D 1.4.3 Report on fourth international technology show

Coordinators: Ian Blacoe (UniLiv) and Valentina Tamma (UniLiv)
Contributors: Luigi Ianonne (UniLiv) and Roberta Cuel (UniTN).

Abstract.
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The aim of the workpackage 1.4 within the network of excellence Knowledge Web is to promote ontology technology and to show the added value resulting from the use of semantic web technology. The work carried out in this workpackage has the objective of creating awareness of how semantic web technologies can become the vehicle enabling organisations to deliver new products and services. This final deliverable reports on the two main ways in which this task has been pursued. The first way to promote technology developed under the umbrella of the Knowledge Web activities is a virtual technology show. The virtual technology show is part of the dissemination effort carried out by the industry area, and it consists of a repository of information regarding semantic web tools and applications. The other main way in which the task objective is achieved is through the organisation of *technology shows.* That is, events aimed at a wider audience, composed by industrial organisations, public institutions and major IT players, where different tools and applications, partly developed within Knowledge Web, are presented in order to provide efficient support to a faster take up of these technologies by industry.

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Knowledge Web Consortium

University of Innsbruck (UIBK) – Coordinator
Institute of Computer Science,
Technikerstrasse 13
A-6020 Innsbruck
Austria
Contact person: Dieter Fensel
E-mail address: dieter.fensel@uibk.ac.at

École Polythechnique Fédérale de Lausanne (EPFL)
Computer Science Department
Swiss Federal Institute of Technology
IN (Ecublens), CH-1015 Lausanne.
Switzerland
Contact person: Boi Faltings
E-mail address: boi.faltings@epfl.ch

France Telecom (FT)
4 Rue du Clos Courtel
35512 Cesson Sévigné
France. PO Box 91226
Contact person : Alain Leger
E-mail address: alain.leger@rd.francetelecom.com

Freie Universität Berlin (FU Berlin)
Takustrasse, 9
14195 Berlin
Germany
Contact person: Robert Tolksdorf
E-mail address: tolk@inf.fu -berlin.de

Free University of Bozen-Bolzano (FUB)
Piazza Domenicani 3
39100 Bolzano
Italy
Contact person: Enrico Franconi
E-mail address: franconi@inf.unibz.it

Institut National de Recherche en Informatique et en Automatique (INRIA)
ZIRST - 655 avenue de l'Europe - Montbonnot
Saint Martin
38334 Saint-Ismier
France
Contact person: Jérôme Euzenat
E-mail address: Jerome.Euzenat@inrialpes.fr

Centre for Research and Technology Hellas / Informatics and Telematics Institute (ITI-CERTH)
1st km Thermi – Panorama road
57001 Thermi-Thessaloniki
Greece. Po Box 361
Contact person: Michael G. Strintzis
E-mail address: strintzi@iti.gr

Learning Lab Lower Saxony (L3S)
Expo Plaza 1
30539 Hannover
Germany
Contact person: Wolfgang Nejdl
E-mail address: nejdl@learninglab.de

National University of Ireland Galway (NUIG)
National University of Ireland
Science and Technology Building
University Road
Galway
Ireland
Contact person: Christoph Bussler
E-mail address: chris.bussler@deri.ie

The Open University (OU)
Knowledge Media Institute
The Open University
Milton Keynes, MK7 6AA
United Kingdom.
Contact person: Enrico Motta
E-mail address: e.motta@open.ac.uk

Universidad Politécnica de Madrid (UPM)
Campus de Montegancedo sn
28660 Boadilla del Monte
Spain
Contact person: Asunción Gómez Pérez
E-mail address: asun@fi.upm.es

University of Karlsruhe (UKARL)
Institut für Angewandte Informatik und Formale
Beschreibungsverfahren – AIFB
Universität Karlsruhe
D-76128 Karlsruhe
Germany
Contact person: Rudi Studer
E-mail address: studer@aifb.uni-karlsruhe.de

University of Liverpool (UniLiv)
Chadwick Building, Peach Street
L697ZF Liverpool
United Kingdom
Contact person: Michael Wooldridge
E-mail address: M.J.Wooldridge@csc.liv.ac.uk

University of Manchester (UoM)
Room 2.32. Kilburn Building, Department of
Computer Science, University of Manchester,
Oxford Road
Manchester, M13 9PL
United Kingdom
Contact person: Carole Goble
E-mail address: carole@cs.man.ac.uk

University of Sheffield (USFD)
Regent Court, 211 Portobello street
S14DP Sheffield
UnitedKingdom
Contact person: Hamish Cunningham
E-mail address: hamish@dcs.shef.ac.uk

University of Trento (UniTn)
Via Sommarive 14
38050 Trento
Italy
Contact person: Fausto Giunchiglia
E-mail address: fausto@dit.unitn.it

Vrije Universiteit Amsterdam (VUA)
De Boelelaan 1081a
1081HV. Amsterdam
The Netherlands
Contact person: Frank van Harmelen
E-mail address: Frank.van.Harmelen@cs.vu.nl

Vrije Universiteit Brussel (VUB)
Pleinlaan 2, Building G10
1050 Brussels
Belgium
Contact person: Robert Meersman
E-mail address: robert.meersman@vub.ac.be

University of Aberdeen (UNIABDN)
King's College
AB24 3FX Aberdeen
United Kingdom
Contact person: Jeff Pan
E-mail address: jpan@csd.abdn.ac.uk

Work package participants

The following partners have taken an active part in the work leading to the elaboration of this document, even if they might not have directly contributed writing parts of this document:
- University of Trento
- France Telecom
- University of Aberdeen
- National University of Ireland Galway
- University of Manchester
- University of Innsbruck
- University of Liverpool
- University of Sheffield
- The Open University

Changes

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0.1	24-11-2007	I. Blacœ	Repository
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0.3	30-11-2007	I. Blacoe	Introduction and Conclusions

Executive Summary

The aim of the workpackage 1.4 within the network of excellence Knowledge Web is to promote ontology technology and to show the added value resulting from the use of semantic web technology. The work carried out in this workpackage has the objective of creating awareness of how semantic web technologies can become the vehicle enabling organisations to deliver new products and services.

This final deliverable reports on the two main ways in which this task has been pursued. The first way to promote technology developed under the umbrella of the Knowledge Web activities is a virtual technology show. The virtual technology show is part of the dissemination effort carried out by the industry area, and it consists of a repository of information regarding semantic web tools and applications. The software included in the repository is described according to the dimensions identified in D1.4.3v2, that were used to contextualise the technology currently available with respect to the way Semantic Web technology is used in industry. The repository is based on the software described in D.1.4.3v2, where the descriptions have been revised and updated to take into account new developments.

The other main way in which the task objective is achieved is through the organisation of *technology shows.* That is, events aimed at a wider audience, composed by industrial organisations, public institutions and major IT players, where different tools and applications, partly developed within Knowledge Web, are presented in order to provide efficient support to a faster take up of these technologies by industry.

This report builds on the discussions and classification of semantic web technology presented in the first year's report on the technology show (D1.4.3v1) [D1.4.3 v1]. Following that year's conclusions, we have subsequently distinguished *semantic web applications* from *semantic web tools,* where by applications we refer to semantic technologies for the end-user while by tools we denote software aimed at developers of semantic web applications. A tool is meant to be an aid to the development process and might not be an application itself, but might be embedded in a system, or be a plug-in. An application is aimed at a general audience, with no specific background knowledge, whereas a tool is aimed at knowledge engineers or ontology developers.

In the second report on this task (D1.4.3v2) we reviewed two major events organised in full or in part by Knowledge Web, where academic and industrial researchers presented their work. These were the Technology show at the 2nd European Semantic Web Conference (ESWC 2005), and the "Semantic web days" meeting. In particular, our aim was to review the systems presented during the technology show, while comparing and contrasting these systems with the demands of specific type of technology made by industrial organisations during the "Semantic web days". In this way we contextualise the technology currently available with respect to the way Semantic Web technology is used in industry.

In the report on the third year of the task (D1.4.3v3) we provided details of the activity planned for this final year, building on the work carried out in the past two years, and pursuing two main objectives:

- The creation of an information repository of semantic web tools and applications, that acts as a primary point of reference for industry. Activities in this area have concentrated on the repository itself, but also on devising suitable policies for including systems to this repository whilst guaranteeing quality. This is achieved through a double tier mechanism, in which all submissions are initially vetted by our editorial board, and once published they can be rated via feedback from users.

- The organisation of a final technology show. This activity aimed at organising a final technology show, where Knowledge Web technologies and approaches were presented. This show took place as a workshop to the first European Semantic Technologies Conference (ESTC 2007), which was specifically aimed at disseminating semantic web technologies to industry.

This report details the final version of the software information repository, and provides a description of the technology showcase event.
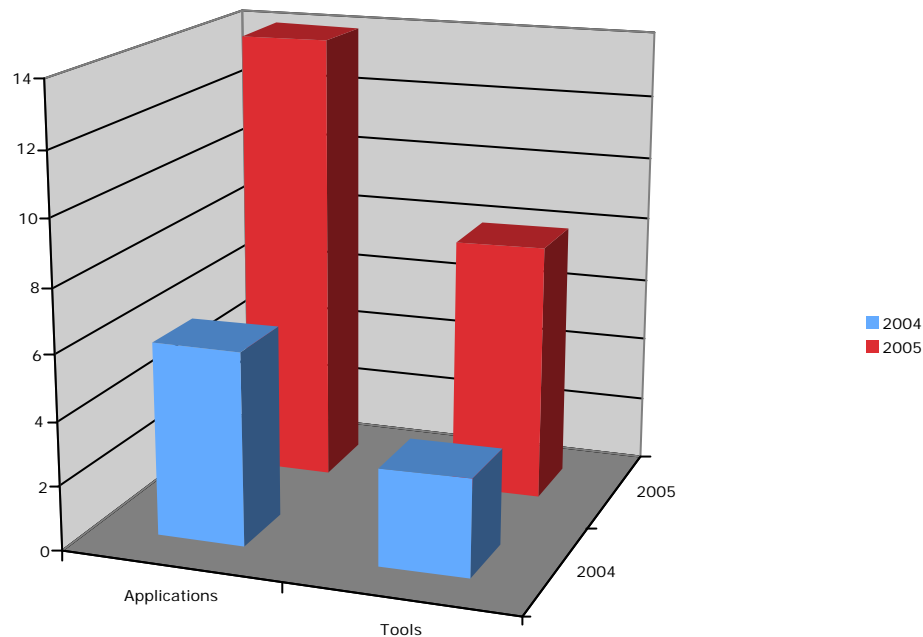
Contents

1. Introduction

The aim of workpackage 1.4 in the network of excellence Knowledge Web is to promote the development of ontology and semantic web technology, by giving impulse and showing the added value resulting from the use of these technologies, and in particular to promote technology developed under the effort of Knowledge Web. The intended audience for this promotion is a wide spectrum of public and industrial organisations that may benefit from the use of ontology and semantic web technology. The workpackage aims to create awareness on semantic web technologies as a vehicle enabling organisations to deliver new products and services.

One of the main objectives of workpackage 1.4 is thus the organisation of *technology shows*, events aimed at a wide audience, oriented to industrial organisations, public institutions and major IT players. Technology shows aim to present different tools and applications, some of which have been developed within Knowledge Web, in order to provide efficient support to a faster take up of these technologies by industry.

Past technology shows organised within this Knowledge Web activity included the Technology show at the 1st and 2nd European Semantic Web Conference (ESWC 2004, 2005), and also in 2005 the "Semantic web days" meeting, held in Munich on October 6th and 7th, 2005. In D1.4.3 v1 and D1.4.3 v2 we reported on these technology shows and we aimed to review the systems presented during these events, that included both *semantic web applications* and *semantic web tools,* a distinction introduced in D1.4.3 v1 [D1.4.3 v1] and retained throughout the subsequent versions. By tool we denote an aid to the development process and might not be an application itself, but might be embedded in a system, or be a plug-in. In contrast, an application is aimed at a general audience, with no specific background knowledge, whereas a tool is aimed at knowledge engineers or ontology developers. The distinction between applications and tools has been used to contextualise the technology currently available with respect to the way Semantic Web technology is used in industry.

The first and second technology shows allowed us to make an initial analysis of the different types of applications and tools that are currently being developed, and gave us the idea of creating a comprehensive online repository of tools and applications, where these are described in a unified and objective way, that can constitute the first call of reference for finding out more information regarding available tools and applications.
Between 2004 and 2005 there was a reported increase in the number of systems (applications and tools) presented to the technology shows, with 9 systems presented in 2004 versus the 22 presented in the following year (as illustrated in Figure 1), to witness the growing interest in this area. In both years, the majority of the systems presented were composed by applications (Figure 1).

Figure 1. Systems presented in 2004 and in 2005.

More information on the types of tools and applications presented in these first two events can be found in the previous versions of D1.4.3 [D1.4.3 v1, D1.4.3 v2]. An analysis of the current content of the repository can be found in Section 2 of this report.

In the report on the third year of the task (D1.4.3v3) [D1.4.3 v3] we provided details of the activity planned for this final year, building on the work carried out in the past two years, and pursuing two main objectives:

- The creation of an information repository of semantic web tools and applications, that acts as a primary point of reference for industry. Activities in this area have concentrated on the repository itself, but also on devising suitable policies for including systems to this repository whilst guaranteeing quality. This is achieved through a double tier mechanism, in which all submissions are initially vetted by our editorial board, and once published they can be rated via feedback from users.

- The organisation of a final technology show. This activity aimed at organising a final technology show, where Knowledge Web technologies and approaches were presented. This show took place as a workshop to the first European Semantic Technologies Conference (ESTC 2007), which was specifically aimed at disseminating semantic web technologies to industry.

This report details the final state of the software information repository, including the functionality provided within the developed software, and a brief analysis of the current content of the repository in terms of submitted software descriptions. The report also provides a description of the technology showcase event, detailing the organisation and content of the event, and summarizing the feedback from the event.

The remainder of this deliverable is organised as follows: Section 2 describes the current state of the Semantic Web software repository. Section 3 describes the technology showcase event, in which Semantic Web approaches were promoted to industry. Finally, we conclude in Section 4.

2. The industry portal software repository

The primary intention of this repository is to provide information on the available software in different areas of semantic web research and development, and thus act as both a point of reference, for interested parties to obtain information on available systems, and a means of promoting the technology. In addition, a comprehensive repository would provide a large sample to from which draw statistical analysis and draw conclusions, and has also complemented and fed into other Knowledge Web activities, and in particular the Technology Evaluation effort carried out in work-package 1.2.

The survey of semantic web tools and applications, as reviewed and reported in D1.4.3 v2, was used as the basis for this repository of information on semantic web software systems. The results of the survey compiled for D1.4.2 v2 were initially reformatted as a webpage providing an index of hyperlinks to the included software descriptions. This index was organized on the same basis as D1.4.2 v2, dividing the systems into tools (software aimed at supporting developers of semantic web applications) and applications (semantic web technologies for the end-user), and then into more specific topics representative of the main purpose of the software described. This initial version of the web-based software repository was then circulated among partners in work-package 1.4 for comments and amendments. It was felt appropriate to publish this repository as part of the Industry Portal given the intended audience - within the *Best Practices* section, on the *Technology Recommendations* menu, of the Knowledge Web Industry Portal[1]. In the final version of the portal, links to the repository are better advertised, directly on the homepage and in the Technology Recommendations section.

As reported in D1.4.3v3, the major objective for this task in 2006 consisted of envisaging the second stage of deployment of the repository, in which we intended to widen the scope of the systems presented, by agreeing on the management procedure for including new software in the portal, while making sure that a certain level of control is maintained. An important aspect of the planning was to ensure a level of quality of the entries in the portal, in order for the repository to provide a means of assessing the listed tools and applications, through implementation of a feedback and/or recommendation mechanism, that will enable potential users to quickly find the best-of-breed software products for their intended purpose. The selection and feedback mechanisms devised to help ensure a high level of quality are described in Section 2.2 and 2.3 respectively.

At this stage the decision was taken to revise the classification scheme used within the repository to indicate the topic of a described software system. Until this point submitted descriptions had been divided into tools and applications, and then additionally described with one or more topics drawn from a widely agreed, but essentially ad-hoc, topic list. The classification scheme chosen was the Semantic Web Topic Hierarchy (SWTH) [SWTH], as it represented a general consensus opinion on topic classifications within the semantic web research area. Furthermore, the topic hierarchy was itself a result of the

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[1] http://knowledgeweb.semanticweb.org/o2i/

Knowledge Web project, and its use would facilitate the integration of information and results from this task with other project tasks. A detailed description of the requested submission information can be found in Section 2.1. This second version of the repository, using the SWTH classification was advertised as being open for submissions to all members of Knowledge Web through an open call, circulated in November 2006, asking to submit details of semantic web software.

During this final year of the Knowledge Web project, a final version of the repository has been implemented and released – as a functionality upgrade to the existing system. This final version includes the user feedback functions (described in Section 2.3), and various other minor refinements to the presentation and function of the repository. A description of the current state of the repository and its contents can be found in Section 2.4. Deployment of this final version of the software was coupled with a wide-ranging call for contributions to the repository from a variety of sources, as also described in Section 2.4 The support structures required to maintain the repository were put into place prior to the release of this final version of the repository, as described in Sections 2.2 and 2.3.

Finally, Section 2.5 outlines the existing plans for the sustainability of the existing repository and its contents, and suggests avenues for further development of and contributions to the repository.

2.1 Classification framework

In the initial survey and in the current repository, there is an initial categorization that divides the software on the basis of its type - into generic tools (usable on specified functions across a range of contexts), and applications (with both a specific context and function).

A secondary level of categorization was provided in the initial tools survey, whereby software could be assigned to one or more topic areas. The available topics were selected from a widely agreed, but essentially ad-hoc, topic list. However, since D1.4.3v3 topic categorization of the submitted tools and applications is according to the Semantic Web Topic Hierarchy (SWTH). This topic hierarchy represents a generally agreed sub-division of the research and development areas under the Semantic Web umbrella. The topic hierarchy is published jointly by Knowledge Web and another EU Network of Excellence - REWERSE, and is available at:
http://wiki.ontoworld.org/index.php/Semantic_Web_Topic_Hierarchy.

Use of the SWTH as the topic categorization for submitted software descriptions was, firstly, intended to provide a structured and widely agreed set of topics for the description of SW software. A secondary intention was that the information and results from this task would be more easily sharable with other efforts within Knowledge Web that also applied this categorization.

Each software description entry submitted to the repository can be described using multiple topics from the SWTH, however, we have requested that authors submitting descriptions only use those topics that are most specifically relevant to their software. The aim of this is to avoid overuse of topics, with software being categorized in topics to which it has only peripheral relevance, and thus enable the repository to produce the most relevant results when searched on the basis of the SWTH.

The information requested in respect of any software description submitted to the repository is, therefore, an aggregation of the types of information collected in previous tool and application surveys. In this way the current repository continues to record entries initially created for previous surveys, providing backwards compatibility between the recorded descriptions. However, some elements of the descriptions have required manual mapping, between the previous and current means of recording – in particular between the previously used ad-hoc topic categories and the Semantic Web Topic Hierarchy categories. In addition, in order to present as few barriers as possible to potential submissions to the repository, the majority of the requested information elements are optional – only the system name is mandatory.

Therefore, in the final version of the repository, for any submitted software description, the following information is requested:

Field	**Description**
Application / Tool	Name or title of tool or application.
Developers	Names, affiliations and emails of system developers / authors.
Type of Development	Academic, Industry or Mixed.
Aim	Brief statement of the aim of the tool or application.
Description	Brief description of the features, methods, and potential uses of the tool or application.
Development Status	Prototype, Alpha, Beta, Release.
License	Type of software license, if any.
Web-site	URL of main download / documentation website.
Further reading	Descriptions (in approximate Bibtex format) of relevant publications.
Topics	Relevant topics to categorize the tool or application, taken from the SW Topic Hierarchy.

Type	Tool or Application

Submissions to the repository have been sought on a number of occasions over the past two years, from a variety of sources. These sources have included: specific surveys of presentations and demonstrations at Semantic Web events and conferences; calls for contributions to the mailing lists of identified Semantic Web projects, forums, and developer portals; and targeted calls for the contribution of descriptions of specific Semantic Web software. Examples of these sources utilised in the most recent calls for contributions are given in Section 2.4.

2.2 Selection mechanisms

As detailed in the last version of this report [D1.4.3v3], it was intended to have a two-tier selection mechanism to ensure both a high quality of software descriptions presented on the repository, and to ensure that the best-of-breed tools and applications could be highlighted as such. This determination was arrived at following discussions with work-package and project partners.

The first tier was to consist of a small (2 to 3 people) 'editorial' team, which would receive and assess submitted descriptions, and act to uphold a high standard of submissions - by requesting authors to amend and correct any submitted descriptions prior to publication if required. This editorial team was instituted as planned early in 2007, initially consisting of three members of the Department of Computer Science at the University of Liverpool. During this past year, all submissions to the repository have been reviewed by the editorial team prior to publication on the repository. In a number of cases the editorial team needed to address errors with submissions, primarily minor errors in the submitted text which were addressed by the editors independently, but in a very small number of cases submission authors were requested to make small modifications or additions to submitted descriptions. The initial editorial team continues to operate, and plans are in place for the continuation of editorial oversight of the repository (see Section 2.5 on Sustainability).

The second tier was intended to select those outstanding tools and applications, from the repository, that could then be promoted as being 'recommended' by Knowledge Web. Such a mechanism was to be based on clearly stated selection criteria - based on both simple reported usage statistics, and on more subjective feedback such as the usability of the software, or the degree of success achieved in the specific tasks required by users. Partners had agreed that, whilst we would want any recommendation to be largely based on such feedback, there would need to be additional overview from within Knowledge Web to enable standards to be upheld for any 'recommended by Knowledge Web' endorsement. The intention was to achieve this with the institution of a small 'selection board' drawn from suitable placed and qualified people within Knowledge Web. This board was to be there to make the final decision on the status of any submissions to the repository, to ensure that the tools and applications listed are of a high standard, and to

ensure that any recommendations are accurate and up to date.

Unfortunately, to date it has not been possible to institute the planned selection board. There are a number of reasons for this, but the primary problem regarded the fact that the selection board was to be drawn from people within the Knowledge Web project, and the majority of submissions to the repository are produced by members (or close affiliates of members) of the Knowledge Web consortium. This situation entailed that there was at least the possibility for a conflict of interest for selection board members. Furthermore, initial enquiries indicated that a significant number of members would seek to have their software be promoted as 'Knowledge Web recommended' – meaning that a significant proportion of the entries on the repository would be put forward for recommendation. This situation is clear contrary to the intention of such recommendation, and would render the entire process worthless. Initial consultations have indicated that an entirely independent selection board, with no attachment to this, or any other major project, would be able to achieve the intention of selecting and promoting only the 'best-of-breed' tools and applications described on the repository.

Despite this, the intention remains to provide some review of the tools and applications entered on the repository, and to determine whether any of them should be highlighted as being of a particularly high standard. This selection would then be indicated by the addition of a 'Recommended' (or similar) label to the description on the repository. The criteria for selection will be based on the following two sets of factors:

- Feedback from users of the repository on the effectiveness of the software – weighted by the 'experience level' of the users concerned.
- Assessment of the software by the members of the selection board – using the same 3 elements as are provided for user feedback (see Section 2.3).
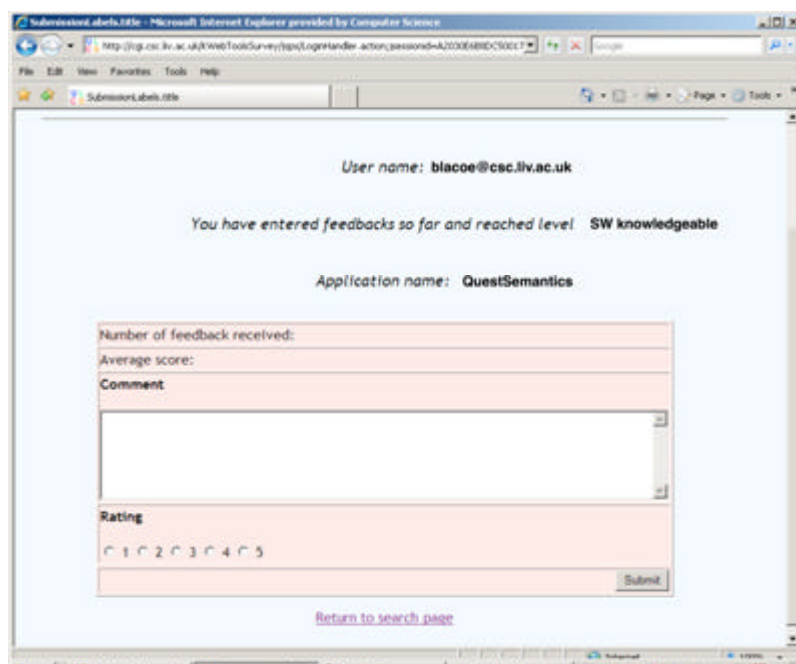
The envisioned selection board would consist of a small number of suitably qualified persons, drawn from within the Semantic Web research community. 'Suitably qualified' in this context means that they have widely recognized expertise within the area of semantic web research, and whose selection would be generally respected. It is envisioned that the first selection board would consist of three people, one to act as chairperson and two board members. It is anticipated that the actual membership of the selection board will change over time, however, providing the membership criteria remain the same, the function of the board will be upheld.

Therefore, of the intended two tier selection mechanism only the first tier is currently in place, ensuring the quality of submissions and maintaining the smooth running of the repository as a whole. The second tier is not currently in place, but actions are continuing to institute the envisioned selection board, or failing this, some alternative means of promoting those entries on the repository seen as representing the 'best-of-breed' within a particular topic area.

2.3 User feedback

One of the key ideas implemented in the final version of the repository consists of enabling interaction with the user, in the form of user-provided feedback regarding their appraisal of the tools and applications. The feedback system was devised on the basis of keeping submission requirements to a minimum as a key factor in encouraging users to submit their feedback. However, we believe that this is not enough to bootstrap and sustain a continuous feedback from the repository users. Therefore, we had proposed providing a form of reward for productive feedback writers, which is a very common mechanism in Web communities. The most popular web communities (see for instance eBay – http://www.ebay.com) implement mechanisms for which their members are rated according the quantity and the quality of the interactions they have with the community itself. In the case of eBay, for instance, the number of successful transactions is the main indicator of the reliability of a member. In our case the rough idea is that the more feedback submissions a user posts, the more their reputation score should grow.


Figure 2: User feedback form

This feedback reward mechanism has been implemented within the final version of the repository. We have specified five different degrees of experience that a user can gain by providing their comments on the listed software. These five levels of experience, from lowest to highest are as follows: SW User, SW Knowledgeable, SW Professional, SW Expert, and SW Guru. Movement between these levels is governed by the number of feedback submissions made, and is currently triggered on every tenth feedback

submission. Such experience ratings are reflected in a ranking included in the display of comments - seen when another user views the feedback comments. In addition, these ratings are also be used to give an approximate weighting to feedback comment when considering whether a specific tool should receive any 'Recommended' endorsement.

The possibility to provide feedback is provided for every entry on the repository, by having each application description web-page provide a link for the submission of any feedback on the use of that item of software. On following this link, users are first prompted to provide their credentials, in order to authenticate any comments. At the present time a basic authentication mechanism using users' e-mail addresses and passwords has been implemented. Following this authentication of user credentials, a feedback submission form is displayed for the provision of feedback on the repository entry previously viewed. The feedback submission page displays the name of the current tool or application, the email address of the user, and the user's current experience level. The feedback form itself (as shown in Figure 2) consists of three elements:

- Textual feedback on how well the software functionalities adhere to its description.
- Numeric appraisal of the overall function of the software.
- Free-text section for any additional comments.

After a user has successfully submitted their feedback, a confirmation page with a recap of the experience degree gained so far is displayed to them (see Figure 3).
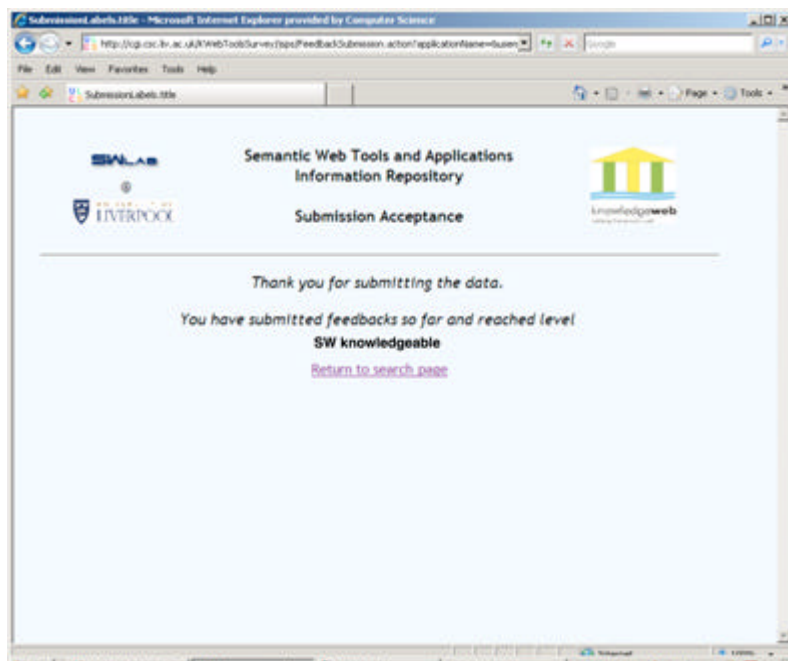

Figure 3: Submitted feedback page.

In addition to the existing uses of the feedback mechanism described here, we have identified a number of interesting directions to pursue, building upon this existing feedback system. One example would be that, since all tools will be annotated according to the Semantic Web Topic Hierarchy, users providing feedback can then be clustered into areas of interests according to this hierarchy. Therefore a facility to characterize the ideal industrial partner with given expertise or interests can be provided for the portal users.

2.4 Current status of the repository

The currently deployed, final version of the SW software information repository includes all the previously mentioned developments regarding the classification framework used, editorial policy, and user feedback facility. The repository homepage, as shown in Figure 4, provides a brief description of the purpose of the repository, enables access to the software descriptions, and provides a link to the software description form for input of new entries. Software descriptions on the repository can be accessed in two ways: by selection from an alphabetical list of entries, or by use of the Semantic Web Topic Hierarchy topic classification. This second means of access makes use of the defined hierarchy, in that selection of a non-leaf topic will retrieve descriptions classified under this topic and of any of its sub-topics. At the current time the SWTH classification used in the repository is version 1.1, however, plans are in place to migrate to using the recently released version 2.0 of the topic hierarchy. However, an initial requirement will be to analyse the difference between version 1.1 and 2.0, in order to determine if any of the existing software descriptions on the repository will require re-classification to conform to the new version of the topic hierarchy. Furthermore, the addition of new topics in the latest version of the hierarchy implies that some of the existing descriptions may now be classified using these new topics in addition to the existing ones.
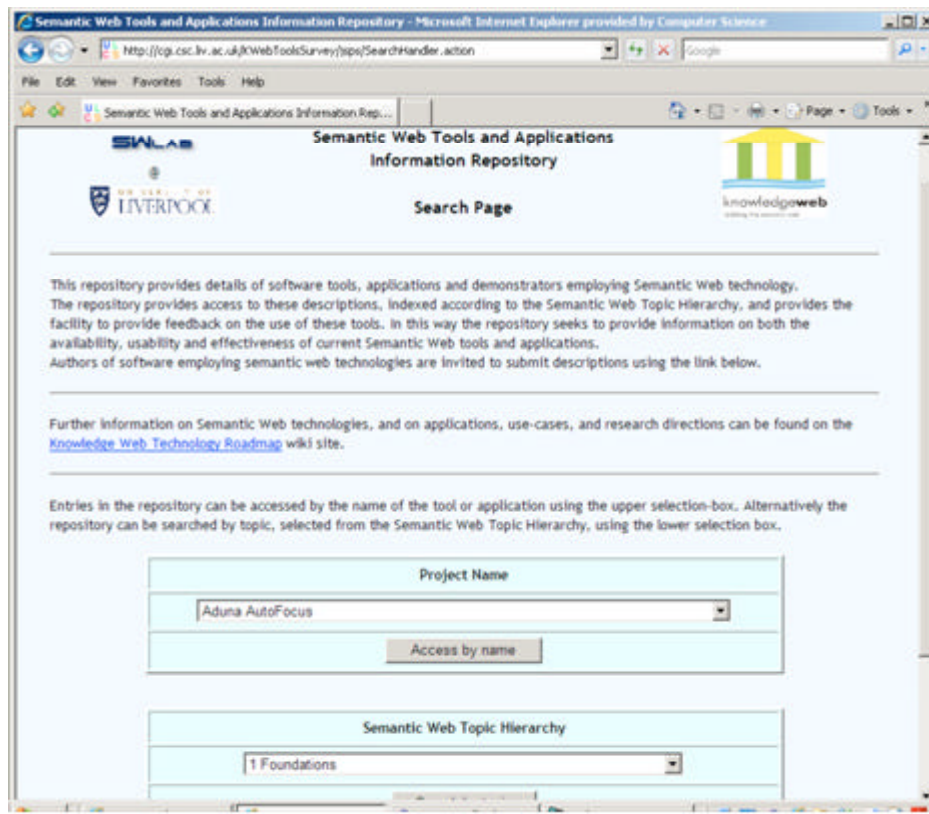
Figure 4: Repository home -page.

The repository is able to record users' feedback on their experience of using individual tools and applications - enabled through the mechanisms described in Section 2.3. Users are able to enter their feedback using a web form, which is accessed from the relevant software description page. The form provided for user feedback enables input of general feedback comments, as a free-text description, and an overall rating of the utility of the software on five point scale. In addition, users are able to view any feedback regarding an entry on the repository that has been provided by other users – again by use of a link on the software description pages.

The current repository also includes a number of minor improvements and extensions to the form and functionality of previous versions. These items include:

- Providing links with other Knowledge Web and work-package 1.4 products - principally in the form of bi-directional links between the repository and the Knowledge Web Technology Roadmap Wiki, produced as a part of deliverable D 1.4.1 v4 - http://ontoworld.org/wiki/Category:Topic_Knowledgeweb_technology_roadmap
- Improvements to the presentation of software descriptions (as shown in Figure 5), and to the general look and feel of the repository, following comments from work-package and project partners.

Figure 5: Typical tool description.

In addition to the activities undertaken to improve the form and function of the repository, a significant degree of effort has been devoted to updating the content of the repository. Therefore, in the last year there have been two re-surveys to update and extend the information in the repository. These re-surveys have primarily taken the form of emailed calls for contributions, sent to the authors of the currently listed software, to the Knowledge Web community, and to various appropriate mailing lists. The targeted mailing lists included those for Semantic Web-based projects, such as Knowledge Web, Neon, Simile, and Musing, and the mailing lists of leading Semantic Web development forums, such as Jena, Protégé, Swoop, and KIM. In addition, calls were sent directly to the authors of all those systems demonstrated at ESWC, ISWC, and Semantic Web Challenge.

These efforts in respect of seeking submissions to the repository have been reasonably successful - at the time of writing the software information repository contains a total of 63 entries. The classifications and types of software represented on the repository are illustrated in Figure 5. In terms of their type, the repository entries are sub-divided into 32 tools and 31 applications. Furthermore, the entries are, in total, classified using 55 topics out of the total 72 available in version 1.1 of the Semantic Web Topic Hierarchy. A total of 17 topics have not been used to describe any current entries, and the average number of topics used to classify any one software description is 7.9.

When compared to the results for the first and second versions of this report, as illustrated in Figure 1, it is clear that there has been a significant increase both in the total number of entries on the repository, and in the proportion of systems classified as tools. In the previous reports, the proportion of tools to applications was approximately 40% to 60%. However, in the current set of repository entries the proportion is almost exactly 50% each. This increase in the proportion of tools that can be used in the development of Semantic Web systems, as opposed to end-user facing applications, can be seen as being indicative of the increasing maturity of the research area – with an increased focus on the provision of tools and techniques to the mainstream software development industry.
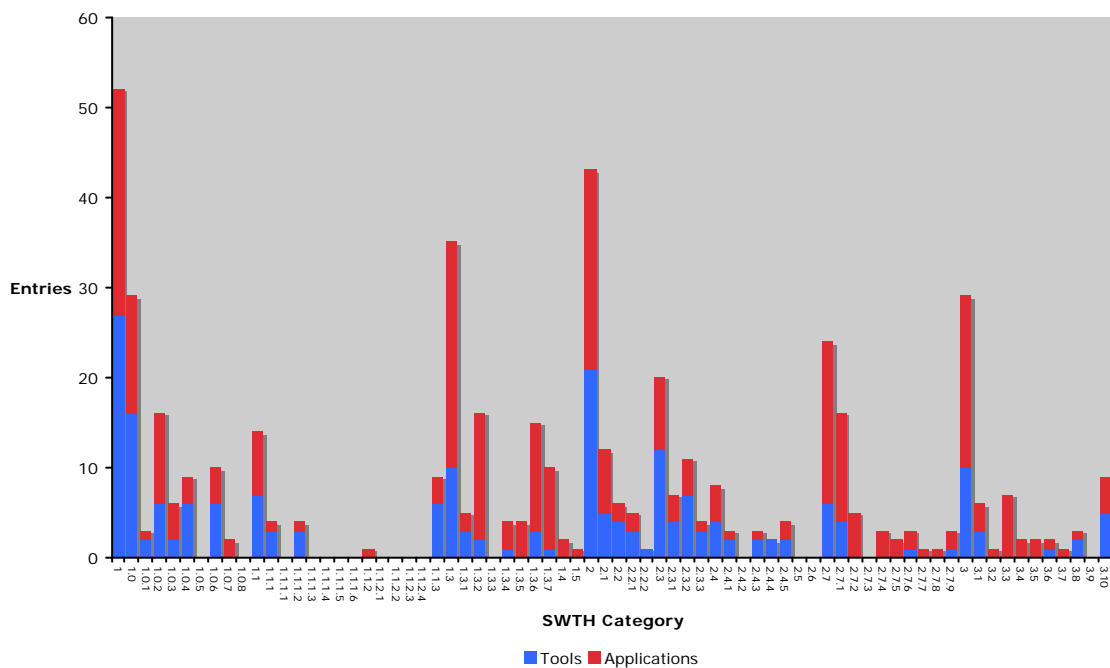
Figure 5: Current contents of the repository

2.5 Sustainability

A crucial point regarding the software information repository regards its sustainability following the completion of the Knowledge Web project. There are two main issues to address in this area:

- Where is the repository website and database to be hosted ?
- Who is to act as the editorial board to ensure continued oversight ?

Regarding the hosting issue, the repository is currently hosted at the University of Liverpool, and will remain so for the foreseeable future. In the event that it become necessary to cease hosting the repository at this location, the current hosts will determine a suitable replacement host. The available options for any such host would include any EU-funded Semantic Web project or funded network of excellence.

Providing web-hosting facilities can be maintained, the automated submission, retrieval and feedback processes can continue, with very little further support - if required. However, the preferred approach would be to continue with both the repository itself, and the small-scale support structures that ensure the quality and relevance of the repository. At the present time, the three member editorial team is drawn entirely from the University of Liverpool, and these members are able to continue in this role for the foreseeable future. Ideally, the responsibility for continued editorial support of the repository could be passed from Knowledge Web, following its completion, to another suitable EU-funded network of excellence in the area of semantic web research. Candidates for taking on this responsibility would include the Repository for the European Association for Semantic Web Education (REASE), and any new Semantic Web research projects funded in IST Framework 7, including any follow-on project(s) from Knowledge Web itself.

Therefore, in the short-term the repository can continue in its current form, at its current location, and be supported by the existing editorial team. In the event that the current arrangements cannot continue, the editorial team will ensure that suitable replacement hosting and /or editorial team members will be found, so that the repository remains available.

3. The industry technology showcase

Workpackage 1.4 has committed to the task of promoting ontology and semantic web technology to business and industry. One specific aim was to have a showcase of Semantic Web technologies aimed at a non-academic audience. As described in D1.4.3 v3 [D1.4.3v3], agreement had been reached on organization of a technology showcase tutorial/workshop within the European Semantic Technology Conference (ESTC 2007) event, in Vienna on the 31st May 2007. The ESTC event was the main industrial outreach event linked to European Semantic Web Conference 2007, and as such was specifically intended to have a primarily industrial audience – making this an ideal location for the showcase.

In order to realize this showcase event, it was important to co-ordinate with the existing planned events, and with the other event organizers, particularly within Knowledge Web to avoid duplication of effort. Therefore, this task required ongoing collaboration amongst Knowledge Web partners, primarily from WP1.1, WP1.3 and WP1.4, regarding organization of the showcase. Therefore, the organising committee was deliberately drawn from these and related workpackages, and consisted of four members:
- Ian Blacoe (University of Liverpool)
- Valentina Tamma (University of Liverpool)
- Lyndon Nixon (Free University of Berlin)
- Roberta Cuel (University of Trento)

The initial planning had determined that any such showcase should seek to promote a range of best-of-breed software products, which would collectively demonstrate to the audience how to employ and benefit from the application of such technologies in their organizations. However, after further consultation and consideration, it was decided that such a format would not enable a clear presentation of the technologies and key issues involved. In particular, it was accepted that the original outline of the showcase event, comprising of a number of sessions that each involved a presentation, a demonstration and a discussion would have only provided a very shallow exploration of the issues, especially within the restricted time-frame of a workshop. Therefore, a revised format was adopted, in which each topic area would consist of a single presentation that provided an in-depth description of key issues in that topic. In this updated format, the workshop was intended to provide descriptions of (some of) the key technological challenges involved in the use of Semantic Web technologies within business and industry, and to introduce examples of the Semantic Web technologies and software that can help to solve them.

The general aim of this workshop was to promote semantic web technology to industry, by focusing on providing a technical audience with an introduction to the main technological challenges hindering the uptake of Semantic Web technology by industry, together with a practical presentation of the technological solutions that can help to overcome these problems. The workshop format was divided into three key topic areas

for the application of these technologies: knowledge representation and ontologies; metadata and annotation; and rules, reasoning and query answering. In each topic area there was an overview presentation of the topic given by an expert in the field, which included demonstration of a high-quality software tool addressing key tasks within the topic. The details of the three presentations given at the workshop are as follows:

1) <u>Knowledge representation and ontologies</u>

Describing what can be achieved using knowledge representation, how knowledge can be represented in machine-understandable forms and what are the challenges in making machines effectively communicate on the basis of ontologies.

Title: Schema-based semantic matching. [Slides]

Presenter: Pavel Shvaiko University of Trento, Italy.

2) <u>Metadata and annotation</u>

Describing the role of metadata, how it is created, and how it is then used in the annotation of information resources.

Title: Semantic Annotation: Theory and Applications. [Slides]

Presenter: Martin Dzbor. Open University, UK.

3) <u>Reasoning, rules and query answering</u>

Describing how the represented knowledge can be manipulated and reasoned with, how rules can be applied to use this knowledge, and how knowledge-based queries facilitate information retrieval.

Title: Practical Reasoning with OWL and Rules. [Slides]

Presenter: Markus Krötzsch AIFB Karlsruhe, Germany.

The workshop took place as planned on 31st May 2007 in Vienna, as part of the 1st European Semantic Technology Conference - http://www.estc2007.com/. The conference as a whole and this workshop were well attended and received by the audience, that consisted of both industry and academic representatives.

4. Conclusions and future work

In this deliverable we have presented the final year of developments regarding the technology promotion tasks that have been ongoing within deliverable 1.4.3. These tasks primarily consisted of the Semantic Web software information repository (described in Section 2), and the technology showcase event (described in Section 3).

Firstly, we have described the current state and content of the semantic web software repository, including an analysis of the software presented within it. Secondly, we have given details of the key ongoing actions and developments undertaken to improve and enhance the content, form and function of the repository. The main points of these developments are:

- The repository content has been significantly updated and extended, through calls for contributions to potential contributors, including members of Semantic Web projects, known key developers, and demonstrators at relevant conferences.
- The automated user-feedback system, to enable user participation and involvement in the repository, has been fully implemented and deployed. Users are able to enter feedback on the use of software described in the repository, and are award an 'experience status' to reflect their level of feedback.
- Creation of the required support structures, in the form of an editorial team, to ensure the quality of entries to, and to maintain the functioning of, the repository. Efforts remain ongoing to institute a 'selection board' to enable promotion of the best-of-breed tools and applications described in the repository.

Finally, we have sought to promote the repository to all interested parties in research and industry – by various means, such as publication in the Knowledge Web Industry Newsletter, flyers at relevant conferences, etc. In addition, the repository is clearly promoted on the homepage of the Knowledge Web Industry portal.

In a second, related set of actions we have organised and held the technology showcase event. The showcase was organised as a workshop within the 1st European Semantic Technology Conference, held on the 31st May and 1st June 2007 in Vienna. The showcase as a whole aimed to provide a practical guide to the process of applying semantic web technologies within commercial and public sector organisations, and, at the same time, sought to promote Semantic Web technologies in general, and specifically the products of Knowledge Web-related research. The showcase focussed on three key semantic web topics: ontologies and ontology alignment, semantic annotation of resources, and rules and reasoning. For each of these key topics there was an overview presentation of the topic given by an expert in the field, which included demonstration of high-quality software addressing key tasks within that topic.

5. Bibliography

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