RDA DTR & PID & MGI Goals

RDA P5
Adoption Day
San Diego, CA
March 8, 2015
The Materials Genome Initiative

Goal: decrease the cost and time-to-market by 50%

http://www.whitehouse.gov/mgi

1. Launch interagency effort & funding: DOE, DOD, NSF, NIST
2. Double the speed to discover, develop, and manufacture
3. Provide wealth of information to develop new products and processes
RDA Call:
Applications for Adoption of its Products

- Adopters to work with any/all of 4 WGs:
  - **Data Type Registry**: online service for listing uniquely identified application data types so that tools can be associated with DTs.
  - **Persistent Identifier Information Types**: suggested set of information associated with a persistent identifier.

- Adopters to evaluate product within community environment in terms of value added to established resources.
Adopting RDA Infrastructure & MGI

• Broad Aim:
  • Prototype integration of RDA Data Type Registry + PID Concepts into Materials Genome Initiative’s Materials Innovation Infrastructure

• Objectives:
  • Work closely with NIST: Datasets, guidance, feedback
  • Build Use Case – *Phase based Materials Datasets & Types*
  • Test Data Type Registry + PID Information Types
Demo Project Activities

• Define Use Case(s)
  • Identify relevant small & large datasets
  • Identify essential data types

• Relate to NIST RDA Registry
  • Integrate unique, complementary elements
  • Identify components that need to come together

• Evaluate registry
  • Make repository services discoverable via data types.
  • Find data & target services
RDA DTR & PID WG

• **DTR WG:**
  • Aim: “record implicit details of data as Data Types & associate uniquely identified Types with different instances of datasets”
  • Benefit: Ability of user to find & retrieve available services to be used with related data.

• **PID WG:**
  • Aim: “specify a framework for information types & build consensus on some essential types”
  • Benefit: define Data Types for Use Case & as additional DTs added
Materials Datasets & Data Types

Experimental data for use in aerospace and automotive industries

- **Diffusion**
  - Including self-diffusion, interdiffusion

- **Experimental Methods**
  - Including x-ray diffraction, PVD (physical vapor deposition)

- **Thermochemical & Thermophysical Properties**
  - Including molar volume, thermal expansion & elastic constants

- **Phase Transformation & Mechanical Properties**
Timeline

• Start of Project – early Feb:
  • Identify Use Case, data sets, repositories
  • Begin discussion of needed data types
  • Relate to current NIST RDA Registry work
  • Determine what parts need to work together

• Middle of Project – middle Apr:
  • Finalize data types
  • Preliminary test to connect registry with repositories

• Before end of Project – mid June:
  • Finalize test to connect registry to find & target services
  • Evaluate added value to community environment & resources