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Forum for Metadata Schema Implementers

D42: SCHEMAS SECOND WORKSHOP REPORT

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1. Introduction

This document reports on the second SCHEMAS workshop which was held in Bonn, Germany, on 23-24th November 2000. The theme of the two-day workshop was "*Publishing and sharing your metadata application profile"*. The number of delegates registered was 51 including partners in the SCHEMAS project, however the actual number of participants who were able to attend the workshop was 41.

2. Aims of the Workshop

Implementation projects generally find that no one metadata standard will completely meet their descriptive needs. General standards such as Dublin Core must often be used alongside domain or sector specific standards such as MPEG-7 for multimedia and IEEE/LOM for educational resources; and new elements may be needed for local needs not covered by any of the existing standards. Recent practice distinguishes between the definition of semantics in "namespaces" (i.e. official standards) and the reuse and interpretation of those semantics in "application profiles". Application profiles are schemas that combine elements from multiple standards, perhaps with application-specific constraints such as the use of a specific controlled vocabulary[1,2].

The workshop aimed to present the state of the art in constructing and publishing an application profile and how it may be declared in XML/RDF, especially in light of new metadata harvesters that support the indexing and browsing of standards and application profiles located on multiple Web servers.

One of the objectives was that participants in the workshop would gain an understanding of the conceptual issues involved in ongoing debates about application profiles and come away with concrete guidelines for creating and publishing profiles for their own projects.

Apart from the specific issues addressed in the workshop, the event provided an opportunity for metadata schema developers from a wide range of domains to meet and discuss common problems and interoperable solutions.

3. Programme

The programme for the workshop, as well as the original call for participation can be found on the SCHEMAS website[3].

The workshop took the form of introductory presentations relating to the SCHEMAS project, application profiles and RDF (Resource Description Framework)[4]. These were followed up by four main case studies based on the EULER[5], MathNet[6], DCMI Education[7] and EIONET[8] projects. The programme also catered for exposure to several other case studies including the Danish National Library Authority[9] and the Trial-Solution[10] which were presented by delegates attending the workshop.

Following the presentations, case studies and open discussions, three break-out sessions were held during which participants split up and discussed issues relating to application profiles and metadata schema registries. The groups later reported back with a summary and conclusions to the plenary session.

The presentations and related materials given out during the workshop can be found linked in from the workshop programme.

4. Demonstration of a prototype Registry

A prototype metadata schema registry was presented during the workshop based on the EOR toolkit[11].

Although the registry is in its initial stages it was possible to demonstrate the concepts of a working registry; examples shown included: a description of a project, a description of a working group, an expert review, the definition of a vocabulary term, the entire vocabulary where that term was defined and its source (in RDFS[12]) as well as the schema for the registry itself.

5. Summary/conclusions from break-outs and open discussions

In depth discussions took place with regard to the functionality and organisation of a registry for schemas and application profiles.

5.1 Scope of the registry

Should the registry accept any schema or should there be some selection/acceptance criteria? What should these criteria be? see 5.2 Quality assurance

It was agreed that the registry should cater for several types of schemas: namespaces, application profiles and controlled vocabularies.

Other additional data that would be useful for finding schemas include: descriptions of activities and schemas, with links to applications, such as a web page describing the application, reviews and annotations.

5.2 Quality assurance

There was a consensus that there need to be minimum requirements to ensure the quality of the information provided by the registry. As a minimum, the descriptions of the schemas registered should have:

- descriptive information about the schema, including its subject area and genre
- it must be clear who is the developer of the schema for credibility as well as contact information
- the schema must be well-formed in terms of syntax (XML/RDF)
- the schema must comply with the definition of an application profile
- there must be some indication of the status of the schema e.g. draft, recommendation

5.3 Crosswalks

Are crosswalks/mappings essential to the functionality of a registry? If so, who should perform the mapping the developer of the schema or the registry coordinator?

5.4 Version control

Both, namespace schemas and application profiles have a tendency to evolve over time. The registry should cater for this by incorporating version control into the registry.

5.5 Relationships between application profiles

Some mechanism is required to record the relationships between various application profiles. This would enable a user to search for all application profiles that assert a relationship to another profile.

5.6 Context of use of elements

Where should one record the context of use of each element in a registry, as part of an annotation or elsewhere?

5.7 Semantic drift

The danger of "semantic drift" within a hierarchy of application profiles -e.g. basing usage on particular adaptations of element definitions. The need to maintain secure links to namespace definitions rather than adapt application profiles.

5.8 Descriptions of schemas

As well as the criteria listed for quality assurance (5.2), the metadata for the schemas should cover the following:

- Type of schema -application profile, namespace, controlled vocabulary
- Level of application -cross-domain, domain, local
- Reviews
- Annotations
- Links to applications or descriptions of applications where used
- Language of the schema
- Information about the aims of the activity for which the application profile was produced. The reason for creation of the profile. Specific reasons behind the selection of each element and the reason why it was chosen from a specific namespace
- Date of creation
- Rights, restrictions on use
- Project URL

5.9 Purpose of the registry

The following were listed as functionalities that would be expected of a schema registry:

- to be able to find elements that have been defined already
- to be able to find information about who defined those elements
- should be able to use application profiles to find projects
- should be able to use projects to find application profiles
- to provide a glossary
- to provide usage guidelines
- popularity of use, with links to application that make use of the schema/elements

6. Training Materials

The materials collected during the workshop, which included presentations and conclusions from the break-out sessions, form the initial set of training materials resulting from the second workshop. These may later be enhanced under work package 7 which is concerned with the provision of training materials.

7. Costs Incurred

The costs of the workshop were within the allocated budget.

8. Conclusions from the Workshop

The presentations and case studies served to bring out some important issues for discussion. A good discussion focusing on application profiles is presented by Makx Dekkers[13] in an article for the electronic journal, Cultivate Interactive.

It was apparent that the concept of an application profile was relatively new in most domains. It was clear from Metadata Watch Report No.3[14] that most activities within the various domains were diverse in nature and that no detailed standards existed for interoperable metadata within domains.

The idea that a metadata schema registry could help harmonisation within and across domains was the underlying theme of the workshop. This could be achieved by projects publishing and sharing their schemas in the form of application profiles. However, it should be noted that creators of schemas are less concerned with producing application profiles than with producing services. Projects would need tools to help them to generate schemas in RDFS and register them into the SCHEMAS registry.

The particular characteristics of application profiles as opposed to namespace schemas were clarified as the workshop progressed. Also, there is a hierarchy of application profiles ranging from cross-domain (e.g. DC[15]) to domain-specific (e.g. DCMI-Education[7], IEEE/LOM[16]) to local schemas for a particular application (e.g. MathNet, EULER, The Trial-Solution).

The SCHEMAS project has decided to make use of the EOR Toolkit[11] as the basis for implementing a metadata schema registry. A major advantage of this software is that supports the harvesting, indexing and browsing of schemas expressed in RDFS. Thus project schemas published in RDFS could be easily harvested and indexed by the SCHEMAS registry for machine processing as well as being presented in human readable form. It was however acknowledged that schema developers would require help in the form of tools to enable them to produce RDFS encodings of their application profiles.

9. Concluding Remarks

Feedback during the workshop and through evaluation forms indicate that the workshop was successful in providing a forum in which people with similar interests and problems could undertake valuable discussions and learn from each other.

Amongst the most useful aspects cited were: learning how other people are approaching common tasks, the exchange of ideas, developing the idea of application profiles and learning the importance of metadata, RDF and interoperability for new comers to the area.

Aspects which people felt could be improved included: break-outs could be longer and earlier in the programme, the topics of the break-outs were felt to have too much overlap and there could have been a better match between the announced and actual break-out sessions.

For future workshops, participants suggested that the following would be useful: more case studies and practical examples, further implementation details, a tutorial on RDF/RDFS and a prototype registry to experiment with.

Overall the content, organisation and venue were rated as being between excellent and good.

It was agreed during the workshop that all participants would be subscribed to the schemas-forum mailing list, which will help in keeping up and following discussions raised at the workshop, as well as strengthen contacts made during the workshop.

10. References

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http://purl.org/dc/groups/education.htm

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