SWAD–Europe Deliverable 12.2
RDF–based annotation systems

Project name:
Semantic Web Advanced Development for Europe (SWAD-Europe)

Project Number:
IST-2001-34732

Workpackage name:
12.2. Annotations demonstrator

Workpackage description:
http://www.w3.org/2001/sw/Europe/plan/workpackages/live/esw-wp

Deliverable title:
12.2.2: Annotation Demonstration Server Report

URI:
http://www.w3.org/2001/sw/Europe/reports/annotation_demo_server

Authors:
Charles McCathieNevile, W3C

Abstract:
This report surveys the state of semantic web systems to support annot
commenting on documents by people or agents who need not have any
form of the document.

Status:
First version published 2002-12-03. This is a completed report, last up
This document may be updated during the life of the SWAD-Europe
further developments in this area.

Comments on this document are welcome and should be sent to
c list, archived at http://lists.w3.org/Archives/Public/public-esw/
annotation techniques and especially Annotea should be sent to
www-annotation@w3.org, archived at http://lists.w3.org/Archive

Contents

1 Introduction
2 Background
3 Annotea Protocol
4 Implementation
5 Collaboration
6 Future Work
7 Outcomes
8 Frequently Asked Questions (FAQs)
A References - Publications
1 Introduction

This report is part of SWAD-Europe Work package 12.2: Annotations the scope, features and purpose of tools for annotating or commenting on systems that are licensed as Free Software or Open Source.

For those in a hurry: go straight to the FAQs section

Scope - This report covers annotation systems known to be using the systems developed for the SWAD-Europe project and others developed independently that appears to be closely related.

Terminology -

Annotation
This term is used to describe information which is explicitly comment which can be discovered by some method using that resource as a key. It include the use of the rel="rev" attribute to describe links in HTML. It allow for flexible storage options and sophisticated lookup.

Annotea
Annotea is used in this document to refer to the Annotea protocol development is occasionally also used to refer to the user interface for that protocol for some servers for that protocol.

2 Background

The Web as deployed today provides a simple, powerful system for making links and services. These links are one-way - from some information describing itself. This has proven to be extremely useful, but it is difficult to search such systems keeping large tables of data. The Semantic Web consists primarily of machine-processable data designed for aggregation. In each case, finding information from that resource has proven difficult.

Several annotation systems have been implemented in the Web. Early approaches included collecting Web pages (still done by organisations like Google, but impractical for most). In principle, the attribute rel="rev" was allowed to be attached to a link in a document, indicating resources that described or linked (forward) to the document. This principle allows for harvesting, but again, scale is a problem in implementing this approach.

More recent services for providing specific types of annotation (reviews, for example) have proven to be successful in enabling lookup of annotations annotate as a key in limited circumstances. These annotations have normally within a closed system.

W3C has been developing the Annotea protocol, and clients and servers for that protocol have been developed.
3 Annotea protocol

The Annotea protocol is in development within W3C as an advanced development project. Since this is considered pre-standardisation it is not being developed as a W3C standard project, rather as a demonstration.

The protocol [PROTOCOL] is documented, and is implemented in Amaya client, and as a module for Apache servers.

The protocol was chosen for this project because it is based on RDF, at the context of W3C. Different open source implementations for many parts are available, which makes it a good framework for developing interoperable applications.

4 Implementation

Some further development of tools has been undertaken as part of the SWA annotations, leading to a library of tools [ANNOTOOLS] for use within the protocol. These include utility functions which can be incorporated into simple models for copying. They are open source, available under the terms of the W3C software copyright license [LICENSE], a BSD-style license.

The MUTAT evaluation tool [MUTAT] was adapted to use Annotea as a storage and retrieval system, working with the experimental EARL server provided by W3C.

A more complete list of known implementations [IMPLEMENTATIONS] is maintained by the Annotea project at W3C with the assistance of this project.

5 Collaboration

Other implementation of Annotea-based systems has taken place both within Europe and elsewhere.

An experimental Annotea aggregating query server was developed, in work funded by the SWAD-E project. Currently the source code is available under the GPL license, a GPL-licensed HTTP server.

Work has been done collaborating with European developers of Annotea, in particular in the use of EARL, an RDF vocabulary for supporting quality assurance processes. Work has been done collaborating with developers and W3C’s Web Accessibility Initiative has taken advantage of Annotea.

The ZAnnot server was packaged for easy installation under Mac OS X using the fink project, with simple ZAnnot installation instructions provided for.

This project has funded some European participation in the Annotea project.

6 Dissemination

As part of this project the use of Annotea was presented as an option for
EARL, and for annotating images, at the workshop on EARL and Image annotation held in Bristol in June 2002.

Using W3C’s public annotation list [WWW-ANNOTATION] discuss Annotea and annotation systems in general, and leveraging the properties provide for more powerful and flexible approaches integrated with the wider SWAD-E resources have been used within W3C to ensure that European the documentation produced by the Annotea project.

7 Future work

Development work is being undertaken on incorporating Annotea into software. The project W3C is assisting the supervision of open-source student projects using Annotea for adding value to tools for improving the knowledge management incorporating Annotea into an open source accessibility evaluation tool.

8 Outcomes

- Tools which can be used for testing the interoperability of Annotea-based systems.
- Improvements to existing Annotea servers based on testing.
- Assistance provided for development of several tools using Annotea.
- A small library of simple code, available for incorporation in other projects.
- Dissemination of information about Annotea and promotion of Web as important bases for annotation systems.

9 Frequently Asked Questions (FAQ)

What software is available for Annotea?

A list of known software [IMPLEMENTATIONS] is maintained by the Annotea servers and Annotea clients.

What platforms do Annotea clients run on?

Clients are available for a number of platforms. Amaya is distributed in Linux, and available for many other variants of Unix including OS X. There for use within a Javascript-capable Web browser. The tools developed [ANNOTOOLS] run in Ruby, a language that can easily be installed Windows and Unix-based platforms.

What servers are available?

There are open source Annotea servers written in PERL for Apache, and in
There is also a query server written in ruby - it does not accept annotations, from multiple servers. There is a list of known servers [IMPLEMENTAT the Annotea project.

**How do I extend the protocol?**

Because the Protocol is in RDF it can be readily extended. An example i Annotea project to provide threaded replies to annotations. The reply general the documentation of the protocol [PROTOCOL], but uses a i annotations [ANNOEA-R] developed for this extension.

**Where do I find the Protocol and Schemas?**

The protocol [PROTOCOL] is documented (with links to the schemas) as |

---

**References**

Annotation tools, specifications and documents -

[ANNOEA-R]
The Schema for threaded annotations, developed to allow for thread http://www.w3.org/2001/03/thread

[ANNOOOLS]
A small library of tools developed for use with the Annotea protoc people wanting to develop their own tools. These tools are described a http://www.w3.org/2001/sw/Europe/200209/annodemo/readme.html

IMPLEMENTATIONS
A list of known Annotea Implementations is maintained by W3C's . http://www.w3.org/2001/Annotea/#Comp

[MUTAT]
The Open Source MUTAT tool is designed to provide an interview-producing conformance reports in the EARL [EARL] format. It ha the reports to be posted as annotations to an anotea server. An online available at http://www.w3.org/QA/Tools/MUTAT/

[PROTOCOL]
The Annotea protocol is documented at http://www.w3.org/2001/A:

[WWW-ANNOTATION]
The www-annotation@w3.org mailing list is a public discussion forur including Annotea. Its archives (including instructions for subscribi http://lists.w3.org/Archives/Public/www-annotation/

Other references -

[EARL]
EARL (The Evaluation and Reporting Language) is a specification in
Evaluation and Repair Tools group. It is an RDF vocabulary for expressing arbitrary requirements. The Latest published draft is available at http://[LICENSE]
The W3C Software Copyright license is a BSD-style license allowing in open-source or proprietary products with appropriate acknowledgement available at http://www.w3.org/Consortium/Legal/copyright-software