

COCOON

Building Knowledge driven and dynamically networked communities within European healthcare systems

COCOON is a 6th Framework EU integrated project aimed at setting up a set of regional semantics-based healthcare information infrastructure with the goal of reducing medical errors. Three services were developed in COCOON for that purpose: a Semantic Information Retrieval, a Decision Support System and a facility to find Expert.

The Semantic Information Retrieval service is meant to help General Practitioners (GP) in accessing healthcare open access content by supporting GPs in searching and navigating medical contents in a semantic way. A SIR infrastructure has been set up in three European regions: Lombardy in Italy, Brussels in Belgium and Epirus in Greece and serves around 250 GP testers. SIR is made up by an instance of SOIP (<http://seip.cefriel.it>) and by a commercial conceptual indexing engine (<http://www.landcglobal.com/>). The documents are crawled from 59 open access journals, they are indexed using TeSSI ontology and Dublin Core metadata (i.e., title, authors, abstract, publication date, source, etc.) becoming available for semantic navigation through SOIP. A demonstrative version of SIR is available at <http://seip.cefriel.it/soip4cocoon/>.

The Expert Finding service offers GP a way to ask for help of expert. A GP has first to describe the problem of the patient and his/her preferred date-times to arrange a teleconsultation meeting. Then, the service performs the discovery by matching the problem expressed by the GP against the descriptions of the teleconsultation offered by each specialist, and it returns to the GP application a list of references to the various agendas of the experts, ordered by decreasing relevance. The GP can, then, interactively select one of agendas and find a slot available for the teleconsultation meeting. A demonstrative service is available at <http://glue.cefriel.it/glueclient/>.

Official web site <http://www.cocoon-health.com/> . (IST-2002-507126 eHealth)

1 Publications

1.1 Book chapters

- [1] Emanuele Della Valle, Dario Cerizza, Irene Celino, Asuman Dogac, Gokce B. Laleci, Yildiray Kabak, Alper Okcan, Ozgur Gulderen, Tuncay Namli, Veli Bicer “**eHealth Use Case - Semantic Web Services in eHealth**”, In: Rudi Studer, Stephan Grimm, Andreas Abecker (eds.), **Semantic Web Services: Concepts, Technology and Applications**. Idea Group Publishers, 2007.
- [2] E. Della Valle, D. Cerizza, V. Bicer, Y. Kabak, G. Banu Laleci, H. Lausen **The Need for Semantic Web Service in the eHealth** –Chapter in “The Semantic Web”, Institute of Chartered Financial Analysts of India Publication, November, 2007 (to appear)

1.2 Paper in International Conferences Proceedings

- [3] S.Ceri, M. Brambilla, E. Della Valle **Design Abstractions for Innovative Web Applications: the case of the SOA augmented with Semantics**– In Proceedings of 4th European Semantic Web Conference, ESWC 2007, **LNCS 4519**, Innsbruck, Austria
- [4] I. Celino, E. Della Valle. “**Multiple Vehicles for a Semantic Navigation Across Hyper-environments**”, In proceedings of ESWC 2005, **LNCS 3532**, Jan 2005, Pages 423 – 438
- [5] E. Della Valle, V. Perdoni, L. Gadda. “**A semantic-based healthcare information infrastructure able to integrate medical information and eHealth services**”. In proceedings of e-2005 eChallenges Conference, 2005
- [6] E.Della Valle and M. Brioschi,“**Toward a framework for Semantic Organizational Information Portal**’ In proceedings of first European Semantic Web Symposium, J. Davies et al. (Eds.): ESWC2004, **LNCS 3053**, pp. 402-416, 2004.

1.3 Paper in International Workshop Proceedings

- [7] I. Celino, F. Corcoglioniti, E. Della Valle **A Semantic Navigation Framework for automatic presentation of ExpertFinder information**. In 1st International ExpertFinder Workshop, Berlin, January 16, 2007
- [8] E. Della Valle, D. Cerizza, I. Celino **Who Shall I Ask? A Discovery Engine for Booking a Meeting with the Right Specialist**. In 1st International ExpertFinder Workshop, Berlin, January 16, 2007
- [9] M. Brambilla, I. Celino, S. Ceri, D. Cerizza, E. Della Valle and F. M. Facca **Flexible Specification of Semantic Services using Web Engineering Methods and Tools**. In proceeding of SWESE 2006 at ISWC 2006, Athens, GA, USA **[BEST PAPER AWARD]**
- [10] M. Brambilla, I. Celino, S. Ceri, D. Cerizza, E. Della Valle, F. Facca, C. Tziviskou. **Improvements and Future Perspectives on Web Engineering Methods for Automating Web Services Mediation, Choreography and Discovery**. In Semantic Web Service Challenge 2006 Phase III, Athens, GA, USA.
- [11] Brambilla, M., Ceri, S., Cerizza, D., Della Valle, E., Facca, F. M., Fraternali, P., Tziviskou, C.: **“Web Modeling-based Coping with Requirements Changes: SWS-challenge phase II”** In Semantic Web Service Challenge 2006 Phase II, Budva, Montenegro, June 2006.
- [12] Brambilla, M., Ceri, S., Cerizza, D., Della Valle, E., Facca, F. M., Fraternali, P., Tziviskou, C.: **“Web Modeling-based Approach to Automating Web Services Mediation, Choreography and Discovery”**. In Semantic Web Service Challenge 2006 Phase I, Stanford University, Palo Alto, CA, March 2006.
- [13] Emanuele Della Valle and Dario Cerizza. **The mediators centric approach to automatic Web Service discovery of Glue**. In Martin Hepp, Axel Polleres, Frank van Harmelen, and Michael R. Genesereth, editors, *MEDIATE2005*, volume 168 of CEURWorkshop Proceedings, pages 35–50. CEUR-WS.org, 2005
- [14] E. Della Valle, D. Cerizza. **“COCOON Glue: a prototype of WSMO Discovery engine for the healthcare field”** Proc. of 2nd WSMO Implementation Workshop WIW'2005, Innsbruck, Austria, June 6-7, 2005, CEUR Workshop Proceedings, ISSN 1613-0073
- [15] E. Della Valle, D. Cerizza, V. Bicer, Y. Kabak, G. Laleci, H. Lausen, "The **Need for Semantic Web Service in the eHealth**", W3C workshop on Frameworks for Semantics in Web Services, 2005
- [16] E. Della Valle, N. Korda, S. Ceri, and D. Dori, **“Gluing Web Services through Semantics: The COCOON Project”** To Appear In proceedings of ICCMSE in the Artificial Intelligence in Healthcare session, November, 2004

1.4 Posters and Demo in International events

- [17] I. Celino, A. Turati, E. Della Valle, D. Cerizza: **Squiggle Med:**

- Semantic Search for Medical Digital Library.*** In proceedings of W3C HCLS Workshop at ISWC 2006, Athens, GA, USA
- [18] D. Cerizza, I. Celino, E. Della Valle. ***Semantic Discovery of Medical Advice Services with Glue.*** In proceedings of W3C HCLS Workshop at ISWC 2006, Athens, GA, USA
 - [19] E.Della Valle, D. Cerizza, I. Celino,L. Gadda, A. Savoldelli,V. Perdoni, ***"The COCOON project"*** In Poster of Second European Semantic Web Conference, ESWC 2005, Heraklion, Crete, Greece, May 29–June 1, 2005

2 Standardization

COCOON contributed to the standardization of :

3 Clustering

COCOON clustered with several other European projects in the area of