



MATERIALS RESOURCE REGISTRIES Working Group
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Evolving Interoperable Metadata

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Context: Nondisruptive Evolution

- Interoperable Metadata: common schema (and formats) used across multiple software applications, sites
 - How do you extend the metadata for new capabilities without breaking existing records and software?
 - How do we manage evolution over different formats in use?
 - XML
 - JSON
 - JSON-LD (and other RDF formats)
- Goal: Don't require that we model the entire world before we start building and using a useful system
 - Create metadata that solves our immediate problem
 - Provide means to extend schemas as needed for new capabilities
- Techniques being applied to the Materials Resource Registries WB effort

Aggregation and Extention

- Divide metadata into smaller groups that accomplish particular goals
 - "Lego Brick" approach: fit needed pieces together

Data Application Resource (Repositories, Databases, Datasets, Software, ...)

- Identity -- how we refer to the resource
- Providers -- who is responsible
- Content -- general description of what the resource contains/does
- Access -- how we access and use the resource
- Coverage -- how the resource applies or maps to time, space, ...
- **Role*** -- metadata describing its role as a particular kind of resource
- **Applicability*** -- how the resource is useful to a particular community or application

Role

- How we support different kinds of resources
 - Repository
 - Database
 - Dataset
 - Portal
 - Organization
 - Software
 - Registry
 - Facility
 - ...
- New types can be defined over time
- A resource can have multiple roles
 - e.g. a Resource that is both a Repository and a Registry

Applicability

- How the resource applies/is useful to particular community, application
- A place to put domain-specific metadata
 - Material Science vocabulary is put here
- Can have multiple applicability elements, each for a different community
 - e.g. one for Material Science, one for Chemistry, one for Beam-Line Physics, ...
 - Each one speaks a different language
 - Applications can consume the types they understand, ignore the ones they don't
 - It's okay if there is overlap in concepts!