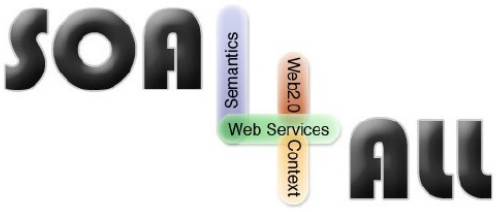

Project Number: **215219**
Project Acronym: **SOA4ALL**
Project Title: **Service Oriented Architectures for All**
Instrument: **Integrated Project**
Thematic Priority: **Information and Communication Technologies**

D11.2.1

Initialise working group on Aligning WSMO With Other Approaches To W3C

Activity:	4: Exploitation and Impact	
Work Package:	11: Standardization	
Due Date:		M6
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Revision:		1.0
Author(s):	Jacek Kopecký (UIBK)	

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Dissemination Level		
PU	Public	☒
PP	Restricted to other programme participants (including the Commission)	☐
RE	Restricted to a group specified by the consortium (including the Commission)	☐
CO	Confidential, only for members of the consortium (including the Commission)	☐

Version History

Version	Date	Comments, Changes, Status	Authors, Reviewers
0.1	29/07/2008	First version, ready for review	Jacek Kopecký
0.9	16/08/2008	Incorporated review comments	Maria Maleshkova, Jacek Kopecký
0.95	19/08/2008	Incorporated review comments	Carlos Pedrinaci, Jacek Kopecký
1.0	23/08/2008	Final version for submission	Jacek Kopecký

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Glossary of Acronyms

Acronym	Definition
AC	Advisory Committee (W3C)
ASWSA	Aligning Semantic Web Service Approaches
CR	Candidate Recommendation (W3C)
D	Deliverable
EC	European Commission
FPWD	First Public Working Draft (W3C)
LCWD	Last Call Working Draft (W3C)
OWL	Web Ontology Language
OWL-S	Semantic Markup for Web Services
PR	Proposed Recommendation (W3C)
SAWSDL	Semantic Annotations for WSDL and XML Schema
SWS	Semantic Web Services
W3C	World Wide Web Consortium
WD	Working Draft (W3C)
WG	Working Group (W3C)
WP	Work Package
WSDL	Web Services Description Language
WSMO	Web Service Modeling Ontology
XG	Incubator Group (W3C)

Executive summary

Standardization is among the major goals of every research project, especially a large-scale integrating project such as SOA4ALL. Deliverable D11.2.1 aims to "initialize working group on Aligning WSMO With Other Approaches To W3C". However, a standard can only be created when there is a clear prevailing direction. Therefore, the first goal of SOA4ALL standardization in this area is to start a common forum and to drive the effort to find this prevailing direction.

The W3C has created Semantic Annotations of WSDL and XML Schema (SAWSDL), a thin layer over the Web Services Description Language (WSDL), that allows the attachment of semantic descriptions to WSDL documents, but it does not standardize any concrete semantics.

In SOA4ALL D3.1.1, due M12, we will refactor WSMO based on the SAWSDL point of view. This will be the perfect starting point for aligning with the other SWS approaches.

In this deliverable we propose a clear plan for our standardization steps, and we describe the W3C standardization process and draft a charter for the group that we intend to start when WSMO-Lite is ready.

1 Introduction

Standardization is among the major goals of every research project, especially a large-scale integrating project such as SOA4ALL. Standards clearly show a long-lasting impact of a research work. In the Description of Work of SOA4ALL, Deliverable D11.2.1 aims to "initialize working group on Aligning WSMO With Other Approaches To W3C". WSMO [2] is only one of a number of approaches for semantic description of Web services, and the W3C, the Web standardization body,[1] has been cautious about starting standardization in this area, as there are major differences in the different existing approaches. A standard can only be created when there is a clear prevailing direction. Therefore, the first goal of SOA4ALL standardization in this area is to start a common forum and to drive the effort to find this prevailing direction.

The W3C has made one step towards Semantic Web Services (SWS) standardization: Semantic Annotations of WSDL and XML Schema (SAWSDL [3]), a thin layer over the Web Services Description Language (WSDL [5]), that allows the attachment of semantic descriptions to WSDL documents, but it does not standardize any concrete semantics. SAWSDL is a basis on which semantic descriptions of Web services should be built.

In SOA4ALL, we have delivered a SAWSDL-based grounding for WSMO in D1.2.1. Nevertheless, a bigger task is still ahead of us - refactoring WSMO, based on the SAWSDL point of view, into WSMO-Lite (D3.1.1). This will be the perfect starting point for aligning with the other SWS approaches.

The W3C, as a standardization body, is not well-suited for conducting research. It prefers to start standardization efforts with one or two well-defined technologies that have the backing of W3C members. Therefore, it would be premature to attempt to initialize a Working Group on Aligning WSMO with other approaches before we even have WSMO-Lite, the alignment of WSMO with SAWSDL. Instead, in this deliverable we propose a clear plan for our standardization steps, and we describe the W3C standardization process and draft a charter for the group that we intend to start when WSMO-Lite is ready.

[1] `http://w3.org/`

2 Plan for SOA4ALL Initialization of ASWSA Incubator Group

The concrete steps towards initializing standardization work on aligning WSMO with other SWS approaches, under the proposed name Aligning Semantic Web Service Approaches (ASWSA), are as follows:

1. investigate the W3C Process, create a plan (i.e., this report) (M6)
2. contact the W3C and key authors of prominent other SWS technologies (such as OWL-S [4]), alerting them to our plan and seeking cooperation (M8)
3. submit WSMO-Lite to the W3C as a SWS technology built on SAWSDL (M12)
4. propose an Incubator Group (XG) to work on aligning WSMO-Lite with other SWS technologies (M12)
5. work in the XG, report on its status in D11.1.3 (M18)

While this present deliverable is called “Initialise working group on Aligning WSMO With Other Approaches To W3C”, due to the processes involved and due to the dependency on a SOA4ALL M12 deliverable, this is the fastest practical plan for actually achieving the goal of D11.2.1.

3 W3C Standardization Process

In the W3C, standards are called *Recommendation* and are developed by *Working Groups*. The process around Working Groups can be summarized as follows:

1. a Working Group is suggested by W3C *Members* (organization who have formally joined the Consortium) to work on a specific piece of technology, usually with some external specification submitted as an input;
2. the W3C *Team* creates a charter (possibly drafted in the WG proposal),
3. the charter is approved (or rejected) by representatives of the consortium members, the so-called *Advisory Committee*,
4. the Working Group is started, with well-defined timeline and deliverables,
5. and finally, after it finishes its work or its time (modulo possible extensions), the group is ended.

Working Groups can have normative and non-normative deliverables. The normative ones are said to be "on the Recommendation track", with the goal to get wide consensus and specify the standard technology. The steps of the Recommendation track are the following:

1. *First Public Working Draft* (FPWD) is the first time a Working Group formally publishes a document; this is announced in relevant places.
2. *Working Draft* (WD) is a formal update of a document. To demonstrate progress, working groups are required to update their deliverables at least every 3 months (a so-called heart-beat requirement).
3. *Last Call Working Draft* (LCWD) is an update that signifies that the Working Group is done with the document. At this stage, the group requests formal reviews from the public and selected relevant parties in particular, and there are stringent requirements for handling the feedback received for an LCWD. In case any substantial changes are made to the document as result of the feedback, the next publication must again be a Working Draft or a Last Call Working Draft.

   After all the Last Call feedback is handled, the WG submits the document to the W3C for publication as a Candidate Recommendation, and the WG must show that the document covers all the requirements, and that all feedback has been handled appropriately, with strong emphasis on reaching consensus.
4. *Candidate Recommendation* (CR) is a call for implementations. The working group enters CR with a set of *exit criteria*, specifying what and how many implementations are expected and how they should interoperate. In conjunction with the implementors, the WG performs any testing necessary to gather evidence of implementability of every feature of the specification.

   Implementors often uncover problems with specifications, and in case such reports lead to substantial changes, the specification must go back to Working Draft or Last Call.
5. *Proposed Recommendation* (PR) is published after the Working Group shows evidence of implementations of a stable Candidate Recommendation. A Proposed Recommendation is given to the Advisory Committee for formal approval, and when approved, the document becomes final.

6. *Recommendation* is a W3C standard, a stable technology specification. It can undergo maintenance, with errata etc.

This process, with specified minimum durations of the various review stages, takes no less than one year, commonly more. It is a process strongly focused on achieving wide consensus and a high level of stability and maturity of specifications.

In some cases, there is not enough consensus around a single technology on which the W3C could work, and yet the W3C would be a good environment for some work. Therefore, the W3C has established a lightweight *Incubator* process which allows its members to work on their technologies of interest on the neutral ground of the consortium, but with minimal support and without the ability to produce Recommendations.

An Incubator Group (XG) is established rapidly upon request of at least three W3C members, without the need for Advisory Committee approval, instead approved by the W3C Team. An XG gets the same infrastructure as a WG (Web pages, mailing lists etc.), for a duration initially not exceeding one year. XGs also publish Working Drafts, but the end product, possibly after Last Call(s), is a so-called XG Report, with no formal standards standing. However, an Incubator Group may request a simplified transition to a full Working Group; simplified by its already existing connection with the W3C, but still requiring full AC approval.

An Incubator Group may work on a technology that would not initially be suitable for standardization, and if the technology matures appropriately, it will have a smoother path towards the Recommendation track. Due to the nature of the SOA4ALL standardization intent in this area, we expect to submit WSMO-Lite (D3.1.1, due M12) to create an Incubator Group, and use the consensus-centric W3C environment to foster the alignment of WSMO with other SWS approaches.

4 Draft Charter of ASWSA XG

This section drafts the main elements of the proposed Aligning SWS Approaches Incubator Group (ASWSA XG) charter. A template for the charter can be generated online.[1] Note that this draft cannot be completed at this time, due to the dependencies mentioned earlier. The places where the draft needs to be completed are marked with a double at-sign (@@), or with @@text enclosed by double at-signs, as shown here.@@

The mission of the Aligning Semantic Web Services Approaches Incubator Group, part of the Incubator Activity, is to gather input on existing frameworks for Semantic Web Services, and to work on aligning those frameworks, starting from Semantic Annotations for WSDL and XML Schema (SAWSDL).

End date: 31 March 2010

Confidentiality: Proceedings are public.

Initial Chairs: @@up to negotiations@@

Initiating Members: BT, the Open University, University of Innsbruck, @@possibly others@@

Usual Meeting Schedule: Teleconferences every two weeks, face-to-face 3–4 times per year.

4.1 Scope

Web Services are a technology for distributed computing in the Web environment, that has wide industrial support. There are many Web Services standards from assorted standardization bodies, above all the W3C and OASIS. These standards, however, focus mostly on the run-time behavior of Web services (they define protocols for achieving various tasks using Web Services), and little on the design-time description.

Researchers have proposed several frameworks for automation of the discovery and use of Web services with the help of semantic Web service descriptions; the term used to name this line of research is generally Semantic Web Services (SWS). Many of them are disconnected from the underlying Web service specifications such as WSDL, and they propose to tackle the semantic description of services in very different ways (cf. OWL-S, WSMO, [1], @@others@@).

The W3C has standardized SAWSDL (Semantic Annotations for WSDL and XML Schema) in order to make WSDL the basis model for semantic Web service descriptions. Existing frameworks now support SAWSDL (e.g. SAWSDL grounding exists for OWL-S and WSMO), and new frameworks are appearing that build directly on SAWSDL, e.g. WSMO-Lite, @@others@@.

The ASWSA Incubator Group will analyze the SAWSDL-based SWS frameworks and extract commonalities (or identify points of contention), resulting in a unified proposal for concrete service semantics, built as a layer above SAWSDL.

[1] http://www.w3.org/2006/02/chartergen?groupname=Aligning+Semantic+Web+Services+Approaches&group=xg&xgshortname=aswsa&end-day=31&end-month=March&end-year=2010&domain=inc&confidential=public&ieaccess=public&patpol=xgdisc&mtgtel=2&mtgftf=3&makenew=Generate+new+charter

4.1.1 Success Criteria

The XG will be considered successful if a common framework is agreed on, with pledges of support from multiple groups that submitted inputs to the XG.

4.1.2 Out of Scope

The XG will not work on new types of semantics that are not supported by submitted frameworks.

4.2 Deliverables

The XG will produce a single XG report, titled “Aligned Semantic Web Services Approach (ASWSA).”

4.3 Dependencies

4.3.1 W3C Groups

The result of the XG is expected to use RDF, OWL and possibly rules. Therefore, the XG may need to reuse the specifications coming from the RIF WG (Rule Interchange Format).

4.3.2 External Groups

@@to be filled in based on the outreach to other SWS research groups, plus potentially the SEE and SOA4ALL-extended SEE TCs at OASIS.@@

4.4 Participation

The XG is open to participation by any interested W3C Members and external individuals, with no limitation on the number of participants. At least two participants should serve as editors for each formal deliverable.

The group expects to hold bi-weekly teleconferences, plus to organize 3–4 face-to-face meetings during its duration. Participants are considered in Good Standing if they (the individuals) attend at least two meetings (teleconference or face-to-face) out of each consecutive four.

Should the group require voting to resolve an issue and to move forward, the chairs may choose to exclude participants in bad standing from the vote.

4.5 Communication

This group primarily conducts its work on the public mailing list public-xg-aswsa@w3.org. The group’s Member-only list is member-xg-aswsa@w3.org.

Information about the group (deliverables, participants, face-to-face meetings, teleconferences, etc.) is available from the Aligning Semantic Web Services Approaches Incubator Group home page.

4.6 Decision Policy

As explained in the W3C Process Document (section 3.3), this group will seek to make decisions when there is consensus. When the Chair puts a question and observes dissent, after due consideration of different opinions, the Chair should record a decision (possibly after a formal vote) and any objections, and move on.

- When deciding a substantive technical issue, the Chair may put a question before the group. The Chair must only do so during a group meeting, and at least two-thirds of participants in Good Standing must be in attendance. When the Chair conducts a formal vote to reach a decision on a substantive technical issue, eligible voters may vote on a proposal one of three ways: for a proposal, against a proposal, or abstain. For the proposal to pass there must be more votes for the proposal than against. In case of a tie, the Chair will decide the outcome of the proposal.
- This charter is written in accordance with Section 3.4, Votes of the W3C Process Document and includes no voting procedures beyond what the Process Document requires.

4.7 Patent Policy

This Incubator Group provides an opportunity to share perspectives on the topic addressed by this charter. W3C reminds Incubator Group participants of their obligation to comply with patent disclosure obligations as set out in Section 6 of the W3C Patent Policy. While the Incubator Group does not produce Recommendation-track documents, when Incubator Group participants review Recommendation-track specifications from Working Groups, the patent disclosure obligations do apply.

Incubator Groups have as a goal to produce work that can be implemented on a Royalty Free basis, as defined in the W3C Patent Policy.

The W3C Team is responsible for notifying all Participants in this Incubator Group in the event that a new Working Group is proposed to develop a Recommendation that takes the XG Report as an input.

For more information about disclosure obligations for this group, please see the W3C Patent Policy Implementation.

5 Conclusions

In the Description of Work of SOA4ALL, Deliverable D11.2.1 aims to "initialize working group on Aligning WSMO With Other Approaches To W3C". It turns out that to initialize such a group, we will require inputs from tasks scheduled for M12, therefore this report provides a concrete plan and a first draft of the charter of the group that we expect to initialize.

In summary, we expect to adopt WSMO-Lite (D3.1.1) as the basis for a W3C incubator group on Aligning Semantic Web Service Approaches (ASWSA), which should be running by SOA4ALL M18.

References

[1] Sudhir Agarwal. *Formal Description of Web Services for Expressive Matchmaking*. PhD thesis, University of Karlsruhe, Germany, 2007.

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[3] Semantic Annotations for WSDL and XML Schema. Recommendation, W3C, August 2007. Available at `http://www.w3.org/TR/sawsdl/`.

[4] The OWL Services Coalition. OWL-S 1.1 Release. Available at `http://www.daml.org/services/owl-s/1.1/`, November 2004.

[5] Web Services Description Language (WSDL) Version 2.0. Recommendation, W3C, June 2007. Available at `http://www.w3.org/TR/wsdl20/`.