SEVENTH FRAMEWORK PROGRAMME

Challenge 1

Information and Communication Technologies

Trusted Architecture for Securely Shared Services

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The TAS³ Consortium

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4	University of Karlsruhe	DE	KARL	Partner
5	Technische Universiteit Eindhoven	NL	TUE	Partner
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7	University of Koblenz-Landau	DE	UNIKOL	Partner
8	Vrije Universiteit Brussel	BE	VUB	Partner
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14	Risaris Ltd	IR	RIS	Partner
15	Kenteq	NL	KETQ	Partner
16	Oracle	UK	ORACLE	Partner
17	Custodix NV/SA	BE	CUS	Partner
18	Medisoft bv	NL	MEDI	Partner
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Contents

1 Executive Summary

The constitution of a supporting community started with the creation of the HR-EDU SIG, the experimentation of a social network and a first attempt of an aggregation with other parties.

This was followed by the foundation of *Internet Of Subjects*. This foundation is based on **TAS³** research activities, with the goal of creating a coalition of organisations and people. A closer cooperation took place within our broader research cluster.

Finally, **TAS³** technology is now increasingly adopted in standardisation bodies and as a basis for new research and commercial projects, notably in the last months of 2010.

2 Introduction

The purpose of this document is to describe the efforts made to create a community of practitioners in the field of digital identity in order to create the conditions for sustainability of the **TAS³** project. The span for this work package is M12-M48.

In view of the scope and complexity of the TAS³ approach it was to be expected that community interest would only grow when tangible results became available; Now that this is the case we have been preparing to raise the community efforts in the last year of the project. Next to general interest via communities such as IoS and Kantara, we expect vertical market interest, notably form the employment market.

3 Supporting community

3.1 Creation of a special interest group (SIG) in Liberty Alliance

A special interest group dedicated to human resources and education has been created in Liberty Alliance with the goal to "foster interoperability, security and user privacy across online identity-enabled solutions in the global education and human resources sectors. »

The HR-EDU SIG held its first public meeting October 22 at the ePortfolio & Digital Identity 2008 conference in Maastricht, the Netherlands..

3.2 TAS³ working space for project partners

A working space for **TAS³** partners (https://portal.**TAS³**.eu/) provides a document repository for deliverables, work in progress, calendar for project events and meetings, reporting documents, etc. This working space is using a wiki.

All **TAS³** existing process and channels for dissemination from EifEL websites have been transferred to the current wiki.

3.3 TAS³ public working space

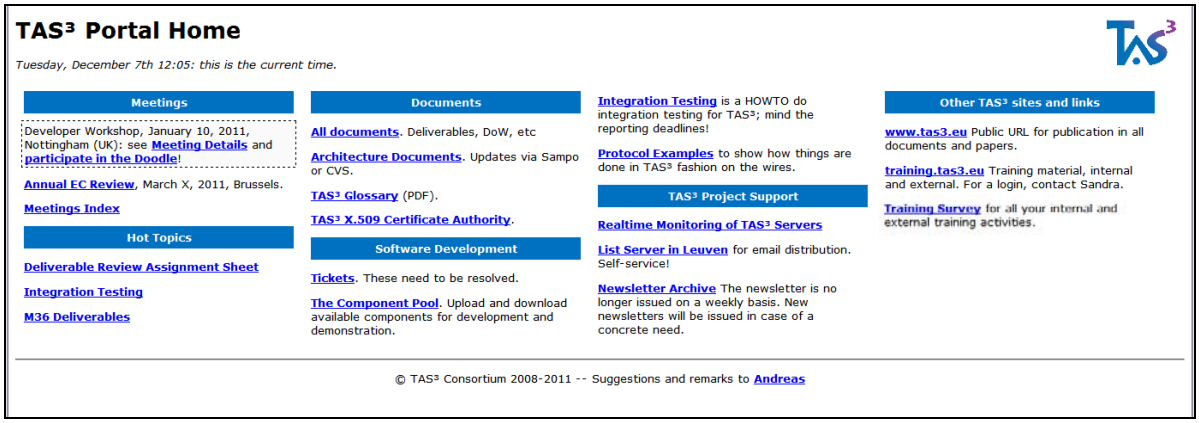

Figure 1 Home page of project partners' working space: December 2010

3.4 TAS³ extended communities

3.4.1 Social Network

The **TAS³** partnership has been experimenting the use of a social network (NING) as a space for dissemination. The network is currently restricted, and will be made accessible to the associated partners, the pilot partners and to the larger community of **TAS³** adopters.

The use of social networking for dissemination is twofold:

Provide first-hand experience to **TAS³** partners on a context where digital identities are being used - explore issues such as SSO, attribute sharing, etc.

Provide a space for the extended community around the **TAS³** partnership to meet - exchange ideas, be involved in the preparation and outcome of events, etc.

A virtual community was created using Ning to explore the use of social networks to support the project, but it is now dormant as it was not the expected success.

As a second attempt, **TAS³** is going to use most common networks for organisation communities.

Created end of 2010, a **TAS³** LinkedIn group will ensure a sustainable reference with a network of contacts; the group will be in ramp-up phase on the first quarter 2011. About 20 members with "**TAS³**" reference already exist but are not yet connected.

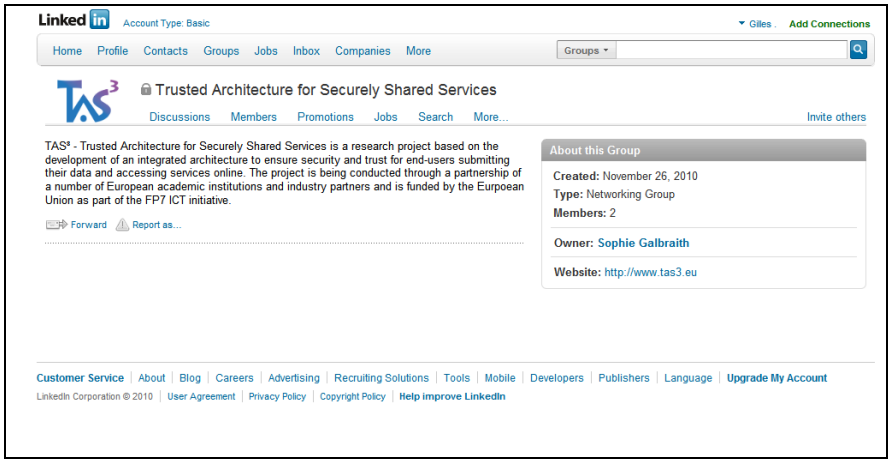

Figure 2 TAS³ LinkedIn group

TAS³ will also use Twitter as dissemination channel for events and news. In addition to our existing process for planning and reporting, this channel should provide a better visibility of the project's public events. This channel has been created and will have the same ramp-up phase as the LinkedIn group.

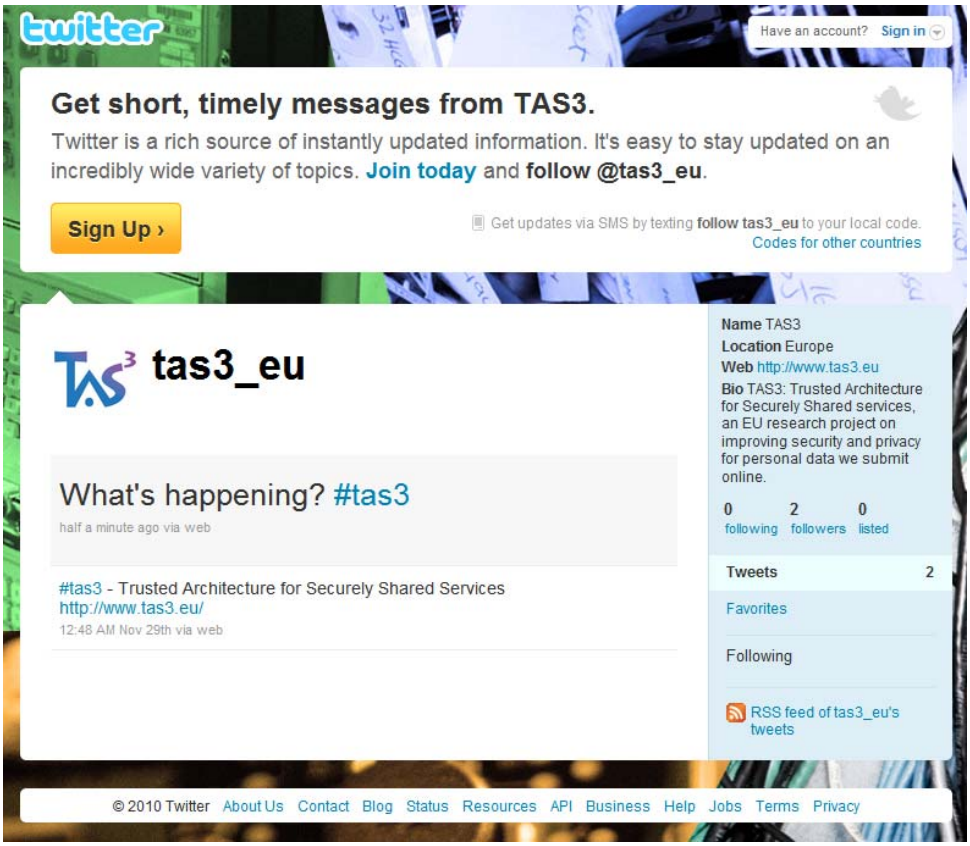

Figure 3 TAS3 twitter channel

3.4.2 Research Network

It is a known fact that, by their nature, European projects have the tendency to work in isolation rather than to cooperate. This also happened so far with TAS³. Although we had numerous contacts and encounters with other related projects such as PrimeLife, Master, Swift, etc…these projects were not able to setup a permanent cooperation; we hope this will change with the FI PPP programme.

On the contrary there always were en remain good contacts with the Kantara group, up to the point that the SIMS FI PPP proposal aims to integrate the University of NewCastle's Kantara/UMA implementation into TAS³.

Furthermore at the ICT2010 event, multiple projects consortia such as Swift and PrimeLife showed interest in further cooperation with TAS³ in view of the fact that TAS³ is seen as a wireframe (work) project capable of being extended/improved with modules from other projects.

As such TAS³ made an offer to Thales coordinator of Trust & Security WG within the FI Core Platform proposal, to take TAS³ on board as the base platform from which a generic FI Trust Framework could be built. This was accepted in principle by Thales.

In addition, **TAS³** increased its collaboration with the community as follows:

- PrimeLife, 2 cluster meetings and 1 **TAS³**-PrimeLife dedicated workshop have been organized. Cluster meetings presented research activities and common interest. The workshop was more technical with the evaluation of PrimeLife integration into **TAS³**. PrimeLife could be fully integrated into **TAS³** with shared a privacy policy principles and standards, however it's not foreseen to have a common prototype due to planning and licence issues.
- **TAS³**-MASTER, 1 workshop took place in April 2010. With a technical focus, both consortiums discussed their design, running prototypes and potential interoperability. The integration would bring MASTER software stubs into **TAS³** components and the use of a common bus, actually with no incompatibility detected.
- Liberty-Kantara liaison still active through our chief architect (S. Kellomäki)
- ISO/IEC JTC 1 SC 27/WG 5 still active through our WP6 team
- Presentation to Cisco, planning for a joint cloud implementation
- Presentation to Institute of Waterford TSSG group, planning for joint collaboration

3.4.3 Supporting organisation

One focus of the '*supporting community*' action is to ensure the sustainability of **TAS³** after the project's end. Already several initiatives have been started using **TAS³** technology, some of these are described below and some other in the Exploitation and Sustainability Plan [1]

3.4.3.1 Internet of Subjects

This foundation, based on **TAS³** technology, has been created with a simple message that can be understood by most stakeholders: "personal data it's ours".

The first goal of IoS was to organise a public campaign based on that message and recruit key personalities and organisations supporting the creation of a Foundation supporting this message

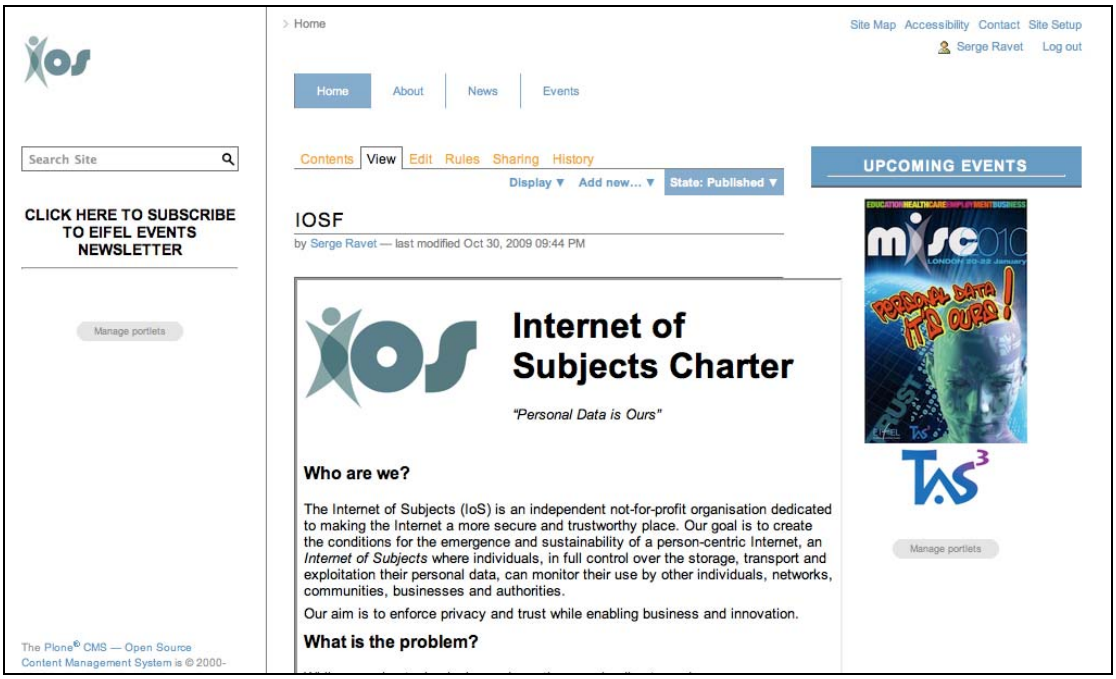

Figure 4 Home page of TAS³ IoS community: December 2009

This campaign took place during the first public **TAS³** international even: MISC 2010 (www.miscforum.eu) January 2010

An IoS workshop has been organized in May 2010, with a goal to show an implementation of Personal Data Store using **TAS³** technology.

IoS was mainly run by EiFEL and have a common chief Architect with **TAS³**. Despite EifEL's situation, IoS will remain active but there is currently (as of December 2010) no visibility on the further collaboration steps.

3.4.3.2 Engagement with standardisation body: OASIS

- OASIS eXtensible Access Control Markup Language (XACML) TC
- Cross-Enterprise Security and Privacy Authorization (XSPA) TC
- OASIS Privacy Management Reference Model (PMRM) TC

More details can be found in the Exploitation and Sustainability Plan [1]

3.4.3.3 "My Private Cloud" Research Project

"My Private Cloud" is a newly announced EPSRC/JISC funded project, submitted in response to the joint call between JISC and EPSRC for pilot projects to explore and develop new cloud computing technologies for research in engineering and the physical sciences. The principal investigator of My Private Cloud is Professor David W Chadwick from the University of Kent. The primary objective of the My Private Cloud project is to port existing research software, tools and methods from the **TAS³**, to the cloud.

Whilst My Private Cloud is being managed by Professor Chadwick this is a genuine **TAS³** community project, since many project partners in **TAS³** provided letters of support to EPSRC/JISC, and agreed to provide their open source tools, documentation and support to Prof Chadwick in order to allow his team to port their **TAS³** software to the cloud.

More details can be found in the Exploitation and Sustainability Plan [1]

3.4.3.4 Potential Component of Future Internet Project

Synergetics has convinced 9 European regions (of which 6 signed up now) to plan for regional employability platforms, each of them running as an independent TAS³ network. The local authority of six of these regions have signed up to deliver a PPP and an agreed upon business plan to roll out an employability plan by mid 2013. The Limburg region, which has a significant employment problem could not afford to wait any longer and has asked Synergetics to help start up its "Transition Centre", transitioning from employer driven to user-driven labour market approach.

With the support of these regions Synergetics engaged in writing SIMS, a FI PPP FP7 IP proposal (number: FP7-285498), which can also be considered a follow-up project to TAS³. In this proposal the focus on the user is broadened to also include service providers in so-called ***S**ervice **I**nnovation **M**arketplace**S***. SIMS therefore is also to be considered as a generic services innovation enabler, also applicable to e-Health and e-Government. Several TAS³ partners are cooperating in SIMS.

More details can be found in the Exploitation and Sustainability Plan [1]

4 Conclusions

In 2010, **TAS³** has reached another level of maturity by demonstrating a functional architecture with promising research results. As such, it's now supported by several communities and organisations. With these results in hand and facing our final year, we target to considerably enlarge our community, involve more actively partners and enhance our public visibility.

5 References

[1] The **TAS³** Consortium, (2010). Report D11.4 - Publications, scientific communications in peer reviewed journals, policy papers (green and white papers). M. Seguran, G. Montagnon, S. Galbraith (Eds.) Ver. 3.0 – 2010.

6 Appendix

New Liberty Alliance Group Focuses on Identity Management in the Education and Human Resources Sectors

Public Group Targeting Interoperability Across Education and Human Resources Applications and Services

Wednesday, October 15, 2008

Liberty Alliance, the global identity community working to build a more trustworthy Internet for businesses, governments and people worldwide, today announced the launch of the public Liberty Alliance Human Resources and Education Special Interest Group (SIG). The goal of the group is to foster interoperability, security and user privacy across online identity-enabled solutions in the global education and human resources sectors. The Human Resources and Education (HR-EDU) SIG will hold its first public face-to-face meeting on October 22 at the ePortfolio & Digital Identity 2008 conference in Maastricht, the Netherlands.

Members of the SIG include representatives from EIfEL, Entr'ouvert, EuroCV, IMS Global, iProfile.org, the French Ethics & Recruiting Association, the French Recruiting Syntec Syndicate, the OpenID European Foundation, Stepstone, Symlabs, Synergetics, 3s Unternehmens-beratung GmbH and the University of Kent. The group is working to advance the adoption of proven interoperable, secure and privacy-respecting Liberty Alliance specifications in education and human resources, and collaborating with other communities and specifications bodies to promote open standards and best practices for digital identity management in the education and human resources sectors.

According to Marc Van Coillie, CTO with EIfEL and chair of the new Liberty Alliance HR EDU SIG, "The formation of the new Liberty Alliance group marks an important milestone in bringing the education and human resources industries together to foster interoperability across online applications and services."

About the Liberty Alliance HR-EDU SIG

Liberty Alliance members form special interest groups to solve regional, national, international and vertical-specific identity management challenges. The Human Resources and Education SIG is Liberty Alliance's ninth open-to-the-public special interest group. During the October 22 face-to-face meeting members of the HR-EDU SIG will establish priorities for advancing interoperability and data portability among education and human resources applications. All individuals and organizations in the data portability, identity management, education and human resources sectors are encouraged to attend this public event.

More information about the HR-EDU SIG, including how to join the group's mail list and how to register for the October 22 meeting, is available by visiting the group's wiki.

If you want more information about this SIG, please contact: Marc Van Coillie, EIfEL marc.van.coillie@eife-l.org

Announcement in EIfEL blog

Wednesday, October 15, 2008

Un nouveau Groupe de Liberty Alliance se concentre sur la gestion de l'identité dans les secteurs de l'éducation et des ressources humain

C'est avec joie qu'EIfEL va présider le nouveau groupe d'intérêt spécial Liberty HR-EDU qui a été annoncé officiellement aujourd'hui, plusieurs membres de l'association sont déjà impliqués (Entrouvert, Ethique et Recrutement, Symlabs, Synergetics).

Le focus immédiat proposé au groupe sera de se concentrer sur la sécurisation des échanges d'informations entre services en ligne liés à Europass (CV, portfolio des langues, supplément au diplôme et au certificat) et l'extension de leur cadre d'usage hors Europe ainsi que plus globalement de mener une réflection sur la problématique de la sécurisation des échanges de données personnelles entre services en ligne liés aux secteurs de l'éducation et des ressources humaines. Il bénéficiera en outre des résultats et retours d'expériences des projets européen **TAS³** (Trusted Architecture for Secrely Shared Services) et français **CV Universel**.

Ce groupe est publique et fait ainsi echo au tout nouveau **groupe francophone Liberty** auquel participe EIfEL, Entr'ouvert, Orange, SUN Microsystems.

Source : http://fr.learningfutures.eu/2008/10/un-nouveau-groupe-de-liberty-alliance.html

Liberty HR-EDU SIG Charter

GROUP TYPE: OPEN PUBLIC SPECIAL INTEREST GROUP OPERATING WITHOUT CONFIDENTIALITY, FULL PARTICIPATION OPEN TO NON-LIBERTY MEMBERS

DATE: JULY 26, 2008

1. Description

The aim of this SIG is to increase data portability in Education and HR sectors especially for Employability and Life Long Learning purposes. Its aims are to study use cases, recommendations for new Liberty ID-SIS and cross interoperability with other actors in this field (user communities, specification and standardisation bodies).

2. Scope

This SIG is chartered to:

Become an active public discussion forum for the market development and deployment of new draft ID-SIS profiles relevant for employability and life long learning context such as the HR-ID-SIS draft profile taking into account community needs and existing initiatives (such as European Europass Initiative).

Become an active public discussion forum for studying cross interoperability issues with other related specifications (Dataportability, OpenID, OpenSocial) and driving consensus on common shared data model (such as CV).

Develop a detailed roadmap to be published by the SIG participants on the public wiki that will serve to provide recommended next actions for the technical work required to the current stewards of the proposed new profiles and starting with the HR-ID-SIS draft profile.

To foster long-term adoption of the ID-SIS Specifications especially by creating liaisons with other specifications bodies actives in these fields (AICC, CEN ISSS WS LT, IEEE LTSC, IMS Global, ISO SC36, HR-XML…) in the field of digital identity and social networks (OpenID, Dataportability, OpenSocial) and related projects or working groups

(European projects **TAS³**, Aspect, French Universal CV project, French CV2020 working group…)

3. Criteria for Success

• Sufficient participation from experts, including: deployers, ID-SIS architects and other stakeholders from the Liberty membership and industry stakeholders outside of the Liberty membership.

• Engaged, collegial analysis of the use cases and technical roadmap for implementation next steps

• Vital activity including a demonstrated ability to meet self-imposed deadlines, meetings that meet quorum, active public email discussions, and consistent participation from a critical mass of contributors to maintain continuity.

4. Duration

The HR-EDU SIG is chartered by the Liberty Management Board to begin its work effective August 8, 2008 with no expiration date pre-defined, noting that the charter may be amended from time to time if needed.

Resource Requirements:

The Working Group requires the following support from the Liberty Alliance organization:

• Mail lists established, with archives, on the public pages with a dedicated section of the public wiki

• Globally available conference call facilities (including local toll free numbers), with a dedicated conference call access code to not be shared by other SIG's or Expert Groups to allow for maximum flexibility with scheduling meetings by teleconferences.

• Ability to delegate tasks to appointed Program Management Office staff including, but not limited to, management of mail lists, provisioning and deprovisioning of accounts , arrangement of conference call and/or WebEx facilities, and other administrative support that would serve to improve and/or accelerate the work of the SIG.

Active member participants in the SIG are expected to:

• Contribute relevant use cases and constructive feedback that help to define new needed ID-SIS specifications relevant for the HR and Education sectors.

• Drive and actively participate in e-mail discussions, teleconferences, and in-person meetings as may be called from time to time by the

Chair(s) of the SIG..

5. SIG meetings

The SIG will primarily communicate using the e-mailing lists, and conference calls, and/or webcast. A SIG open mailing list and wiki section will be created.

6. Participants

Participation in the HR-EDU SIG is open to the general public.

(Upon formation of this SIG a call for participation will be sent out to Liberty mailing lists (both internal and public).

To meet the requirements of the SIG Policy by documenting at least three. Liberty

member organizations are requesting the formation of this SIG, the founding participants of the HR-EDU SIG are provided below:

EIfEL

Entr'ouvert

EuroCV.eu (non liberty member)

iProfile.org (non liberty member)

Stepstone (non liberty member)

[1] Symlabs

[2] **Source** : http://wiki.projectliberty.org/index.php/HR-EDU_SIG

[3]

The Internet of Subjects Manifesto

The influx of digital technologies in our lives is leading to an ever-increasing flow of personal data circulating over the Internet. The current difficulties experienced in personal data management, such as trust and privacy, are the revealing symptoms of a growing contradiction between an architecture that was primarily designed to manage documents, with the growing expectations of individuals to have a more person-centric web. This contradiction will not be resolved by adding a simple patch to the current architecture; but a second order of change similar to a Copernican revolution, is required to move from a document-centric to a person-centric Internet, to create the conditions for a more balanced and mature relationship between individuals and organisations.

The objective of the Manifesto is to explore why and how we can move from an Internet of Things to an Internet of Subjects tailored to the needs of emancipated, self-conscious individuals.

Why today's fragmented digital identity is an obstacle to unleash the full potential of individuals, communities, organisations and businesses?

Current Internet architecture leads to a fragmented identity

The current architecture of the Internet is the result of a design at a time where bandwidth, storage and computing power were scarce and expensive. During that time, it was believed that it was more efficient and reliable to have one's personal data stored on the server of the service provider rather on one's own personal space. The rapid growth in the number of services people interact with, has led to an ever-increasing fragmentation of the information constituting one's digital identity/persona.

Various solutions have been designed and implemented to federate fragmented identities and services. This was the first order of change, and it is currently implemented only by a limited number of actors. We have now reached the tipping point where the network becomes a platform and a second order of change is now made possible.

A person centric architecture is possible

To imagine a new architecture for the Internet, we need to take into account that today, bandwidth, storage and computing power are abundant and cheap. At such a time, storing personal data on the server of a service provider is not necessarily cheaper and safer as recent stories of identity theft have amply demonstrated. Having a large number of job-

seekers / learners / patients / clients on the same server is prone to massive hacking and negligence, something more difficult when personal data is being distributed over a multitude of personal space (themselves being distributed over a number of servers).

Starting with a vision that every information produced by, or related to, an individual is published / stored in his/her own personal space, it is possible to envision organisational information systems built dynamically from the aggregation of a number of pieces of information stored in personal spaces. For example, the threads of a forum, do not have to be stored in the forum's server but can be built dynamically using the track-back technology used in today's blogs —I write in my personal space, and it is displayed somewhere else. A directory such as the yellow pages, could be built by aggregating dynamically the information from personal spaces. If social networks were managed through the aggregation of selected elements from personal spaces, then we would not be dependent from service providers to create (and destroy) our own social networks, on the fly; creating and deleting a social network would be made as simple as creating and deleting a mailing list, without losing any of the information produced in the course of its existence.

A person-centric architecture is better

A person-centric architecture is better for the individual as well as for businesses.

It is better for individuals as they have one space (multiple identities, virtual, distributed, encrypted) from which they can update and manage their personal data. For example, the data contained in one's personal space can be used in the yellow pages of his/her company, the white pages of the municipality, the Who's Who, a professional directory, etc. each directory being granted certain access rights. Any update in the personal space can be immediately propagated to all directories. Based on rights management, a friend who reads an entry in the white pages might see that the owner is away, a complete stranger might only see the phone number, while a colleague might not see the personal phone number but his/her professional number, calendar and professional blog. One address (URL or URI) would support many different behaviours based on the profile of the reader.

A person centric architecture is better for business in general, as it is a powerful opportunity equaliser, as VRM systems (Vendor Relationship Management) have already demonstrated —e.g. a group of people join together for the best possible deal for domestic fuel can get up to 30% discount, thanks to increased competition! A person-centric architecture will help us move from a world where personal data is fragmented over a number of CRM systems (Customer Relationship Management) to a world where, to be efficient, CRM will be created through the aggregation of personal data, blurring the frontier between CRM and VRM — CRM will be just another type of directory. A *person-centric* architecture will naturally expand into a generalised *entity-centric* architecture, i.e. where networks, organisations, businesses will be able to exploit the full benefits of their own *digital identities*. If we take the competencies of an individual as being a component of his/her identity, then the aggregation of all the competencies of an organisation is an element of its own identity and be exploited to respond to bids, find partners, explore new markets, recruit new staff.

Beyond privacy: intimacy and trust

So far a number of technologies have been developed to enhance 'privacy': they are named Privacy Enhanced Technologies (PETs). While privacy is a perfectly legitimate demand, we believe that this concept is limited and tends to develop PETs as a means to create higher and thicker walls to protect an individual's privacy. We believe that a more interesting concept to use when addressing the issue of data protection is 'intimacy', i.e. the sharing of

data across a 'private' community —a communal privacy—and that research should move from privacy enhanced technologies to intimacy enhanced technologies (IETs). Such technology should allow a seamless continuity between person-centric to community-centric architecture, in a way similar to fractal functions where large scale 'intimacy' (e.g. of a large business) would share some of the essential characteristics of a a small scale 'intimacy (individual privacy).

The IoS vision

Our vision is to establish a network made up of single personal data spaces, where identity data and personal information systems representing individuals are at the very centre of the architecture. An 'Internet of Subjects' that provides loosely coupled but meaningful connections to subjects, persons or identities, just as it provides meaningful connections to location-independent content (idocuments and files).

Our vision is one where connections to people, services, and to documents is seamless, not fragmented over a number of services.

Our vision is one where personal identities are held in one space and shared across a number of communities:

Identities — a person can have multiple identities, and this can be reflected through different identifiers, like URLs, URIs or others

Communities — a person can share a number of attributes within a number of circles of trust, where **intimacy** is protected. This can be an organisation, a social network or an ad-hoc group, or the general public.

This is achieved by defining how attributes are segmented or layered to reflect individual preferences, i.e. which parts are:

Private — what is concealed from all communities

Restricted — defines which attributes are shared with identified communities and people

Public — defines the attributes that are publicly accessible

The mechanisms for managing the different levels/circles of intimacy should make it possible for individuals to tailor with extreme accuracy the visibility of their personal data, from single individuals, to individuals sharing the same interests (For example, I want to share my passion for train spotting with other train spotters, while not making it visible to the casual visitor) to clearly identified and closed community (my company, my professional body, etc.).

We have now reached the tipping point where technologies are ready to reunite our digital identities, to create a Subject-Centric Internet

We have OpenID, Liberty Alliance, market requirements documents for IGF and even the CARML API...why do we need yet another ID initiative? Oasis Group, Liberty Alliance, Open ID and Oauth have variously produced digital identity management specifications and standards, making it possible for a person to federate his/her accounts distributed in multiple and heterogeneous services. The field is still fragmented. Our vision of a Subject-Centric Framework (SCF) is intended to codify a set of fundamental principles to which any identity architecture should conform to be universal and sustainable.

Principles of the Internet of Subjects

A Subject Centric Framework (SCF) is intended to codify a set of fundamental principles to which any identity architecture should conform to be universal and sustainable. The principles can be summarised by the acronym "ID TOUCH."

A universal Subject centric system should be:

Independent: it should be sovereign and independent from commercial or partisan interests; it should be based on the existence of multiple, competitive, operators and technologies and cuts through all existing ID schemes.

Dependable: it should have a provision to guarantee that personal data are free from potential loss or theft as well as identity attacks.

Trustworthy: Mechanisms such as reputation and trust should be native features of identity systems. Personal data must be treated accordingly to the policies defined by its owner, including the right to rectify information. One should have access to reports and statistics on how one's personal data is being accessed and exploited.

Opaque: it should provide mechanisms to fine-tune external visibility of personal data, up to the point of total opacity and anonymity —except for legal or regulatory requirements. It should include encryption and other techniques to limit the risks of undesired disclosure.

Unifying: it should provide a seamless experience across identities and contexts (e.g. healthcare, education, employment, leisure, mobility) while keeping a clear separation between independent contexts and multiple identities.

Community Awareness: Identity systems must recognise and exploit the social nature of identity. They should provide mechanisms negotiation and discovery mechanisms for social interaction and data exchange.

Humanist: the underpinning values of an identity centric system is a humanist vision of technology refusing the reification of human beings and promoting an open and free society.

How can we make the Internet of Subjects a sustainable reality?

Although future innovation will bring new solutions, we already have the technical means to create the Internet of Subjects today. The main obstacles are not technical, but human, i.e. the capacity to change our representations of the Internet and act accordingly.

Make no mistake: the Internet of Subjects equally is aimed at people and business. Being a people enabler, it creates the conditions for developing one's social and professional identity and contribute to the growth of social capital. As a business enabler, it creates the conditions for for-profit as well as not-for-profit organisations, public and private agencies, to provide a personalised services market, using personal information ethically, as defined by the individuals policies.

The main drivers for the Internet of Subjects (IoS) currently identified are:

Education: IoS solves the issue of interoperability and transition across institutions. Sponsors can be regional and local governments, education institutions, professional bodies, individuals

Employment: IoS provides the means to manage a portfolio career. Sponsors can be public employment agencies, regional and local governments, job boards, professional bodies, individuals

Healthcare: IoS provides a solution for the generalisation of Personal Health Records, worldwide. Sponsors can be public health services, laboratories, individuals

Business: IoS provides a general mechanism for the development of VRM approaches to business. Sponsors can be telecom and network operators, innovative businesses, individuals

Overall, the main drivers for making the IoS a reality is the increased need for TRUST. To increase the trustworthiness of services, there is a strong requirement to establish a clear separation between the services hosting personal data and those exploiting them. Establishing the foundations of an architecture where personal data records are kept under the control of individuals rather than fragmented over a number of service provides is a powerful means to create a trustworthy Internet.

Investing in trust will not be an option in the close future and the IoS provides a simple and efficient model to provide better, cheaper, safer and more trustworthy services.

[4]

Personal data, it's ours

Call for the creation of the Internet of Subjects Foundation

	Role
Advisory Board	[illegible]
Steering Committee	[illegible]
Technical Committee	[illegible]
Workgroups	[illegible]
Scientific committee	[illegible]
Privacy Committee	[illegible]

Digital technologies play an ever-increasing role in the construction and expression of our identities. They have created a whole new space where people constantly explore novel paths to invent and reinvent themselves. Is current Internet technology the best we can expect to empower people to manage their own growth? How much do we know of the impact digital technologies have on the construction of personal identities?

The weaknesses of the current Internet architecture is probably equalled by the poor understanding of the impact digital technology have on the construction of our identities: IT engineers reduce identity to identifiers and sets of personal attributes, policy makers reduce identity issues to the protection of privacy formulating regulations that rarely take into account emerging practices and technologies ; to the exception of few individuals, sociology, psychology, ethnology and philosophy have not yet embraced the full reality of the *continent* Internet, and when publicised by mass media, superficial research is generally used to activate fears in the readers, not their capacity to reflect.

The main issue with the current Internet architecture and its ability to support identity construction is the fragmentation of personal data: the digital component of our identities is fragmented across an ever-increasing number of services. People are not in control of their personal data. The integrity of our digital self, hence our identity, is at stake.

Fragmentation of our digital self is the result of an architecture where each service and application manages personal data in an idiosyncratic way with little or no control by individuals. This situation is bad for privacy and trust, as well as damaging to personal and business relationships. But we cannot let the risks and inconveniences of the current situation overshadow the tremendous opportunities offered by technologies and the innovation they bring. There are solutions to put people back in control of their personal data, and to allow them to fully benefit from digital technologies to construct their identities.

To address this double challenge, the *fragmentation* of the digital self and the *lack of understanding* of the impact of technology on the construction of identity, we have decided to create a Foundation with the mission to:

- **Put people back into control of their personal data**: creating the technical and organisational conditions for individuals to be able to reunite their personal data and take control of their exploitation.
- **Support research programmes on identity construction**: inviting all fields of knowledge to confront current identity theories and practices across cultures, worldwide, to the new reality of a digitally expanded world.

To address its first mission, the Foundation will support an architecture based on the effective split between storage and exploitation of personal data: instead of each service and organisation keeping their own databases of personal data, they will make use of Personal Data Stores (PDS) owned and controlled by *emancipated* individuals that will become the central element of the future Internet architecture, contributing to the creation of an Internet of emancipated subjects.

To address its second mission, the Foundation will coordinate and support research programmes on identity and digital technologies[1]. Special care will be taken to include different groups and cultures across the world. Special action research programmes will be carried out in the field of education and lifelong learning.

In order to achieve the Foundation's goals, we need to establish a strong leadership, bringing together major stakeholders and organisations that are willing to take the lead in what could be a major transformation of the way people, network, organisations and businesses exist and operate on the Internet. We are looking for brainpower and influence to mobilise the required resources and establish a legitimate governance body for the new architecture where people will be able to exist as empowered subjects —the current name of the Foundation is the *IoS Foundation* (the Internet of Subjects Foundation)

The current roadmap for the creation of the foundation is:

- **January 2010**: creation of the Advisory Board, committees and workgroups.
- **22 January 2010, London**: launch of the Foundation creation process, during MISC 2010 (www.miscforum.eu).
- **June 2010**: beta version of the PDS-based architecture
- **5-7 July 2010, London**: incorporation and launch of the Foundation, during Learning Forum London (www.ep2010.eu)
- **November 2010, Poitiers**: International colloquium

We would like to invite you and your organisation to join the IoS Foundation and participate in MISC 2010, in particular 22 January, where the Advisory Board and the Steering Committee will be presented and discuss publicly the future of the Foundation. It is a unique opportunity for your organisation to take the lead in an innovative initiative that might have a major impact on the future of the Internet.

We look forward to hearing from you.

The IoS Foundation team

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[1] We are already working on a number of projects, in particular TAS3 (www.tas3.eu) that are developing the [illegible] technologies, we need to make such endeavour a success. We have also submitted a number of European projects and will do more in the future.

Document Control

Amendment History

Version	Baseline	Date	Author	Description/Comments
0.1		19 Dec 2008	Theo Hensen	Initial template
1.0		5 Jan 2009	Serge Ravet	Compile feedbacks
2.0		20 Dec 2009	Serge Ravet	Update
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