The Dryad Data Repository: A Singapore Framework Metadata Architecture in a DSpace Environment

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DRYAD

NESCent

National Science Foundation
WHERE DISCOVERIES BEGIN

Overview

- Recent metadata developments for Dryad (formerly known as DRIADE)
  - A digital data repository for datasets underlying publications in the field of evolutionary biology
- Implementation of the system in a DSpace environment
  - Current efforts to represent of the Dryad application profile in DSpace
- Bringing the Dryad application profile into conformance with the Singapore Framework
  - Challenges, considerations for the future

The Dryad Repository

- Dryad‘s role and functionalities
- Collaboration between the SILS Metadata Research Center (UNC Chapel Hill) and the National Evolutionary Synthesis Center (NESCent)
- Two goals for metadata activities:
  - Dryad’s need to be interoperable with other data repositories used by evolutionary biologists
  - Dryad’s need for a sustainable information infrastructure

DSpace Implementation

- Benefits:
  - Adaptable, will support Dublin Core metadata
  - Submission system
- Challenges:
  - Modifications are difficult
  - Default workflow for submitting content is too cumbersome for users
  - Permissions issues
  - Metadata with hierarchical information (e.g. MODS) not supported in core repository

DSpace : http://www.dspace.org/

Dryad Application Profile, version 1.0

- Modular design
  - Data Object module
  - Publication module
- Incorporates elements from:
  - Dublin Core, Darwin Core, PREMIS, DDI, EML
- Supports Dryad functionalities
  - Basic data/metadata storage
  - Simple retrieval and submission system

Carrier, S., Dube, J., & Greenberg, J. (2007). The DRIADE Project: Phased Application Profile Development in Support of Open Science. In *DC-2007: Application Profiles: Theory and Practice. International Conference on Dublin Core and Metadata Applications*, Singapore, August 27-31, 2007.

Singapore Framework Compliance

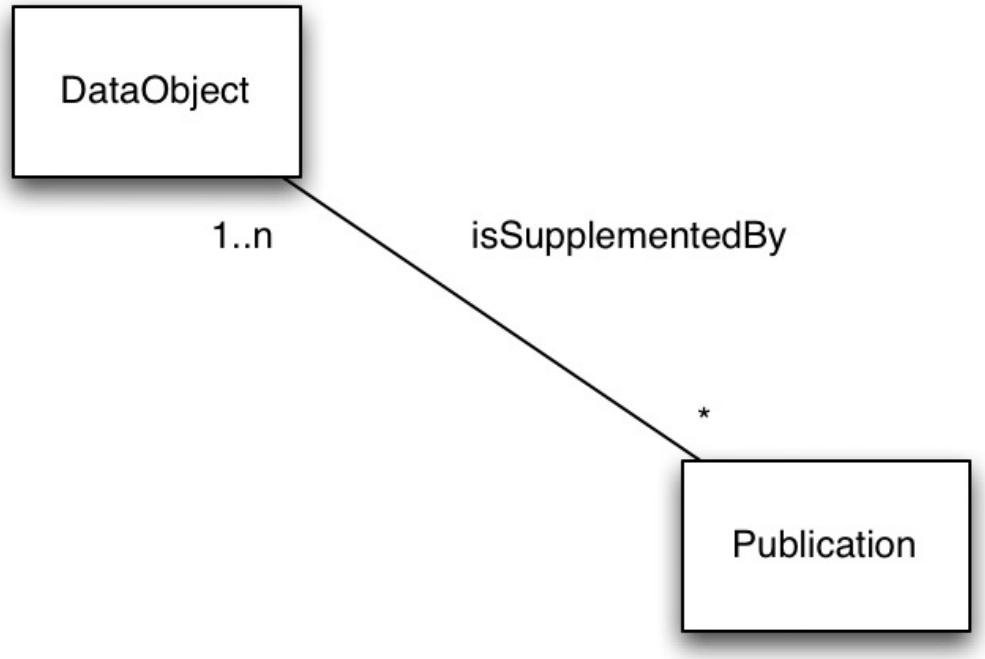
- Standard for Dublin Core application profiles
- Benefits
  - consistency, long-term quality control, and **interoperability** with other metadata structures
- Use of Scholarly Works Application Profile (SWAP) as a key example of an application profile in conformance with the Singapore Framework

Functional Requirements

- Scope
- Stakeholders and designated community
  - Researchers in the field of evolutionary biology, publishers of established biology journals
- Requirements gathering
  - Stakeholders workshop, use case study, survey
- Functional requirements
  - Resource discovery and use
  - Data interoperability
  - Automatic and semi-automatic metadata generation
  - Linking of publications and underlying datasets
  - Data/metadata quality control
  - Data security

Domain Model

- Dryad application profile version 1.0 accomodates one publication associated with multiple datasets



Description Set Profile and Usage Guidelines

- DSP is “an information model and XML expression”
  - http://www.unc.edu/~scarrier/dryad/DSPLevelOneAppProfDraft.xml
- Usage guidelines are optional
  - https://www.nescent.org/wg_digitaldata/Dryad_Level_One_Cataloging_Guidelines

Carrier, S. (2008). The Dryad Repository Application Profile: Process, Development, and Refinement. DOI: http://hdl.handle.net/1901/534.

Challenges and Future Work

- Ongoing revision of the Dryad application profile
- Streamlining Dryad's interface for entering metadata
- Limitations in the current state of citation metadata
- Determine how or if elements from non-Dublin Core namespaces should be included in the DSP
  - Issues with interoperability, e.g. RDF/DCAM

- Dryad
  - http://datadryad.org/
  - Dryad Wiki
    - https://www.nescent.org/wg_digitaldata/Main_Page
    - Includes links to publications, the application profile, and lists Dryad team members
- Metadata Research Center <MRC>
  - http://www.ils.unc.edu/mrc/
- National Evolutionary Synthesis Center (NESCent)
  - http://www.nescent.org/index.php

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