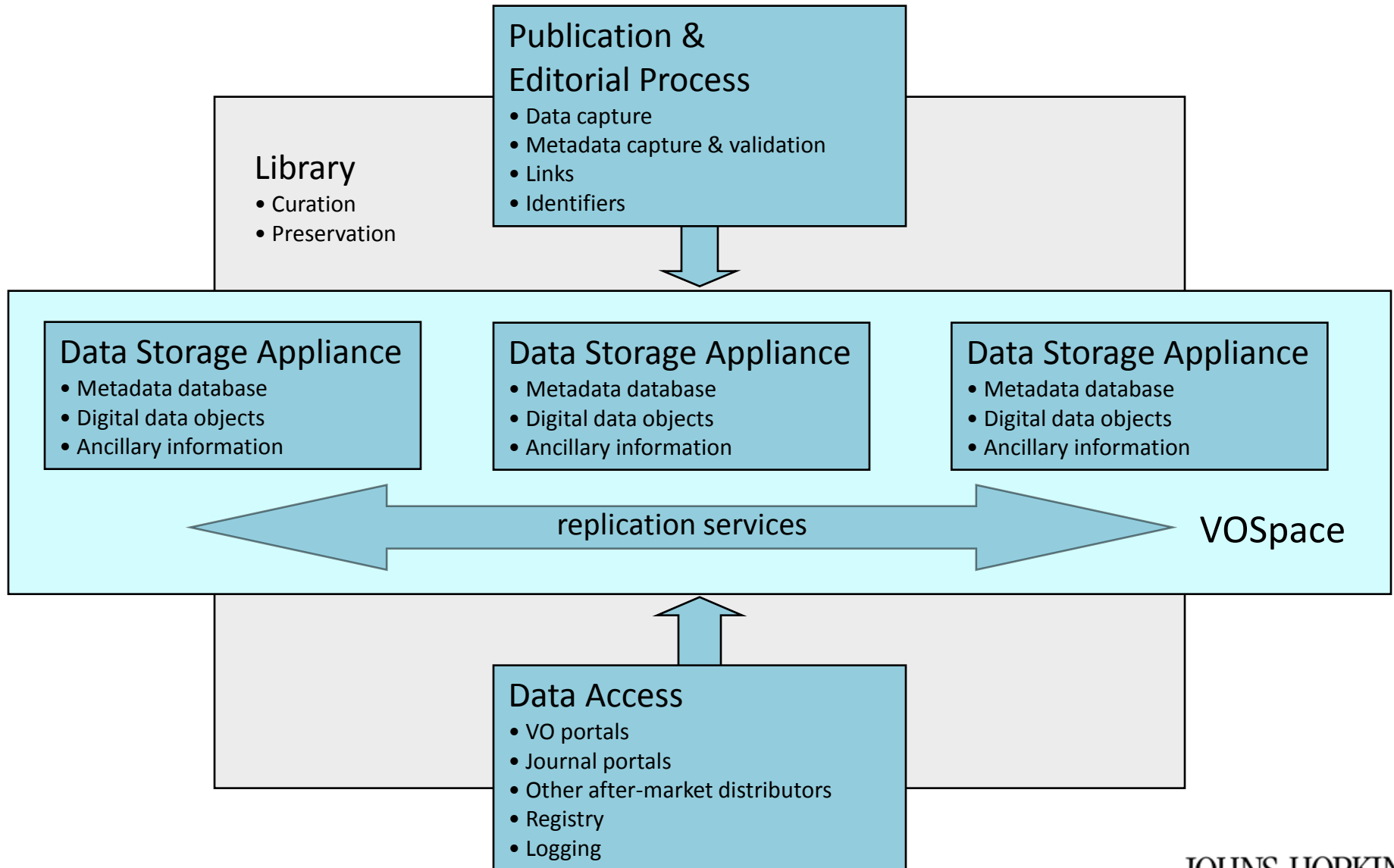
Open Archives Initiative – Object Reuse and Exchange (OAI-ORE)
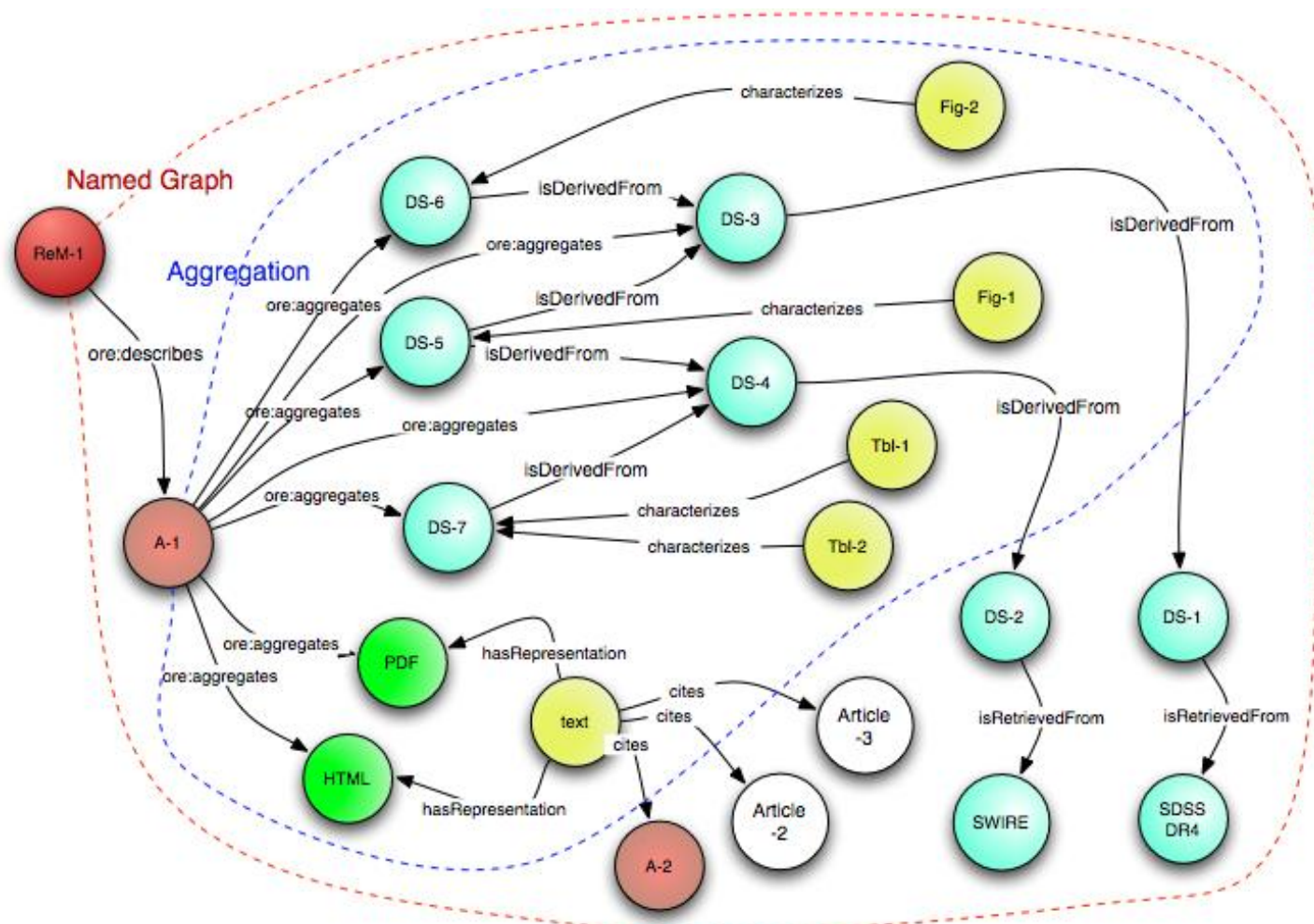
Four Key Thoughts

- Data are a new form of publication

- Opportunity to capture entire research process, not only final product

- Data curation as part of scientific workflow and not an act unto itself

- Data curation may depend on nature of data types, practices, uses…which vary by discipline

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