



FAST AND ADVANCED STORYBOARD TOOLS

FP7-ICT-2007-1-216048

<http://fast.morfeo-project.eu>

Deliverable D7.4 (Collaboration Plan)

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EXECUTIVE SUMMARY

The FAST project will collaborate with other related projects through a number of forums: the Service Front End WG, the Semantic Technologies and Ontologies CWG, and the MORFEO community. By doing so, the FAST project hopes to exploit synergies and increase its impact. Given the benefits of collaboration the consortium further will continue to evaluate future collaboration opportunities and take part where relevant.

Document Summary

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1 INTRODUCTION

Collaboration in the achievement of objectives is one of the ways in which increased impact can be created. By collaborating, the involved projects will reduce duplicated efforts, as well as learn from each other. The different requirements posed by the different goals increase the richness of the solutions and standards created. This richness allows for broader application and by itself already increases impact.

By not duplicating efforts, the various involved projects are further enabled to focus their efforts on the requirements unique to their project. This allows a higher quality of research with broader applicability. That should increase the impact as well. A final benefit of collaboration is the lack of competition between similar, overlapping solutions created by the various projects with related research fields.

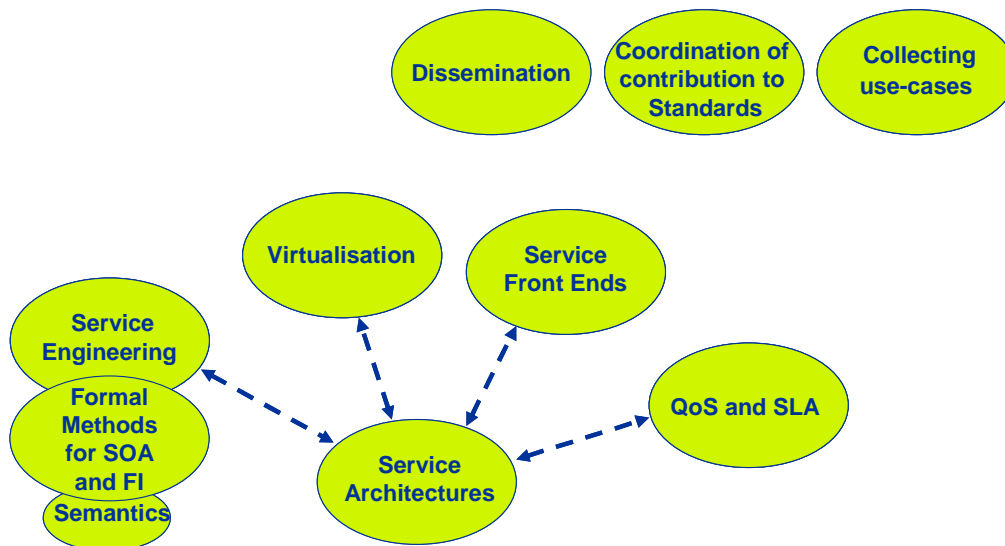
The FAST project aims to achieve the highest possible impact, and as such to take maximum benefit from collaboration opportunities. Various collaboration opportunities have been identified and acted upon. FAST coordinates the Service Front End WG, is evaluating the possibility of taking part in the Semantic Technologies and Ontologies CWG, and participates in the Morfeo community. Further the consortium is continuously on the lookout for new beneficial collaboration opportunities.

In the rest of this document we outline the various identified opportunities and asses their benefits.

2 SERVICE FRONT-END WORKING GROUP

2.1 Background

Internet users are expecting that the Web will support their daily life. Becoming the front-end through which they will get access and mix services (either application services, content/data delivery services) which are truly useful for them, matching their needs at any moment, in a context/knowledge-aware manner. As illustrated below, several European projects, either EU FP, national or industry funded projects are addressing relevant research challenges in the area of Services Front Ends, dealing with research topics such as context modelling and management, or evolution of web technologies that enable users, organized in communities, to mash-up, configure connect, and share services in a knowledge-aware manner. Furthermore, the FP7 ICT Work Programme 2009-2010 is foreseen to include a dedicated research topic on Service Front Ends, in the area of Service Architecture and Platforms for the Future Internet, focused on technologies enabling communities of networked users with different levels of expertise to search for, compose, configure, share and use services while supporting device and context aware service adaptations.



2.2 Service Front-Ends

Web services (or electronic services in general) have generally a symbolic existence. They provide an interface for computers to interact with the services, but not an interface for humans to do so. The purpose of Service Front-Ends is to provide this human interface to web services. The FAST project is but one of the projects in this space, and the effectiveness of the project benefits from the exploitation of the synergies between various projects.

To help achieve these synergies, the FAST project has taken the initiative to set up and coordinate the Service Front Ends Working Group. In this working group we hope to coordinate between the various projects that address different aspects of service front-ends. This coordination should result in more complete requirements, better standards, and less duplicated work. A homepage for the Service Front Ends Working Group has been created at: <http://sfe.morfeo-project.org/>

2.3 Goals of the Working Group

The stated goals of the Service Front Ends Working Group are:

- A common vision on the technologies and architecture associated to Service Front Ends in the future Internet of Services
- Open specifications and, potentially, open source reference implementations of components in the envisioned architecture

When agreed, results of this joint effort will be submitted for adoption by the NEXOF-RA initiative promoted by NESSI.

2.4 Further information

2.4.1 NEXOF-RA

As stated, one of the goals of the SFEWG is to contribute to the NEXOF Reference Architecture. “The NEXOF-RA project is the first step in the process of building NEXOF the generic open platform for creating and delivering applications enabling the creation of service based ecosystems where service providers and third parties easy collaborate. NEXOF-RA main results will be the Reference Architecture for NEXOF, a proof of concept to validate this architecture and a roadmap for the adoption of NEXOF as a whole. To build the specifications for the Open Framework Architecture,

An open process has been defined to allow the involvement of all relevant initiatives and organizations concerned on building a Reference Architecture for the “Future of Internet”.”¹

While the NEXOF-RA project is still in its early stages, there is the opportunity for the working group to influence the service front-end aspects based on the results of the working group and the constituting projects. This should allow the NEXOF Reference Architecture to be based on strong real-world requirements, and as such be more successful.

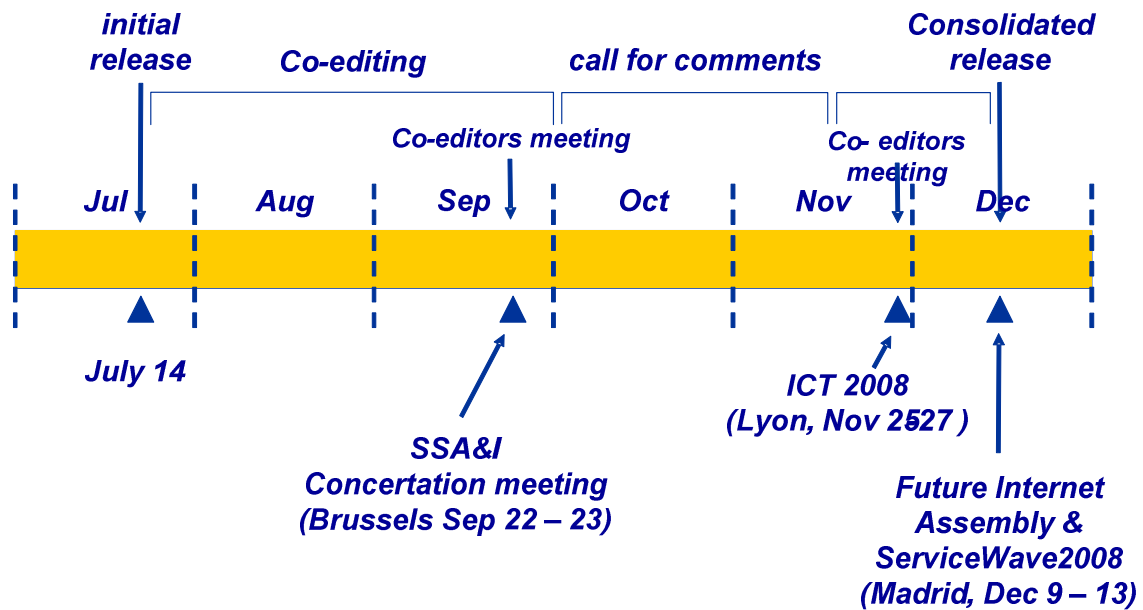
2.4.2 Position Paper

The first activity of the working group is the collaboration on a position paper. This position paper will allow the projects to align themselves better towards each other, as well as work towards synergies in their efforts. To achieve these goals the position paper will outline the vision of the working group consisting of scenarios and guiding principles, an envisioned high-level architecture and an underlying model. The paper will also inventorise the topics for which open specifications are desired.

2.4.3 Roadmap

The following picture outlines the preliminary roadmap of the working group.

¹ From <http://www.nexof-ra.eu>



2.5 Involved parties

The following table presents the projects that have joined the SFE collaboration working group so far.

Project	Representative	Organization
FAST	Juan José Hierro (jhierro@tid.es) Miguel Carrillo Pacheco (mcp@tid.es)	Telefónica
m:Ciudad	Diego Urdiales (diegou@tid.es)	Telefónica
OPUCE	Alberto León (alm@tid.es)	Telefónica
OPEN	Fabio Paternò (fabio.paterno@isti.cnr.it)	CNR-ISTI
IRMOS	Tim Courtney (tim_courtney@xyratex.com) José Luis Urien (urien@tid.es)	Xyratex
N/A	Martin Gaedke (martin.gaedke@informatik.tu-chemnitz.de)	Chemnitz University
N/A	Joe Gorman (joe.gorman@sintef.no)	SINTEF
Persist	Howard Williams(mhw@macs.hw.ac.uk)	Heriot-Watt University
SOA4ALL	Ander Altuna (ander.altuna@atosresearch.eu)	ATOS Origin

Below we will give a short overview of all participating.

2.6 FAST

The FAST project is a project that aims to develop an environment for the development of gadgets by end-users. These gadgets provide interfaces for web-services, and besides collecting information also allow interaction. The approach of the FAST project looks at the integration of various predefined components into a useable composition.

To achieve these goals, the project needs various inputs. In general the web-services used need to be annotated such that they can be integrated properly into the environment. This requires a sufficiently rich ontology.

Various services also need some sense of front-end component. As far as more complex front-ends go, the complexity of their creation is beyond the end user. As such the goal of FAST is not to research the creation of such front-ends, but to incorporate the results of other efforts.

Another important topic in web-services is service orchestration by workflow systems or similar tools. The FAST tool will not provide such services, but cannot be ignorant of their existence either. The gadgets developed through the FAST tool will often live in such an environment, and awareness will allow the tool to take advantage of a defined workflow in the development of "related" gadgets.

2.7 m:Ciudad

The m:Ciudad project aims to provide a technology for the provision of services from mobile phones. These services are created on the phone, by end-users or prosumers. m:Ciudad tries to answer a number of questions:

- What tools are required to allow users become service providers with their mobile phones?
- How should the mobile platform behave to be efficient and easy to use?
- How can these distributed, volatile services and their information be found and reached?
- What business opportunities does this technology provide, and how can that be exploited?

The m:Ciudad project focuses on U+ services: small, sharply focused applications with their own graphical user interface. This differs from for example the FAST project that has a strong focus on enterprise services and no mobile aspects. The UI aspects of the services in the m:Ciudad present various challenges that very well fit within the service front end working group.

2.8 OPUCE

The OPUCE project aims to produce an open infrastructure where services that are seamlessly accessible by a multitude of devices on heterogeneous networks can be easily created. A lot of this work focuses on the integration of component services and automatic composition. The services in the end also need a user interface. The automatic composition of the services implies that the user interface has to be automatically composed as well. This is a nontrivial problem, and clearly in the area of service front-ends. Like with the other projects, there is a clear need for sufficiently annotated services, from again another perspective.

2.9 OPEN

The open project aims to provide the technology to allow users to change the interaction device for service interaction, while maintaining state. Users can just continue where they left off. Within the context of the OPEN project, interfaces

are not necessarily automatically composed. The maintenance of state across devices is however a challenge towards the interface. The OPEN project clearly focuses on providing a consistent, migrating interface to existing services. The requirements that the OPEN project can bring to the Service Front End WG will put another different perspective on service front ends.

2.10 IRMOS

The IRMOS project looks at the integration of real-time methodologies and technologies into service oriented systems. Part of the system will be a front end that receive the real-time services and present an interaction to the user. This perspective provides quite some challenges to a service front end and should be an enrichment for the requirements of service front ends.

2.11 Persist

The PERSIST project focuses on the idea of personal smart spaces. "A smart space is a multi-user, multi-device, dynamic interaction environment that enhances a physical space by virtual services." While smart spaces currently exist, they are bound to physical locations. As such they provide an all or nothing experience. A personal smart space is connected to a person and mobile. This personal smart space provides a minimum of functionality.

Personal smart services allow for various service improvements such as context awareness, service personalisation and intelligent service creation and adaptation.

2.12 SOA4ALL

The SOA4ALL project aims to "integrate the service world of large enterprises, SMEs, and end-users enabling them to engage as peers within a network of equals". In the SOA4ALL vision, the web will be transformed to a place where billions of parties are exposing and consuming services seamlessly.

To achieve this, SOA4ALL focuses on various architectural aspects of services. SOA4ALL looks at the composition, virtualisation, discovery and execution of services on the one hand. On the other hand it looks at the service engineering and creation environment required to achieve these goals.

One of the further issues addressed by the SOA4ALL project is an end user integrated enterprise service delivery platform. This platform should allow end users to participate as peers in the service landscape. The flexibility thus required of the platform means that some level of automatic or end user service front end creation is required.

3 SEMANTIC TECHNOLOGIES AND ONTOLOGIES CWG

Besides organizing the Service Front End Working Group, the FAST consortium is evaluating the possibility of participating in the Semantic Technologies and Ontologies CWG. As semantic technologies play an important role within the FAST project, the Semantic Technologies and Ontologies CWG is of high interest for the project.

3.1 Short description of the CWG

The mission of the Semantic Technologies and Ontologies Working Group is to provide a forum for collaboration amongst projects, primarily within the Software and Service Architectures unit, on the application of semantics to SOA.

The working group focuses on a number of areas:

- Generic ontologies for describing services. Current initiatives in this area include the Web Services Modelling Ontology (WSMO)
- Generic ontologies for describing Grid entities. A Grid Resource Ontology was recently developed while there are ongoing efforts for the development of SLA, QoS and Security related ontologies.
- Architectures and infrastructures for managing semantic SOA systems and applications. An example of this includes the Semantic Execution Environment currently being standardised within OASIS.
- Architecture and methodologies for the development of Semantic Grid infrastructures such as the S-OGSA reference architecture.
- Semantic languages and representation formalisms for representing services.
- Use cases that demonstrate the business value delivered from the option of semantics in a SOA environment.

The working group will further establish and maintain links with the Conceptual Models for Services Working Group which captures the work from previous efforts, the NESSI Semantics Working Group and ongoing projects on Semantics applied to SOA.

3.2 Benefits for FAST

Semantic technologies form an essential part of FAST. They contribute to various aspects of the results of the project. In particular to the following:

- **Enhanced automatic composition.** Using semantic technologies, the additional information attached to components allows for a narrower selection of candidates components, as well as the automatic performance of various data transformations needed to glue elements together.
- **Easy finding and retrieval of components.** With a large supply of services and visual components, a significant problem is the retrieval of the relevant ones. Using semantic technologies, it is should be possible to make this search much easier, and covering a smaller search space.

- **Increased interoperability between components from various sources.** When it is known that the output of one component is semantically equal to the input of another component, even though they are not represented in the same way, they can be automatically converted. Similarly, once the semantic type of a value is known, it can be automatically converted or composed to a related semantic type. Take for example the conversion of degrees Celsius to degrees Fahrenheit

4 MORFEO COMMUNITY

The FAST project is one of the projects supported, and taking part of the morfeo project. This project, funded by the Spanish “Ministerio de Industria, Turismo Y Comercio” aims to provide a collaboration platform and working environment for various efforts in the area of service oriented architectures.

4.1 Morfeo background

Morfeo can be understood as a framework to facilitate the dissemination and monetization of the efforts related to the creation of free software. When a developer (either as individual or as a company) decides to produce free software, he quite commonly wants to make a profit out of it (economically or in a different form) and to maximize the revenue of his efforts. There are however several major barriers to overcome. Morfeo aims to address this and to some degree cut down the costs of this work. This is possibly the main goal of Morfeo and the basic understanding of the exploitation of the outcome of the project.

Thus, Morfeo generates the practical and conceptual environment to ease on the one hand the development process of free software and, on the other hand, the profitability of the efforts invested. In regard to the former, Morfeo offers documentation, consultancy, tools and services oriented to the creation of free software, particularly the scenarios where there is a combination of heterogeneous actors: large and small companies, research centres, independent developers, etc. Concerning the latter, Morfeo also offers guides, services and tools to improve the visibility of each project, to design and sustain business models, to transfer the technology to third parties, to help the creation of communities that could in turn generate business opportunities, etc.

4.1.1 Potential Impact

The Morfeo community provides an open framework of collaboration in which companies (either small or large), universities, research centres and the public administration are experimenting the opportunities to develop open source software. Such opportunities encompass:

- Speeding up and consolidating software standards. They are key to the construction, deployment, management and access to networked electronic services on the internet.
- Creating business opportunities. Based on services offered to companies and the public administration (services of support, maintenance, consultancy, integration and training)
- Incubation of I+D+i projects. This involves projects that integrate in a natural fashion disparate scientific and technological agents, contributing to the development of a strong industrial and scientific network in the countries where the members of the Morfeo community are present.

The Morfeo community has raised a growing interest from its conception and has the explicit support from a number of public entities in Spain: Junta de Andalucía, Gobierno de Aragón, Principado de Asturias, Junta de Comunidades de Castilla la Mancha, Generalitat de Cataluña, Comunidad de Madrid, Junta de Extremadura, Región de Murcia and Generalitat Valenciana. Diverse projects and activities within the community have also obtained the support of

the Spanish Ministry of Industry, Tourism and Commerce by means of the PROFIT programme.

The Morfeo community was identified as one of the nodes that will be part of the pan European network of competence centres for the development of open software. The definition of this network will be the outcome of an ongoing work within the FP6 project Qualipso. The ObjectWeb Open Software community, a referent in the field of Java Application Servers, will also be part of this network. It is worth pointing out that Qualipso is the largest research project in free software of the 6th Framework Programme.

A number of projects incubated in the Morfeo free software community are playing a relevant role in the development of the Strategic Research Agenda of the Technology platform NESSI (Networked European Software and Services Initiative). There are some related to the user-service interaction in the context of new generation Service Oriented Architectures (SOA). Among these, we can highlight MyMobileWeb and EzWeb, being the latter a Strategic NESSI Project. Consequently, there is an actual opportunity to make Morfeo one of the main “virtual factories” to create reference implementations for technologies and products that will shape the ICT infrastructure proposed by the Technology Platform NESSI. This will serve as the basis for the creation, exploitation and access to the electronic services of the future.

At a national level, the Morfeo free software community is a referent within the Spanish Technology Platform INES. This stems from the fact that various Morfeo related news have found a space in the magazine periodically published by INES. The Morfeo community comes out to be a space to host in a natural fashion open source research projects that build on the Research Agenda, published by the INES platform

Numerous references in the media and on the internet illustrate the strategic character of the free software community. It is important to highlight the references to Morfeo in reports published by several entities, for instance those published in the Information Society Portal of Telefónica and in the Report of the CyD Foundation(Fundación Conocimiento y Desarrollo) in 2006.

4.1.2 Strategic goals

In our view, the organisations that are open to cooperation and that are willing to take up ambitious and high impact projects are organisations with spirit of leadership. Hence, the companies, research centres and universities involved in the Morfeo project constitute a non exclusive core of creativity and innovation. Such organisations have a deep impact in the community where they operate and therefore they widen the influence area of the project.

A community of free software such as Morfeo implies an open work scheme that:

- Favours the creation of stable links with research centres, universities, research groups and the industry.
- Shortens the path for the creation of consortia in order to build proposals for the local, national or European I+D+I programmes. As a beneficial side effect, this fosters the incorporation of research groups and SMEs

with a lesser degree of experience by providing a critical mass and a reference.

- Fosters the participation of disparate entities in the project, giving the SMEs the opportunity to get close to the research groups from the universities or even large corporations. This exchange originates extensive synergies as a result of putting experiences in common.
- Fosters the dissemination of the research activities, attracting those with common interests and willing to contribute.

At the end of the day, the development of I+D+i projects of a large enough scale will generate local industrial networks specialised in Information Technologies.

On the other hand, the development of reference implementations in open source will promote and consolidate standards, since:

- They bring the credit needed to participate and influence decisively in the standardisation processes
- The organizations involved in the developments will gain credit from the successive experiences. This could position them as prescribers of these technologies.
- They allow the consolidation and definition of standards (let us consider the example of Apache in the Java/Web world or Linux in the field of operating systems).
- The extensive application of these techniques will promote further advancements in their knowledge and perfection. We strongly believe that this is a major contribution to the community and that it has a vast impact. Furthermore, there is a multiplier effect since the more you extend your enablers, the more they are used and extended (e.g. when you have a mashup platform, this encourages the creation of tools to create gadgets. Once you have both, there are more actors willing to use both and extend them)

Consolidation is key to the realisation of vision where the networks transform themselves into global ecosystems where electronic services with the following features abound:

- Provided by companies or public entities.
- Used in an intelligent and secure fashion. They take into account user mobility and service ubiquity.

In this respect, having this technology available together with reference developments in the “Semantic Web” will stimulate the demand and consumption of ubiquitous electronic services, enabling the full development of the Information Society and improving the quality of life of the citizens.

The industry evolves thanks to the incorporation of new expertise and innovations that feed the process. For instance, the Ezweb Project intends to push the Internet sector with the creation of a platform that will promote innovation and the satisfaction of a necessity of a vast number of beneficiaries.

5 CONCLUSIONS

The collaboration opportunities described here show clear potential to significantly increase the impact of the FAST project. The service front ends WG will help to create a unified direction for the various related projects, as well as avoid overlap. Taking part in the semantic technologies and Ontologies CWG will help the creation of functional web service ontologies that contain sufficient structure to allow such annotated services to be incorporated in the FAST tool. The cooperation in the context of the morfeo project should allow the reuse of various related frameworks that fall out of the direct scope of the FAST project, but are nevertheless required for a successful implementation of the research results.