SWAD-Europe Deliverable 3.6: Developer Workshop Report 1 – EARL and Image annotation

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Abstract:
> This report summarises the first developer workshop, held in Bristol on 24-26 June 2002. The workshop explored the EARL RDF vocabulary under development at W3C, and the topic of image annotations.

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> First version published 2002-08-01. This version 2002-08-31. This report may be updated over the life of the SWAD-Europe Project to link to new work emerging on the topics of the workshop.

Contents

Executive Summary

This workshop brought together developers and users who were in many cases working simultaneously on two areas: the EARL vocabulary for recording evaluations of conformance; and annotation of images.

The workshop was co-hosted by the W3C's Evaluation and Repair Tools Working Group, who are developing EARL, and held in Bristol over the three days 24, 25 and 26 June 2002. The first two days were devoted to the topic of EARL, and the final day to the topic of image annotation. Participants were mostly from Europe, with some participation from Australia and remote participation from the USA

The EARL part of the workshop produced the following outcomes:

- Bringing together developers, early users, and potential large-scale users to discuss practical issues in implementation and use of EARL
- New use case scenarios, and consequent requirements, for EARL
- A modified EARL schema
- Further development of tools based on discussion at the workshop, including
  - Page Valet (Webthing, UK)
  - MUTAT (W3C/INRIA, France)

- An EARL database store (W3C)

The image annotation workshop had the following outcomes:

- A survey of some existing annotation systems based on Semantic Web technology
- Exploration of large-scale use cases (inside and outside Europe)
- Development of existing image annotation work to cover multimedia
- Further development of tools for image annotation, including
  - CoDepiction tool (jibbering.com, UK)
  - RDFPic (W3C/INRIA, France)
- Ongoing discussion of uses for annotated images, and of techniques and tools

1 Introduction

This report is part of the ☞SWAD-Europe project ☞Work package 3: Dissemination and Implementation.

Standards - The areas investigated in this workshop are "pre-standardisation". In other words, although there is some sentiment for using existing standards and for more standards in the relevant areas, there is not yet standardisation of the schemes and vocabularies used. Each topic builds on existing standards, most particularly RDF.

In the case of EARL, the workshop represents an important step in standardising an RDF vocabulary for assessment of conformance, by bringing together implementors and users to discuss practical issues arising from use of the existing specification proposals. The workshop has lead to new specification proposals, which have been implemented and further refined.

2 Background

A short list of ☞background reading for workshop participants is available.

EARL - The Evaluation and Repair Language (EARL) has been under development by the W3C. It is meant for recording the results of conformance assessments. A particular use case is recording accessibility assessments of Web content, for use in Quality Assurance control during development and maintenance. The use cases for EARL require that information can be recorded about a document which changes, and that provenance can be recorded for information recorded by different individuals or tools, or recorded on different dates or for different versions of the same resource.

Further information on EARL is available from the ☞W3C's EARL page.

Image Annotation - Several systems have been developed for annotating image content, for several different use cases. In particular resource discovery, searching through information which is in graphic form, and providing alternative representations to people with disabilities, have given rise to annotation systems and databases.

Related work - This project has two other surveys that cover related areas to semantic web data storing. The first has already been mentioned ☞SWAD-Europe Deliverable 10.2 Mapping data from RDBMS which will be a more detailed look into the schemas used for RDBMS with recommendations. The second is the ☞SWAD-Europe WP 7 Deliverable 7.2 - Report comparing existing RDF query language functionality which also influences the requirements on underlying stores.

3 Workshop

The workshop was conducted and simultaneously minuted in IRC, to enable remote participants. The raw IRC records for ☞24 June, ☞25 June and ☞26 June are available, as well as a ☞summary of the first two days, and a ☞summary of the final day. Workshop participants came from Europe and Australia, with remote participation from Europe and the United States, with the following organisations represented

- e-Media
- Hewlett-Packard
- Motile P/L (Australia)
- Peepo.com

- Royal National Institute of the Blind
- University of Bristol
- University of Southhampton
- UsableNet
- Webthing
- W3C

4. Outcomes

EARL - At the workshop itself substantial simplification of the EARL schema was proposed. This led to a new draft schema being developed by the Evaluation and Repair Tools working group, who are developing EARL. New use cases developed at the workshop have given rise to better-defined requirements. The scope of EARL, and of a test description language which has been discussed as potentially related work, have been better defined.

Following the workshop, as a direct result of work taken on by participants, a new RDF database has been provided for storing EARL annotations. New versions of ☞Accessibility Valet, an accessibility testing tool, and ☞MUTAT, a generalised testing tool producing EARL, have been released.

Since the workshop, but not necessarily as a result of it, more commercial tools have announced their support for EARL, based on development versions. An important factor appears to be that using RDF ensures that tools will be able to work with legacy EARL content even when the specification of the vocabulary has changed.

Image annotations - A number of tools and systems were presented.

☞Amaya
> A browser/editor for the Web which has been developed by W3C/INRIA. This tool includes a user interface for annotations which can be made on SVG images or parts of the image.

☞Annotea
> A protocol for annotations on Web content, using RDF. The project includes development of a server, a client implementation in Amaya, and the protocol itself.

☞Image filtering tools.
> Developed by Dan Brickley, this is a small set of tools that integrate annotations identifying objects with filtering algorithms to provide highlighting (or anonymisation by blurring) of regions of pictures identified according to user defined schemes.

Jibbering.com FOAF tools
> Developed by Jim Ley of e-Media / Jibbering.com, these are a group of tools for ☞annotating images with metadata and then ☞using annotated images. One feature of these tools is the ability to store path information in RDF that can be used to generate images in SVG format based on regions of the originally annotated image.
> As a result of the workshop, these tools have been updated

☞Jibbering.com SVG Whiteboard
> Also developed by Jim Ley, this is a shared whiteboard developed in SVG. It potentially allows for annotation of objects on the whiteboard, and is therefore an important step in developing accessible versions of collaborative graphics-based tools.
> As a result of the workshop this tool has been discussed by the W3C's Authoring Tool Accessibility Guidelines working group as a model for accessible collaborative graphics tools.

☞RDFPic
> A tool developed by W3C/INRIA for adding RDF metadata directly to images. This tool has a corresponding module developed which allows the Jigsaw server to accept requests for RDF or JPEG formats and serve the appropriate format from a single JPEG image.
> As a result of the workshop this tool has been updated to support adding RDF path information that can be used to generate SVG defining regions, for example to use with FOAF tools

☞RDFWeb CoDepiction tools
> Developed by Dan Brickley, Libby Miller, and Damian Steer, these are an RDF vocabulary and a suite of web-based services for describing information relating people who appear together in photographs. They include a system for generating metadata about the people depicted in an image, a database which collects references to such information, and tools which query the information using the Squish query language.

Synergies - A number of useful outcomes resulted from having two different topics discussed at the same workshop. Although many participants were already developing in both areas, there were some useful insights gained. In addition there were some specifically useful outcomes which were possible because there were people from differing backgrounds together.

As mentioned above in outcomes from the image annotation part of the workshop there has been some important development work that has since been highlighted for the international Accessibility community - in particular the development of accessible "shared whiteboards" and tools for producing photo-realistic animation.

The development of a database designed for EARL annotations can also be used to house annotations made about images, providing another data source for testing scalability, storage, and querying systems, as well as a useful piece of infrastructure for further work on image annotations.

Appendix A Projects and Tools

☞Accessibility Valet

An accessibility evaluation service which produces EARL as one of its report formats. This is part of the Site Valet suite of tools developed by ☞WebThing (UK)

☞Amaya

A browser/editor for the Web which has been developed by W3C/INRIA. This tool includes a user interface for annotations which can be made on SVG images or parts of the image.

As a result of the workshop, further suggestions for improvements to the image annotation functionality have been made, and are expected to be incorporated into the Amaya development plan.

☞Image filtering tools.

Developed by Dan Brickley, this is a small set of tools that integrate annotations identifying objects with filtering algorithms to provide highlighting (or anonymisation by blurring) of regions of pictures identified according to user defined schemes.

☞Jibbering.com EARL tools

An EARL store, and some client software.

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☞MUTAT

This is a platform for running test suites, which uses RD to describe a test suite and produces results in EARL

☞RDFPic

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☞RDFWeb EARL query

A web-based service which can query EARL information and return results according to a template which the user can edit.