

Citation for published version:

Patel, M 2001, 'The SCHEMAS Forum Registry: Managing schemas in a multilingual Semantic Web', Paper presented at Third SCHEMAS Workshop: Managing schemas in a multilingual Semantic Web, Budapest, Hungary, 9/05/01 - 10/05/01.

Publication date:
2001

Document Version
Publisher's PDF, also known as Version of record

[Link to publication](#)

Publisher Rights
Unspecified

University of Bath

Alternative formats

If you require this document in an alternative format, please contact:
openaccess@bath.ac.uk

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



The SCHEMAS Forum Registry

Third SCHEMAS workshop
Budapest, 10-11th May 2001

Manjula Patel
m.patel@ukoln.ac.uk



Goal: Encourage publication, disclosure, sharing of schema vocabularies

Why? To enhance possibility of alignment, convergence, harmonisation both within domains and across domains



Content:

- vocabularies (various representations, RDDDL)
- metadata watch reports
- standards activity reports
- metadata activity reviews
- best practice guidelines
- pointers to projects and information about them
- other ...guided by user requirements



The Schemas Forum Registry

The [SCHEMAS](#) provides a forum for metadata schema designers involved in projects under the IST Programme and national initiatives in Europe. SCHEMAS will inform schema implementers about the status and proper use of new and emerging metadata standards. The project will support development of good-practice guidelines for the use of standards in local implementations. It will investigate how metadata registries can support these aims. The SCHEMAS Forum Registry is a collection of RDF Schemas and associated profiles that provide a database of semantics and how these semantics are used in applications around the world. This service is in early stages of development and is subject to change and periodic modification.

Search for containing the following:

Help with [searching](#) Show all registered: [Namespace schemas](#) [Application profile schemas](#)

Powered by 



EOR (Extensible Open RDF) Toolkit

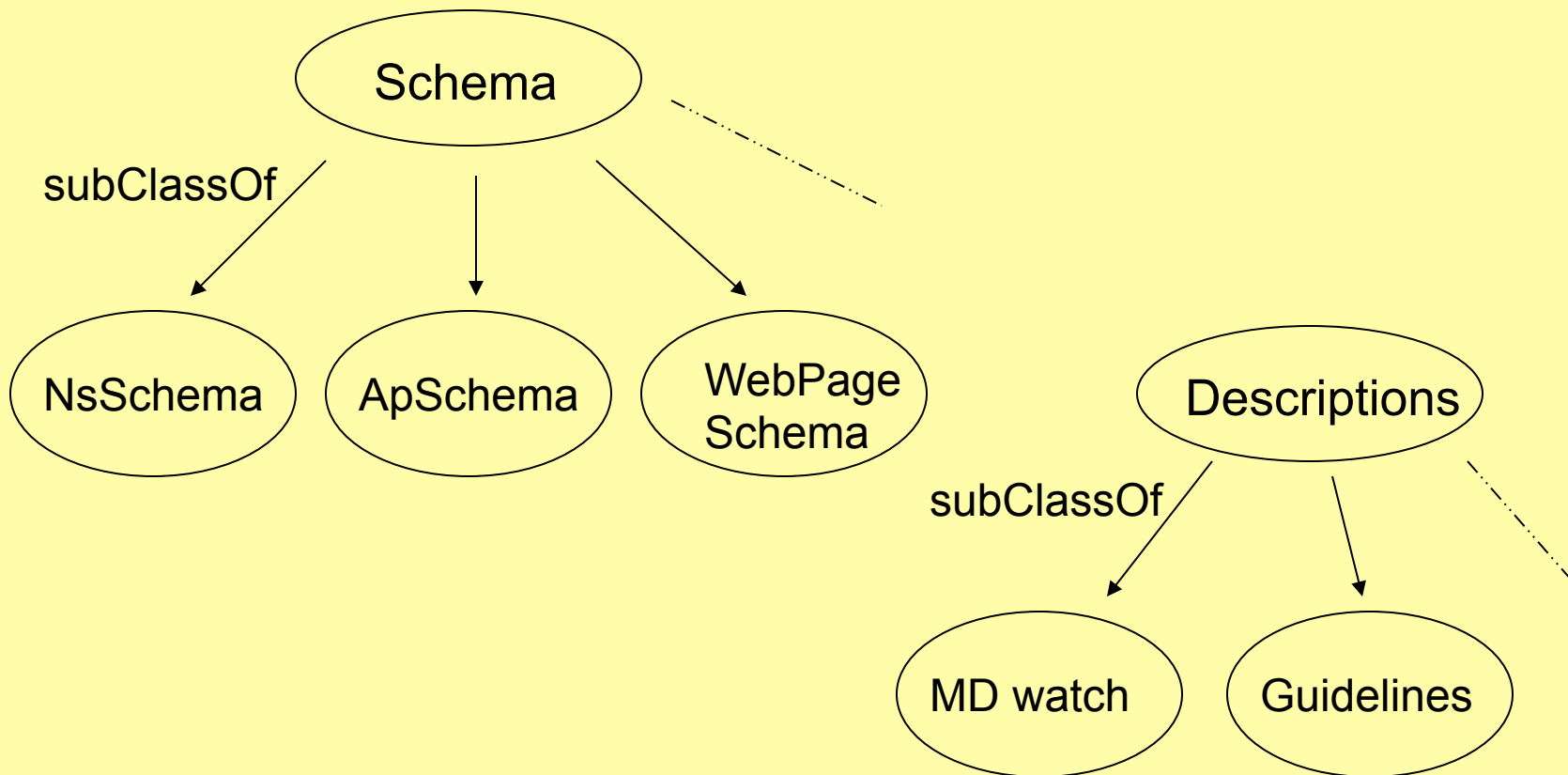
- Open source software
- Harvests RDF schemas from distributed servers on the web
- Creates central index for searching
- Schema browser -hyper-links not only between vocabularies, but between related terms

RDF Schemas

- Capability to explicitly declare semantic relations between vocabulary terms
- Machine readable, but also defines properties and classes with human readable labels and comments



Data Model





General Attributes:

title, identifier, description, date,
creator, contributor, publisher,
language, type, relation, format

NsSchema:

ApSchema:

isProfileOf, uses, label, comment

WebPageSchema:

Metadata Watch:

ActivityReport, reviewDate,
deliverable, correspondent,
expertOpinion, sector, ShortReport

Namespaces and Application Profiles



Namespaces:

Declare names and definitions of vocabulary terms
(e.g. Dublin Core standard, LCSH controlled vocabulary)

Application profiles (APs):

Data elements drawn from one or more namespaces,
and customised for a particular application

- need to declare which elements are being used
- may specify dependencies e.g. mandate schemes
- may adapt existing definitions for local purposes
- may declare rules for content (usage guidelines)
- may specify whether an element is mandatory, optional or repeatable



Example: BIBLINK vocabulary



BIBLINK vocabulary (uses DC and BC)

DC: title, contributor, identifier, publisher, format, date, subject, description, language, rights, source

BC: creator organisation, contributor organisation, checksum, frequency, edition, place of publication, system requirements

Qualifies: title (title alternate), format (extent)

Schemes: identifier (URI, URL, DOI, ISBN, ISSN, SICI), subject (LCSH, DDC, UDC, LCC)

Namespaces



EOR Toolkit: for management of knowledge - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Item # 1	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc
Title	The BIBLINK Vocabulary v1.0
Identifier	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc
Description	The BIBLINK vocabulary supports the BIBLINK project which aims to link publishers and National Bibliographic Agencies
Date	2000-08-22
Creator	http://www.schemas-forum.org/registry/Person/ManjulaPatel
Publisher	The SCHEMAS Project
Type	Namespace
Language	en-uk
Relation	http://hosted.ukoln.ac.uk/biblink/
Format	RDF/XML
type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#NsSchema
Item # 2	http://www.schemas-forum.org/registry/schemas/RSLP-CLD/1.0/cld
Title	The RSLP CLD Vocabulary v1.0
Identifier	http://www.schemas-forum.org/registry/schemas/RSLP-CLD/1.0/cld
Description	The RSLP CLD 1.0 Schema provides a set of metadata attributes for describing collections within the RSLP. It is based on An Analytical Model of Collections and their Catalogues developed previously in the project.
Date	2001-03-02
Creator	http://www.schemas-forum.org/registry/Person/ManjulaPatel
Contributor	Peter Johnston
Publisher	The SCHEMAS Project
Type	Namespace
Language	en-uk
Relation	http://www.ukoln.ac.uk/metadata/rslp/
Format	RDF/XML
type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#NsSchema
Item # 3	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes
Title	The SCHEMAS Vocabulary v1.0

XML: Namespace mechanism



```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:vCard = "http://www.w3.org/2001/vcard-rdf/3.0#">
```

...can be used to pull in multiple namespaces

Example: BIBLINK namespace



define a new term and associated semantics ...

BIBLINK vocabulary:

Edition: A statement indicating the version or edition of the resource

```
<rdf:Property ID = "edition" >
<rdfs:label> Edition </rdfs:label>
<rdfs:comment>
  A statement indicating the version or edition of the resource
</rdfs:comment>
<rdfs:isDefinedBy
  rdf:resource =
  "http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc"/>
</rdf:Property>
```



Example: BIBLINK namespace



```
<rdf:Property ID="extent">
<rdfs:label> Extent </rdfs:label>
<rdfs:comment>
  The size of the resource in bytes, number of files or CD-ROMs
</rdfs:comment>
<rdfs:subPropertyOf "http://purl.org/dc/elements/1.1/format"/>
<rdfs:isDefinedBy
  "http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc"/>
</rdf:Property>
```

...declare a local qualifier for dc:format

Dublin Core: **Format:** The format of the resource

BIBLINK : **Extent:** The size of the resource in bytes, no. files, or CDROMS



Example: BIBLINK namespace



define a scheme for identifier ...

BIBLINK vocabulary: identifier scheme: URI, URL, DOI, ISBN, ISSN, SIC

```
<rdfs:Class rdf:ID="IdentifierScheme">
  <rdfs:label> Identifier Schemes </rdfs:label>
  <rdfs:comment>
    A set of identifier encoding schemes and/or formats
  </rdfs:comment>
  <rdfs:isDefinedBy rdf:resource=
    "http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc "/>
</rdfs:Class>
```

```
<rdfs:Class rdf:ID="URI">
  <rdfs:label> URI </rdfs:label>
  <rdfs:comment> Uniform Resource Locator </rdfs:comment>
  <rdfs:subClassOf rdf:resource = "#IdentifierScheme" />
  <rdfs:isDefinedBy rdf:resource =
    "http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc"/>
</rdfs:Class>
```



SCHEMAS Application Profile format



- SCHEMAS vocabulary is still evolving
- Simple format for the publication of application profiles
- Machine processible (RDFS) and human readable
- New terms:
 - uses** -declare reuse of predefined vocabulary terms
 - label** -define a new label for an existing element
 - comment** -provides local usage guidelines

SCHEMAS Forum Registry

Application profiles



EOR Toolkit: for management of knowledge - Microsoft Internet Explorer

Item # 1	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc-ap
Title	The BIBLINK Application Profile v1.0
Identifier	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc-ap
Description	The BIBLINK vocabulary supports the BIBLINK project which aims to link publishers and National Bibliographic Agencies
Date	2000-08-22
Creator	http://www.schemas-forum.org/registry/Person/ManjulaPatel
Publisher	The SCHEMAS Project
Type	Application Profile
Language	en-uk
Relation	http://hosted.ukoln.ac.uk/biblink/
Format	RDF/XML
isProfileOf	http://hosted.ukoln.ac.uk/biblink/wp8/fs/bc-semantic.html
uses	http://purl.org/dc/elements/1.1/description
uses	http://purl.org/dc/elements/1.1/identifier
uses	http://purl.org/dc/elements/1.1/subject
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#placePublication
uses	http://purl.org/dc/elements/1.1/language
uses	http://purl.org/dc/elements/1.1/title
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#systemRequirements
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#edition
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#creatorOrganisation
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#contributorOrganisation
uses	http://purl.org/dc/elements/1.1/creator
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#price
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc#checksum
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc-ap#genid12
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc-ap#genid13
uses	http://www.schemas-forum.org/registry/schemas/BIBLINK/1.0/bc-ap#genid14
uses	http://purl.org/dc/elements/1.1/rights

Example: BIBLINK application profile



declare reuse of terms from multiple vocabs ...

From Dublin Core:

```
<smes:uses
  rdf:resource="http://purl.org/dc/elements/1.1/description"
 />
<smes:uses
  rdf:resource="http://purl.org/dc/elements/1.1/language" />
<smes:uses
  rdf:resource="http://purl.org/dc/elements/1.1/rights" />
```

From BIBLINK:

```
<smes:uses rdf:resource=
  "http://www.schemas-
    forum.org/registry/schemas/BIBLINK/1.0/bc#price"/>
<smes:uses rdf:resource=
  "http://www.schemas-
    forum.org/registry/schemas/BIBLINK/1.0/bc#extent"/>
```



Example: BIBLINK application profile



```
<smes:uses>
  <rdf:description
    rdf:about = "http://purl.org/dc/elements/1.1/title">
    <smes:comment>
      The title of the publication
    </smes:comment>
  </rdf:description>
</smes:uses>
```

...adapt the definition of dc:title

Dublin Core: Title: The title of the resource
BIBLINK : Title: The title of the publication



Example: BIBLINK application profile



mandate a scheme with a specific term ...

BIBLINK vocabulary:

identifier scheme: URI, URL, DOI, ISBN, ISSN, SICI

```
<smes:uses>
  <rdf:description
    rdf:about = "http://purl.org/dc/elements/1.1/identifier">
  <rdfs:range
    rdf:resource="bc:IdentifierScheme"/>
  <rdfs:domain
    rdf:resource="http://purl.org/dc/elements/1.1/identifier"/>
  </rdf:description>
</smes:uses>
```



SCHEMAS Forum Registry



- What about XML and validation?
- Interaction between various metadata schema registries?
- Casting a vocabulary into RDFS format requires considerable interpretation
- Input tools and templates

Conclusions



- SCHEMAS registry currently intended for simple discovery and publication
- SCHEMAS vocabulary will evolve depending on functionality requirements of the registry
- Use of RDF to enhance cross-domain interoperability as well as harmonisation within specific domains

Contact details



Manjula Patel
UK Office for Library and Information Networking
University of Bath, UK

m.patel@ukoln.ac.uk

(<http://www.schemas-forum.org/>)

(<http://www.ukoln.ac.uk/>)

SCHEMAS Forum Registry

Metadata activity watch reports



EOR Toolkit: for management of Knowledge - Microsoft Internet Explorer

type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#ActivityReport
Item # 12	http://ssdoo.gsfc.nasa.gov/nost/isoas/ref_model.html
Title	Reference Model for an Open Archival Information System (OAIS)
Identifier	http://ssdoo.gsfc.nasa.gov/nost/isoas/ref_model.html
Description	CCSDS 650.0-R-1 (Red Book, Issue 1) dated May 1999. Submitted as a Draft ISO Standard.
Type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#Initiative
Language	English
Review Date	2000-04-20
Correspondent	Michael Day
Sector	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#Academic
type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#ActivityReport
Item # 13	http://geology.usgs.gov/tools/metadata/tools/doc/mp.html
Title	FGDC Metadata Tools - Parser (mp)
Identifier	http://geology.usgs.gov/tools/metadata/tools/doc/mp.html
Description	
Contributor	Peter N. Schweitzer - pschweitzer@usgs.gov
Type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#Documentation
Language	English
Review Date	2000-01-11
Correspondent	Elise Sfeir
Correspondent	Makx Dekkers
Sector	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#Geospatial
type	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#ActivityReport
Item # 14	http://www.leeds.ac.uk/cedars/
Correspondent	Michael Day
Expert Opinion	
Sector	http://www.schemas-forum.org/registry/schemas/SCHEMAS/1.0/smes#Academic