



D 2.3.5 v1 Integration of the Consensus Making Framework with the Versioning Environment (internal version status)

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Abstract.

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D 2.3.5 v1.1 internal Integration of the Consensus Making Framework with the Versioning Environment

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Changes

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Executive Summary

In this deliverable, advances in integration of consensus making framework (previously reported in KnowledgeWeb D2.3.2) with the versioning environment (previously reported in KnowledgeWeb D2.3.1, D2.3.3v1) are outlined. The advances towards integration took place in identification of common requirements, use case consideration and further implementation. As this version of the deliverable is internal and is purposed to coordinate the work in WP 2.3, extensive documentation will be provided in the later, external version of this deliverable, D2.3.5v2.

Contents

Executive Summary	6
1 Introduction	8
2 Identification of Common Requirements	8
3 Cases Studies.....	9
3.1 KnowledgeWeb on the People's Portal	9
3.2 Gene Ontology	10
4 Implementation.....	10
5 Conclusion.....	10
Acknowledgements	11
References.....	11

1 Introduction

The goal of the major activity to which this deliverable is related is the specification and implementation of a Semantic Web consensus making environment with a provision of dynamic and community/agents driven ontology construction, reaching agreement process support and ontology instantiation; dynamic ontology and ontology instance data alignment and aggregation; Semantic-based personalization, ontology views and targeted delivery of Semantic Web data and metadata; domain independent and domain dependent ontologies and ontology technologies widely applicable and appropriate for setting best practices on emerging Semantic Web. The Semantic Web consensus making environment is being applied to selected specific case studies such as expert environments, digital libraries and e-Tourism among B2B, B2C and C2C scenarios.

Integration of consensus making framework with the versioning environment is essential due to the dynamicity of consensus making processes. Here, we consider further development of the consensus making framework prototype and its application to use cases in an integrated fashion with the versioning environment.

In this document we refer to our approach to the problem, case studies considered and current implementation progress.

2 Identification of Common Requirements

Work performed on the consensus making environment and related case studies can be found directly in the papers published by us on this topic in 2005 [3, 4, 5, 6, 7, 8].

The People's portal [3, 4, 5, 6, 7, 8] performs the consensus making part and SemVersion [2] performs the versioning part.

People's portal is an implementation of a human-Semantic Web interactive environment. The basic idea of the People's portal is to combine community web portal technology with collaborative ontology management in order to bring the Semantic Web to masses and overcome limitations of the existing community web portals.

SemVersion is an implementation of an RDF-centric versioning approach. It provides structural (purely triple based) and semantic (ontology language based, like RDFS, OWL and OBOL) versioning. It separates language-neutral features for data management from language-specific features like semantic diffs in design and implementation. This way SemVersion offers a common approach for already widely used RDF models and a wide range of ontology languages.

Integration or combination of these prototypes is strongly driven by needs of the real life case studies.

Generally, we considered and agreed upon:

- an ontology of basic changes from the consensus making and versioning points of view, comes from case study analysis [2]
- common software language (Java)
- common software basis (Jena)
- common ontology support language (RDF/S, OWL), with a possibility to consider different languages at later stages
- applying SemVersion in combination with the People's portal consensus making system.

3 Cases Studies

The integrated framework for is being applied to two case studies: "knowledgeweb on the people's portal" and the gene ontology.

The "knowledgeweb on the people's portal" case study runs on the software constructed in WP 2.3. The gene ontology case study is valuable for identification of requirements for consensus making and versioning integration and is being considered for application of developed software in the long run.

3.1 KnowledgeWeb on the People's Portal

The consensus making environment was applied to the KnowledgeWeb consortium to produce a new social application for people working in an area of Semantic Web (application was launched on September 5, 2005). The name of this project is *KnowledgeWeb on the People's portal* and its aim is acquisition of ontological information about people involved in the area of Semantic Web for facilitation of joint research and social activities.

An address of "knowledgeweb on the people's portal" is: <http://people.semanticweb.org>

Features include:

- community-driven ontology construction
- interfaces to identify and browse communities
- dynamic integration of data from KnowledgeWeb portal¹
- easy registration of new members (support of "community friends")

The use case is planned to be actively developed further in the direction of user involvement increase and dynamics support.

¹ KnowledgeWeb portal: <http://knowledgeweb.semanticweb.org>

3.2 Gene Ontology

The gene ontology (GO) community² is where collaborative ontology construction is practiced a long time comparing to other communities. The GO community showed that involvement of multiple parties and high dynamicity is a must for a comprehensive ontology as a result [1]. Hourly changes in the gene ontology and provide strong needs for integrated consensus making and ontology versioning systems.

Our gene ontology case study is targeted at the following audiences:

- Developers of various community environments (for them to illustrate by example the influence of a community on ontology construction process and the corresponding tool support to make the environments benefit from its communities at the highest degree)
- Developers of tools supporting ontology versioning (to give an idea on which ontology change operations are especially useful and can be successfully captured and processed by the community)
- computer science community (for us to spot gaps in the market with the GO case study)

A document draft with the gene ontology case study elaboration was circulated over the KnowledgeWeb WP2.3 mailing list and is currently work in progress.

4 Implementation

Since January 2005, two new software prototypes were created:

- new version of the consensus making framework (People's portal)
online code: http://homepage.deri.org:8080/community/pportal_v0.2.zip
online installation: <http://people.semanticweb.org>
- versioning environment SemVersion (based on ontology of basic changes)
online code: <http://www.ontoware.org/projects/semversion>

These prototypes were driven to work together. Specifically, common basis for software integration provided include:

- both prototypes are conceptually based on ontology of basic changes
- both prototypes are written in Java, building on Jena
- both prototypes support primarily W3C standards, i.e. RDF/S and OWL

5 Conclusion

A brief outline of the D2.3.5 progress is provided here. We have achieved identification of use cases where an integrated consensus and versioning prototype is required and

² GO: <http://www.geneontology.org>

development of compatible prototypes for consensus making and ontology versioning. Further integration and full-fledged documentation is to follow in external D2.3.5v2.

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