

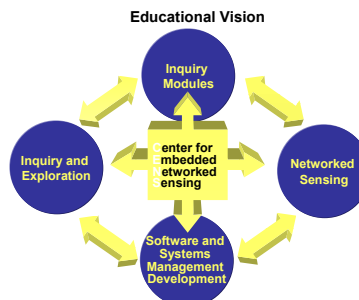
Making CENS Data Useful and Usable

Stasa Milojevic, Kalpana Shankar, Christine Borgman
 Education Team - <http://www.cens.ucla.edu/Education>

Sensors will generate data in a variety of formats for a variety of purposes. These data must be usable by multiple communities in the short and long term.

Our goals for CENS are:

- To be a leader in the implementation of standards and technologies for *managing information and data from sensor network portals*.
- To make CENS data *accessible* and to maintain the *integrity* of those data for research and educational efforts of current and future CENS' participants.
- To *collect, organize, and preserve* scientific data so that they are useful for *multiple users* with different levels of subject expertise and for *multiple uses*.



Metadata and CENS data

Metadata

- is structured information that describes data, collections of data and systems.
- can be human and/or system generated.
- can facilitate discovery, preservation, and interoperability.

- Preservation (related to the preservation management of data)
- Technical (related to how a system functions or metadata behave)
- Use (related to the level and type of use of data)

Types and functions of metadata:

- Administrative (used in managing and administering data)
- Descriptive (used to describe or identify data)

Metadata and CENS communities

- Different communities of practice have evolved different systems for managing and describing data that are not mutually compatible.
- Some scientific disciplines have extensive tools, resources, and data archives for warehousing community datasets, while others do not.

CENS data – studying the needs of users

Our portal needs to:

- Provide access to data to the CENS community and beyond
- Be interoperable with other systems (federated repositories)
- Enable longitudinal research
- Track use and users of data (for educational purposes)

How do we get there?

- Study and understand current practices and information needs of CENS users.
- Develop user scenarios.
- Investigate standards, tools, and policies for scientific data, metadata, and information management.

Same Data, Different Audiences Multiple descriptions required

Ex: describing ecological data for scientists and teachers

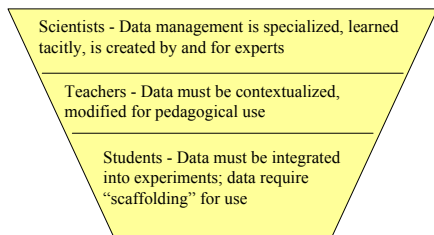
Ecological Metadata Language (EML)

- Responsible people and organizations
- Access rights/Use restrictions
- Geospatial and taxonomic information
- Research context
- Methodological information
- File format
- Logical structure of data

Learning Objects Metadata (LOM)

- Responsible people and organizations
- Access rights/Use restrictions
- Geospatial and taxonomic information
- Research context
- Methodological information
- File format
- Content standards
- Interactivity level
- Resource type (dataset? Module?)
- Typical learning time
- Required software/hardware

Data description determines data usability



Selected results and next steps:

- Assess management of scientific data for individual disciplines: its creation, description, storage, retrieval, access, preservation
- Continue dialog with CENS users
- Assess tradeoffs of individual metadata standards and technologies
- Map standards against CENS schema
- Determine appropriate subsets of data and (additional) description for teachers/students
- “Scaffold” the data for teachers and students
- Design information architecture
- Establish infrastructure (hardware, software, staff expertise, and policy)
- Develop and deploy testbed system.