Service Web 3.0 Collaboration Activities Plan

Deliverable 3.4

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Abstract (for dissemination)	This document elaborates on the plan of cooperation with other ICT projects grouped under the FP7 objective “Service and Software Architectures, Infrastructure and Engineering”. The goal of the collaboration is to achieve synergies between the projects by contribution to working groups, joint training and dissemination activities, development of common dissemination materials, joint standardization efforts, etc. As a result, outcomes of the projects should be both more visible to external parties as well as more aligned among the existing projects.
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CONTENT

1. EXECUTIVE SUMMARY

This document elaborates on the plan of cooperation with other ICT projects grouped under the FP7 objective “Service and Software Architectures, Infrastructure and Engineering” and mentions other collaboration initiatives undertaken by members of the Service Web 3.0 project.

The goal of the collaboration is to achieve synergies between the projects by contribution to working groups, joint training and dissemination activities, development of common dissemination materials, joint standardization efforts, etc. As a result, outcomes of the projects should be both more visible to external parties as well as more aligned among the existing projects.

A major unanticipated venue for ServiceWeb 3.0 has emerged in the European Union’s Future Internet initiative. The Future Internet brings together government, industry and academia to define the needs of a future European internet, and bring cross-domain coherence to the research efforts directed towards meeting them. ServiceWeb3.0, being a Support Action targeted at provision of roadmaps, dissemination, standardization and alignment of initiatives in the area addressed by the project, has taken a key role in the Future Internet, and is leading its Services and Architectures working group. This document presents the aims of the working group, its structure, participants, activities undertaken as well as future plans.

2. INTRODUCTION

The main idea of the project was to align work of different projects addressing the concept of Web of Services, which are developing different tools and emphasising the benefits accruing from pervasive use of semantics. Service Web 3.0 together with one of its partners, namely STI, is to shape roadmaps for semantic technologies, coordinate standardisation and dissemination efforts in order to reach industrial partners, and thereby promote industry take-up of the developed technologies.

However, the envisioned scope of the collaboration activities of Service Web 3.0 has been extended and the collaboration activities now encompass all projects from the area of FP7 "Service and Software Architectures, Infrastructure and Engineering" (SSAI&E). The collaboration, being in the focus of attention of this deliverable, aims at [1]:

- *exploitation of synergies / technical concentration: workshops participation, contribution to some of the working groups;*
- *joint activities aiming at exchange, dissemination and training;*
- *production of dissemination material that can be used for communication of ideas to the general public;*
- *co-ordination of standardisation efforts;*
- *contribution to repositories of reference implementations.*

Such collaboration ensures coherence of FP7 SSAI&E projects and alignment of the achieved results, increases effectiveness of collaboration between EU projects and therefore boosts their impact as well as enables optimised usage of resources by performing shared activities. For this collaboration Service Web 3.0 acts (together with the NESSI initiative[1]) as co-ordinator of Services and Architectures working group of the European Union's Future Internet initiative.

This document is structured as follows. First, it presents the areas of collaboration of Service Web 3.0 project. Then, it focuses on Services and Architectures working group of the European Union's Future Internet initiative, which is the main collaboration initiative of the project. Section 4 provides on overview of other collaboration activities that are to be performed within the project. The document concludes with remarks on the future work and a detailed plan of collaboration activities to be performed.

[1] http://www.nessi-europe.com/Nessi/

3. COLLABORATION

Two groups of collaboration activities of the Service Web 3.0 project may be distinguished. The first group results from the project being a Support Action targeted at provision of roadmaps, dissemination, standardization and alignment of initiatives in the area of Web of Services. The second group results from the involvement in the coordination of Services and Architectures working group of the Future Internet initiative.

Service Web 3.0, as a Support Action, is focused on the provision of roadmaps, dissemination, standardization, and the alignment of initiatives in the area of Web of Services. Therefore, the project concentrates on fostering collaboration in shaping the future of the field e.g. by road mapping including vision formulation, strategic planning, tactical planning and alignment of visions. This is enriched by collaboration with other projects from the addressed field resulting in e.g. organization of scientific and industry events such as the European Semantic Web Conference, European Semantic Technology Conference, Asian Semantic Technology Conference, provision of tutorials and workshops (e.g. semantics4WS, workshop@COMPSAC), production of general-purpose multimedia-based promotion materials describing the benefits of these technologies in industry or a book collecting the results of the road mapping activities. The plan for these activities is described in detail in project's description of work as well as in other project's deliverables.

In parallel, , the project is heavily involved in the coordination of Services and Architectures working group of the European Union's Future Internet initiative. As the plan of activities performed within the first type of collaboration is described in detail in other documents, the following sections describe mainly the Future of the Internet initiative and present a plan of future collaboration.

3.1. Future of the Internet

Future of the Internet is an initiative of the European Commission (EC) aiming at grouping all projects founded under FP7-ICT Call 1 and belonging to Challenge 1 "Pervasive and Trusted Network and Service Infrastructures" [2]. The selected 70 projects deal with problems relevant to the Internet of the Future concept e.g. security, broadband, mobility, scalability, distributed services, media, dependability. The EC initiated discussion on creation of working groups consisting of the projects' members in order to ensure collaboration and effective use of resources. In Bled, Slovenia in April 2008 the projects contributing to the idea of Future Internet signed a Declaration outlining challenges and objectives of the Future Internet Assembly (FIA).

FIA consists of different working groups (WG), each working on different issues related to the Future Internet. The following groups were created:

- Network Architecture and Mobility
- Internet of Things
- Content creation and delivery
- Services Architectures
- Trust, Security, Privacy
- Experimental Facilities and Test Beds.

Each group has its own initiatives, members, and a work schedule. Service Web 3.0 together with the NESSI platform is responsible for managing the WG on Service Architectures.

3.2. Projects involved

Currently the WG Service Architectures involves members of the following projects [4]:

- IRMOS, http://www.irmosproject.eu/

  The aim of IRMOS is to enable 'Real-time' interaction between people and applications over a Service Oriented Infrastructure, where processing, storage and networking need to be combined and delivered with guaranteed levels of service."

- NEXOF-RA, http://www.nexof-ra.eu/

  NEXOF-RA aims to build the Reference Architecture for the NESSI Open Service Framework (NEXOF) leveraging research in the area of service-based systems, and to consolidate and trigger innovation in service-oriented economies

- RESERVOIR, http://www.reservoir-fp7.eu/

  The goal of the RESERVOIR project is to increase the competitiveness of the EU economy by introducing a powerful ICT infrastructure for the reliable and effective delivery of services as utilities. This infrastructure will support the setup and deployment of services on demand, at competitive costs, across disparate administrative domains, while assuring quality of service.

- SLA@SOI, http://www.sla-at-soi.org/

  SLA@SOI is an Integrated Project (IP) researching the systematic management of service-oriented infrastructures on the basis of formally specified service level agreements (SLAs). SLA@SOI is a NESSI strategic project realizing one core pillar of the overall NESSI vision.

- SOA4ALL, http://www.soa4all.org/

  Computer science is entering a new generation. The emerging generation starts by abstracting from software and sees all resources as services in a service-oriented architecture (SOA). SOA4All will help to realize a Web of billions of services, a world where billions of parties are exposing and consuming services via advanced Web technology.

- OPEN, http://www.ict-open.eu/

  The objective of OPEN is to provide users with migratory interactive services, which enable users to change interaction platform and still continue their tasks through an interface adapted to the new context of use.

- SHAPE, http://www.shape-project.eu/

  The objective of the SHAPE project is to support the development and realization of enterprise systems based on a Semantically-enabled Heterogeneous service architecture (SHA). SHA extends Service Oriented Architecture (SOA) with semantics and heterogeneous infrastructures with a unified service oriented approach. SHAPE will provide an open source implementation of the UPMS service.

- m:CIUDAD, http://www.mciudad-fp7.org/

  User-friendly creation tools in the mobile, optimised execution environment, a model for knowledge warehouses, a proposed specific searching engine and a set of business models for users, for service providers and for third parties. This is m:Ciudad's scope.

- PERSIST, http://www.ict-persist.eu/

  The vision of PERSIST is of a Personal Smart Space, which is associated with the portable devices carried by the user and which moves around with him/her, providing context-aware pervasiveness to the user at all times and places. The Personal Smart Space will cater for the needs of users, adapting to their preferences and learning new ones as these arise.

- SERVFACE, http://www.servface.org/

  The project ServFace will extend service-oriented architecture concepts with an integrated approach of user interface description and development by introducing the notion of a correspondent user interface for services.

- S-CUBE, http://www.s-cube-network.eu/

  S-Cube, the Software Services and Systems Network, will establish an integrated, multidisciplinary, vibrant research community which will enable Europe to lead the software-services revolution, thereby helping shape the software-service based Internet which is the backbone of our future interactive society.

As already mentioned, Service Web 3.0 and NESSI are coordinators of the WG. The list of members is to be further extended with participants of other initiatives and related projects from other FP7 calls. They new members will be actively sought during the events organised and attended by the WG members.

3.3. Topics of interest

During its first workshop in Bled, the Service Architectures WG identified several topics to be addressed by the group. These topics became a basis for the creation of four clusters within the group, namely: management and governance, trust at scale and high granularity,

architectures and infrastructures, and lifecycle engineering for Future Internet Applications. A short description of topics that are addressed by each cluster follows.

Management and governance

- Management of Ubiquitous Virtual Resources - including the integrated and flexible usage of heterogeneous resources and maximizing efficiency over various criteria including computational throughput, efficient use of bandwidth and storage, minimizing overall energy consumption, handling mobility across multiple devices;
- Managing across multiple domains and across the network and service layer providing integrated management functionality, incorporating issues including: system lifecycles, monitoring, (re)configuration, optimisation, organisation, performance, adaptation, context, semantics, security, composition, assurance, negotiation, repository, SLA, QoS, billing, functions-management;
- Embedding management functionality in all Future Internet systems (i.e. InNetworks management, InServices management, InContent management);
- Orchestration and integration of management functionalities.

Trust at scale and high granularity

- Security management frameworks taking into account current research in Mobile Ad-Hoc Networks (MANET);
- Planetary scale computing efforts;
- Trusted virtualization which facilitate the creation of appliance networks which largely automate the deployment and auditing life cycles of both hardware and software according to well specified policy requirements, which operate across the differing domains of personal, business and governmental computing sectors.

Architectures and infrastructures

- Architectural and infrastructural concerns making the Future Internet a reality, which include:
    - mobility;
    - dynamicity;
    - security;
    - awareness of user context;

- relationship to business value chains and socio-economic aspects.

Lifecycle engineering for Future Internet Applications

- Interplay between content engineering, service engineering and network engineering lifecycles.
  - How can content be engineered, so it remains usable when the devices and networks used to produce, consume and distribute it are transient?
  - How can content be engineered when these devices and channels may not even exist yet?

3.4. Collaboration activities

The following goals were defined for the Service Architectures WG:

- development of a shared white paper to describe the advanced vision of an Internet of Services, addressing topics such as management of services, trust, security, privacy, etc.,
- sharing and extending research portfolios and deliverables in order not to duplicate work between projects, as well as taking advantage of the WG ,
- setup of glossary of terms to ensure common terminology,
- setup of joint program activities focusing on cross-domain challenges, organisation of joint-dissemination events (e.g. Future of the Internet workshop in Vienna) aimed at creating a community centered around the WG and working on topics highlighted by the WG,
- creation of research framework - by providing infrastructure enabling for exchange of ideas,
- contribution or development of new standards.

The WG primarily works remotely, having conference calls at least once a month. Face to face meetings are envisioned at all FIA events.

Moreover, to enable and foster collaboration of the Working Group a wiki has been established. It is publically readable, and available at: [3]. This repository not only stores files, but also enables collaborative work on documents as well as dissemination of outcomes of the WG. The portal also has a private area for storing information available only to the WG members.

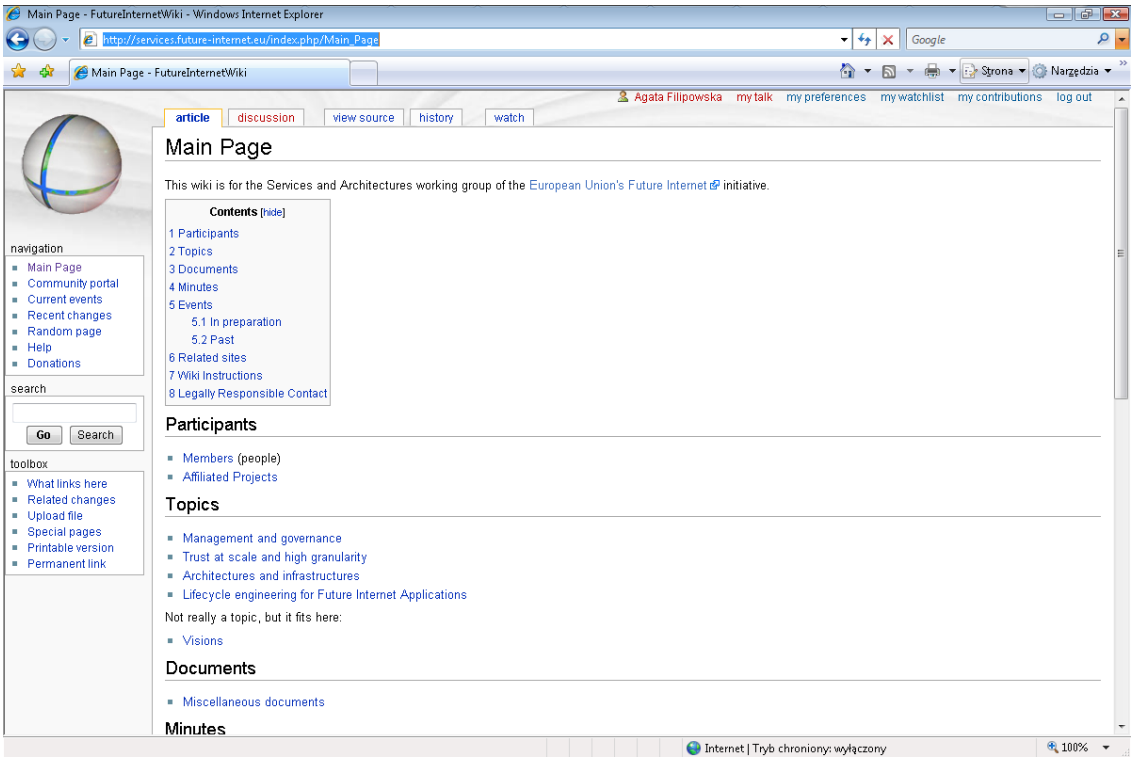

Figure 1. Future Internet Services and Architectures working group wiki

The communication of the working group takes place using the dedicated mailinglist: services@future-internet.eu.

In addition to co-chairing the Services and Architectures working group, The Open University has set up a crossproject community in the form of the Future Internet Interest Group (FIIG). The core of the interest group will consist of members of the Services and Architectures working group, however this will expand to include members from outside of the community.

3.5. Resources involved

There are no additional resources allocated to collaboration tasks or the working group initiative besides the resources included in the project plans of the participating projects and their members. Moreover, travel, dissemination activities, standardization efforts, etc. will also have to be covered by the specific partners. In case of workshops or other dissemination activities, funding from sponsors will be considered.

4. OTHER COLLABORATION ACTIVITIES

4.1. STI Conceptual Models for Services Working Group

STI Conceptual Models for Services Working Group (CMS WG) is to continue the efforts of the WSMO working group[2]. It will maintain WSMO by adding appropriate updates fulfilling requests of Semantic Web service researchers and practitioners. Moreover, building on WSMO the CMS working group will create new generic ontologies including:

- *WSMO-Lite* - a lightweight ontology which uses RDFS as the description language and defines mechanisms to annotate WSDL descriptions using SAWSDL.
- *MicroWSMO* - an annotation mechanism for RESTful services.
- *Semantic Annotations of Processes* - an ontology for describing processes which are implemented as Web services. Processes at varying levels of granularity will be considered (e.g. from high level business views to Web service aggregations).

The work of the CMS WG is based on the ongoing work in three European projects: SUPER[3], and SEEMP[4] for the semantic annotations of processes and SOA4All[5] for WSMO-Lite and MicroWSMO. The group will take advantage from the standardisation efforts within W3C and OASIS especially: SAWSDL[6] and the SWS Testbed Incubator Group[7] within W3C; and the OASIS Semantic Execution Environments Technical Committee[8].

The CMS WG is expected to hold regular distributed meetings (e.g. teleconferences), scheduled by the WG chairs (currently John Domingue - Open University, Tomas Vitvar - STI Innsbruck and Michal Zaremba - STI Innsbruck). The WG will also organize annual face-to-face meetings co-located with major events such as STI International meetings, European Semantic Web Conference or International Semantic Web Conference.

Detailed information on the group may be found at: http://cms-wg.sti2.org/home/

4.2. Semantic Technologies and Ontologies Working Group

The mission of this working group is to provide a forum for collaboration amongst projects, primarily within the Software and Service Architectures unit, on the application of semantics to SOA. In particular topics addressed by the group cover:

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[2] http://www.wsmo.org
[3] http://www.ip-super.org/
[4] http://www.seemp.org/
[5] http://www.soa4all.org/
[6] http://www.w3.org/2002/ws/sawsdl/
[7] http://www.w3.org/2005/Incubator/swsc/
[8] http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=semantic-ex

- generic ontologies for describing services,
- generic ontologies for describing Grid entities,
- architectures and infrastructures for managing semantic SOA systems and applications,
- architecture and methodologies for the development of Semantic Grid infrastructures such as the S-OGSA reference architecture,
- semantic languages and representation formalisms for representing services,
- use cases that demonstrate the business value delivered from the adoption of semantics in a SOA environment.

The WG is currently being set up. It will also establish links with the previously mentioned Conceptual Models for Services Working Group and ongoing projects on Semantics applied to SOA.
The group has already established a wiki available at: http://wg.sti2.org/semtech-onto/index.php/Main_Page.

5. SERVICE WEB 3.0 COLLABORATION ACTIVITIES PLAN

After the Future Internet conference at Bled in April, the following events were/are to be attended/organised by the Future Internet Services and Architectures WG members:

Date & Place	Type of activity	Description
23 January 2008	Meeting	Future Internet Meeting, Brussels
4-5 March 2008	Conference	Internet of Services, Brussels http://cordis.europa.eu/fp7/ict/ssai/fp7-launch-march08-reg_en.html
31 March – 2 April 2008	Conference	The Future Of The Internet, Perspectives emerging from R&D in Europe, Bled, Slovenia http://www.fi-bled.eu/
28 April 2008	Meeting	Meeting with Jesus Villasante (Head of Services Unit)
19 May 2008	Meeting	Future Internet Assembly in Madrid, Organising Committee meeting
28 May 2008	Conference call	
9-10 June 2008	Conference	1st Japan EU Symposium on the "New Generation Network" and the "Future Internet", 9 – 10 June 2008, Brussels, Belgium http://www.ict-fireworks.eu/events/eventview/article/1st-japan-eu-symposium-on-the-new-generation-network-and-the-future-internet.html
11 June 2008 Stockholm, Sweden	Future Internet Assembly (FIA) Cluster meeting	Networks, Services, Content, Things - Cross Domain Issues /WGs
11 July 2008	Conference call	
15 September 2008	Meeting	Future Internet Assembly in Madrid, Organising Committee meeting
22-23 September 2008	Meeting	Software&Services Concertation meeting

28 September 2008 Vienna, Austria	FIT Workshop	Interdisciplinary symposium, open to all scientific areas with an emphasis on the technologies driving the development of the Web 3.0: semantics and services. Research should address the key challenges the Internet is facing: **Scalability** in the face of peer-to-peer traffic, decentralisation, and increased openness, **Trust** when government, medical, financial, personal data are increasingly trusted to the cloud, and middleware will increasingly use dynamic service selection, **Interoperability** of semantic data and metadata, and of services which will be dynamically orchestrated, **Pervasive** usability for users of mobile devices, different languages, cultures and physical abilities, **Mobility** for users who expect a seamless experience across spaces, devices, and velocities.
25-27 November 2008	Conference	ICT Event "I's to the Future" http://ec.europa.eu/information_society/events/ict/2008/index_en.htm
9-10 December 2008 Madrid, Spain	Future Internet Assembly (FIA) Cluster meeting	Networks, Services, Content, Things - Cross Domain Issues /WGs http://www.future-internet.eu/home/future-internet-assembly/madrid-dec-2008.html

Other Future actions are currently being defined in order to address the goals of the working group as described in Section 3.4.

CMS Working Group, as it has been already mentioned, is expected to hold regular distributed meetings (e.g. teleconferences), scheduled by the WG chairs. The list of WG conference calls is presented in table below.

Date & Place	Type of activity	Description
09-01-2008	Conference call of the CMS WG	The last WSMO telcon: WSMO-Lite, MicroWSMO, non-functional properties
19-02-2008	Conference call the CMS WG	The first CMS WG telcon: WSMO-Lite, MicroWSMO, WADL
15-04-2008	Conference call the CMS WG	WSMO-Lite, MicroWSMO
27-05-2008	Conference call	WSMO-Lite, MicroWSMO, Semantic annotations of procsses
23-06-2008	Conference call	WSMO-Lite and WSML, Semantic Annotations for processes, EU initiatives

The WG will also organize annual face-to-face meetings co-located with major events such as STI International meetings, European Semantic Web Conference or International Semantic Web Conference. Detailed (and constantly updated) information on the collaboration plan (and events) may be found at: http://cms-wg.sti2.org/home/

6. CONCLUSIONS

This deliverable presented the overview and action plan of the collaboration of the Service Web 3.0 project. This collaboration is to ensure coherence of projects and increase effectiveness of the EU collaboration. One of the main collaborations planned is chairing and fostering work of the Services and Architectures WG, that is one of the working groups created within the Future of the Internet Initiative. Its members work jointly on topics of services management and governance, trust at scale and high granularity, architectures and infrastructures and lifecycle engineering for Future Internet Applications.

Other initiatives discussed within the deliverable cover STI Conceptual Models for Services Working Group as well as recently established Semantic Technologies and Ontologies Working Group targeted at research at semantic foundation of the Web of Services.

All groups hold (or will hold) at least monthly conference calls, and have a defined work plan that is to be achieved by the end of the year. The actions are intended to be genuinely cooperative in that they are envisioned not to change the project plans of involved projects or partners.

7. REFERENCES

1. Annalisa Bogliolo, EC Expectations, Pressentation available at ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/ssai/events-20080304-05-bogliolo-introduction_en.pdf
2. Future Internet Portal, http://future-internet.eu/
3. Service Architectures WG Portal, http://services.future-internet.eu/index.php/Main_Page
4. Cordis, http://cordis.europa.eu/fp7/ict/ssai/projects_en.html

8. ANNEX I – WG PARTICIPANTS LIST*

Surname	Firstname	Organisation	Project
Baresi	Luciano		S-CUBE
Benbernou	Salima		S-CUBE
Bisson	Pascal	THALES	NESSI 2010
Boniface	Mike	IT Innovation	
De Panfilis	Stefano	Engineering	NEXOF-RA
Delama	Nuria	ATOS	SOA4All
Domingue	John	The Open University	Service Web 3.0
Doolin	Kevin	Telecommunications Software & Systems Group (TSSG)	PERSIST
Dooly	Zeta	Telecommunications Software & Systems Group (TSSG)	Think-Trust
Druais	Serge	THALES	NEXOF RA
Dustdar	Schahram	Technical University of Vienna	COMPAS
Filipowska	Agata	University of Poznan	Service Web 3.0
Francois-Marsal	Bruno	THALES	NESSI 2010
Galis	Alex	UCL	Autonomic Internet and Reservoir
Galizia	Stefania	The Open University	SOA4ALL
Gavras	Anastasias	Eurescom GmbH	
Gidoin	Daniel	THALES	NEXOF-RA
Gittler	Frédéric	HP	NEXOF-RA
Hierro	Juanjo	Telefonica	FAST
Husmann	Elmar	IBM Deutschland GmbH	RESERVOIR and NEXOF-RA
Kennedy	John	Intel	PERSIST
Lambert	Dave	The Open University	ServiceWeb 3.0
Li	Man-Sze	IC Focus	COIN

Meunier	Jean-Dominique	Thomson	
Moran	Humberto	Open Source Innovation Ltd	Aspire
Negrao Malo	Pedro Miguel	UNL	
Osman	Keith	AIDC-UK	CASAGRAS
Papazoglou	Mike	Tilburg U	S-CUBE
Pedersen	Lars	Software and Services Unit	
Pedrinaci	Carlos	The Open University	SOA4All
Pils	Carsten	Telecommunications Software & Systems Group (TSSG)	PERSIST
Pistore	Marco		S-CUBE
Prasad	Neeli	Aalborg University	ASPIRE
Salant	Eliot	IBM Halfa	RESERVOIR
Sassen	Anne-Marie	Software and Services Unit	
Soria-Rodriguez	Pedro	ATOS	MASTER
Telesca	Luigi	CREATE-NET	
Theilmann	Wolfgang	SAP	SLA@SOI
Toma	Ioan		
Trossen	Dirk	BT	EIFFEL, PSIRP
Tsakali	Maria	Software and Services Unit	
Vitvar	Tomas	STI Innsbruck	
Wahler	Alexander	STI International	Service Web 3.0
Wainwright	Nick	HP	PICOS
Williams	Doug	BT	
Zahariadis	Theodore	SYNELIXIS	
Zaremba	Michal	STI Innsbruck	SOA4All
Zwegers	Arian	Software and Services Unit	
de Meer	Hermann	University of Passau	

*The list of participants is constantly updated and is available at: http://services.future-internet.eu/index.php/Members