D 1.6.5 Report on the Knowledge Web portal

**Raúl García-Castro (UPM), Ángel López-Cima (UPM),
M. Carmen Suárez-Figueroa (UPM)**

Abstract.
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This deliverable summarizes the updates performed during 2006 in the Knowledge Web portal and provides different statistics such as content and access statistics.

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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
United   Kingdom
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 to writing any parts of this document:

UPM

Changes

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0.1	21-11-2006	Raúl García-Castro	First draft with index
0.2	24-11-2006	M. Carmen Suárez-Figueroa	Section 3, 4, and 1
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1.0	28-12-2006	Raúl García-Castro M. Carmen Suárez-Figueroa	Update of changes proposed
1.1	22-01-2007	Raúl García-Castro	Update of changes proposed
1.2	06-02-2007	Raúl García-Castro	Update of changes proposed

Executive Summary

This deliverable presents the report of the Knowledge Web (KW)[1] Semantic Portal.

This document shows the new functionalities included in the KW Semantic Portal during 2006. The report also provides the statistics of the ontologies that the portal manages and summarizes the evolution of the number of instances within the KW Semantic Portal.

Finally, the document presents the KW Semantic Portal access statistics and draws some conclusions about the issues dealt with and how to improve it.

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

Contents

1. Introduction

This deliverable presents the report of the Knowledge Web (KW)[2] Semantic Portal.

In this report we present the new functionalities included in the KW Semantic Portal. They are:

- a mailing system that notifies WP leaders, area leaders and the management team the starting and status of the bimonthly reports to be submitted to the European Comission,

- a risk management system whose goal is to evaluate, create and monitor the risks identified in Knowledge Web and, then, report them in the deliverable *D4.6.1 "Report on self-assessment, risk analysis and market watch"*.

The backbone of the KW Semantic Portal content is the set of ontologies (*Documentation*, *Person*, *Event*, etc.), which allow managing the KW Network of Excellence (NoE). The portal content changes continuously because the people and organizations involved in the NoE can insert new *articles*, *students*, *meetings*, *exchanges*, etc. at any time. For this reason, the portal content is represented as instances of the concepts in the ontology.

This document also provides the statistics of the ontologies used by the KW Semantic Portal (see Section 3), and summarizes the number of *articles*, *people*, *meetings*, and *exchanges* within the KW Semantic Portal on December 2004, December 2005 and December 2006.

Finally, the document presents the KW Semantic Portal access statistics and draws some conclusions about the issues here presented.

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[2] http://knowledgeweb.semanticweb.org

2. New Knowledge Web Portal Functionalities

Two new functionalities have been developed inside the KW Semantic Portal:

❑ A mailing system that notifies the people responsible in each organization which is the current status of their progress reports during the reporting period. Also this email is sent to the managing director in order to monitor the current status of the whole project.

❑ A risk management system. This system covers the requirements specified in deliverable *D4.6.1 "Report on self-assessment, risk analysis and market watch"* and has been included inside the reporting system.

2.1. Mailing system during the reporting period

The progress reports inform the advancement of each work package (WP) and area during the past two months, and also of the efforts devoted. Every two months, the reporting period starts and is divided into 5 stages:

1. Each WP leader must report the progress of the WPs of their group, the person responsible in each organization must report the efforts devoted, and each area manager must report the progress inside the whole area.

2. The area leaders must review the WP progress report and send the comments to the corresponding partner.

3. The partner corrects/modifies the WP progress report according to the area manager.

4. The Managing Directors review all the reports and send the corresponding comments.

5. The document of the progress report is generated and submitted to the European Commission.

Due to some delays during the reporting period from different partners, it was decided to notify any type of delays and inform about the current status of the reports.

The mailing system is launched at specific days during the progress report and it sends the following emails:

❑ The reporting period begins. The mailing system sends an e-mail to all WP leaders, Area leaders, and contact person in each organization and notifies that the reporting period has started and which reports are required from them.

❑ At the end of each stage the mailing system sends an email:

➢ To each contact person acting as WP leader in each organization informing of which is the current status of all the reports of that organization.

➢ To each area leader informing of the current status of all WP progress reports inside the area.

➢ To the managing director informing about the current status of all effort reports.

After the installation of the system, it has been detected few delays during the reporting period and an increase in the inputs in the progress reports.

2.2. Risk management system

Following the requirements established in the deliverable *D4.6.1 "Report on self-assessment, risk analysis and market watch"*, a system has been implemented that manages and reports risks during the reporting period within the KW Semantic Portal.

There are different risks associated to areas, WPs, tasks, and deliverables. The responsible for such risks are:

❑   The area manager for the area risk,

❑   The WP leader for the WP, task and deliverable risks, Each responsible can propose a new risk or the removal of a risk, if the risk proposed is accepted by a risk manager, the risk is included or excluded from the reporting period inside the WP progress report or from the area overview report.

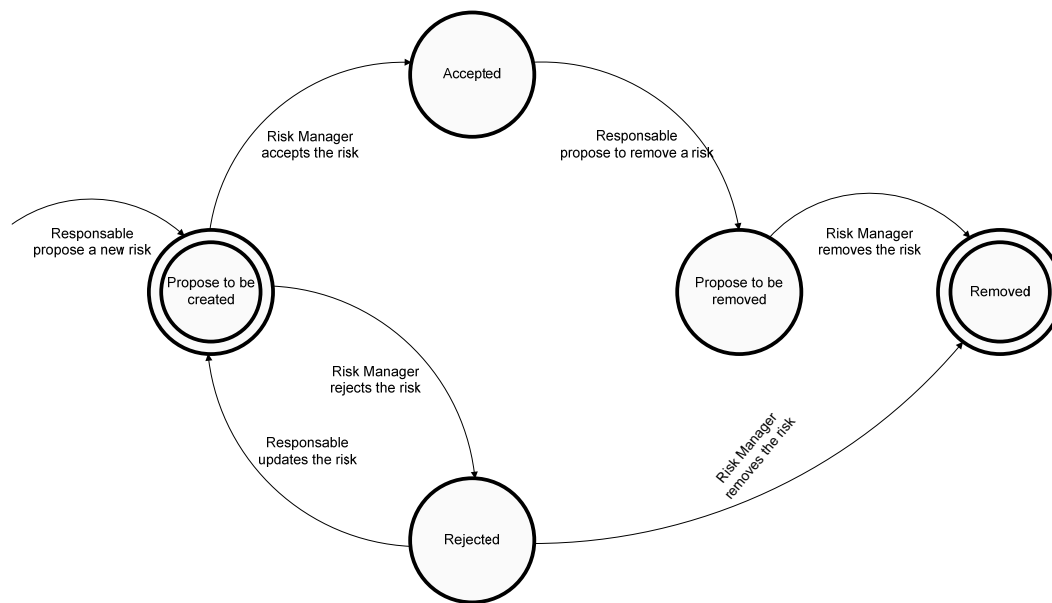The risk lifecycle is summarized in the Figure 1:

Figure 1. Risk lifecycle

The risk management system has a notifying system via email.

❑   When a WP or area leader proposes a new risk or the removal of a risk, the system sends an email to the risk manager informing of the proposal.

❑   When the risk manager accepts, rejects or removes a risk, the system sends an email to the corresponding responsible for that risk (the WP or area leader).

❑   When a WP leader changes an evaluation of a risk from the previous progress report, the system sends an email to the risk managers advising about this change.

The risk management system generates a report listing all the risks identified and the evaluation of the risks in order to help create the deliverable *D4.6.1 "Report on self-assessment, risk analysis and market watch"*. Such list of risks is inserted inside the activity report.

A new ontology has been created for this system which models different risks and the evaluation of the risks on each period.

The implementation of this system is completed except for the mailing system that will be finished at the beginning of January 2007.

3. Knowledge Web Portal Ontology Statistics

As stated in the deliverable *D.1.6.1 "Portal requirements analysis and system design"*, the KW Semantic Portal[3] has been built by reusing and improving the technology produced in the Esperonto[4] (IST-2001-37343) project.

Such technology is called ODESeW [2], and is an ontology-based application built within the WebODE ontology engineering workbench[5]. ODESeW allows managing knowledge-intensive ontology-based Intranets and Extranets.

The KW Semantic Portal has been running since March 1st, 2004. This semantic portal can manage multiple interlinked ontologies. So far, six *project description* ontologies (*Documentation*, *Event*, *Organization*, *Person*, *Project*, and *T-REX*), plus one *User* ontology [4], one *Management Report* ontology [4], and one *Risk Management* ontology have been developed to be included in the KW Semantic Portal. These ontologies are intended to support the KW NoE management, the result dissemination, and the different exchanges within the network. These nine ontologies have been developed with METHONTOLOGY [3] and the WebODE ontology engineering workbench, and evaluated with ODEval [1]. Such ontologies are available in RDFS and OWL within the portal (user and password are required). Five of the 9 ontologies used are presented in detail in the deliverable *D.1.6.2 "Portal Ontology"*.

The core of the *project description* ontologies (except the *T-REX* ontology) is being reused in other european projects, like OntoGrid, NeOn, etc.

The statistics of the 9 ontologies (number of concepts, attributes, and ad-hoc relations) released on 24th November 2006 are shown in Table 1.

	Number of concepts	Number of attributes	Number of ad-hoc relations
Documentation Ontology	36	37	15
Event Ontology	12	10	4
Organization Ontology	4	9	9
Person Ontology	18	13	9
Project Ontology	6	28	21
T-REX Ontology	4	6	2
User Ontology	10	0	1
Management Report Ontology	17	11	15
Risk Management Ontology	6	7	5

Table 1. KW Ontologies Statistics

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[3] http://knowledgeweb.semanticweb.org
[4] http://www.esperonto.net
[5] http://webode.dia.fi.upm.es

4. Knowledge Web Portal Content Evolution

The KW portal content is internally represented as instances of the six project description ontologies included in the KW Semantic Portal. Content is available in RDF within the portal (user and password are required).

To show how the content in the KW Semantic Portal has evolved during its life, we provide the number of instances of the following issues (concepts) on December 2004, December 2005 and December 2006.

❑ Number of publications, divided into articles (in book, in conference, in journal, and in workshop) and books. The number of instances inserted in the KW Semantic Portal during each year (2004, 2005, and 2006) and the total number of instances in the KW Semantic Portal are shown in Table 2 and in Figure 2. Note that during 2006, 51 new publications were added; and during 2005 no book was inserted.

	Dec 2004	Dec 2005	Dec 2006	Total
Publication	77	12	51	140
Article	67	12	47	126
Article in Book	3	1	2	6
Article in Conference	33	5	23	61
Article in Journal	9	1	3	13
Article in Workshop	22	5	19	46
Book	10	0	4	14

Table 2. History of the Number of Publications inserted in the KW Semantic Portal
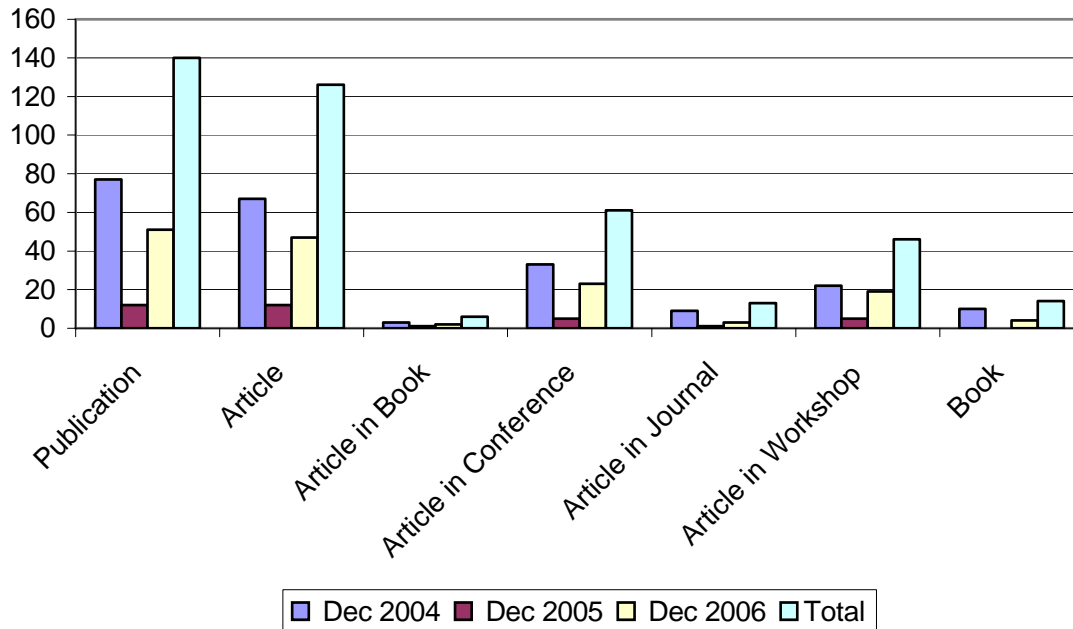
Figure 2. Graphic of the Evolution of the Number of Publications inserted in the KW Semantic Portal

❑ Number of persons involved in KW, divided into university staff, company staff, and students. The number of instances inserted in the KW Semantic Portal during each year (2004, 2005, and 2006) and the total number of instances in the KW Semantic Portal are shown in Table 3 and in Figure 3. Note that during 2006, 13 people as university staff and 2 students were added, and 2 people as company staff were deleted.

	Dec 2004	Dec 2005	Dec 2006	Total
University Staff	92	19	13	124
Company Staff	9	1	-2	8
Student	37	19	2	58

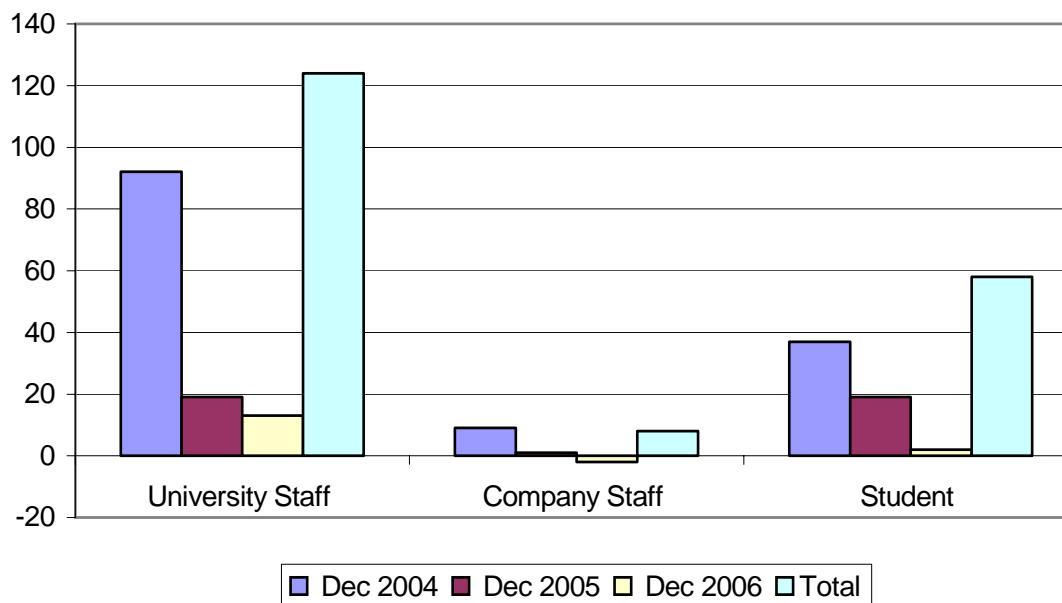**Table 3**. History of the Number of Persons inserted in the KW Semantic Portal

Figure 3. Graphic of the Evolution of the Number of Persons inserted in the KW Semantic Portal

❑ Number of KW meetings, divided into the three types of area meetings (industry area meeting, research area meeting, and education area meeting) and plenary meetings. The number of instances inserted in the KW Semantic Portal during each year (2004, 2005, and 2006) and the total number of instances in the KW Semantic Portal are shown in Table 4 and in Figure 4. Note that during 2006, one industry area meeting, 4 education area meetings, and one KW plenary meeting were added. But, no research area meeting was added during December 2005 and December 2006.

	Dec 2004	Dec 2005	Dec 2006	Total
Industry Area Meeting	5	2	1	8
Research Area Meeting	3	0	0	3
Education Area Meeting	5	3	4	12
KW Plenary Meeting	3	3	1	7

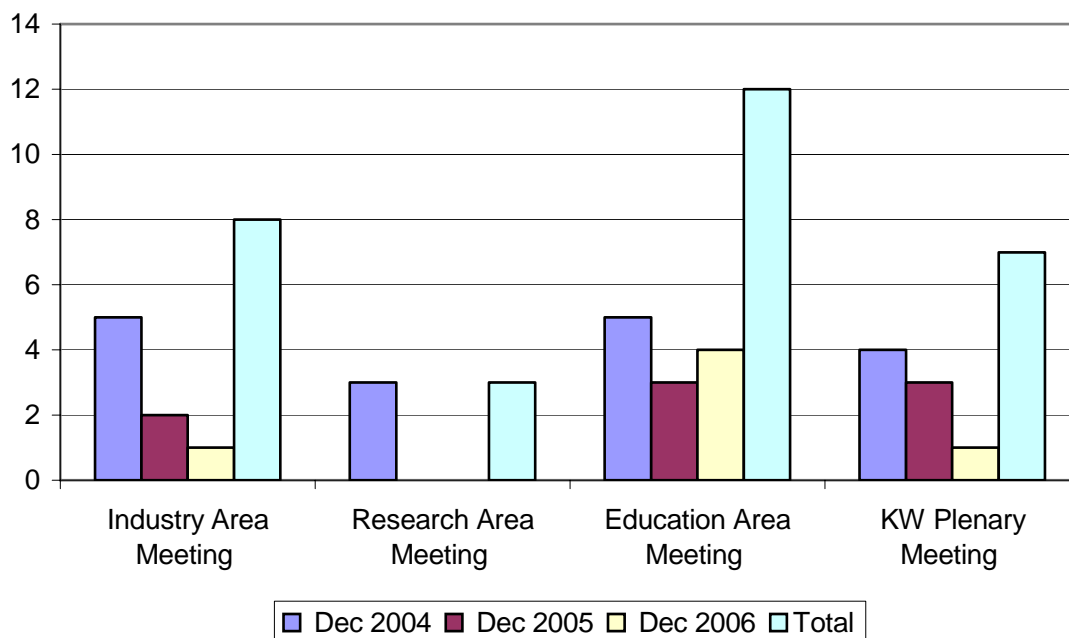**Table 4**. History of the Number of Meetings inserted in the KW Semantic Portal

Figure 4. Graphic of the Evolution of the Number of Meetings inserted in the KW Semantic Portal

❑ Number of exchanges within KW (T-REX ontology). The number of exchanges inserted in the KW Semantic Portal during of each year (2004, 2005, and 2006) and the total number of exchanges are shown in Table 5 and Figure 5. Note that during 2005, 18 new exchanges were introduced in the KW Semantic portal; and during 2006, 7 new exchanges were introduced.

	Dec 2004	**Dec 2005**	**Dec 2006**	**Total**
Exchange	14	18	7	39

Table 5. History of the Number of Exchanges inserted in the KW Semantic Portal
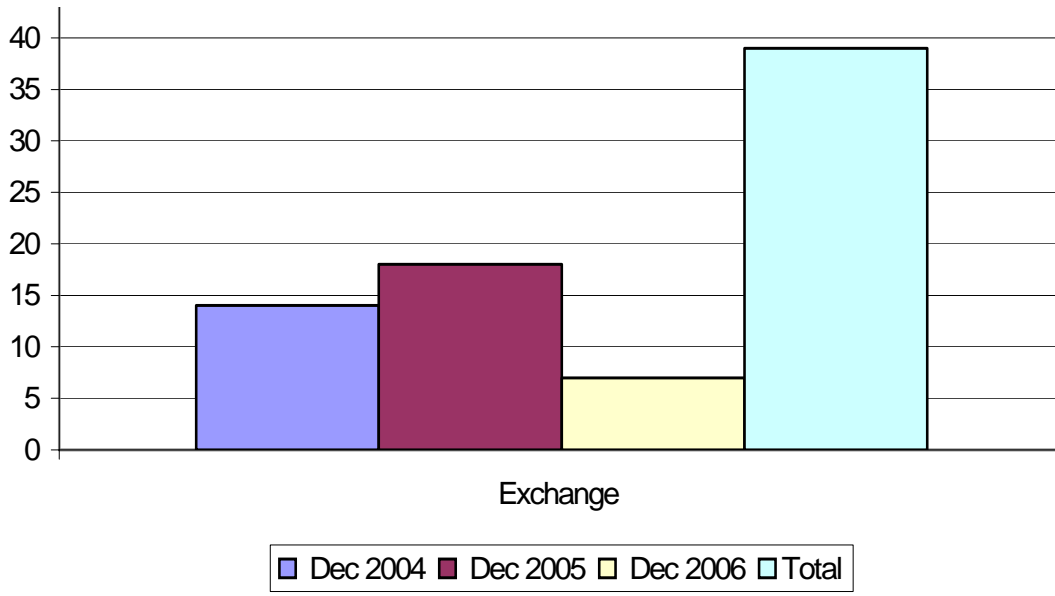
Figure 5. Graphic of the Evolution of the Number of Exchanges inserted in the KW Semantic Portal

5. Portal Access Statistics

Table 6 and Figure 6 present KW portal visits from March 1st, 2004 to November 30th, 2006. During this period, 55.538 visits were counted. Forty percent of these visits were made by KW members and 60% by non-KW members.

	2004	2005	2006
January	0	1542	2677
February	256	1558	2495
March	313	2010	2879
April	255	2061	2064
May	1346	2024	2128
June	1129	1772	1855
July	1143	1754	1643
August	827	1424	1616
September	1160	1850	1679
October	1383	1959	1311
November	1284	2457	1811
December	1442	2431	-
TOTAL	10538	22842	22158

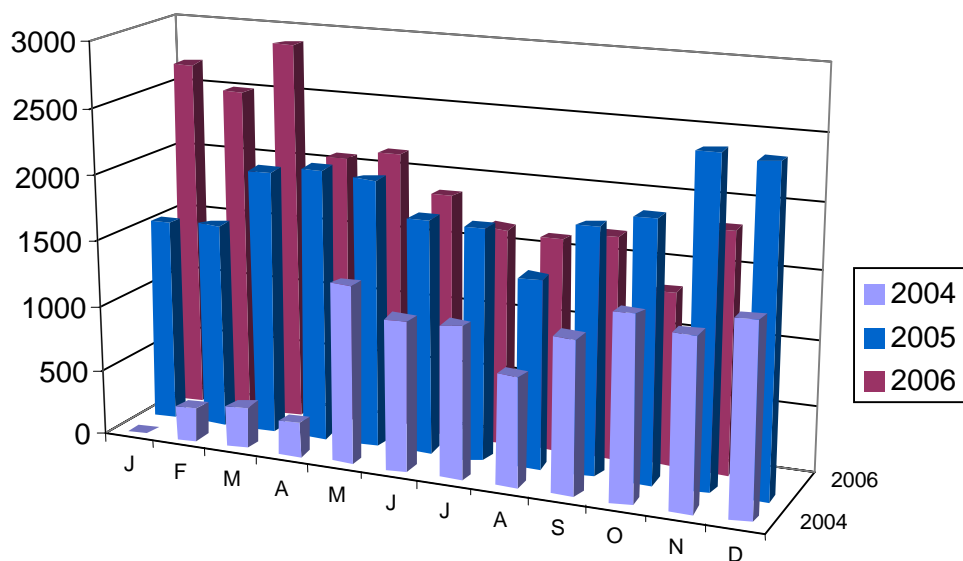**Table 6**. KW portal visits per year

Figure 6. KW portal visits per year

Figure 7 shows the access statistics per partner domain from 2004 to 2006; visits from organizations outside Knowledge Web are not included.
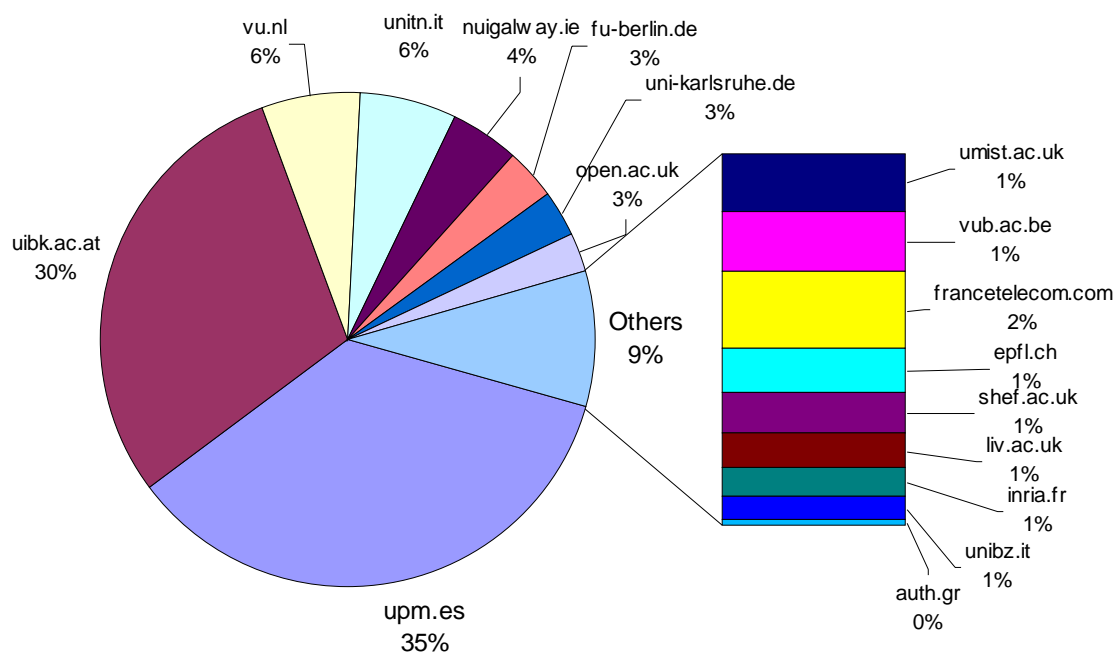
Figure 7. KW portal visits per partner domain from 2004 to 2006

In **Table 7** and **Figure 8** we can see the number of visitors from organizations outside Knowledge Web per year. In 2004, the number of visits from organizations outside Knowledge Web was of a 55%, and in 2005 and 2006 it has stabilized in a 63%. We can see that the number of visits from organizations outside Knowledge Web increases a 49% from 2004 to 2005 and stabilizes from 2005 to 2006. The visits from the United States comprise the 32% of the visits from organizations from outside KW.

	2004	**2005**	**2006**
KW partners	56757	60716	62635
Outside KW	68197	101939	101501

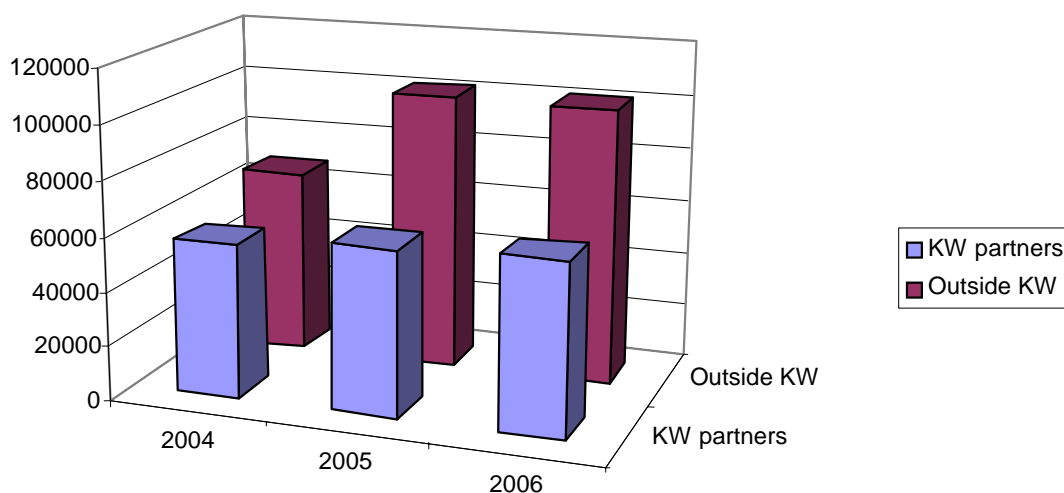**Table 7** KW portal visits from partners and non partners per year

Figure 8 KW portal visits per year

After analyzing the access from countries (see Table 8 and Figure 9), we can say that from 2004 to 2006 the top 3 of accesses consist of the United States, Spain, and Austria. In the case of Spain and Austria, the high number of accesses is due to the management and update of the portal and its content. In Figure 10 we can see the visits per country per year.

	2004	2005	2006	TOTAL
United States	7301	33820	44588	85709
Spain	36763	24912	16357	78032
Austria	5047	12473	41864	59384
Germany	13545	18495	9435	41475
Great Britain	12552	12760	7820	33132
Italy	8698	8076	5513	22287
France	10158	5684	4266	20108
Netherlands	2550	11832	1940	16322
European Union	4716	5411	5796	15923
Greece	4175	4052	2363	10590
Others	18449	25140	24194	67783

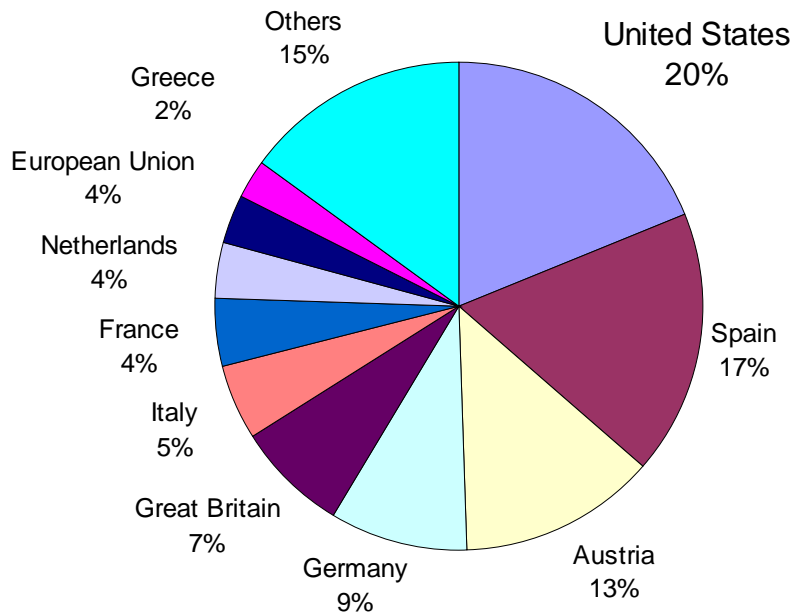Table 8 KW portal visits per country from 2004 to 2006

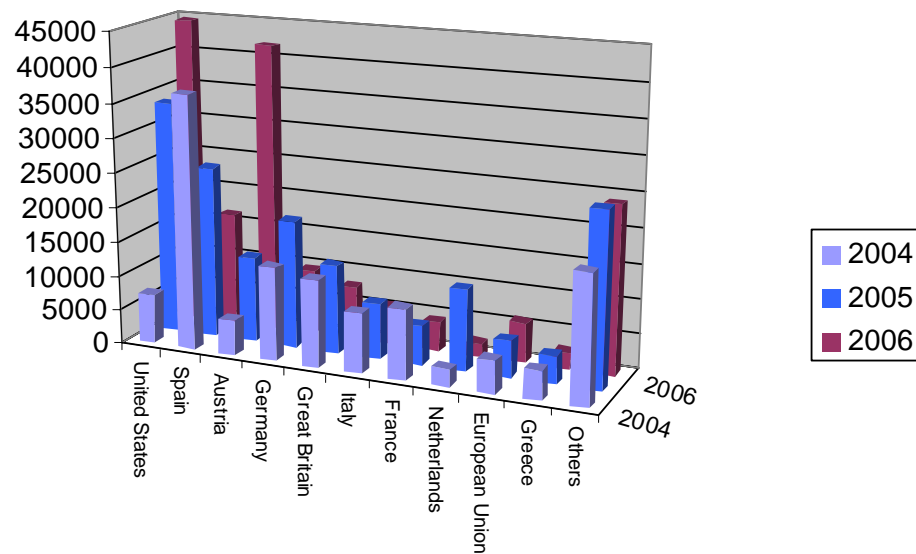**Figure 9**. KW portal visits per country from 2004 to 2006

Figure 10 Visits per country per year

6. Conclusions

This deliverable presents the new functionalities included in the KW Semantic Portal. The semantic portal provides a mailing system for notifying the current status of progress reports during the reporting period and a risk management system that covers the requirements specified in deliverable *D4.6.1 "Report on self-assessment, risk analysis and market watch"*.

The KW Semantic Portal is able to manage multiple interlinked ontologies. For the time being, six project description ontologies, plus one *User* ontology, one *Management Report* ontology, and one *Risk Management* ontology have been developed to be included in the KW Semantic Portal. In this deliverable, the statistics of these 9 ontologies (number of concepts, attributes, and ad-hoc relations) released on 24th November 2006 are presented.

We also present the evolution of the number of instances of those issues that we think are the most interesting for the Knowledge Web management. Those issues are: publications, people, meetings and exchanges.

Finally, this deliverable shows the KW Semantic Portal visits from March 1st, 2004 to November 30th, 2006. Forty percent of these visits were made by KW members , the remainder, 60%, by non-KW members.

7. References

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2. Corcho, O.; Gómez-Pérez, A.; López-Cima, A.; López-García, V.; Suárez-Figueroa, M.C. 2003. "*ODESeW. Automatic Generation of Knowledge Portals for Intranets and Extranets*". International Semantic Web Conference 2003 (ISWC03). Lecture Notes in Computer Science (2870). PP: 802-817.

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4. Gómez-Pérez, A.; López-Cima, A.; Suárez-Figueroa, M.C.; Corcho, O. 2006. "*The ODESeW platform as a tool for managing EU project: the KnowledgeWeb case study*". 15th International Conference on Knowledge Engineering and Knowledge Management (EKAW 2006). Managing Knowledge in a World of Networks. Springer. LNAI 4248. Steffen Staab, Vojtêch Svátek (Eds). Pages: 389-396. Podebrady, Czech Republic. October 2-6, 2006.