W3C Semantic Web Activity

The **Semantic Web** provides a common framework that allows **data** to be shared and reused across application, enterprise, and community boundaries. It is a collaborative effort led by W3C with participation from a large number of researchers and industrial partners. It is based on the Resource Description Framework (RDF). See also the separate FAQ for further information.

Introduction

The Semantic Web is a web of data. There is lots of data we all use every day, and it is not part of the web. I can see my bank statements on the web, and my photographs, and I can see my appointments in a calendar. But can I see my photos in a calendar to see what I was doing when I took them? Can I see bank statement lines in a calendar?

Why not? Because we don't have a web of data. Because data is controlled by applications, and each application keeps it to itself.

The Semantic Web is about two things. It is about common formats for integration and combination of data drawn from diverse sources, where on the original Web mainly concentrated on the interchange of documents. It is also about language for recording how the data relates to real world objects. That allows a person, or a machine, to start off in one database, and then move through an unending set of databases which are connected not by wires but by being about the same thing.

Specifications (Recommendations and Notes)

You may want to look at the collection of SW Case Studies and Use Cases to see how organizations are using these technologies today. For links to various technologies, references to tools and specifications, please refer to the Semantic Web Standards Wiki.

Publications / Articles / Interviews

The following is a partial list of various publications and or interviews by the W3C Staff that help explain the goals and objectives of the Semantic Web.

Further links

On this page: Specifications | Publications | Presentations | Current Groups | Past Groups

Latest news: See the activity weblog

Community wiki: See the activity weblog

Latest "layercake" diagram: in SVG, PNG, and small sized (300×315) PNG formats.

Active Groups: Semantic Web Coordination Group | Rules Interchange Format Working Group | RDB2RDF Working Group | RDFa Working Group | SPARQL Working Group | Health Care and Life Sciences Interest Group | Semantic Web Interest Group

Completed Groups: OWL Working Group

Past Groups: Best Practices and Deployment Working Group | RDF Core Working Group | Web Ontology Working Group | Education and Outreach Interest Group | POWDER Working Group | Semantic Web Deployment Working Group | GRDDL Working Group

Related Groups at W3C: Semantic Sensor Network Incubator Group | Social Web Incubator Group | Provenance Incubator Group | Linking Open Data Community

- "Tim Berners-Lee and Tim O'Reilly", Web 2.0 Summit 09 discussion (October 2009).
- Interview with Tim Berners Lee at a technology symposium at the Embassy of Finland in Washington, (October 2009).
- "Ivan Herman discusses the Semantic Web Activity at the Word Wide Web Consortium", ZDNet Podcast Interview with Paul Miller (April 2009); listen to the podcast on-line or download the interview.
- "Sir Tim Berners-Lee Talks About the Semantic Web", Transcript of the Podcast Interview with Paul Miller (February 2008); the sound version can also be accessed on-line.
- The Semantic Web in Action, by Lee Feigenbaum, Ivan Herman, Tonya Hongsermeier, Eric Neumann, and Susie Stephens, Scientific American, 297(6), pp. 90-97, (December 2007).
- The Semantic Web, Scientific American, May 2001, Tim Berners-Lee, James Hendler and Ora Lassila.

Project | Media Fragments Working Group | Media Annotations Working Group

Nearby: SW FAQ | Use Cases and Case Studies | "Business Case for the Semantic Web" | List of Tools | On-line validators | List of Books | Semantic Web Logos and Buttons

Activity RSS feeds: Activity news | W3C QA blog | FAQ | SW Use Cases and Case Studies

See the archive for earlier entries on this list.

Presentations

Details of recent and upcoming Semantic Web related talks, given by the W3C Staff, the staff of the W3C Offices, and members of the W3C Working Groups are available separately. A list of *all* Semantic Web related talks since 2004 is also available. References to a *small* subset of these presentations are provided here for convenience.

- 2010-06-22, Introduction to Semantic Web Technologies (tutorial), Ivan Herman, 2010 Semantic Technology Conference in San Francisco, CA, USA
- 2010-06-17, A year on the Semantic Web @ W3C, Ivan Herman, Seattle Semantic Web Meetup in Seattle, WA, USA
- 2010-02-04, The Year Open Data Went Worldwide, Tim Berners-Lee, TED University 2010, in Long Beach, California, USA. The talk is also available on video.

Groups

The following groups are part of the Semantic Web Activity.

Active Groups

Semantic Web Coordination Group

The Semantic Web Coordination Group is tasked to provide a forum for managing the interrelationships and interdependencies among groups focusing on standards and technologies that relate to this goals of the Semantic Web Activity. This group is designed to coordinate, facilitate and (where possible) help shape the efforts of other related groups to avoid duplication of effort and fragmentation of the Semantic Web by way of incompatible standards and technologies.

Rules Interchange Format Working Group

This Working Group is chartered to produce a core rule language plus extensions which together allow rules to be translated between rule languages and thus transferred between rule systems.

The Working Group will have to balance the needs of a community diverse including Business Rules and Semantic users Web specifying extensions for which it can articulate a consensus design and which are sufficiently motivated by use cases.

RDB2RDF Working Group

The mission of the RDB2RDF Working Group, is to standardize a language for mapping relational data and relational database schemas into RDF and OWL, tentatively called the RDB2RDF Mapping Language, R2RML.

RDFa Working Group

The mission of the RDFa Working Group, is to support the developing use of RDFa for embedding structured data in Web documents in general. The Working Group will publish W3C Recommendations to extend and enhance the currently published RDFa 1.0 documents, including an API. The Working Group will also support the HTML Working Group in its work on incorporating RDFa in HTML5 and XHTML5.

SPARQL Working Group

Formerly known as RDF Data Access Working Group, it developed the SPARQL Query Language recommendation published in January 2008. The group is currently chartered to make small updates to the SPARQL specification that have been identified as users and implementers as feasible and useful extensions.

Semantic Web Interest Group

The Semantic Web Interest Group is a forum for W3C Members and non-Members to discuss innovative applications of the Semantic Web. The Interest Group also initiates discussion on potential future work items related to enabling technologies that support the Semantic Web, and the relationship of that work to other activities of W3C and to the broader social and legal context in which the Web is situated.

Semantic Web Health Care and Life Sciences Interest Group

The Semantic Web Health Care and Life Sciences Interest Group is designed to improve collaboration, research and development, and innovation adoption in the health care and life science industries. Aiding decision-making in clinical research, Semantic Web technologies will bridge many forms of biological and medical information across institutions.

Completed Groups

The following groups have completed their deliverables and are no longer expected to hold regular meetings.

OWL Working Group

The mission of the OWL Working Group, is to produce a W3C Recommendation that refines and extends the 2004 version of OWL. The proposed extensions are a small set that: have been identified by users as widely needed, and have been identified by tool implementers as reasonable and feasible extensions to current tools.

Past Groups

RDF Core Working Group

The RDF Core Working Group was chartered to consider update to the RDF Model and Syntax Recommendation, and to a few revisions to the RDF Schema specification.

Web Ontology Working Group

The Web Ontology Working Group was chartered to build upon the RDF Core work a language for defining structured web based ontologies which will provide richer integration and interoperability of data among descriptive communities.

Semantic Web Deployment Working Group

The mission of this Working Group is to provide guidance in the form of W3C Technical Reports on issues of practical RDF development and deployment practices in the areas of publishing vocabularies, OWL usage, and integrating RDF with HTML documents.

This group is also responsible for the development of the RDFa and SKOS specifications.

Semantic Web Best Practices and Deployment Working Group

The focus of the Semantic Web Best Practices and Deployment Working Group was to provide hands-on support for developers of Semantic Web applications.

Semantic Web Education and Outreach Interest Group

The Semantic Web Education and Outreach Interest Group (SWEO) was chartered to collect proof-of-concept business cases, demonstration prototypes, etc, based on successful implementations of Semantic Web technologies, collect user experiences, develop and facilitate community outreach strategies, training and educational resources.

POWDER Working Group

The mission of the Protocol for Web Description Resources (POWDER) Working Group is to develop a mechanism through which structured metadata ("Description Resources") can be authenticated and applied to groups of Web resources. This mechanism will allow retrieval of the description resources without retrieval of the resources they describe.

GRDDL Working Group

The mission of this Working Group was to complement the concrete RDF/XML syntax with a mechanism to relate other XML syntaxes (especially XHTML dialects or “microformats”) to the RDF abstract syntax via transformations identified by URIs.

W3C staff assigned to the W3C Semantic Web Activity are: Harry Halpin, Sandro Hawke (see also private blog), Ivan Herman (see also private blog), Eric Prud’hommeaux, Dave Raggett (see also private blog), and Ralph Swick

Ivan Herman, (W3C) Semantic Web Activity Lead, <ivan@w3.org> 2010-02-06

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