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### D14.1.1 Web based environment for self-learning

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Tom Bösser  
kea-pro GmbH

#### **Abstract**

The deliverable of this workpackage is a website

[www.keapro.net/sekt/](http://www.keapro.net/sekt/)

designed to support the SEKT training activities.

The SEKT training activities address the needs of technical managers and decision makers who want to be informed about the capabilities which SEKT technology offers for their tasks.

The SEKT training site is intended to have a simple structure which leads quickly to selected information. The core will be presentations on relevant topics by experts from the SEKT consortium. This will include video lectures and presentations which present and complement the information which is also included in seminars and workshops.

The site will be complemented with content from the SEKT project partners.

Keyword list: web site, self-learning, video lectures, training

#### **Task 14.1 Setting up a web-based environment for self-learning and support of teaching activities**

Deliverable 14.1.1 Web-based environment for self-learning and support of teaching activities going on line (with an initial set of learning content)

Software  
30.11.2004

RE  
10.1.2004

## **SEKT Consortium**

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### **British Telecommunications plc.**

Orion 5/12, Adastral Park  
Ipswich IP5 3RE  
UK  
Tel: +44 1473 609583, Fax: +44 1473 609832  
Contact person: John Davies  
E-mail: john.nj.davies@bt.com

### **Empolis GmbH**

Europaallee 10  
67657 Kaiserslautern  
Germany  
Tel: +49 631 303 5540  
Fax: +49 631 303 5507  
Contact person: Ralph Traphöner  
E-mail: ralph.traphoener@empolis.com

### **Jozef Stefan Institute**

Jamova 39  
1000 Ljubljana  
Slovenia  
Tel: +386 1 4773 778, Fax: +386 1 4251 038  
Contact person: Marko Grobelnik  
E-mail: marko.grobelnik@ijs.si

### **University of Karlsruhe, Institute AIFB**

Englerstr. 28  
D-76128 Karlsruhe  
Germany  
Tel: +49 721 608 6592  
Fax: +49 721 608 6580  
Contact person: York Sure  
E-mail: sure@aifb.uni-karlsruhe.de

### **University of Sheffield**

Department of Computer Science  
Regent Court, 211 Portobello St.  
Sheffield S1 4DP  
UK  
Tel: +44 114 222 1891  
Fax: +44 114 222 1810  
Contact person: Hamish Cunningham  
E-mail: hamish@dcs.shef.ac.uk

### **University of Innsbruck**

Institute of Computer Science  
Techikerstraße 13  
6020 Innsbruck  
Austria  
Tel: +43 512 507 6475  
Fax: +43 512 507 9872  
Contact person: Jos de Bruijn  
E-mail: jos.de-bruijn@deri.ie

### **Intelligent Software Components S.A.**

Pedro de Valdivia, 10  
28006  
Madrid  
Spain  
Tel: +34 913 349 797  
Fax: +49 34 913 349 799  
Contact person: Richard Benjamins  
E-mail: rbenjamins@isoco.com

### **Kea-pro GmbH**

Tal  
6464 Springen  
Switzerland  
Tel: +41 41 879 00  
Fax: 41 41 879 00 13  
Contact person: Tom Bösser  
E-mail: tb@keapro.net

### **Ontoprise GmbH**

Amalienbadstr. 36  
76227 Karlsruhe  
Germany  
Tel: +49 721 50980912  
Fax: +49 721 50980911  
Contact person: Hans-Peter Schnurr  
E-mail: schnurr@ontoprise.de

### **Sirma AI EAD, Ontotext Lab**

135 Tsarigradsko Shose  
Sofia 1784  
Bulgaria  
Tel: +359 2 9768 303, Fax: +359 2 9768 311  
Contact person: Atanas Kiryakov  
E-mail: naso@sirma.bg

### **Vrije Universiteit Amsterdam (VUA)**

Department of Computer Sciences  
De Boelelaan 1081a  
1081 HV Amsterdam  
The Netherlands  
Tel: +31 20 444 7731, Fax: +31 84 221 4294  
Contact person: Frank van Harmelen  
E-mail: frank.van.harmelen@cs.vu.nl

### **Universitat Autònoma de Barcelona**

Edifici B, Campus de la UAB  
08193 Bellaterra (Cerdanyola del Vall`es)  
Barcelona  
Spain  
Tel: +34 93 581 22 35, Fax: +34 93 581 29 88  
Contact person: Pompeu Casanovas Romeu  
E-mail: pompeu.casanovas@uab.es

## **Executive Summary**

The objectives of training in the SEKT project are to make the knowledge developed in the project available to relevant individuals outside the project in order to maximise the impact of the RTD work. Training is directed at technology experts who might complement and extend semantic knowledge technology, and application experts and decision makers in the user community who will be empowered to manage the takeup of semantic knowledge technology. For this purpose reusable training materials are created and maintained on the SEKT training site.

The intended audience for the SEKT training website are experts and professionals who at this stage are not active within the semantic knowledge RTD community, but whom it is desirable to introduce to SEKT. Initially this will be more technically oriented, and during a later stage of the project the focus will be extended to application experts and decision makers.

The SEKT training website intends to be easily accessible for interested individuals, including those who are focussed on applications rather than technology, also non-IT specialists. It has a streamlined and simple navigation structure and look-and-feel, enabling easy and simple access. More specialised technical sources will be available on lower layers, and through links to the sources of partners. An added value of the SEKT training site is the set of recommendations leading to quality content.

A set of presentations and video lectures will be available which partly reproduce presentations given at training events, workshops and seminars of the SEKT project.

The initial version of the site includes the general structure, which will be extended and completed with further content which is taken from the ongoing SEKT activities.

Use of the website is free, but certain areas will require registration (this feature will be installed when more content is available).

## Contents

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## **1 Objectives of the Training Activities in the SEKT project**

The objectives of training in the SEKT project are to make the knowledge developed in the project available to relevant individuals outside the project in order to maximise the impact of the RTD work. Training is directed at technology experts who might complement and extend semantic knowledge technology, and application experts and decision makers in the user community who will be empowered to manage the takeup of semantic knowledge technology. For this purpose reusable training materials are created and maintained. This includes electronic documents and materials (available for self-study and reference), and material for seminars and workshops. The distance learning material is intended ideally to follow up training in seminars and workshops, but should also enable individuals with appropriate initial qualifications to acquire important competences by self-learning.

The training will address external organisations, and will partly be open to participants from related projects upon agreement to be reached. The training activities will aim to develop a common understanding of the new technology and applications developed. SEKT aims to make a strong impact on the concepts and standards in the domain. The training activities for professionals and decision makers complement the dissemination to the technical public and support the introduction of semantic knowledge technologies into end user organisations by empowering decision makers to assess potential, benefit and RoI for their organisations. Organisations pursuing complementary technical development activities should be provided with the knowledge to do so in an effective manner beneficial to the field as a whole.

Training will be targetted in the initial phases towards the needs of information technology specialists who are implementing and deploying semantic knowledge technology. Emphasis will shift towards experts and decision makers responsible for selecting and managing knowledge technology applications. As the use cases are implemented, training for end users and decision makers to enable them to prepare more users for the deployment of semantically enabled knowledge technology will be offered.

The activities will partly build upon ongoing training in SEKT partner organisations, use the leading edge expertise to present the knowledge developed in SEKT to make the same high level knowledge available to individuals outside the SEKT consortium. Training material will use documentation generated as part of the development and use case WPs. It will also provide an interface between developers and users, taking account of the need to complement open-source software with appropriate training material. The academic partners will contribute some modules which they use in their ongoing teaching. Some material will be developed specifically for training purposes, and preferably used for multiple purposes in training events and for self-study on the web..

## **2 The SEKT Training website**

The intended audience for the SEKT training website are experts and professionals who at this stage are not active within the semantic knowledge RTD community, but whom it is desirable to introduce to SEKT. Initially this will be more technically oriented, and during a later stage of the project the focus will be extended to application experts and decision makers.

The SEKT training website intends to be easily accessible for interested individuals, including those who are focussed on applications rather than technology, also non-IT specialists. It will have a streamlined and simple navigation structure and look-and-feel, enabling easy and simple access. More specialised technical sources will be available on lower layers, and through links to the sources of partners. The added value of the SEKT training site is the set of recommendations leading to quality content.

A selected amount of material (documents, presentations, video lectures) will be produced or adapted and maintained on the site. Links will be provided to further material, indicating some recommendations and preferences of the different groups of users.

The training events (workshops and seminars) carried out by the SEKT project will be supported by information on the site. A large share of the material used in the events should also be available on-line.

The following requirements were realized on the site:

The site should be a modular set of training and learning materials which can be adapted flexibly to different demands. For different user groups recommended tracks giving priority to selected material will be provided (such as technical and non-technical users).

A common terminology and appearance will be aspired where useful and possible, even for the material external to the site.

The training resources should be complementary to other academic and research oriented publications and resources. Links will be provided to specific information on the sites of related projects, in particular

- Knowledgeweb project
- DIP project
- SDK-cluster pages

### **Structure**

The structure of the SEKT training is adapted to the suggested reading sequence for the users, providing a top-down route of access from the more general to specific information. A top-level of six pages is defined. Below this level, a variable number

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of “topics” – brief introductions – which provide entry points to defined themes, and which are followed up by presentations, videos, documents and commented links.

The home page provides access to the six top-lever pages of the site:



Semantic knowledge technology will provide powerful and easy access to a wide range of information sources

*the aim: knowledge available at your fingertips*

Semantic Knowledge Technology and the Semantic Web will build a new basis for automatic and semi-automatic processing of information with the aim to make knowledge available easily, comfortably, and more providing more comprehensive results than today.

Semantic Knowledge Technology is the combination of advanced technologies for the management of knowledge, including ontologies, advanced text analysis, and search capabilities.

The result will be new applications for the analysis, archiving, retrieval, and documentation of knowledge. Rather than keyword search as used today, knowledge will be retrieved on the basis of semantics - meaning.

**We want to enable IT managers and decision makers to assess the potential value of semantic knowledge technology.**

*Let us inform You about the solutions available today, and about the technology which will be available for integration into applications in the near future!*

Experts from the SEKT project team introduce the basic facts of Semantic Knowledge Technology to enable technical managers and decision makers to assess the current state-of-the-art of semantic knowledge technology for their purposes, and to plan for their adoption of Semantic Knowledge Technology.

In this location we continue to assemble information about the basic technology, reports about the growing experience with applications, and references to further information sources.

We will also carry out a series of workshops and seminars where we provide the most up-to-date view of the state-of-the-art of Semantic Knowledge Technology, and where we discuss future developments and potential applications with experts and potential future users. If you are interested in participating in one of the planned workshops, do let us know at [events@sekt-project.com](mailto:events@sekt-project.com).

**How to use this site:**

As a start we recommend to proceed to the INTRODUCTION, or to the individual TOPICS which introduce relevant knowledge areas and then lead to in-depth



The initial structure of the site is as follows:

<u>Structure of the SEKT training site as of 10.1.2005</u>	
<b>home</b>	<a href="http://www.keapro.net/sekt/">http://www.keapro.net/sekt/</a>
<b>introduction</b>	Presentation and video lecture introducing to Semantic Knowledge Technology
<b>topics</b>	<ul style="list-style-type: none"><li>Semantic Web</li><li>Applications of SEKT and case studies</li><li>Integration of semantic knowledge technology into existing systems</li><li>constructing ontologies</li><li>knowledge discovery</li><li>ontology mediation</li><li>metadata extraction</li><li>ontology languages and standards for the semantic web</li></ul> Each "topic" is followed up by presentations and in-depth information
<b>presentations</b>	<ul style="list-style-type: none"><li>full list of presentations at JSI</li><li>Track a (recommended list of links and documents)</li><li>Track b</li></ul>
<b>links</b>	(commented links)
<b>events</b>	<ul style="list-style-type: none"><li>Registration form for seminar</li><li>Registration form for workshop</li></ul>
<b>about</b>	(Impressum)

When more content is available on the site, a very light access regime may be introduced for access to parts of the content, for example the resource-intensive video lectures. Access will be free, but users will be asked to register in order to access

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certain areas of the site. (This feature will not make sense to users with the initial small amount of content.)

In addition, external links to sites of the SEKT project partners may require registration separately.

(1) A public section will include content of use to a general audience, among these a brief introduction to SEKT technology, Semantic Web issues, and SEKT training items.

(2) High-level tutorial introductions (in-depth continuations of the topics at level 1) and selected and commented links to further material will be added continuously to the site.

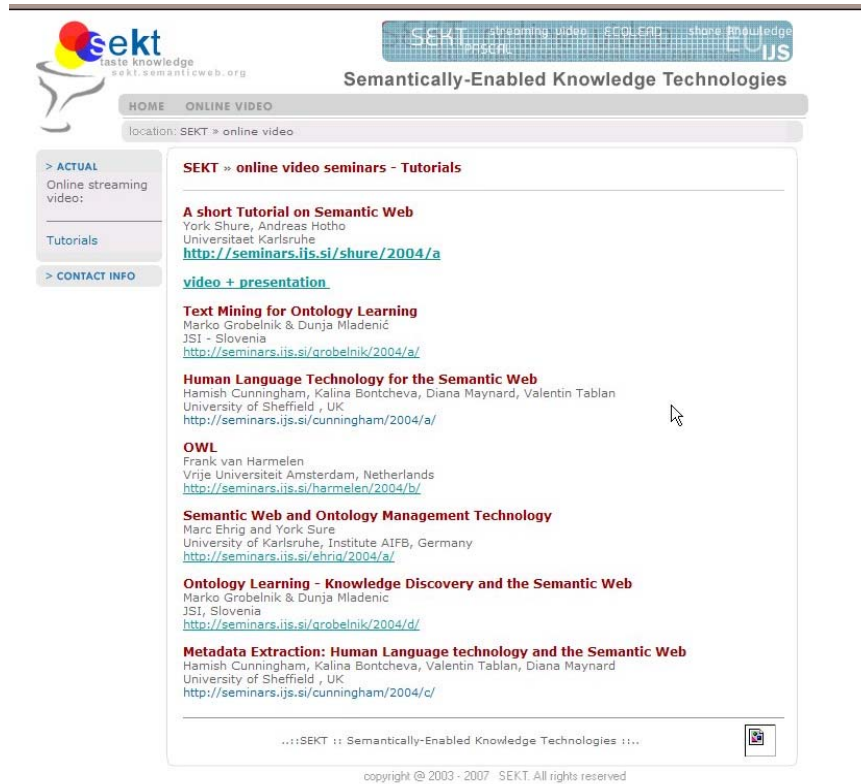
(3) Presentations of lectures and tutorials, in the form of presentation slides plus audio and video. The video lectures will be added as they become available in the project activities. Due to high cost for productions it is not considered to produce lectures specifically for the site.

(2) and (3) will be partly private, and will be accessible to registered users only. Some of the material will be hosted by the owners and authors, who are also using and maintaining the content for other purposes under their responsibility.

(3) will be hosted by JSI, using the video server platform set up in the ECOLEAD project (<http://seminars.ijs.si/ecolead/newsletter/>). The current state of the technology will limit to one technical platform, which is Windows Media Player and Powerpoint presentations. This is a limitation which most video server platforms imply.

The following two illustrations show the entry point to the list of videos available at the JSI video lecture server site, and a video lecture.

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The user interface to the video lectures shows a synchronised presentation (powerpoint slides) and video. Navigation within the video stream is possible by selecting individual slides, which is followed by the video stream synchronised with the slide.

Home
Bookmarks
NZZ
SZ
SPIEGEL
FAZ
Google CH
Google DE
Arcor TV
Vimeo

**Solomonovi seminarji®**  
by sebastian.misle/sil...  
Video

**Table Of Contents**  
1. A Short Semantic Web Tutorial  
2. Karlsruhe: Location for  
3. KAON  
4. slide 4  
5. Semantic Web  
6. Machine accessible meaning  
7. Semantic Web Layers  
8. XML:  
9. XML: Document = labelled tree  
10. XML: limitations for  
11. XML ?  
12. The semantic pyramid again  
13. RDF for semantic annotation  
14. What does RDF Schema add?  
15. RDF Schema syntax in XML  
16. Conclusions about RDF(S)  
17. Last but not least ...  
18. Ontology  
19. Communication Principle  
20. Views on Ontologies  
21. Slide297  
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24. Slide300  
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26. Example: OntoWeb.org  
27. slide 27  
28. OTK Methodology:  
29. But ...  
30. Slide321

**CurrentSlide**

### Ontology (in our sense)

**Rules**  
 $T \text{ described\_in } D \Rightarrow T \text{ is\_about } D$   
 $P \text{ writes } D \Rightarrow P \text{ knows } T$

• Representation Language: Predicate Logic (F-Logic)  
• Standards: RDF(S); coming up standard: OWL

Slide 24

DESCRIPTION	THUMBNAILS	NOTES
Slide297	Slide298	Slide299
Slide300	Ontology & Metadata	
Example: OntoWeb.org	slide 27	OTK Methodology:
Where to start?	Slide255	But ...
Slide256	Ontology Learning	Ontology Learning Steps
Slide257	Slide258	Slide256
Slide326	Slide257	Crawling the (semantic) web
Slide258	slide 40	

## 4 Content

The content used on the site is selected from material available in the SEKT project from the partners, and reviewed and edited by experts and kea-pro, where needed.

Some presentations to be given at training events will be recorded and included in the video lectures made available on the site.

The evolution of content follows the development of project results. The content is produced as spin-off of the documents, publications, and events of the SEKT project.

The “topics” page structures the initially contained content, and is adaptable.

SEKT next generation knowledge management

home introduction **topics** presentations links events about

[Semantic Web](#)  
[Applications](#)  
[Integration](#)  
[Constructing Ontologies](#)  
[Knowledge discovery](#)  
[Ontology mediation](#)  
[Metadata extraction](#)  
[Ontology languages](#)

### Topics

[applications](#)

In the SEKT project three applications will be developed in close cooperation with their future users and owners, will be tested and improved according to the demands of the users. An overview of other applications under development, and of the current use of semantic knowledge technology components will be given.

[Integration of semantic knowledge technology into existing applications and IT infrastructures](#)

The value of existing information and systems should not be impaired by the integration of semantic knowledge technology. Previous experience and the vision for the integration of SEKT into applications are presented.

[constructing ontologies](#)

Ontologies are a core component of semantic knowledge technology, enabling more powerful means to access knowledge than taxonomies or search by names. The methods and tools available for the construction of ontologies are described.

[knowledge discovery](#)

The identification of knowledge elements in a semi-automatic or automatic fashion greatly reduces the total cost of the use of semantic knowledge technology.

[ontology mediation](#)

A core function is the ability to access and relate the knowledge from several domains with their own respective ontologies.

[metadata extraction](#)

The manual creation of the metadata describing individual knowledge elements in reference to ontologies can be very resource consuming. Semi-automatic methods to process large amounts of information available in text form are a component of semantic knowledge technology.

[ontology languages and standards for the semantic web](#)

Semantic knowledge management and the Semantic Web are based on the use of machine-interpretable meta-data, leading beyond XML. A number of standards and languages are proposed, with different strengths and weaknesses..

Select one of the topics and proceed to the presentations, on-line lectures, and further references on these topics.

## **5 Web site “marketing”**

The SEKT training site will be made known by means which target the intended audience. The goal is to attract individuals who can contribute to the uptake of SEKT technology in their organisations.

- Publications of the SEKT consortium, preferably in non-scientific technical publications
- Project publicity material distributed as part of the dissemination activities
- Agreements and banners on related websites

## **Bibliography and references**

The site address is

[www.keapro.net/sekt/](http://www.keapro.net/sekt/)

Further links and references are contained on the site.