The JISC Information Environment Metadata Schema Registry (IEMSR)

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Context: current registry activity…

- JISC Metadata Schema Registry (UK Joint Information Systems Committee of the Higher Education Funding Agency)

- DCMI Registry (Dublin Core Metadata Initiative)
- NSDL Registry (National Science Digital Library; Cornell University and University of Washington)
- DEST Registry (Department of Education, Science and Training, Australia)

What is a Metadata Schema Registry?

- Application that provides services based on information about "metadata terms" (and related resources)
- "Metadata term" = "unit of meaning" deployed in metadata descriptions
- Functions of the registry might include
  - Disclosure/discovery of information about "terms"
  - Verification of provenance/status of "terms"
  - Discovery of relationships between "terms"
    - support for mapping, inferencing
  - Pointers to related resources
    - usage in metadata application profiles, guidelines for use, bindings
- Support for services to human readers, software agents

Motivation for metadata registries

- Proliferation of metadata
  - Digital libraries, e-learning, institutional repositories
    - resource description, rights management, preservation
  - Appropriate metadata element set has to be identified for every new system and project

- Requirement for
  - Locating appropriate metadata terms
  - Ensuring authoritative version of term definitions etc
  - Declaring term usages
  - Facilitating evolution of metadata term sets

IEMSR project background

- Funded by the UK Joint Information Systems Committee (JISC) as part of shared services programme 2004-2006
- Development partners
  - ILRT, University of Bristol
  - UKOLN, University of Bath
- Associate partners
  - British Library
  - Becta (British Educational Communications and Technology Agency)
  - CETIS (Centre for Educational Technology Interoperability Standards)

IEMSR distinctive features

- Emerging from (digital) library tradition
- Focus on ‘sets of terms’
  - Dublin Core and IEEE LOM
- Registers both term sets and application profiles (how term sets are used locally)
- Provides web and automated m2m interface
- Provides desktop client for creation and registration of term sets and application profiles

Builds on previous work

- DESIRE Registry

  http://desire.ukoln.ac.uk/registry/

  - Introduced registration of application profiles
  - Mapped terms (demonstration)
- Meg Registry

  http://www.ukoln.ac.uk/metadata/education/regproj/

  - Introduced a client to create machine readable Dublin Core schemas and application profiles
  - Introduced RDF as model for registry
- SCHEMAS and CORES

  http://www.cores-eu.net/

  - Encouraged a common approach amongst standards makers to declaring their metadata terms
  - Further work on client software
  - Note SZTAKI demo, Hungary

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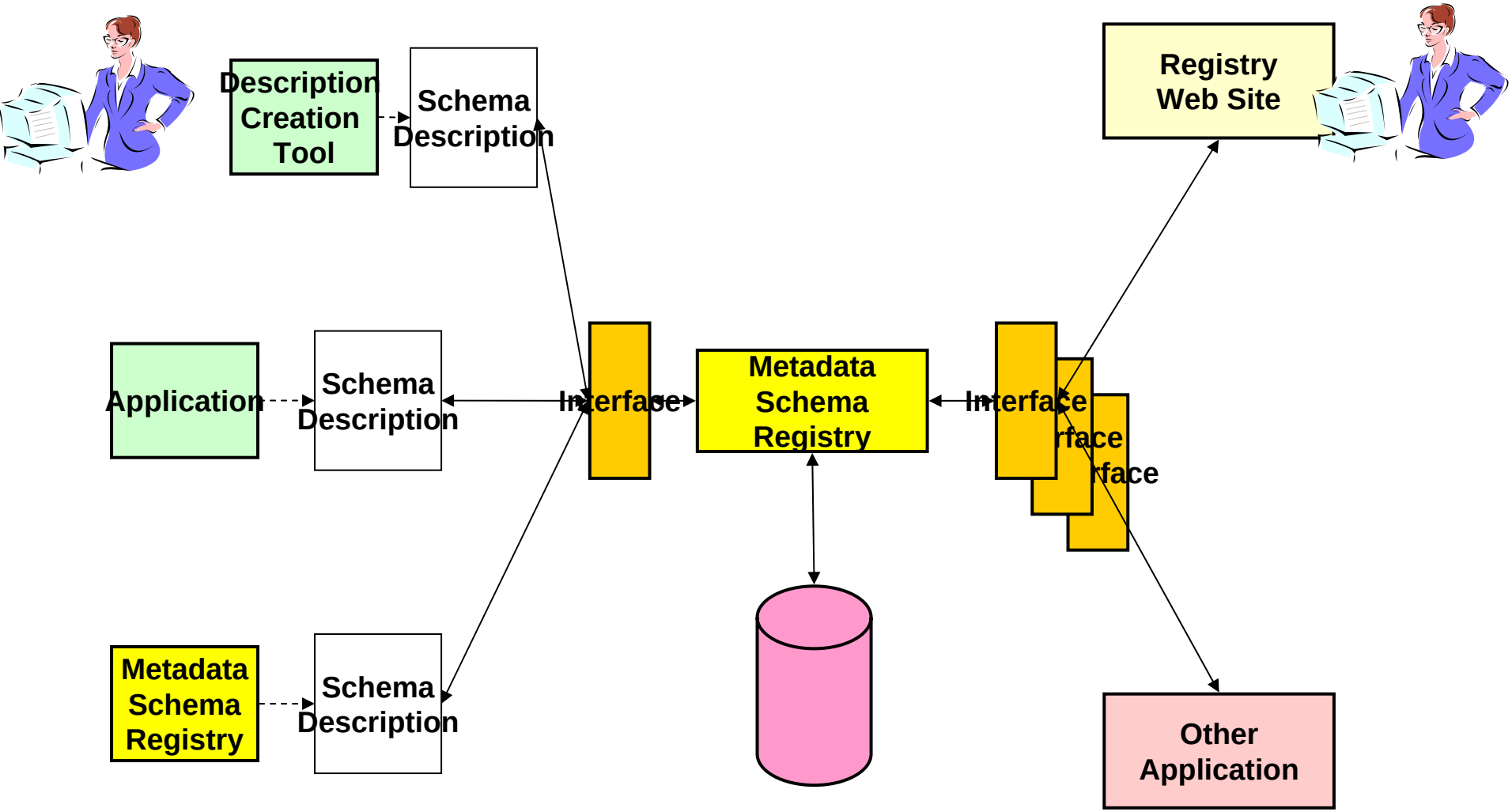
Description Creation Tool
Schema Description
Registry Web Site
Application
Schema Description
Interface
Metadata Schema Registry
Interface
Metadata Schema Registry
Schema Description
Other Application

Potential Registry Functions

- Disclosure of terms
- Discovery/selection (and re-use) of terms
- Discovery of relationships between terms
  - support for mapping, inferencing
- Pointers to related resources
  - guidelines, bindings, transformations…
- Verification of provenance/status of terms and related resources

IEMSR web interface

- However… metadata exchange in IE currently based on prior co-ordination between human data/service providers
- IEMSR also as presentational service
  - Human-readable interface ("unstructured")
  - **Disclose/discover** metadata semantics, usage
  - Promote **appropriate reuse** of existing solutions
  - **Minimise duplication** of effort
- "Metadata vocabulary portal"

IEMSR: Use Scenarios

- Content provision service discloses application profile
- Metadata schema developer explores existing implementation choices, reuses existing components
- Metadata creation tool accesses machine-readable description of selected application profile
- Aggregation or presentation service accesses information about an application profile

Examples

- OAI-DC (Simple DC) Application Profile
  - "Simple DC"
  - 15 properties of DCMES
  - All optional, all repeatable
  - Value strings
- RDN-DC Application Profile
  - Additional properties from DC Terms, RDN Terms
  - Encoding Schemes
- RSLP CD
  - Multiple resource types

Examples

- UK LOM Core
  - Usage of IEEE LOM to support disclosure/discovery/access/use of UK learning resources
- RDN LTSN LOM Application Profile
  - Disclosure/discovery/access/use
  - Record sharing between RDN and LTSN partners over OAI-PMH

IEMSR project

- Primary outputs
  - Description of requirements
  - Models for metadata application profiles
  - Pilot metadata schema registry service
  - Pilot Web site
  - Data creation tool(s) for DC & LOM implementers (plus documentation)
  - Open-source software
  - Recommendations re policy framework

IEMSR software development

- Components: Schema desktop client, registry server, registry Web interface.
- Client and registry server software based on the earlier MEG registry but with much updated data model
- Client is written in Java and uses the Eclipse SWT+JFace library to provide a natural interface across Microsoft Windows (win32), Linux (X+GTK) and OSX (Carbon)
- A development log is available from the project web site
  http://www.ukoln.ac.uk/projects/iemsr/

Open Source software development using SourceForge project

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Issues, challenges, thoughts

- Complexity of working with multiple meta-models
  - Ongoing discussions between DCMI and IEEE LOM communities
- Centralised v distributed registry services
  - IEMSR as "semi-distributed"
    - Reads/indexes data distributed on Web
    - But single point of provision of service
  - Distributed model?

Issues, challenges, thoughts

- Uses of machine-oriented registry interfaces
  - demonstrate usefulness as m2m service?
- Interaction between registry and services in information framework
  - use in combination with other components, including other shared services
- Scope/policy issues
  - which standards/profiles/terms are "in scope"?
  - authority, status, provenance, trust
  - "who says what about what"

IEMSR web site

http://www.ukoln.ac.uk/projects/iemsr/

Thank you!

Questions?