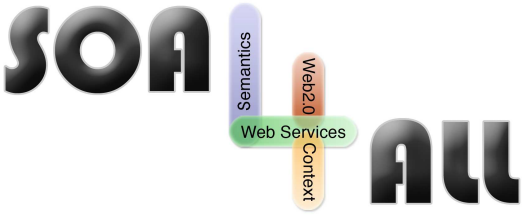


Project Number:	**215219**
Project Acronym:	**SOA4All**
Project Title:	**Service Oriented Architectures for All**
Instrument:	**Integrated Project**
Thematic Priority:	**Information and Communication Technologies**

D12.6.3 Second Collaboration Activity Report

Activity 4:	Activity 4 – Exploitation and Impact Activities	
Work Package:	**WP12 – Dissemination Strategies**	
Due Date:		M24
Submission Date:		28/02/2010; resubmit with corrections 19/04/2010
Start Date of Project:		01/03/2008
Duration of Project:		36 Months
Organisation Responsible of Deliverable:		Atos Origin
Revision:		4.1
Author(s):	Nuria de Lama (ATOS), with contributions from partners	
Reviewers(s):	Stuart Campbell (TIE), John Domingue (OU)	

Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)		
Dissemination Level		
PU	Public	**X**

Version History

Version	Date	Comments, Changes, Status	Authors, contributors, reviewers
1.0	15/03/2010	First version with inputs from partners	Julia Wells (Atos) with contributions from partners
1.1	17/03/2010	Revision of existing material and corrections	Nuria de Lama (Atos)
2.0	26/03/2010	Minor add-ons on collaboration activities	Nuria de Lama (ATOS)
3.0	27/03/2010	Inclusion of reporting of all previous activities, sections on NESSI, Future Internet and joint dissemination events	Nuria de Lama (ATOS)
4.0	31/03/2010	Executive summary, conclusions, elaboration of plan for the next period, formatting, revision & validation of the final version of the document	Nuria de Lama (ATOS)
4.1	19/04/2010	Resubmission with correction (SAP USDL references)	Julia Wells (ATOS)

Table of contents

Glossary of Acronyms

Acronym	Definition
B2B	Business to Business
CELTIC	A Eureka Cluster Programme to foster European leadership in telecommunications
COIN	Enterprise Collaboration and Interoperability
FAST	Fast and Advanced Storyboard Tools
FINES	Future Internet Enterprise Systems
FIRE	Future Internet Research Experimentation
FP7	The 7th Framework Program
EC	European Commission
EUREKA	A Europe wide network for market oriented Industrial R &D
ETP	European Technology Platform
FIA	Future Internet Assembly
ICT	Information and Communication Technology
ISU	Interoperability Service Utility
IST	Information Society Technology
NESSI	Networked European Software and Services Initiative
ITEA	Information Technology for European Advancement
NSPs	NESSI Strategic Projects
NoE	Network of Excellence
NWG's	NESSI Working Groups
NEXOF	NESSI Open Service Framework
NEXOF-RA	NEXOF Reference Architecture
OCP	Open Construction Process
PPP	Public Private Partnership
SAAS-U	Software as a Service Utility
SCS	Service Centric System
S-CUBE	The Software, service and System Network
SEEM	Single European Electronic Market
SLAs	Service Level Agreements
SLA@SOI	Empowering the Service Economy with SLA Aware Infrastructures
SME's	Small and Medium Enterprise
SOA4All	Service Oriented Architectures for All
SOMI	Service-Oriented middleware Infrastructure
SPICE	Service Platform for Innovative Communication Environment
SSAI&E	Service and Software Architecture, Infrastructure and Engineering
SSSE	Semantics, Software and Service Engineering
STASIS	Software for Ambient Semantic Interoperable Services
WG	Working Group
WS	Web Service

Executive summary

This deliverable reports the **most relevant collaboration activities carried out by SOA4All together with other projects and initiatives**. In some cases activities reported here overlap with the ones described in the Dissemination Activity Reports. Nevertheless, it is worth paying attention to the fact that these collaboration activities always reflect either bilateral relationships (for example, if they happen between two projects) or multilateral relationships (when many initiatives are involved). In all these cases, **there is always a benefit not only for SOA4All, but also for the other activity involved in the collaboration**. **Impact should thus be understood in this context.**

Benefits range from an **increased visibility** of project results to a **reduction of costs** to perform specific tasks (be they technical or related to dissemination) or to the **achievement of more ambitious scientific or industrial goals** that go far beyond the objective of a single project.

Collaboration with other projects helps us to **position SOA4All within a more general context** of initiatives and projects contributing to a better understanding of our own project but also of the others. Finally, these relationships provide the right environment to **identify other potential opportunities for the future.**

1. Introduction

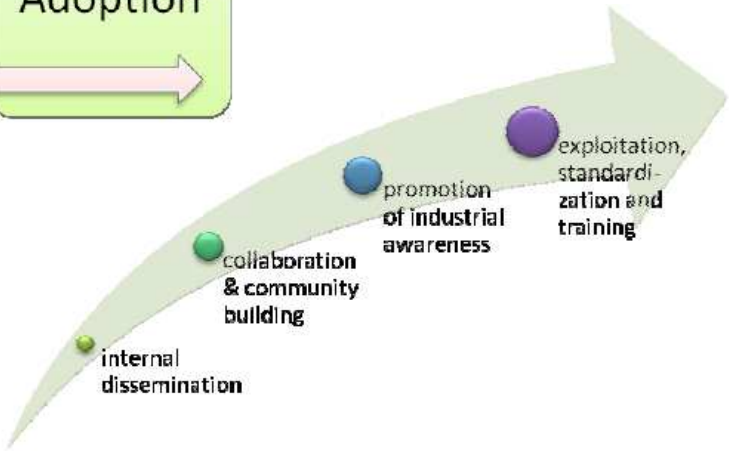
1.1 Purpose and scope

This document is the Second version of the Collaboration Activity Report. Its main purpose is: on the one hand, to provide un update of the collaboration activities carried out by the SOA4All project along the second reporting period of the project, and on the other hand to update and adapt accordingly the plan for the upcoming period. For this objective, we have taken into account a possible reshaping of the objectives and scope of the collaboration activities as well as the assessment of the activities performed so far.

It is impossible to understand this deliverable without considering its former versions: D12.6.1 Definition of Collaboration Activities, submitted in M6 and D12.6.2 First Collaboration Activity Report, submitted in M12. In addition to those documents, and as part of WP12 -devoted to the overall dissemination of SOA4All- it is relevant to take into consideration the contents of other related deliverables, as it is the case of the Dissemination strategy set up in the first period of the project (D12.1.1 submitted in M6), its revision (D12.1.2 submitted in M18) and of course the different versions of the Dissemination Activity Reports ready in M12 and M24 respectively.

Finally, as said, collaboration happens in the context of the overall dissemination strategy of SOA4All and as a result, it has an impact on the creation and update of the dissemination material and tools already created by the project as well as on other impact-related activities, such as standardization, training and of course exploitation.

Because of this intimate relationship between all these WPs and their tasks, the information is often repeated, but we hope that this will help even more to communicate the main messages, including both intentions and actions of SOA4All with respect to collaboration.



1.2 Structure of the document

In this version of the deliverable we have avoided the repetition of a lot of contents that were already distributed through the previous version of the deliverable. As a result, we have focused on the actions performed in the last year of project execution (specifically since March 2009 until March 2010). We consider that part of this information is also explained in a complementary way in the Dissemination Activity Report released at the same time than this report and therefore we took the freedom of including almost only new information instead of adding new data to the older version.

Besides the Executive Summary and other common sections included in all SOA4All deliverables, this document is divided into the following chapters:

- ✓ Chapter 2: Update of collaboration activities performed by SOA4All together with other stakeholders, either projects or other kind of initiatives
- ✓ Chapter 3: Brief assessment of collaboration activities in the last period and impact on the structure of activities for the next period
- ✓ Chapter 4: Action plan for collaboration activities (activities to be developed during the third year will be reported in the final version of this deliverable in M36)

1.3 Audience

The following groups compose the audience of this deliverable:

- ✓ Partners in the SOA4All consortium, since D12.6.1 shows the actions already performed by the project that all partners should know about (to make necessary references to them when appropriate) and can be used as a reminder regarding future actions
- ✓ Projects and initiatives that have already collaborated with SOA4All and potential ones that could start collaborating in the remaining period. For all of them this document gives ideas and concrete actions
- ✓ External audience, since reading the document may provide inspiration for further activities

2. Collaboration Activities in the Second Year

As said, it is not the purpose of this document to repeat once again the goals and descriptions of all the initiatives, or at least not in the same way they were described at the beginning of the project or one year ago. Instead, we will focus on activities carried out in the last months as well as new trends that may change somehow the understanding or impact of such actions.

When we defined the strategy of the Collaboration Plan two different modalities were pointed out: 1) exploitation of synergies at the technical level and 2) joint dissemination actions.

The two of them are of utmost importance for SOA4All because they allow this project:

- ✓ **To perform same activities that we could do individually, but in a faster and cheaper way** (sharing resources and gaining experience from each other). This could be the case of attending an event together with another project, as SOA4All did for the *Research Connection* by sharing a stand and related efforts and costs with the STASIS project
- ✓ **To perform activities that we could not do as an individual project**, such as the organization of the *Semantic Week*. For this to happen a lot of activities and resources are required, as well as different points of view on the use of Semantic technologies that only many diverse projects with different approaches can guarantee.
- ✓ **To increase the impact of the project**. This is obvious by taking advantage of being a *NESSI Strategic Project* and thus, using dissemination tools such as NESSI newsletters that are circulated to hundreds of companies or having an active participation in *Servicewave*, providing the SOA4All view and results to a relevant audience in the Software and Services domain that otherwise would not be reachable to us.

2.1 NEXOF-RA and the NESSI context

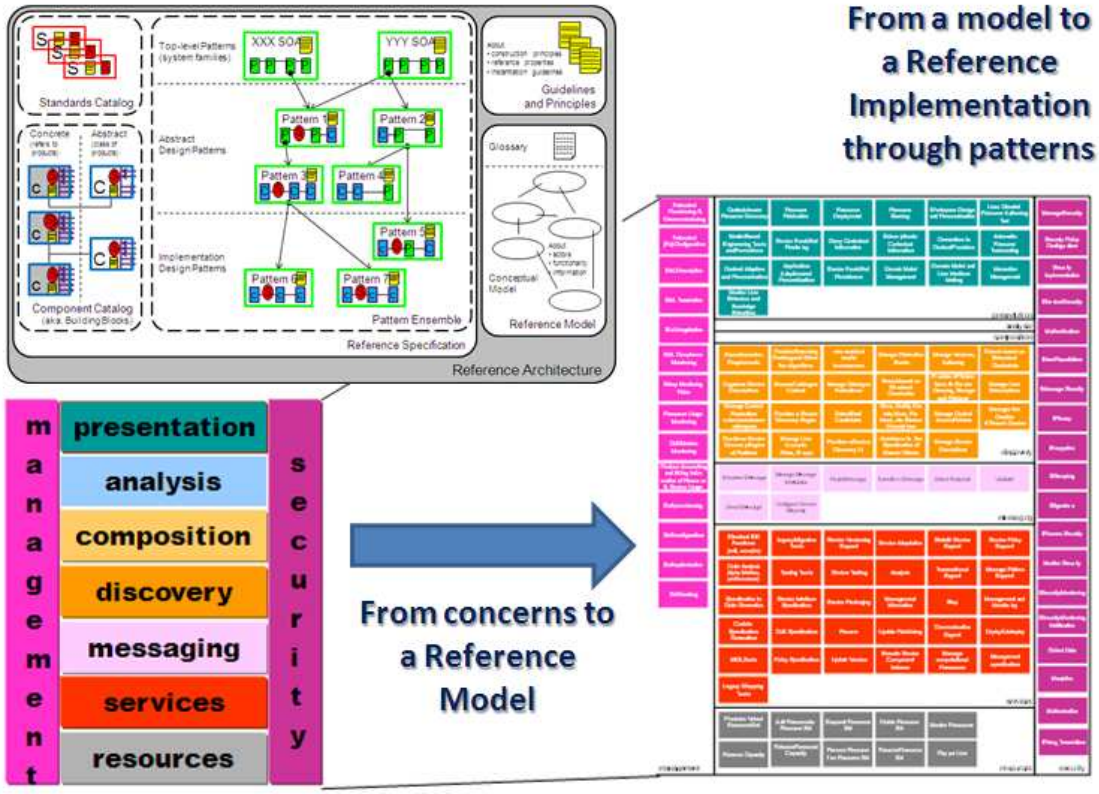
NEXOF is one of the main goals of NESSI, the European Technology Platform on Software and Services. NEXOF as such refers to the NESSI Open Service Framework, that is composed of several elements, among them: the so called ***Open Reference Model, Open Reference Architecture, Open Reference Implementation*** (the target of NESSI for the medium term is the implementation of one of them, although understanding that many alternative implementations may be possible), ***Conformance Test Suite and validation of NEXOF instances in real scenarios*** (for this, kind-of Instantiation guidelines are required to go from the abstract world of a generic architecture to the real implementation and deployment of the architecture into a specific industrial domains and contexts).

For these ambitious goals NESSI works with main industrial companies in the S&S field since several years ago and represents other groups like the one of SMEs (especially important in Europe, since the S&S industry is very fragmented). Besides the contributions of companies and individuals, NESSI defined a cooperation

programme that gave birth to the definition of a set of coherent projects addressing different and complementary research challenges to build systematically the aforementioned NESSI Open Framework, or NEXOF.

NEXOF-RA is the project in charge of defining the Reference Architecture, but not all the elements of NEXOF and of course, it does not address all the working areas defined under the NESSI umbrella. As part of its activities, NEXOF-RA got the challenge of defining a collaboration process to allow many projects working in the S&S area to cooperate towards the building of NEXOF.

These projects provide direct contributions to the following concrete expected outcomes of NEXOF-RA: the Open Reference Model and the Open Reference Architecture. In addition to that, NEXOF-RA works towards the realization of proof-of-concepts that validate the technical choices of the project as well as the NEXOF Roadmap, which will provide the basis for the sustainability of NEXOF, including its implementation and further use (exploitation).



Reference Architecture Construction process: from concerns to the Reference Model and pattern definition as part of the Reference Specification

Therefore, **technical collaboration of SOA4All with NESSI happens mainly through the collaboration with NEXOF-RA**. Thanks to the overall coordination role of NEXOF-RA in this process, collaborations with other NESSI Strategic and NESSI Compliant projects usually happen in this context too.

So far, and as it was reported in the previous report, SOA4All had participated in two different activities (1) the First Invitation to Contribute, as part of the OCP (Open

Construction Process) and (2) Attendance of Architectural Board meetings in order to coordinate technical efforts and build the overall NEXOF framework (a more ambitious goal than the one of each of the individual projects).

In the second period, the OCP was extended through the Second Invitation to Contribute. Regarding the Core Service Framework area SOA4All contributed in terms of submitting two papers: one based on the execution engine (runtime composition topic) and one based on the light-weight process modeling language.
SOA4All has continued to join the Architecture Board meetings held in Madrid, Rome and Brussels as well as contributing to more general aspects like updating the glossary and feeding the NEXOF-RA Repository with relevant documents generated by SOA4All that should be shared, used and considered by other NESSI projects in the process.

In July 2009 a meeting with the EC took place to explain the future activities of NESSI and the collaboration between the projects. This meeting was further developed after summer (6-October-2009) with the aim of going into the details of such bilateral and global collaborations between NESSI projects, among them: SOA4All.

Main objective of the meeting was to provide an update on the achievements of the ongoing NESSI Strategic Projects in terms of results, published information, coverage and gaps.
The contents started with an Overview of the NESSI project strategy (Frederic Gittler) followed by the results from ongoing projects

- RESERVOIR NSP (Elmar Husmann)
- SLA@SOI NSP (Hui Li)
- SOA4ALL NSP (Reto Krummenacher and Santi Ristol)
- MASTER NSP (Juan Bareño and Aljosa Pasic)
- COMPAS NCP (Pascal Bisson)
- EzWeb NSP, FAST & MyMobileWeb NCP (Juan Hierro)
- NEXOF-RA NSP (Stefano De Panfilis)

NEXOF-RA has launched so far 2 calls (invitations to contribute) with 18 topics. Since NEXOF-RA will finish around summer of 2010 no more calls for contributions are expected, but further collaboration once the project finishes in under discussion in the sustainability plan of NESSI.

To provide a more detailed view of the contributions and nature of collaborations between SOA4All and NEXOF-RA we offer two different perspectives:

1. The positioning of SOA4All in the overall NEXOF Reference Architecture
2. The specific nature and description of actions at both technical and joint dissemination level

2.1.1 SOA4All positioning in the overall NEXOF Architecture

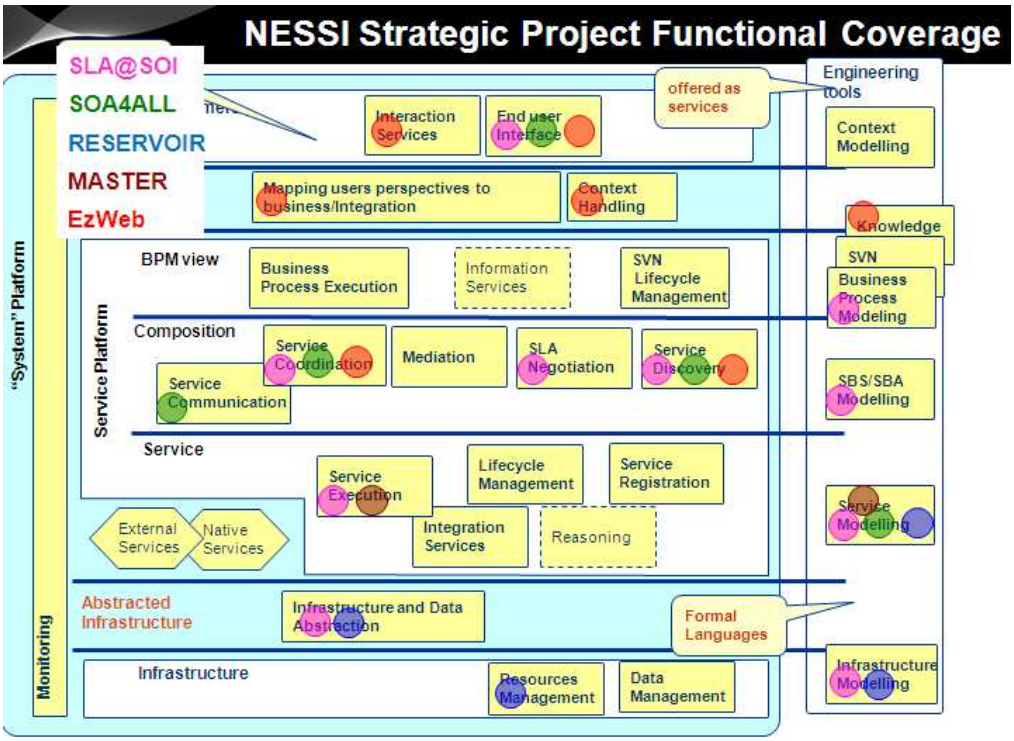
In the next page you can see a comparison between the initial positioning of SOA4All (when discussions about the degree of coverage of the technical challenges of NEXOF by the NSP and NCP took place) and the specific contributions provided so far. Therefore, **the first picture shows the expectations during 2008 and the second one gives the information about what has been covered and achieved at the beginning of 2010**.

SOA4All has from the very beginning addressed the service layer (service platform in the picture), building on top of service-oriented infrastructures (notably cloud) and investing mainly on all those processes that refer to the overall service lifecycle, ranging from service description, discovery to service consumption and with special emphasis on service composition.

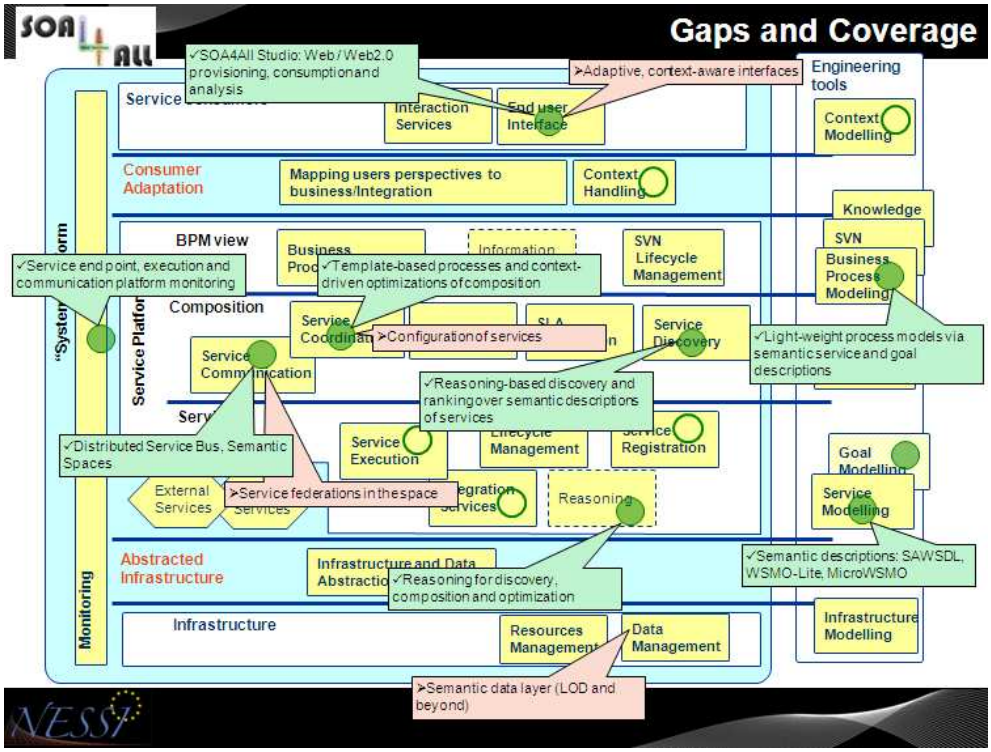
The approach was the use of semantics to enable operations that nowadays have not been solved from a technical point of view, and that are especially relevant in the context of the (open) Web and more specifically the Internet of Services. Clear synergies could be found with SLA@SOI opening the possibility to incorporate SLA negotiation solutions into the overall SOA4All proposal. In addition, EzWeb could provide some additional aspects for service consumption because of the works at the level of User interfaces and mash-up-like lightweight service composition. Finally, in a future deployment of SOA4All at industrial level, findings from RESERVOIR have always appeared as a sound option to address the relationship between the service platform and the infrastructure.

Concrete contributions from a technical point of view to NEXOF-RA fall under the fields of:

- ✓ ***End-User interface***: (1) direct contributions: SOA4All studio, web based tool for service provisioning, consumption and analysis; (2) identified gaps: adaptive context-aware interfaces
- ✓ ***Service Coordination***: (1) direct contributions: template-based processes and context-driven optimization of composition; (2) identified gaps: service configuration
- ✓ ***Service Communication***: (1) direct contributions: distributed Service Bus and Semantic Spaces as main infrastructural elements; (2) identified gaps: service federations in the space
- ✓ ***Service Discovery***: (1) direct contributions: reasoning-based discovery and ranking over semantic descriptions of services
- ✓ ***Reasoning*** (not identified at the beginning of the process): (1) direct contributions: reasoning for discovery, composition and optimization;
- ✓ ***Service modeling***: (1) direct contributions: Semantic descriptions SAWSDL, WSMO-Lite and MicroWSMO:
- ✓ ***Business process modeling***: (1) direct contributions: lightweight process via semantic service and goal descriptions ;
- ✓ ***Data management***: (1) identified gaps: semantic data layer (LOD and beyond)

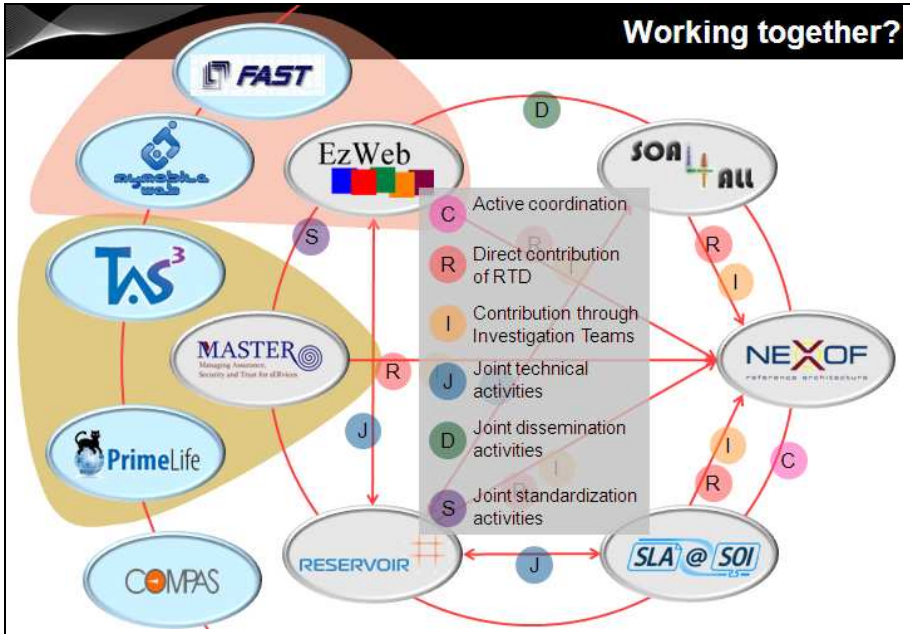


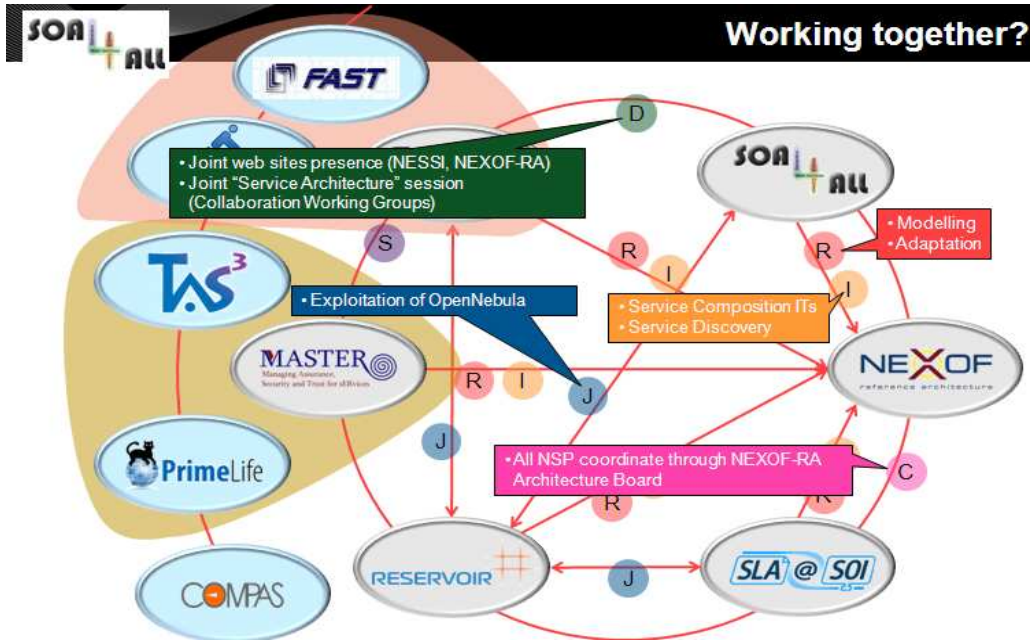
SOA4All positioning in the Service Platform of the overall NEXOF Architecture (2008)



Contributions by SOA4All to NEXOF and identified gaps (2010)

2.1.2 SOA4All Actions and contributions





So far collaboration activities have happened in different fields: in some cases it has been an overall contribution from all the NSP/NCP to NEXOF and NESSI and vice-versa; in some other occasions collaboration has emerged as a bilateral relationship between two projects.

Collaboration ranges from coordination of research efforts and direct contribution of RTD results, including inputs provided through the Investigation Teams, to joint dissemination and standardization efforts.

SOA4All uses dissemination channels provided by NESSI and NEXOF-RA such as presence in their respective websites and joint participation and organization of events, creating a bigger potential impact thanks to the increased audience. SOA4All has also contributed to the Investigation Teams with inputs related to Service Discovery and Service Composition. As part of its commitment to building NEXOF, SOA4All participates in the Architecture Board and has offered solutions in the fields of modeling and service adaptation, helping in the coordination of research efforts, thanks to which it has initiated the analysis of the possible use of OpenNebula, from RESERVOIR for the validation infrastructure.

Collaboration flows between NSP/NCP and specific SOA4All collaboration activities

2.1.3 Joint Dissemination activities

As it has been said so far, one of the most profitable activities from the point of view of generating impact about the outcomes of the project is the use of existing resources for dissemination purposes. Here we provide an overview of the main actions developed together with NESSI, NEXOF-RA and NESSI 2010 during the last year.

2.1.3.1 Presence in media

Some of the results of SOA4All are presented through other websites, such as those of NESSI, NEXOF-RA (where most relevant SOA4All documents are also uploaded to the Repository) and some NSP.

SOA4All is promoted through different websites

2.1.3.2 Servicewave 2009

The joint ICSOC-Servicewave 2009 took place in Stockholm, 23-27 November, 2009.

The main objective of Servicewave (that is co-organized with ICSOC once every two years and following European venues) is to join forces, with the aim to provide a world-leading forum and unique opportunity for academic researchers and industry

practitioners to report on groundbreaking research work in service oriented computing.

The joint conference fosters the creation of **cross-community scientific** excellence by gathering industrial and academic experts from various disciplines such as business process management, distributed systems, computer networks, wireless & mobile communication networks, grid computing, networking, service science and software engineering.

SOA4All @Servicewave'09

SOA4All had a strong presence in this edition that we summarize briefly here:

- ✓ Being Serviceawave a conference driven by NESSI and being SOA4All a NESSI Strategic Project, the SOA4All image was promoted in many places, including a poster at the NESSI stand
- ✓ Santi Ristol, INES representative and SOA4All coordinator chaired the panel "One year of Future Internet: is cloud computing the new wave?"
- ✓ Panellist (Nuria de Lama, ATOS) at the "Architectures: enablers or barriers to the Future Internet?" panel chaired by Stefano de Panfilis (NESSI research director) and with the participation of ANSWARE, ERICSSON, IBM and Fondazione Bruno Kessler
- ✓ "SOA4All in action", a series of SOA4All demos at the demonstration session

Further information in http://www.servicewave.eu/.

2.2 Internet of Services 2009: Collaboration meeting for FP6 & FP7 projects

10-11 June 2009 (Crowne Plaza Brussels City Centre-Le Palace) ; http://ec.europa.eu/information_society/events/ssai/ios/index_en.htm

The European Commission, DG Information Society, "Software & Service

Architectures and Infrastructures" Unit organised together with the projects IRMOS, SLA@SOI and SOA4ALL the Internet of Services Concertation meeting.

Main objectives of the meeting were:

- ✓ To achieve a better understanding of the results of the FP6 & FP7 projects in the “Internet of Services” area
- ✓ To consolidate the collaboration activities among the projects in order to build an even stronger community
- ✓ To progress the work of the running collaboration working groups allowing feedback and planning for the future
- ✓ To present key outcomes of FP6 & FP7 projects through posters and demonstrations
- ✓ To facilitate networking and discussion following the Software, Services and Virtualisation call 5 information day on 9th June

The meeting was organized around several working groups: Trust & security, Software Innovation for Complex Service Architectures and Engineering and Formal Methods, Service Engineering, Virtualized Service Platforms, QoS and SLAs, Semantic Technologies, Business models and SLAs, Repositories, Dissemination, Virtual Organizations, Service Front-ends, FIA, Standards, Service Architectures, Collecting Use Cases and Data Management.

SOA4All most relevant contributions in terms of collaborating with other projects can be summarized as follows:

- ✓ Attendance of the Service Engineering session and contribution to the elaboration of the Book on Service Engineering together with other SSAIE projects around a common use case
- ✓ Active presence in the FIA session through the leadership of John Domingue, OU, for the FISO session
- ✓ Participation and contributions by SOA4All to the Use Case session through CEFRIEL
- ✓ Presentation of SOA4All (Nuria de Lama, ATOS) as contribution to the Service Architectures session in an attempt by NEXOF-RA to show the different points of view of NESSI projects with regard to building a common service delivery platform
- ✓ SOA4All was present at the event also with a demonstration “SOA4All Studio - Enabling a Web of billions of services”. The studio was successfully showed at the event by TIE, creating a lot of expectations and positive feedback.

2.3 The SOA4All-STASIS “seed”: Semantic Week 2009

2.3.1 Technical synergies

The joint collaboration between STASIS and SOA4All has involved at the technical level, an open platform that allows the projects to increase the awareness of both projects.

TIE is the coordinator of the STASIS FP6 project looking at semantic interoperability in a federated P2P network. As such there is coherent overlap with SOA4ALL and we have been exchanging ideas in SOA4ALL WP2 and the triple spaces with STASIS RDF/Registry system. STASIS also invited SOA4ALL to present at its Berlin workshop, which unfortunately overlapped with the SOA4ALL Kick-off, although the SOA4ALL Project Officer did present on the project behalf.

2.3.2 Semantic Week 2009

The Semantic Week'09 took place in Amsterdam, 22-26 June 2009.

The event was led by the STASIS project and was born as a clear collaboration attempt between projects working on the domain of Semantic technologies. Specifically, main objectives of the conference were:

- ✓ Update of important focused semantic activities happening in Europe
- ✓ Networking of the knowledge of individuals and projects in this field
- ✓ Technological insights
- ✓ Sharing information about projects' activities

The week was composed of the following, workshops and meetings:

- Workshop part 1: 1 days: Which overviews what projects/groups have to offer - inform, excite, entice and seek cooperation and interest in Workshop part 2.
- Workshop part 2: 1 day: More in depth session: longer/more detailed workshop/open group-meetings.
- Meeting part: 2 days, prior to the workshops; projects have WP/Plenary meetings, help with travel and create critical workshop mass.

The Semantic week'09 was organized in a very funny way, trying to differentiate from many other events (probably organizers of the Semantic Week would qualify them as "boring"). The website offers a lot of information, among which we want to point out some of the conclusions related to the most promising and relevant Semantic areas, as a reflection for the coming execution period of SOA4All:

- ☐ Usability...user interface development for simple user input
- ☐ Standardization
- ☐ Develop multidisciplinary topics (SOA, semantics, MDE, BPM,) and at the same time experiment future needs and requirements with real world users
- ☐ Extension of semantic concepts to include notions of behaviour in addition to static state
- ☐ Distributed semantic repositories of web services
- ☐ Reasoning incomplete and inaccurate semantic information
- ☐ Scalability and reusability of semantic technologies
- ☐ Semantics related to Future Internet (services, IoT, security, trust)
- ☐ Linked data

- ☐ Business models
- ☐ ...

As can be appreciated, SOA4All is focusing very much on some of the challenges associated to reasoning, but also taking seriously into consideration user interfaces through the SOA4All Studio as a way to address the "4All" concept. Additionally Future Internet and business models are topics where this consortium is making great emphasis too.


It seems Stuart Campbell, from TIE, one of the SOA4All partners and main organizer of the Semantic Week, was doing it quite well...

The event counted, among others, on the following SOA4All related participation:

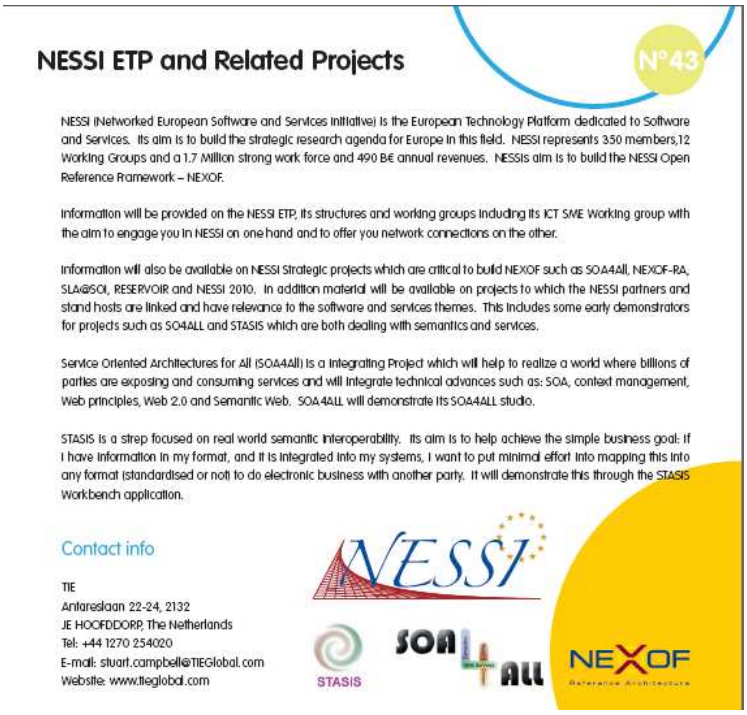
- ✓ Keynote speech by Dieter Fensel (STI)
- ✓ A SOA4All presentation "SOA4All Tester" (Santi Ristol, ATOS)
- ✓ A session of the Semantics WG of NESSI, co-chaired by ATOS and where SOA4All was present
- ✓ A parallel session driven by SOA4All: "SOA4All at work: billions of semantically connected services" (Tomás Pariente, ATOS), where besides technical contents and a project demo we included a presentation on business "how about doing business with SOA4All" (Benjamín Gil, ATOS).

2.3.3 Research Connection

Furthermore, SOA4All and STASIS have attended the Research Connection 2009[1] in Prague, Czech Republic (May 2009). This conference was one of the main EU research events bringing the opportunity to exhibit SOA4All and STASIS as EU funded projects and promoting the networking and integration of research activities carried out in Europe. Thanks to the leadership of TIE in the Research Connection event through the STASIS project and by representing NESSI Projects, SOA4All could attend the conference and promote its results with a minimum effort.

[1] http://ec.europa.eu/research/conferences/2009/rtd-2009/index_en.cfm

The STASIS project ended in September 2009 and so this collaboration has been concluded.



NESSI ETP and Related Projects

N°43

NESSI (Networked European Software and Services Initiative) is the European Technology Platform dedicated to Software and Services. Its aim is to build the strategic research agenda for Europe in this field. NESSI represents 350 members,12 Working Groups and a 1.7 Million strong work force and 490 B€ annual revenues. NESSIs aim is to build the NESSI Open Reference Framework – NEXOF.

Information will be provided on the NESSI ETP, its structures and working groups including its ICT SME Working group with the aim to engage you in NESSI on one hand and to offer you network connections on the other.

Information will also be available on NESSI Strategic projects which are critical to build NEXOF such as SOA4All, NEXOF-RA, SLA@SOI, RESERVOIR and NESSI 2010. In addition material will be available on projects to which the NESSI partners and stand hosts are linked and have relevance to the software and services themes. This includes some early demonstrators for projects such as SO4ALL and STASIS which are both dealing with semantics and services.

Service Oriented Architectures for All (SOA4All) is a Integrating Project which will help to realize a world where billions of parties are exposing and consuming services and will integrate technical advances such as: SOA, context management, Web principles, Web 2.0 and Semantic Web. SOA4ALL will demonstrate its SOA4ALL studio.

STASIS is a strep focused on real world semantic interoperability. Its aim is to help achieve the simple business goal: If I have information in my format, and it is integrated into my systems, I want to put minimal effort into mapping this into any format (standardised or not) to do electronic business with another party. It will demonstrate this through the STASIS Workbench application.

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NESSI STASIS SOA4All NEXOF

Description of the SOA4All and STASIS offering in the Research Connection event (source: exhibition catalog)

2.4 SOA4All and *The Future Internet*

Future Internet has become one of the most famous concepts within the field of Software and Services because of its important implications for the future economy and its direct relationship to the S&S related technologies. In fact, the way Future Internet has been conceived by the European Commission in the different initiatives covers all the technologies nowadays involved under Challenge 1 of the ICT work programme. This means that layers such as networking, services, enterprise systems, internet of things (sensors, RFID, etc), or experimental facilities are envisaged by the current activities.

In Europe and specifically under the umbrella of European R&D several initiatives are working for the definition and implementation of these Future Internet technologies. Some of them are listed below together with the concrete involvement of SOA4All.

2.4.1 Future Internet Assembly

The Future Internet Assembly, known as FIA is an initiative driven by EC-funded projects. It was launched around April of 2008 with a preparatory work based on the aim of placing Europe in a leadership position in the field of new Internet-based technologies. At that time many initiatives were ongoing at International level (GENI and FIND in US, Akari in Japan, etc) discussing approaches to build a new Internet infrastructure in order to solve current limitations and bottlenecks (such as the shortage of IP addresses in a world where everything is expected to be connected, high bandwidth everywhere, advanced mobile communications, etc). Most of these

international programmes focus on low level issues, for example the networking layer, while Europe has in mind a more holistic approach, complementing the networking layer with aspects such as Global service delivery platforms or innovation within the vertical sectors that make use of the Internet as underlying infrastructure.

Internet has become the playground for our businesses, but also for leisure, tourism, and almost any activity we can imagine. Therefore, it is not considered anymore as a technological issue but as a global concept with a strong impact on all sectors and fields, being they social or economic.

Following the paradigm of collaborating to reach this European leadership X projects signed the Bled declaration during the first edition of the FIA.

This declaration is endorsed by the following European Technology Platforms and European Research Projects*:

eMobility, NEM, NESSI, ISI and EPOSS

20-20 3D Media	4NEM	4WARD	ADAMANTIUM	AGAVE	ASPIRE
AUTOI	AVANTSSAR	AWISSENET	CARMEN	CASAGRAS	C-CAST
CHIANTI	CHORUS	COIN	COMPAS	CONTENT	CuteLoop
DAIDALOS II	DICONET	E3	ECODE	ECRYPT II	EFIPSANS
EIFFEL	EMANICS	eMobility CA	ETNA	EU-MESH	Euro-NF
FAST	FEDERICA	FIREworks	FORWARD	HURRICANE	INSPIRE
INTERSECTION	IRMOS	iSURF	m:Ciudad	MASTER	MobiThin
MobiWeb2.0	MOMENT	MUGGES	N4C	NANODATACENTERS	NAPA-WINE
N-CRAVE	NESSI 2010	NEXOF-RA	OneLab2	OPEN	OPNEX
OPUCE	P2P-Next	PARADISO	PERIMETER	PERSIST	PetaMedia
PHAROS	PICOS	PII	PrimeLife	PRISM	PSIRP
RESERVOIR	ResumeNet	SAPIR	S-Cube	SEA	SELF-NET
SemSorGrid4Env	SENDORA	SENSEI	ServFace	Service Web 3.0	SHAPE
sISI	SLA@SOI	SMARTLM	SMART-NET	SmoothIt	**SOA4ALL**
SOCRATES	SWIFT	TA2	TAS3	TECOM	ThinkTrust

Trilogy	VICTORY	VITAL++	WISEBED	WOMBAT	

*Accession to this declaration is open to existing and future EU Projects that wish to actively contribute

After FIA Bled some other editions came where SOA4All was an active contributor such as FIA Madrid. We briefly describe the collaboration of SOA4All with this initiative and its projects in the context of the last two editions held in 2009. For presence of SOA4All in the FIA Books and related publications check the deliverable: Dissemination Activity Report (first and second version).

2.4.1.1 FIA Prague (Prague, 11-13 May 2009)

John Domingue (OU) acted as caretaker of the FISO[2] session, which was primarily focused on the following topics:

- ✓ Opening FIRE facilities for the Service Research
- ✓ Panel on Challenges for the Future Internet
- ✓ Panel on Internet scale systems of systems
- ✓ Panel on Future Internet Architectures, bringing a complete view on FI architectures with a representation of the different pillars (IoS, IoT, content-centric architectures, networking architectures (MANA), security, role of semantics, etc).

SOA4All, through the presentation *"SOA4All: Facilitating an internet of services for all" (Nuria De-Lama Sanchez, ATOS)* provided FI challenges and requirements identified by the project to complement the views of other projects like FAST, PERSIST, SLA@SOI, Service Web 3.0, COIN, SHAPE, NEXOF-RA and GridTrust.

Further information in http://www.future-internet.eu/home/future-internet-assembly/prague-may-2009/fia-plenary.html and http://www.fi-prague.eu/.

2.4.1.2 FIA Stockholm (Stockholm, 23-24 November, 2009)

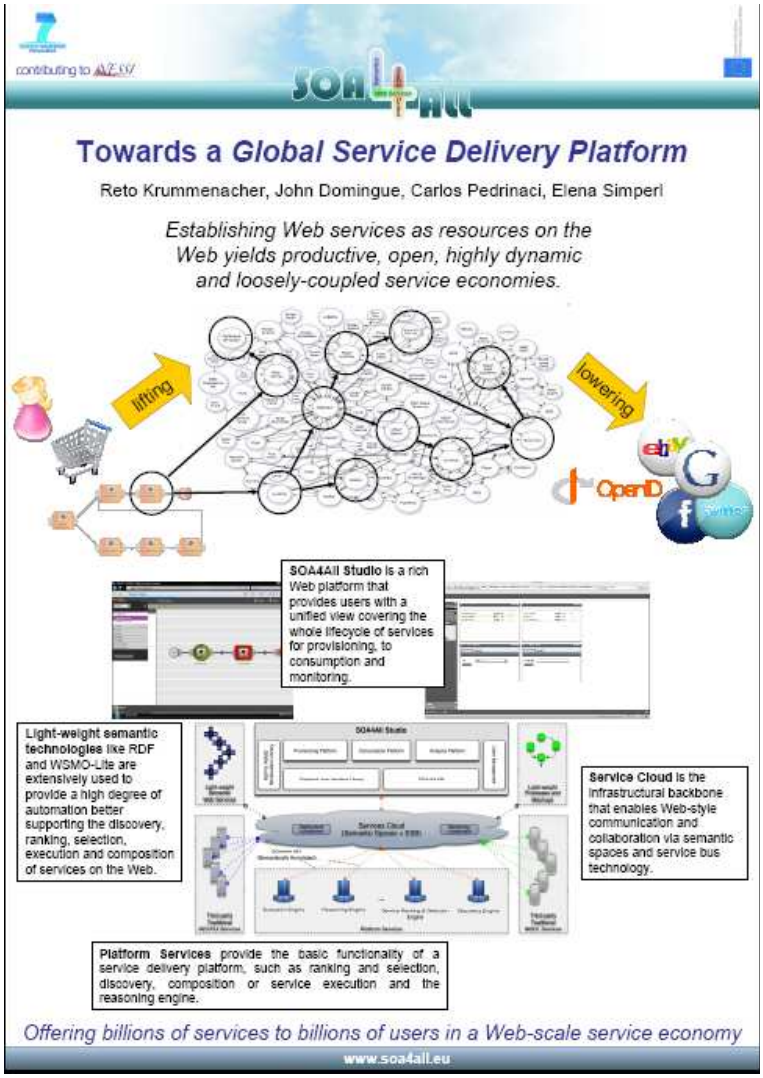
Presence of SOA4All in FIA Stockholm can be summarized by three activities:

(1) John Domingue (OU) acted as FIA caretaker of the FISO session as a follow-up of the discussions of Prague. The session consisted in bringing to an open discussion main aspects highlighted in other sessions that may have an impact on the FISO. For this, each speaker was given the responsibility of taking notes, summarizing main findings and extracting conclusions from a FISO point of view. SOA4All point of view was merged with the perspective of the "Orchestration among networks, content, services and things" through the reporting of this session by Nuria de Lama (ATOS).

[2] FISO stands for Future Internet Service Offer

(2) John Domingue (OU) chaired the session about "The Question of discovery and search in the Future Internet" where the role of semantics was pointed out by professor Dieter Fensel (STI) through a presentation focused on the FISO perspective.

(3) SOA4All presented a technical poster in the exhibition: "Towards a Global Service Delivery Platform" (see picture below).



Technical poster presented at FIA Stockholm

Further information in http://www.future-internet.eu/home/future-internet-assembly/stockholm-november-2009.html and http://www.fi-stockholm.eu/.

2.4.2 FIS: Future Internet Symposium (Berlin, 1-3 September, 2009)

The 2009 edition of FIS relied on the sponsorship and participation of SOA4All as a collaborative work with other projects such as LARKC, SHAPE and Service Web 3.0. Semantics are very much present in FIS and some of the works and concepts developed in SOA4All are reflected through the active involvement of some of the people working in this project.

Further information in http://www.fis2009.org/.

2.4.3 Future Internet PPP

The projects view has been complemented in the last months by a more industrial perspective on what it is needed around the topic of Future Internet. This industrial leadership is one of the voices contributing to the definition of a PPP[3] in Future Internet. Main ideas behind the group of companies (representing main Industries in Europe) are usually expressed by Eurescom, as representative of the group. Because of the involvement of some of the companies of SOA4All in this group, SOA4All views can be fed when appropriate. For example, one of the exercises that is being developed at this stage is the identification of project assets that could be further exploited in the context of FI and here some of the developments of SOA4All might be proposed.

2.4.4 Others

Probably attracted by the interest on Future Internet in some of the aforementioned initiatives some other related activities have emerged (or have become more widely known) providing complementary views on the research challenges and the way to face them. In some cases, these initiatives provide national perspectives, as it is the case of es.internet, which is the Spanish initiative on Future Internet. In some others, Future Internet aspects are analysed from different content viewpoints, as it is the case of the FIRE[4] group (despite working since long time ago, FIRE has become more "popular" thanks to its input to FIA as "provider" of experimental infrastructures for projects to validate some if their developments). This is also the case of the FINES[5] cluster, initiative supported by the European Commission under the area of ICT in support of the networked enterprise, which analyzes the Future Internet addressing relevant aspects for Enterprise Systems through the *Future Internet Enterprise Systems Research Roadmap (ftp://ftp.cordis.europa.eu/pub/fp7/ict/docs/enet/fines-rr-v07_en.pdf)*.

SOA4All findings have been communicated to some of these working groups and initiatives thanks to the close involvement of some of the SOA4All partners or through continuous relationships with other projects.

- ✓ In the case of FIRE, ATOS is involved thanks to its participation in some related projects at two levels: technical infrastructures through the Service-oriented Infrastructures Unit of ATOS Research & Innovation, and through the participation in some Living Labs projects. ATOS is currently negotiating an IP where we are trying to include a small SOA4All-based Case study. In addition to that and because of the nature of SOA4All as NESSI Strategic Project ATOS has participated in some FIRE workshops presenting the NESSI views

[3] PPP stands for Public-Private Partnership

[4] FIRE stands for Future Internet Research Experimentation

[5] FINES stands for Future Internet Enterprise Systems

on FI architectures and therefore including references of SOA4All within the Service Layer.

- ✓ In the case of FINES, some of the SOA4All views have been expressed through the close relationship between SOA4All and the COIN project (see more aspects of the collaboration between the two projects in section 2.7 of this document).

2.5 SOA4All & S-CUBE: SSAIE Summer School

2.5.1 Technical synergies

The plan for collaboration with the S-Cube NoE that has been defined in deliverable D12.6.1 is still valid (see D12.6.1, Sect. 2.2.1 for further details). Both projects have different nature and can be seen as **complementary initiatives,** collaboration mainly takes place at the dissemination level.

S-Cube focuses on **long-term** research and on promoting the development of an **integrated and multidisciplinary community**, whereas SOA4All focuses on the **specific case studies** proposed by industrial partners by adopting a practical approach.

It is worth mentioning that SOA4All and S-CUBE have worked in a joint position paper: “Adapting Service Requests to Actual Service Interfaces through Semantic Annotations” (Luca Cavallaro, Gianluca Ripa and Maurilio Zuccalà), has been published at the Principles *of Engineering Service Oriented Systems (PESOS) 2009*, the *Workshop of the 31st International Conference on Software Engineering (ICSE) 2009*, May 2009, Vancouver, Canada. In addition to that CEFRIEL has participated in discussions and exchanges of knowledge with S-Cube people.

The main actions identified at a more technical level will become more concrete and achievable in the next period and research activities will be further explored within SOA4All.

2.5.2 The SSAIE Summer School

The Service and Software Architectures, Infrastructures and Engineering (SSAIE) Summer School took place in Heraklion, Crete during 16-19 June, 2009. This summer school is co-organized by TSL-CSD, ICS-FORTH and its main promoter, the S-CUBE project.

This event brings the most relevant EC-funded projects working in Software and Services (S-CUBE, BREIN, DIVA, PERSIST, IRMOS, COMPASS, SLA@SOI, NEXOF-RA), ; among them SOA4All, which held one of the longest and most successful tutorials of the Summer School on “Lightweight Semantic Annotations for Services on the Web” (Carlos Pedrinaci, OU).

Software and Services Projects under the sun of Crete (SSAIE Summer School)

Presentations, videos and further information in http://ssme2009.tsl.gr/.

2.6 Dissemination promoted by STI International

With the purpose of opening new channels for disseminating project results and reaching scientific and industrial communities not necessarily associated to EC-funded projects, SOA4All included as third party the organization STI International. Main leaders of this organization come from project partners such as university of Innsbruck, Open University, Hanival, etc. As a result, the link between events organized by STI and SOA4All contents is obvious.

Some of the encounters where SOA4All concepts have been promoted in the last period include, besides the Future Internet Symposium already mentioned when explaining the relationship between the project and Future Internet, the following ones:

2.6.1 OCG Forum Semantic Systems 2009 (Vienna, 4 March 2009)

The OCG Forum Semantic Systems 2009 gives early adopters of semantic technologies and researchers in the area the opportunity to present their latest achievements to the interested national and international audience in a poster and demonstration session. There John Domingue (OU) gave the invited talk: “The Future Internet: a Service’s and Semantic’s perspective”. Further information in http://www.sti2.org/ocg-forum-semantic-systems.

2.6.2 Semantic Data Management Initiative (Sofia-Bulgaria, 10-11 March 2010)

The main objective of the event was to allow for interactive discussions on the full range of topics relevant to semantic data management. SOA4All was represented there the two days with different contributions.

Day1 was divided into the following sessions: (1) Topics, (2) Vendors and (3)

developers.

In (1) main discussions went around Semantic Spaces (SOA4All concept presented by Dieter Fensel (STI), semantic repositories and RDBM versus graph-based approaches. The following vendors attended (2): IBM, Systap, Ontotext and Openlink Software; Finally, in the session devoted to developers was also represented together with other projects. Specifically Fabrice Huet (INRIA) and Reto Krummenacher (STI) discussed on behalf of SOA4All with representatives of CWI, LarKC and KIT).

Day2 covered two main issues: (1) First-tier users, Engine extensions and (2) verticals.

In (2) the following sectors contributed to the discussion: mobile operators, life sciences and Enterprise Data Management. In (1) SOA4All participated thanks to John Domingue and Carlos Pedrinaci (OU).

Follow the conclusions of the meeting in http://www.openlinksw.com/weblog/oerling/?id=1614.

2.7 SOA4All and COIN: driving forces together

The relationship between COIN and SOA4All has been present since the beginning of the two projects, being SOA4All a representative project of the service layer from a very technology-driven perspective, and being COIN the flagship project of service collaboration and interoperability and thus looking at the service layer from the viewpoint of enterprise systems. There are common partners in both of them (ATOS, TXT, STI); despite that, this is a good example of how difficult collaboration is (even if COIN is developing collaboration services...). Many synergies were obvious, but it took time until we were able to fix concrete actions to benefit from each other's. In the last period, besides informal discussions and exchange of project information, COIN organized a bilateral meeting with SOA4All (25 January 2010, Brussels) attended by TXT (Matteo Villa/SOA4All, S.Gusmeroli/COIN), ATOS (Yosu), UIBK (Reto/SOA4All, F.Facca/COIN), OU (John Dominque, Carlos Pedrinaci //SOA4All).

Main collaboration areas and actions derived from this encounter are described here summarizing the agreements between both initiatives on how to take advantage of each other's results.

2.7.1 COIN using SOA4All technology:

1. Platform interoperability

    a. We could say that COIN is promoting its services in a federation of COIN platforms (CPs and GSPs, SLAs, security + platforms for EI/EC specifically like iSURF STASIS ECOSPACE BSCW, the endpoints of the services are inside the federation and under our control), while SOA4ALL will publish them in the open web together with all the other 28,000 WSDL + 10,000,000 REST. The Minimal Service Ontology should include a reference to EI and a reference to EC so that queries will be made also from COIN. This means to allow a COIN Service

Request (EI/EC) to be translated into a MSO query, so that it could be forwarded to possible SOA4All-based platforms

b. The use of WSMOLite seems for the moment not convenient for COIN, but further exploration of SOWER is needed (the editor) (point 2).

c. The use of MicroWSMO is good whenever you have to expose data. One possible application case in the area of service is to publish (beyond the WSDL) some accessory informal (also textual) data to describe services or data necessary to complement COIN tools descriptions (test data, input/output data, simulation data, ontologies used, transformation rules).

d. Another possible case would be to access public data (e.g. Gov data) or Social Networks data (e.g. Facebook). This could also extend the case of the 28,000 services COIN enterprises would need to access as SaaS. So directly from the COIN CP Enterprises could build a “service request” facility to the Minimal Service Ontology, not specifically for EI/EC but for any kind of service/rest. This needs to be better discussed inside the COIN constituency

e. Another option is to go to a Cloud Computing platform for more reliable and professional services (not EI/EC). Analysis of possible platforms will be done in the coming months.

2. Point2. Service Annotation

   a. The SOWER editor of WSMOLite could ease the annotation of services to the Minimal Service Ontology. A second manual step is however necessary to annotate services according to the WSMO ontology, which means in practice to implement a bidirectional interoperability coupling it with point 1a above.

3. Point3. Service Crawling

   a. Seekda is developing a crawling service for SOA4All (extend WSDL with REST services).

4. Point4. End-to-End SLA definition and monitoring

   a. This is not an issue which is currently of interest for SOA4All. SUPER tried to address it but the solution is still not there. COIN could set up some possible solution by involving the intelligent reasoning module (DFKI). SLA@SOI project (SAP) is mostly addressing it in the NESSI COIN will look at that and SOA4All may get benefits from the conclusions.

2.7.2 SOA4All using COIN technology:

1. COIN WSMO - The discovery facility of COIN could be of relevance for SOA4All, after the iServe repository has been developed and point 1a has been positively evaluated.

2. COIN P2P Repository and Security Gateway. Not of SOA4All interest for the moment.

3. COIN Intelligent Reasoning. There could be some interest to exchange preliminary information between DFKI (COIN) and University of Manchester (SOA4All)

4. COIN Utility-based Business Models

    a. COIN WP6.2 (Man Sze Li editor, public deliverables of WP6.2) could be of any interest for SOA4All, mostly for its exploitation plan. Next COIN WP6.2 meeting is in Brux on Feb 22nd, next SOA4All opportunity could be in Valencia NESSI days.

5. COIN Test Cases. Once the bidirectional interface COIN-MSO will be implemented, it could be possible that some COIN provided services could be made available in SOA4All.

6. COIN Dissemination

    a. John is interested to become COIN Testimonial and possibly to be involved later on as COIN Angel, provided that this will require just re-organization of existing material and not huge effort. A door is also open for SOA4All test cases to become COIN multiplier, in particular the BT test case could be of interest for COIN.

    b. FIA. COIN is among the organizers of the “Enterprise” session while John of the “Search & Discovery” one. Synergies will be explored.

    c. Possibility for SOA4All and COIN to work together for the FI Symposium

2.8 SOA4All and Service Web 3.0[6]

Much of SOA4All’s contributions towards the Future Internet Initiative are in direct correlation or within the scope of the Service Web 3.0 project, providing the foundation for future community research and technological development in the area of large-scale service architectures and the further utility of semantic technologies. STI International was the leading partner in this collaboration, where SOA4All remained one of the most prevalent projects in cooperation with Service Web 3.0.

Main activities fall under the fields of coordinating the research, standardization, and dissemination activities and creating the internet of billions of Web services.

Service Web 3.0 maintained a Future Internet Interest Group (FIIG) which included an informative mailing reporting on the activities on those.

[6] Service Web 3.0 has recently finished (December 2009)

2.9 SOA4All and LarKC (Large Knowledge Collider)

The LarKC project (FP7 IP) has the following objectives: to develop the Large Knowledge Collider (LarKC, for short, pronounced “lark”), a **platform for massive distributed incomplete reasoning** that will remove the scalability barriers of currently existing reasoning systems for the Semantic Web.

The project partners plan to achieve this by:

- **Enriching the current logic-based Semantic Web reasoning methods** with methods from information retrieval, machine learning, information theory, databases, and probabilistic reasoning,
- **Employing cognitively inspired approaches and techniques** such as spreading activation, focus of attention, reinforcement, habituation, relevance reasoning, and bounded rationality.
- **Building a distributed reasoning platform** and realizing it both on a high-performance computing cluster and via “computing at home”.

Because of the common interest expressed by both projects around reasoning, SOA4All and LarKC have held two joint workshops and another one is planned for September 2010.

Joint Workshop of LarKC and SOA4All at FIS2009 in Berlin, September 4, 2009

The purpose of this meeting was to begin the process of alignment between the integrating projects SOA4All and LarKC. Both of these projects were reaching at that time a stage at which the first results are becoming available and in which it was timely to identify those activities where collaboration will be mutually beneficial, most likely involving technology sharing and standardisation efforts. The outcome of the meeting was a better mutual understanding of research goals and concrete steps to ensure a closer the coming years. Specific actions were defined around:

- ✓ SOA4All semantic spaces and service bus (LARKC data layer): organize event to discuss further
- ✓ Non-functional properties: build proper ontology for LarKC and ensure it is used in all LarKC plug-in descriptions
- ✓ LarKC decider: LarKC will monitor the status of the SOA4All wsmo-lite tools. When feasible, they will be used for modelling LarKC plugin descriptions. The SOA4All process editor will then be used to build LarKC workflows.

Further actions planned are a collaboration workshop between SOA4All, LarKC, PlanetData and COIN during FIS2010 (://www.larkc.eu/collaboration-workshop-2010/).

For further information go to www.larkc.eu and http://www.larkc.eu/soa4all-larkc-collaboration/

2.10 SOA4All and SLA@SOI

The scope of the SLA@SOI project is the definition, negotiation, and monitoring of SLAs between various layers of a service infrastructure. Such topics are not investigated in SOA4All. SLA@SOI focuses only marginally on service composition design and execution, which is a main goal in SOA4All. Thus the two projects can be seen as **highly complementary**.

Seekda is developing a crawling service for SOA4All (extend WSDL with REST services). This complementary work between SLA@SOI and SOA4All has already been identified by the COIN Project (see more details in previous sections).

2.11 SOA4All and collaboration with other projects

Besides the collaboration activities carried out by the SOA4All project and other parties that have already been described in the previous sections, some additional opportunities have happened in the last year that we summarize in this miscellaneous chapter:

SOA4All has been contacted by the **SPICE** project (http://www.ist-spice.org/index.html). The project focuses mainly on telecom services and utilizes service oriented architectural principles, Web service as well as semantic technologies.

Besides the SPICE project, SOA4All has made a specific collaboration within the **FAST** project (http://fast.morfeo-project.eu) providing an innovative visual programming environment.

3. Assessment of Collaboration Activities

SOA4All has been very active in seeking for possible collaboration with other projects and initiatives. Still this effort is difficult to quantify.

PROJECT/ INITIATIVE	TYPOLOGY *(technical vs. dissemination vs. others)*	DESCRIPTION	DURATION *(punctual vs. long term collaboration)*	ASSESSMENT
NEXOF-RA (and overall NESSI community)	Technical	Contributions to the OCP (Open Construction process) through submission of contributions to the Investigation Teams (Service Composition, Service Discovery)	Punctual: open calls for contributions (2008-2009)	SOA4All is represented in the overall set of patterns created by NEXOF-RA becoming a reference in areas like service description and service composition; nevertheless, final assessment will depend on the success of NEXOF-RA to exploit these results in the longer term (making these patterns “usable” by the S&S community)
NEXOF-RA (and overall NESSI community)	Technical	Sharing relevant SOA4All documents by uploading main deliverables to the SOA4All repository	On a continuous basis (periodic meetings)	The repository is a direct source for NESSI Strategic and Compliant projects, which make them more acknowledgeable by other actors; quantification of impact will depend –once again- on the capabilities of NEXOF-RA to project results to a wider community
NEXOF-RA (and overall NESSI community)	Technical	Participation to the Architecture Boards providing the SOA4All vision on both architectural approach and technologies	On a continuous basis (in principle until end of NEXOF-RA in summer 2010; decision on sustainability of the task still pending)	SOA4All is one of the voices heard in the Board and therefore this helps our project to promote its results and make our developments more widely known by other projects and organizations; quantification will be possible once the projects ends. Besides what SOA4All can provide these meetings have allowed us to get a better understanding of what other projects are doing, like SLA@SOI and RESERVOIR
NEXOF-RA and NESSI	Dissemination	Presence of SOA4All in NEXOF-RA and NESSI websites, as well as in other dissemination channels (such as	On a continuous basis	These are additional channels for SOA4All dissemination that can be maintained and used with little effort; so far the assessment in terms of visibility has been very good.

		newsletters, presentations of the overall NESSI Strategy, etc)		Nevertheless visibility through NEXOF-RA tools will not continue unless an alternative solution is put in place: the analysis of feeding the IT-Tude portal could be promising
NESSI	Dissemination	Active participation in ICSOC-Servicewave 2009 (Stockholm)	November 2009	Great visibility for SOA4All: architectural vision presented through the closing panel, moderation of discussions, demos presented at exhibition session, poster at the NESSI stand;
RESERVOIR	Technical	Use of OpenNebula to access infrastructure (for validation in WP1)	Expected in final phase of the project (not confirmed)	Under analysis until the feasibility of the solution is clear
Several projects under the S&S area of DG INFSO	Dissemination, technical collaboration	Internet of Services Collaboration meeting between FP6 and FP7 projects in Brussels (organized by the European Commission with the support of three projects, among them SOA4All)	June 2009	Despite attending many sessions with active participation (architectures, use cases, semantics...) results so far have not been convincing from the content point of view. There is not continuity in the activities year after year and therefore, the associated cost has not proven to be effective from the point of view of technical collaboration. Main outcomes relate to visibility and in this specific case we appreciated a lot the feedback got through the demo session
STASIS	Technical collaboration	Technical topics identified to enrich the two projects	Ongoing until the end of the STASIS project (TIE is a common partner)	Continuous flow of information has allowed us to identify many synergies that have been taken into consideration in some of the SOA4All WPs
STASIS (and other semantic projects)	Dissemination	SemanticWeek'09 (Amsterdam)	June 2009	Great visibility and very good opportunity to exchange experiences and knowledge with several projects directly involved in research in Semantic technologies. The good organization of the event has given reputation to its results; it was also used by SOA4All to organize an exploitation workshop and get feedback on business models
STASIS	Dissemination	Research Connection event (Prague)	May 2009	The stand in a more general event did not facilitate

				collecting very concrete feedback (as it could be the case of SemanticWeek) but opened up project results to a huge constituency, besides giving SOA4All the opportunity of exploring other projects that attended the same event
FIA	Dissemination and technical contributions to WGs	Participation to the two editions of FIA held in 2009 in Prague and Stockholm respectively	May and November 2009 respectively	In terms of visibility the FIA and other FI-related events have positioned SOA4All as one of the main projects within the pillar ·"Internet of Services". We expect this will help us in the future but no concrete assessment can be provided yet. The evolution of the WGs is not so clear, as well as the technical impact on project development. However, being part of the FIA Books is considered a good outcome
FI-related events	Dissemination	Active participation in several events such as FIS; analysis of potential contributions from SOA4All to the future definition of the Core Platform	Punctual (depending on the event); however, since many months ago Future Internet is omnipresent and therefore sometimes it seems a continuous effort	Main advantage is understanding initiatives around Future Internet and trying to get a position there; at the same time, these events are an opportunity to meet other projects and seek for further collaboration activities (as a result of networking); same comments on long-term impact of FIA apply here too
S-CUBE	Technical	Identification of fields of interest benefiting a continuous flow of information between the two projects thanks to the involvement of CEFRIEL in both SOA4All and S-Cube; contribution to common scientific papers	On a continuous basis	Collaboration with S-CUBE provides a link with the scientific community of Software and Services; this opens up the spectrum of the SOA4All targets, since in the beginning the project was only emphasizing the positioning in the Semantic community
S-CUBE	Dissemination, training	Tutorial of SOA4All at the Summer School (Heraklion, Crete)	June 2009	Very good visibility of the project and evaluation of the interest of our work in front of a different audience (professors and students). Very successful event

STI International	Dissemination	Presence in different events mainly related to Semantic technologies, such as OCG Forum Semantic Systems and Semantic Data Management Initiative	March 2009 March 2010	Good visibility for the project and reputation in the Semantic Community (proof of acceptance of SOA4All concepts)
COIN	Technical (but also dissemination)	Many technical fields of collaboration identified and summarized through concrete action plans	On a continuous basis (since COIN and SOA4All started the attempts to collaborate have not stopped)	In principle working areas identified seem promising for COIN to use SOA4All technologies and for SOA4All to feed its results from a technical point of view; many views are also complementary enriching the approach of both projects; the presence of TXT, CEFRIEL, STI and ATOS should facilitate the implementation of these plans: Exploitation collaboration is also expected and this would be very good for the project taking into account the active work of COIN in the FINES cluster and the definition of the SaaS-U model
LarkC, FAST, SLA@SOI, SPICE	Technical collaboration	Specific collaboration points already identified with most of these projects.	On a continuous basis (not the same for all projects)	So far we have worked at the level of analysis. Now that SW packages start to be ready, a more fruitful collaboration should happen. Its success will depend on the commitment of WP leaders and common partners in the projects.
Service Web 3.0	Dissemination	Collaboration and cooperation between the two projects to jointly work in the Future Internet area	On a continuous basis (Service web 3.0 recently finished)	Very fruitful collaboration, since the participation of OU in both projects (among other partners) has made possible that John Domingue becomes FIA caretaker giving a great visibility to SOA4All in FIA

Table 1: Assessment of Collaboration activities in the second period

4. Collaboration Activities for the third year

4.1 University of Sevilla joining the SOA4All project

Along the project duration, this consortium has received expressions of interest by organizations that wanted to be involved or get information about the project results. Nevertheless, there has been one specific expression of interest that has gone further than that and has ended up with the most satisfying result, the one of elaborating a concrete plan in line with the work plan of the project that has driven the discussion of including this organization as a partner of SOA4All.

We are talking about University of Sevilla, which has already joined several project meetings assigning their own resources. With the objective of synchronizing our activities and formalizing such collaboration, we are currently managing an amendment to the DoW of the project.

A list of specific resources/works that University of Sevilla will provide to SOA4All together with potential applications for SOA4All can be seen below:

Expertise offered to SOA4All

- **Service Ranker based on logic rules evaluation and constraint programming**: University of Sevilla has worked on a simple extension of WSMO with user preferences, where part of the preference model they are developing is integrated within goals definitions. Concretely, preferences are described using utility functions that are defined as WSML axioms in order to perform service ranking in terms of these preferences. Additionally, an implementation of a hybrid service ranker has been done, using both logic programming and constraint programming
  - This work can be used to build a semantic preference model taking into account Non Functional Properties
  - Moreover, their implementation can be integrated into the selection & ranking infrastructural service.
  - More info can be found at: http://www.isa.us.es/upsranker

- **Non-Compliance between templates and agreement offers in WS-Agreement**: specific work focused on analysisng inconsistencies over user preferences in service level agreements (following the WS-Agreement specification)
  - This work can be interesting to build the tooling for users to express its preferences in SOA4All Studio
  - More info can be found at: http://www.isa.us.es/wsag

- **FOM: a framework for Metaheuristic optimization**.
  - This framework can be applied in optimization elements such as the Composition Optimizer.
  - More info can be found at: http://www.isa.us.es/fom

4.2 SOA4All and its collaboration with NESSI and NEXOF-RA

For the coming period and in the very short term, two activities will dominate the work of SOA4All in terms of collaboration with NESSI and NEXOF-RA.

4.2.1 Collaboration with NEXOF-RA in 2010

Following the structure of contributions already presented in the report of activities carried out during the last period SOA4All will concentrate its efforts on:

- ✓ Attending the Architecture Board meetings organized by NEXOF-RA
- ✓ Maximizing contributions from SOA4All to the works performed by NEXOF-RA and specially assuring that patterns related to SOA4All are well represented in the final version of the architecture (this work will relate to the progress of SOA4All in service description, discovery and service composition)
- ✓ Feeding the NEXOF-RA repository with the most relevant deliverables and publications generated in the last period
- ✓ Keeping an eye on the overall outcomes of the project and contribute when possible with ideas for the instantiation guidelines and sustainability of project results
- ✓ Since NEXOF-RA will evaluate the possibility of using the IT-Tude portal as one channel to promote project results and keep track of important contents generated by the project, SOA4All will take benefit of that analysis by following the necessary steps to consider IT-Tude as complementary channel for SOA4All results too (at least when the project finishes)

4.2.2 Collaboration with NESSI: NESSI Projects Summit

SOA4All, as NESSI Strategic Project is one of the projects that will be actively promoted at the NESSI Projects Summit in Valencia (11-12 April 2010).

The NESSI Projects Summit will focus on the collaboration between NESSI projects at this stage of their developments, when many of them can show live demos and promote the use of their SW components in other projects. Attendees to this event will get an overview of what is the status of all NESSI projects and will have the opportunity to follow them more in detail during the second day thanks to the parallel thematic tracks that have been defined by the conference organizers.

Day 1 will focus on the role of NESSI in the Future Internet as well as on providing an overview of what has happened in NESSI in the last period, general progress of all the NESSI projects and the contributions to NEXOF as well as on other issues such as INES (the Spanish initiative on Software and Services) as successful implementation of a National Technology Platform.

Day 2 will change the approach and will offer attendees an attractive agenda with three parallel tracks: Track 1 for Service Platforms and Service Infrastructures, Track 2 for Service Front-ends and finally Track 3 for SMEs and National and Regional Initiatives.

The idea is to address the progress achieved by projects in a specific layer of the stack and avoid project-oriented presentations. For example, SOA4All as representative project of the service layer will not only described its own achievements, but will summarize the overall progress within the Service Layer including outcomes of other relevant projects in the domain such as SLA@SOI.

Further information in http://www.r2sconference.eu/sideEvents_nessiSummit.php.

The collaboration of SOA4All with NESSI in this NESSI Projects Summit will be represented though three main contributions:

- ✓ Day1: presentation of the progress beyond the state-of-the-art in the Service Layer driven by SOA4All (as said, overall progress at the service platform level will be described by SOA4All as one of the most representative projects in this field). This presentation will fall under the responsibility of John Domingue (OU)
- ✓ Day 2: SOA4All parallel session in Track 1b. Service Platforms and Service Infrastructures. See agenda of this session below.
- ✓ SOA4All will have a stand along the full week covering all the events that will happen in Valencia until Friday (not only NESSI Projects Summit, but also FIA and the launch of the FI PPP).

Track 1b - Services Platforms & Service Infrastructure

15:00 - 16:30 SOA, Semantics & Web 2.0: Towards a Web of billions of services (driven by SOA4All Project)
(Chaired by John Domingue, The Open University)

15:00 - 15:10	Introduction. Goals and objectives	John Domingue, The Open University
15:10 - 15:45	Technical architecture including repository server, semantic representations (MicroWSMO and WSMO-Lite) engines and tools	Carlos Pedrinaci, The Open University
15:45 - 16.00	SOA4All Business Value: towards real applications	Nuria De Lama (Atos Origin)
16:00 - 16:20	SOA4All as Service Delivery Platform in the Public Sector	Juergen Vogel, SAP
16:20 - 16:30	Q&A	

Agenda of SOA4All parallel session in the NESSI Projects Summit

4.2.3 Other potential opportunities through NESSI

SOA4All will take advantage as much as possible of the channels and resources provided by NESSI for promoting our results.

Direct opportunities for us relate to the use of the NESSI Newsletter as channel to inform a great constituency about our progress. Any collaboration opportunity that is open through NEXOF-RA in this context will also be welcomed, like the aforementioned option of including some of the SOA4All contents in the IT-Tude portal.

4.2.3.1 Servicewave 2010 (Genth, 13-15 December 2010)

In the same way SOA4All expects an active participation to the Servicewave 2010. The programme is under preparation and thus we will wait until this is clear to decide upon SOA4All participation in calls for papers, demonstration and exhibition

sessions, sponsoring and possible inclusion of SOA4All speakers in the conference sessions. Very preliminary information about this conference and complete overview of the previous editions can be seen in http://www.servicewave.eu/.

4.3 SOA4All and future contributions to the Future Internet

SOA4All will follow the development of all the initiatives already mentioned in the reporting of the second year and will keep an eye of others that may appear in the short-medium term.

In terms of roadmap, main focus of SOA4All will be on FIA Valencia, FIS and possible opportunities within the PPP environment.

Information about participation of SOA4All in the ***future edition of FIS*** (Future Internet Symposium) can be found in the section devoted to dissemination driven by STI International.

Regarding the ***Future Internet PPP*** we will keep an eye on possible opportunities for the results of SOA4All. One of the main initiatives under definition is the Infrastructure of the so-called *Core Platform* or *Technology foundation*. The proposal that will address the underlying infrastructure of the Future Internet-related innovations in Europe has to consider existing results from past and ongoing projects (notice that the PPP will promote innovation and not research). ATOS, as one of the industrial companies well positioned in the current discussions will bring forward those SOA4All results that can be valid for the Core Platform as part of its exploitation strategy.

4.3.1 FIA Valencia

The next edition of FIA will take place in Valencia on the 15-16 April, 2010. The structure of sessions has changed a little bit with respect to previous meetings based on the preferences expressed by companies involved in FIA. Main topics that will be discussed there are:

- ✓ Architectures: FI Reference model
- ✓ FI and smart energy
- ✓ Foundations of Trust
- ✓ What does Future Internet mean for enterprise?
- ✓ Architectures: which concrete results are already available?
- ✓ Smart Health
- ✓ Economics of information for citizens, communities and commerce
- ✓ Search in the future Internet: SMEs and citizen perspectives
- ✓ Architectures: how to move white papers and ideas to standardization?
- ✓ What does Future Internet bring to smart cities?
- ✓ FIRE

There will be several representatives of SOA4All attending different sessions seeking for collaboration opportunities for this project. Many of the projects with which SOA4All is already collaborating signed the Bled declaration and are already engaged in this initiative too. Furthermore, John Domingue (OU) will take care of the session *Search in the Future Internet*.

In the next Collaboration Activity Report information about contributions to FIA Ghent will be provided. At this stage we think the event is too far in time to focus on its preparation and any decision in that respect with depend on the outcomes of FIA Valencia and ongoing initiatives on Future Internet.

4.4 SOA4All in ICT 2010 (Brussels, 27-29 September 2010)

The ICT event is the most important event on ICT supported by the European Commission. In this edition, projects and organizations will find:

- ✓ latest research trends in information and communication technologies
- ✓ European priorities for 2.8 billion Euros research funding in ICT, 2011-2012
- ✓ Meet potential research and business partners at dozens of networking sessions
- ✓ an exhibition with over 5000 square meters of Europe's latest cutting edge ICT research

SOA4All is currently preparing a proposal for the open Call for exhibitions (deadline delayed until 15th of April). In the coming months partners in SOA4All will make their best to assure a good positioning in this event.

4.5 Maximizing collaboration: opportunities driven by partners

Even if many collaboration opportunities exploited so far appeared thanks to partners working in several projects we have realized that a more careful look into the strategy and portfolio of organizations working in SOA4All can enable further discoveries for potential future works. Some relevant examples have been included here as a matter of examples. Still they are abstract and therefore, our main aim is to show the potential to find new collaboration opportunities.

4.5.1 SAP Internal Portfolio

SAP Research focuses on six key research areas within their current research, which touch various aspects of technological, societal and business changes. Each of these research areas addresses a key strategic area within a certain trend. **Error! Reference source not found.** shows the current SAP Research areas [D10.2.1].

Technology	**Economics and Technology**	**Business, Technology, and Society**
Software-Development	Internet of Services	Applications of the Next Generation
	Internet of Things	Empowering End Users

	Business Grids	

Table 2: SAP Research Areas 2010

Here, SOA4All contributes to the Economics and Technology field Internet of Services. Over the last ten years, the service sector has developed to the world's fastest growing industry and now employs the majority of people in general. Information technology can contribute to foster this growth. Furthermore, services should be made more widely available and easily accessible via the internet. The so-called "Internet of Services" deals specifically with services that can be managed by the IT and combined to create higher-value services. Through innovative technological developments, new distribution channels and business models are created. An enterprise SOA provides the services, which facilitates to create, to consume and trade new services. Combined with Web 2.0 technologies, it yields to new service innovations. If real services move into the real world, the Internet of services would be one of the foundations of the future Web 3.0.

SAP expects that the Internet to Services make SAP Applications even more attractive for customers than it is already possible. Customers could benefit from the SAP partner network by reaching additional services and giving feedback in a community on provided and new services.

The project SOA4All contributes to the SAP Research focus Internet of Services in addition to a variety of other mainly EU-funded projects. All projects regularly exchange new ideas and technical achievements in order to drive forward the common emphasis of research. The following table shows a selection of the most important SAP Research projects[7] which collaborate to the research area Internet of Services in the year 2009/2010.

Project Name	**Initiative**	**Brief summary**
FAST http://fast.morfeo-project.eu/	EU FP7	Creating a new visual programming environment to facilitate the development of complex front-end gadgets, involving execution of relatively complex business processes that rely on back-end semantic Web services.
PremiumServices www.premium-services.de	BMBF	Developing a platform for offering pricing mechanisms as out-of-the
ITAIDE www.itaide.org	EU FP6	Solving the increasing data complexity in the area of cross-border and cross-country trade by reducing the administrative overhead carried by commercial and public administration organizations.

[7] http://www.sap.com/about/company/research/pdf/SAP_Research_Report_2009-2010.pdf

Reservoir www.reservoir-fp7.eu	EU FP7	Enabling massive-scale deployment and management of complex IT services across different administrative domains, IT platforms, and geographies. The project will provide a foundation for a service-based online economy, where − using virtualization technologies − resources and services are transparently provisioned and managed on an on-demand basis at competitive costs with high quality of service.
SecureSCM www.securescm.org	EU FP7	Enabling privacy-preserving collaborative supply chain planning without disclosure of sensitive data using applied cryptography.
ServFace www.servface.eu	EU FP7	Developing user interface annotations for Web services supported by methodologies and tools to allow easier and faster creation of service-based applications.
SHAPE www.shape-project.eu	EU FP7	Specifying and developing a tool-supported methodology for flexible business models and variable services on semantically enabled heterogeneous service architectures through model-driven approaches.
SLA@SOI www.sla-at-soi.eu	EU FP7	Developing a systematic service-level agreement (SLA) management framework that spans and translates across business and IT layers.
Smart Services CRC www.smartservicescrc.com.au	CRC	Developing innovation, foresight, and productivity improvements for the services sector, the Smart Services CRC is an AUD120m, commercially focused collaborative research initiative in Australia, with which SAP Research collaborates on different projects.
SOA4All www.soa4all.eu	EU FP7	Simplifying the handling of Web services such that they can be easily searched, executed, annotated, and composed by business users.
Theseus / TEXO www.theseus-programm.de/en-us/theseus-applicationscenarios/texo	BMBF	Contributing within the THESEUS program to the service economy by creating the infrastructure for business webs in the Internet of Services. TEXO will provide a platform that makes services tradable on the Internet and composable into value-added services and that allows the integration of customized services into the environment of

		service consumers.
Virtex	InvestNI	Assessing how SAP can use virtualization technology to enable deployment of its application suite on a grid infrastructure with minimal or no modification.
XtreemOS www.xtreemos.eu	EU FP6	Developing a Linux-based operating system that provides for grids what a traditional operating system offers for a single computer: abstraction from the hardware and secure resource sharing between different users. The system thus simplifies the work of users belonging to virtual organizations by giving them the illusion of using a traditional computer while removing the burden of complex resource management issues of a typical grid environment.

Table 3: SAP Internet of Services Project Portfolio 2009/2010

4.5.2 Discovering synergies in ATOS

In the case of ATOS the research department (ATOS Research & Innovation) is divided into many different research areas and units addressing specific working fields. On the one hand, this enables groups of people to focus on their own areas and maximize their efforts there with concrete outcomes; on the other hand, this also leads to a problem of being aware of all the projects running at the same time in the organization. As a result, ATOS is building a coordination structure that will allow a clear research strategy definition working not only for concrete research results in a very narrow domain, but also working for the more ambitious goal of contributing to higher level initiatives characterized by their multidisciplinary, as it is the case of the Future Internet Initiative.

This is also needed because of the involvement of ATOS in different PPPs and well as its active role in many Technology Platforms at both European and National level.

This internal coordination effort is leading us to find clear working paths. We provide here some areas where we expect to identify concrete collaboration opportunities:

- ✓ Inclusion of security solutions within projects where security and trust are not priorities from a research point of view.
  - o This will not be useful to progress beyond the state of the art, but will clearly improve the overall technical solutions provided by the projects. In the case of SOA4All we will evaluate the possibility of using some of the solutions developed by the MASTER NESSI Strategic Project where ATOS is coordinator
- ✓ Establishment of synergies between service-oriented infrastructures and service-oriented architectures.

- Nowadays, ARI counts on two different units facing the different research challenges at those two levels: while the SSSE[8] Unit focuses on SOA, SW engineering and semantic technologies (thus addressing the so called service platforms), the SOMI[9] unit addresses aspects related to Grid and Cloud computing, as well as some aspects of validation frameworks (testbeds and experimental facilities). The internal cooperation currently happening between the two units will lead to a more comprehensive set of solutions where disruptions between Cloud (or other infrastructures) and the service platform layer will be minimized.

4.6 Dissemination driven by STI International

Opportunities for joint dissemination for SO4All in the short-medium term that we will try to address, specially taking into account the progress of the development in the third year of the project, are the following:

4.6.1 BIS 2010 (Business Information Systems): Berlin, 3-5 May 2010

The BIS conference is by now a well-respected event joining international researchers to discuss the wide range of the development, implementation, application and improvement of business applications and systems. It is addressed to the scientific community, people involved in the development of business computer applications, consultants helping to properly implement computer technology and applications in the industry. This year it will address the topic of Future Internet Business systems. For further information go to http://bis.kie.ae.poznan.pl/13th_bis/.

4.6.2 Seventh ESWC: Extended Semantic Web Conference (Heraklion-Greece, 30 May-3 June 2010)

The mission of the Extended Semantic Web Conference (ESWC 2010) is to bring together researchers and practioners dealing with different aspects of semantics on the Web. ESWC2010 builds on the success of the former European Semantic Web Conference series, but seeks to extend its focus by engaging with other communities within and outside ICT, in which semantics can play an important role. At the same time, ESWC2010 is a truly international conference. For further information go to http://www.eswc2010.org/.

4.6.3 FIS 2010 (Future Internet Symposium): Berlin, 20-22 September 2010-03-31

The Future Internet Symposium (FIS 2010) is now in its third year and will once again offer a forum for researchers and practitioners to discuss key issues in the Future Internet: networks, services, multimedia, Internet of Things, security and trust. This

[8] SSSE stands for Semantics, Software and Service Engineering

[9] SOMI stands for Service-Oriented Middleware and Infrastructures

year we will offer a particular focus on the aspect of virtualisation of ICT resources and services. For further information go to http://www.fis2010.org.

4.6.4 Other opportunities for joint dissemination

Other options are:

- ✓ EON2010-Seventh International Workshop on Evaluation of Ontology-based tools: Heraklion (Crete), 30 May 2010.
- ✓ ESW 2010: First workshop in Enterprise Service Web, in conjunction with BIS 2010 (Berlin, 3-5 May, 2010)
- ✓ SSSC 2010 (IEEE 2010 Summer School on Semantic Computing): Berkley (California), 25-31 July 2010.

4.7 Other potential collaboration opportunities

4.7.1 Participation to the INES General Assembly (Bilbao, 9-11 June 2010)

In 2009 SOA4All did not have a strong presence in the Third General Assembly held by the Spanish Initiative on Software and Services, INES[10], in Malaga (July 2009). The reason for this is that SOA4All had been given a preferential position in the previous Assembly organized in 2008 in Mallorca.

In 2009 we highlighted the relevance of the NEXOF-RA project inviting initiatives, working groups and organizations to contribute to NEXOF-RA in the different modalities. Despite that, SOA4All was promoted through a general presentation made by Nuria de Lama (ATOS) about NESSI as well as in one of the presentations shown at the SEA[11] WG: “Services and Semantics: the future of Semantic Web Services” by Tomás Pariente, ATOS.

We are still waiting for the agenda of the next General Assembly, but the aim of SOA4All is to show demos and attract the interest of the Spanish constituency once main developments of the project are up and running provided the thematic area selected by INES is aligned with the research topics of SOA4All. In addition to that we will bring dissemination material when possible. Further information about INES is available on http://www.ines.org.es/.

4.8 Summary of the SOA4All Roadmap

Main collaboration activities included in the plan for the third year of the project have been selected on the basis of possible impact taking into account the opportunities of the project, the effort needed to make use of those opportunities and the assessment

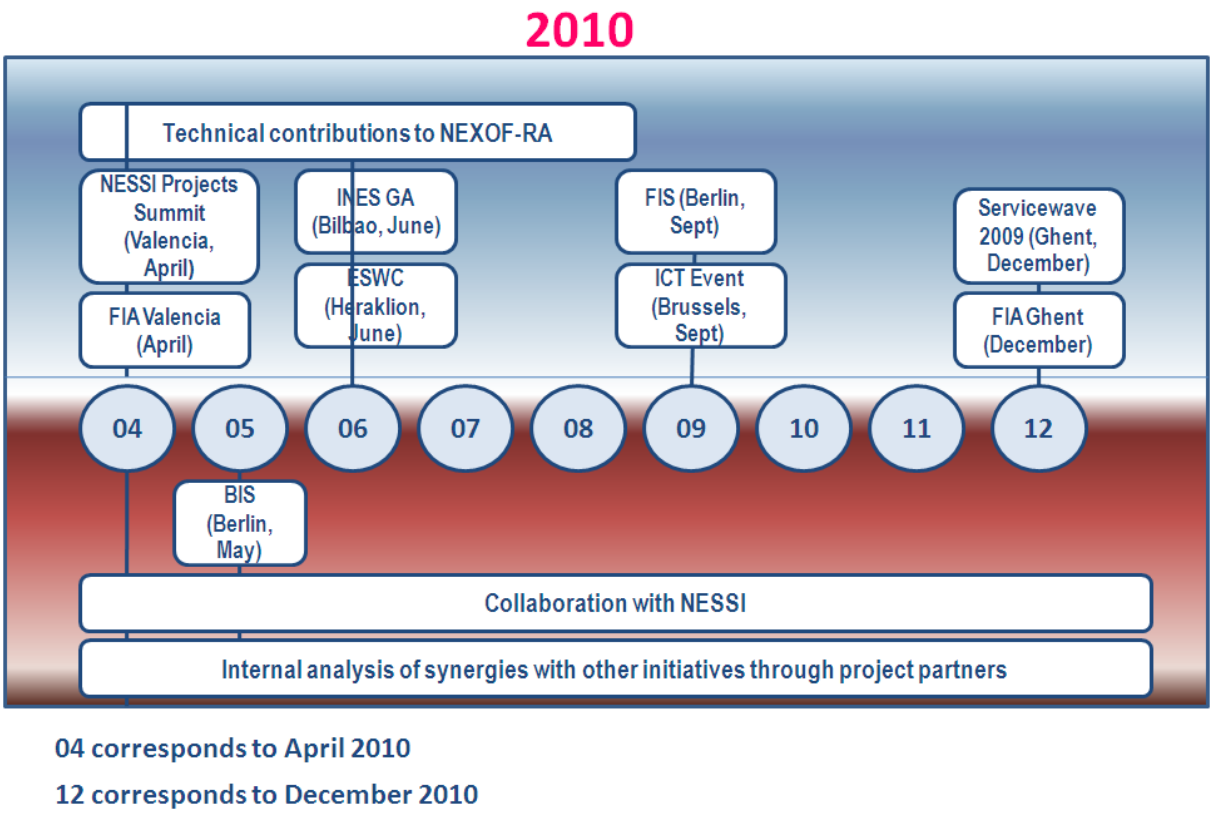
[10] INES is the Spanish Initiative on Software and Services; the presidency of this initiative is held by ATOS ORIGIN

[11] SEA stands for Service Engineering and Service-Oriented Architectures; the SEA WG of INES is chaired by Nuria de Lama (ATOS)

of the activities carried out in the previous period (section 3 of this document). Some of the collaboration activities could be classified as short-term impact ones, while others are a collection of prospective efforts trying to position SOA4All main innovations and results in the right place for further use and exploitation, for example, in the context of Future Internet.

The fact that many of the organizations involved in SOA4All are also participating in many other initiatives (FIA, PPP, S-CUBE, SLA@SOI, Service web 3.0, COIN, NEXOF-RA, NESSI, etc) makes feasible the ambitious collaboration plan that we have presented and guarantees the optimization of resource usage.

In order to facilitate the visualization of future collaboration activities find below a graphical representation of the events and activities in their respective timeframes.



Roadmap of main collaboration activities for 2010

5. Conclusions

This deliverable provides **information at three levels**:

- ✓ It reports main relevant collaboration activities carried out along the last year of project development
- ✓ It provides an analysis/ assessment of these activities with the aim of identifying the real impact on SOA4All as well as for using it as a decision-making tool for the last year of the project
- ✓ It provides a roadmap of collaboration activities for the coming months (December 2010)

SOA4All collaboration was very active in the last year, addressing the following projects/ initiatives/ sets of projects:

- ☐ NESSI European Technology Platform and its flagship project NEXOF-RA, besides the community of NESSI Strategic Projects and NESSI Compliant projects and NESSI-driven events like Servicewave'09.
- ☐ Initiatives around Future Internet such as FIA or FIS and thus collaboration with many of the projects that signed the Bled declaration and are nowadays contributing to the different FIA WG
- ☐ STASIS, addressing both technical contributions and joint dissemination events such as the Semantic Week pushed by STATIS with the collaboration of several projects in the Semantics area
- ☐ S-CUBE, with a focus on scientific collaboration and training activities via the SSAIE Summer School
- ☐ STI International, through which SOA4All can reach a wider constituency in the Semantics area and have a strong presence in numerous events like the OCG Forum Semantic Systems or the Semantic Data Management Initiative
- ☐ COIN, with which SOA4All has defined a concrete agenda of technical contributions to benefit the two projects.
- ☐ Service Web 3.0, which helps SOA4All in those activities that fall under contributions to FIA
- ☐ Many other projects such as SLA@SOI, LarKC, FAST and SPICE to name a few

A brief assessment of all these activities has been provided in Chapter 3.

Finally, this deliverable presents the roadmap for collaboration activities until December 2010. Opportunities offered by the preliminary list of selected events and joint actions with other projects have been described. Among the extensive options, it is worth mentioning the effort of this consortium to include University of Sevilla as partner of the project as a result of discovering the clear synergies between some of the SOA4All technical works and the ones carried out by University of Sevilla. Having reached this level of definition of collaboration tasks with an external partner leads us to think on a very optimistic future for SOA4All.

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