

ITEA 2

M

Magazine

APRIL 2013 • NO. 15



New projects of Call 7  
Addressing a wide range of topics

MODELISAR  
ITEA success story

PO Days 2013  
Brainstorming and consortium building in Istanbul



INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

European leadership in Software-intensive Systems  
and Services – [www.itea2.org](http://www.itea2.org)

ITEA 2 is a EUREKA strategic ICT Cluster programme

**Content**

**EDITORIAL**

**3**  
Philippe Letellier

**PROGRAMME STATUS**

**4**  
Call 7 project landscape

**CALENDAR**

**8**  
Upcoming events

**NEWS**

**8**  
ITEA 2 news facts

**STATE OF THE ART**

**10**  
UsiXML

**WHO IS WHO**

**11**  
Zeynep Sarilar

**ITEA SUCCESS STORY**

**12**  
MODELISAR

**VIEWPOINT**

**13**  
Gérard Roucairol

**INNOVATION REPORTS**

**14**  
ACDC & SUS

**EUREKA NEWS**

**20**  
Korea EUREKA Day  
& New ESE head

**Colophon**



INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT



ITEA 2 (Information Technology for European Advancement) is Europe's premier industry-driven co-operative programme for pre-competitive R&D in Software-intensive Systems and Services (SiSS).

As a EUREKA Cluster programme, ITEA 2 stimulates and supports projects that will give European industry a leading edge in the area of SiSS.

**M** – ITEA 2 Magazine is published three times per year by the ITEA 2 Office. Its aim is to keep the ITEA 2 community around the ITEA 2 projects updated about the ITEA 2 programme status and progress, achievements, projects and events.

An online version is available at [www.itea2.org](http://www.itea2.org)

Published by:  
The ITEA 2 Office  
High Tech Campus 69 – 3  
5656 AG Eindhoven  
The Netherlands  
Telephone: +31-(0)88 003 6136  
Fax: +31-(0)88 003 6130  
E-mail: [communications@itea2.org](mailto:communications@itea2.org)

Design and creative lay-out:  
Studio Kraft – Veldhoven, the Netherlands

Editorial contributions and copywriting:  
Chris Horgan - Goirle, The Netherlands

For ITEA 2: Kay van Ham-Jeunhomme, Linda van den Borne, Erik Rodenbach, Loes van den Borne

Printed by: Verhagen Grafische Media, Veldhoven, the Netherlands

©2013 ITEA 2 Office

Permission to reproduce individual articles from M – ITEA 2 Magazine for non-commercial purposes is granted, provided that M – ITEA 2 Magazine is credited as the source.

Photography: with thanks to project participants and other ITEA 2-involved persons for any assistance and material provided in the production of this issue.

Subscription enquiries: [communications@itea2.org](mailto:communications@itea2.org)

Submissions: The ITEA 2 Office is interested in receiving news or events linked to the ITEA 2 programme, its projects or in general: R&D in the Software-intensive Systems and Services field. Please submit your information to [communications@itea2.org](mailto:communications@itea2.org).

Opinions expressed in the M – ITEA 2 Magazine do not necessarily reflect those of the organisation.

Special thanks to all contributors to this issue of the M – ITEA 2 Magazine.

## Editorial

It is always an honour to write the editorial of the ITEA magazine. ITEA is such a unique organisation, so agile. With ITEA 3 we are redesigning the ITEA processes: keeping the roots of the success intact (project oriented, bottom-up programme, industry and system vision), speeding up our ability to innovate (living roadmap), increasing our adaptability to the speed of the market (living organisation) and strengthening our impact on the market (seizing the high ground). We intensively engaged in ITEA preparing the 8th Call, the last one for ITEA 2, and initiating the new ITEA 3 organisation. ITEA will remain our preferred industrial collaborative R&D programme.

ITEA is definitely project oriented; the projects are at the heart of our assets. You will find in this magazine a landscape analysis of the last harvest, Call 7. You will discover how the ITEA research themes are spreading. In this last Call there is some continuity (software/system engineering, security) and also some emerging domains (big data, smart energies).

'Seizing the high ground' is the new ITEA motto. It means global ambition, it stresses our aim of influencing the new economy and having a strong impact on the market. This magazine contains a focus on MODELISAR, a project that received an award at the last Co-summit because of its level of innovation and fast exploitation. Furthermore, it has just announced a global alliance around its FMI specification to allow even more complete digital simulations and gathered the world's main automotive industry players around the results of the project. Such level of simulation will revolutionise the design process for a lot of industries. It is a perfect example of seizing the high ground. We intend to inform you of similar successes in ITEA on a regular basis.

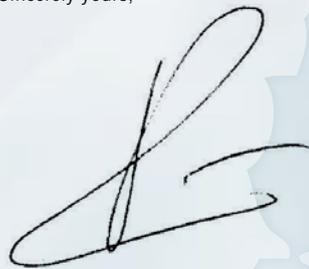
Our projects deliver high-quality State-of-the-Art (SotA) documents on a regular basis to understand where we are in specific domains. Some are particularly interesting because they provide a didactic overview of the concepts or an actual engineering manual or a

detailed description of the technologies. Given the value of this ITEA SotA database, we have decided to highlight one exceptional document on a regular basis. This time we focus on the UsiXML user-interface description language. Discover how this SotA document provides an in-depth didactic view.

In ITEA we consider we have two major assets: the projects but also the quality of our people. I am very pleased to welcome Zeynep Sarilar in the 'Who's who' article. She is a very good example in our ITEA community of a competent, dynamic and open-minded person. In her projects she fosters both a high level of innovation and an immediate connection with the market. We must remember she initiated the origin of the incredible Turkish success story in ITEA that in just a few years put Turkey among the most influential countries in ITEA.

To conclude, I must confess I am very proud to be the successor of Gérard Roucairol, who has just been nominated President of the French Technologies Academy. I have interviewed him about his new position and the aims of the French Technologies Academy. He explains the coherence he sees between his involvement in ITEA and now at the Technologies Academy.

Sincerely yours,



Philippe Letellier



**Philippe Letellier**  
ITEA 2 Vice-Chairman

# New projects in Call 7

Vice-Chairman's  
summary

*Written by Philippe Letellier, ITEA 2 Vice-Chairman*

Twenty-three FPPs comprising a little over 3000 person years (PY) and involving 22 different countries: these figures demonstrate the ITEA spread throughout Europe, and beyond. With more than 40% of the PY required for SMEs, this shows how successfully ITEA mobilises innovative SMEs around large global industrial leaders to push innovation worldwide.

The main themes arising from this Call are:

- Software and System Engineering
- Architecture
- Security
- Big Data
- Smart Energy
- Media
- Health
- Services

On software and system engineering we have two generic topics on governance, which is a regular focus for ITEA, and market access, which is pretty new even if the topic is at the heart of ITEA. Besides these generic topics, we have more application-oriented proposals: a topic where ITEA has already been very successful with the SODA family such as autonomy in Internet-of-Things and two new ITEA themes: scalability, which is a key question for complex systems, and virtual commissioning, a very original response to mastering industrial products under the pressure of delocalisation.

The implications are found in:

- Software development governance methodology and tools as a service for large software (SDGear)
- Process and tools to accelerate innovation access to market (ACCELERATE)
- Software stack for autonomic adaptation in the context of the Internet-of-Things (PRO-HEAL)
- Solutions to ensure scalability for software evolution (SCALARE)
- Improved description of the behaviour of components and systems to propose a formal virtual commissioning test methodology (AVANTI)

We will explore new architectures with embedded high-performance computing as part of a large family of successful projects in ITEA but with a rather new focus on embedded platforms. Another architecture covered in this Call will be a framework for indoor navigation, which is indeed a new topic in ITEA, and real-time connection between imagery and therapy, which signifies a next step in supporting a domain

of worldwide excellence for our European industrial partners.

The implications are found in:

- High-performance embedded computing with heterogeneous architecture (GPU, MIC, FPGA, MSP) with domain-specific language to program fluid mechanics, image processing, bio info, new database models (MACH)
- Framework for indoor / outdoor navigation assistance service development (FIONA)
- Real-time architecture linking imagery and therapy in Oncology (SoRTS)

Security is definitely at the heart of the digital society deployment. In this Call we will focus on virtualisation of smartcard (ViSCa), a very innovative topic not yet covered in ITEA, and automated access control gates for citizens crossing borders based on biometry and new authentication protocols using a new generation of e-Passport (IDEA4SWIFT), which is a totally new application domain in ITEA and which will be synchronised with new European regulations.

After cloud computing, which has been well covered in ITEA, a new hot topic concerns big data as the next frontier. Two research axes show up in this Call:

- A marketplace platform to extract the value from this big data through new data analytics (CAP) which can open a new family of projects to collect the up-to-date data analytics algorithms for different kinds of applications
- A new adaptable, secure hierarchical data structure to offer the right data at the right place at the right time on heterogeneous storage technologies (memory cache, SSD, distributed storage) with low-energy consumption (Point2BDMC). This technology-oriented topic arises from the new significance of big data

Another new hot topic concerns smart energy:

- Semantic understanding of system behaviour to optimise energy consumption for end users and energy providers (SEAS)

- Self protecting, self healing smart grid network (SENNET)

On the media theme, always strongly visible in ITEA, we received only one proposal on the new topic around new enriched multi-screen services (MediaWIND) complementing at a business level the successful ACDC project on TV from the cloud.

The indoor, outdoor localisation system of the FIONA proposal is breakthrough research. In the Health domain we received a proposal on an indoor, outdoor localisation system to monitor dementia patients (DEMWatch). This will be the first ITEA project focus on this important societal challenge. A second topic on health is an intelligent broker between multiple body sensors (Vitality). This innovative project will reinforce the previous ITEA investment in the well-being theme.

A further domain covered is services for which we received one proposal on an abstraction layer to facilitate controlled access to building resources. This will allow the development of multiple services in commercial buildings (BaaS). This project focused on building applications will be the first one in ITEA to emphasise this application domain.

Again we can say we have a good harvest well balanced between the different themes covered by ITEA and well balanced between the different kinds of partners. We can also see a mixture of long-term regular themes, on which we receive Call after Call proposals because these themes are at the heart of ITEA, and new emerging, very innovative themes that have the potential to create new families of success stories for ITEA, thereby strengthening ITEA's heart.

We can be sure Call 7 will deliver a good level of innovation and plenty of impact on the market.

# Project overview

A total of 18 projects were labelled in Call 7, addressing a wide range of topics

S/W & System engineering:	ACCELERATE, AVANTI, PRO-HEAL, SCALARE, SDGear
Architecture:	FIONA, MACH, SoRTS
Security:	IDEA4SWIFT, ViSCa
Big data:	CAP, POINT2BDMC
Smart energy:	SEAS, SENNET
Media:	MediaWIND
Health:	DEMWatch, Vitality
Services:	BaaS

## ACCELERATE

*A platform for the acceleration of go-to market in the ICT industry*

Innovation in industry requires more than just technology creation; it requires 'go-to market' processes. ACCELERATE aims to create services based on technological innovation, advanced processes and new software technologies that will enable the massive adoption of accelerated know-how in the European technology industry. The project will focus on transferring knowledge on a massive scale and introducing a validated learning process, which systematically matches technology and market by validating the mechanics of a business model.

## AVANTI

*Test methodology for virtual commissioning based on behaviour simulation of production systems*

Production systems in Europe are characterised by a high level of automation while producers face stiff global competition. To safeguard European production very flexible production system design, optimum time to market and exceptional product quality are vital. AVANTI aims to improve the advanced behaviour description of devices, components and complete production systems and to establish a formal virtual commissioning test method and thus boost efficiency among the different partners in the life cycle phases.

## PRO-HEAL

*Automated Protection and Healing Software Solutions*

Autonomic Computing, or self-management

systems, concerns autonomous changes, like self-configuration, self-healing and self-protection. These properties are much in demand for many software systems in dynamically changing environments, such as smart buildings. To enable easy adaptation at runtime in response to dynamic changes, these systems must be flexible, fault-tolerant, configurable and secure. PRO-HEAL aims to create a piecemeal development methodology and tools for producing self-management systems on the top of Internet of Things (IoT) networks.

## SCALARE

*SCALing softwARE: Supporting Industry in Managing Software Scalability*

With software solutions moving to centre stage in the delivery of products, the implications of this global shift are frequently underestimated. Many organisations know the reuse threshold level for their hardware components before designing for reuse becomes cost-effective, but no such sophistication is present in their software processes. SCALARE aims to support and enable organisations to scale their software capability as software takes on a primary role in delivering innovation and competitive products or services.

## SDGear

*Software Development Governance as a Service*  
Software Development Governance (SDG) is increasingly important to the success of companies engaged in large software intensive projects, helping such projects to deliver value through alignment with business goals. SDG reduces risk by providing insight

into the development effort, and promotes communication among developers and decision makers, facilitating motivation by defining clear roles and norms derived from sound principles. The SDGear project aims to develop the first cloud platform offering SDG as a service.

## FIONA

*Framework for Indoor and Outdoor Navigation Assistance*

Accurate GPS-based navigation and localisation information provides great added value for emerging mobile services. The commercial importance of location-based services (LBS) is forecast to grow substantially over the coming years. However, where GPS systems are unavailable (e.g. indoors or urban canyons) or provide insufficient accuracy, the potential for LBS remains relatively untapped. FIONA aims to develop a modular, accessible framework to support the core LBS functions and facilitate the development of relevant applications and services.

## MACH

*MAssive Calculations on Hybrid systems*

High Performance Computing (HPC) is vital to for the European economy but new HPC hardware architectures, especially embedded system features, are hitting the market earlier more frequently than before. Consequently, maintaining existing and developing new software applications is growing exponentially. With the introduction of domain specific embedded language DSeL, the MACH project aims to separate the specifics of the underlying hardware layers from the formulation of the general algorithms within an application domain.

## SoRTS

*System of Real-Time Systems*

The SoRTS project aims to increase productivity and effectiveness in cancer treatment and reduce patient risk by supporting healthcare professionals in the transition from invasive, open surgery to minimally invasive, image guided intervention and treatment (IGIT). The development of a System of Real-Time Systems (i.e. imaging and therapy systems) will enable a more automated combination ("more than human interaction") of imaging and therapy as well as motion compensation for the target tumour tissue.

**IDEA4SWIFT**

*Identity management, secure Documents, interoperable Exchange and citizens Authentication FOR Systems for Worldwide Interconnection of Frequent Travellers*

In border management the EU emphasises automation, with automatic border gates already operational in major European airports. The IDEA4SWIFT project aims to overcome the real technological challenges to enable the latest improvements in security to be integrated in existing solutions by designing, developing and integrating disruptive technologies in biometry and soft-biometry in a real environment. Strong enhancements are envisaged for authentication protocols for citizens crossing frontiers and secure communications for sensitive systems.

**VISCa**

*Virtualisation of Smart Cards*

ViSCa, 'Virtual Machine for SmartCard/USIM', is a holistic approach that comprises a centralised management utility for a secure (enterprise) single-sign-on system. Its main objective is to provide a ubiquitous multi-device platform to deploy services that require a strong security protocol, offering full interoperability and access from any user device without compromising security. This concept could provide a clear benefit to end users and increase confidence in new services that require the sharing of confidential data.

**CAP**

*Collaborative Analytics Platform*

Enabling technologies creates the availability of a wealth of public and organisational data for and through collective intelligence applications. The CAP project goal is to provide a flexible platform to access and store various data flows in real time and perform analytics on cross-business domains while ensuring the security and the privacy of each data source. Data owners, platform suppliers and data scientists will be able to collaborate and derive their respective business value.

**POINT2BDMC**

*Power Optimised INfrastructure To Big Data Management Centres*

Scientific applications today generate and handle an increasing amount of data on a regular basis.

As a lot of the data is not used continuously, it is temporary stored on relatively cheap but slow storage devices like tapes with poor random access performance. This project aims to provide a management-efficient storage layer that will minimise economic issues and maximise the availability of data for parallel applications in a highly secure environment.

**SEAS**

*Smart Energy Aware Systems*

The environmental, economic and sustainability challenges presented by continuously increasing energy consumption are global. The SEAS project is tackling the problem of inefficient and unsustainable energy consumption by enabling the interworking of energy, ICT and automation systems at consumption sites, and introducing dynamic, intricate ICT-based systems to control, monitor and estimate energy consumption. Additionally, business models and solutions will be explored to enable energy market participants to incorporate micro-grid environments and active customers.

**SENNET**

*Self-protected and self-healing ENergy NETWORKs*

The smart (energy) grid vision relies heavily on integrating information and communication technologies (ICT) to empower the power grid with the unprecedented capability of supporting two-way energy and information flow. A critical aspect is self-protection, which includes cyber, physical and system security. SENNET will target network and server protection from unauthorised access and malicious attacks as well as enable active participation of small users in the grid thereby facilitating the integration of renewable energy sources.

**MediaWIND**

*Media With Interactive New Dimension*

Following the convergence of broadcast and broadband networks, the next evolutionary step is the dual-screen concept that allows the user to interact with TV content via tablets or smartphones. The MediaWIND project aims to offer the end-user new enriched multi-screen services with personalised, individual interaction between main TV screen and personal devices. Innovative technologies on tablets and

smartphones will enable the end user to benefit from enhanced services and operators to find new business opportunities.

**DEMWatch**

*DEMENTia Watch System*

Memory disorders and dementia result in a progressive deterioration of cognitive and functional abilities and interfere with social and occupational functioning. The goal of DEMWatch is to assist people with slight and moderate memory disorders by creating assistive indoor and outdoor technology thereby enhancing the prospects of increased independent living and inclusion. New applications will provide long-term assistive solutions with an unprecedented awareness of the user's needs and intentions along with efficient and enjoyable rehabilitation.

**Vitality**

*Monitoring & Managing Your Health and Wellbeing*

The VITALITY project focuses on two aspects of personal services for the self-management of health and wellbeing: lowering the burden on the healthcare system through personalised and self-managed health-services, and healthy cities that promote the wellbeing of their citizens. By facilitating open exchange and interpretation of sensor data without compromising privacy/security concerns, VITALITY will enable multiple health and wellbeing services to make use of the same information ethically through an intelligent sensor data broker.

**BaaS**

*Building as a Service*

The BaaS project targets the need for comprehensive and open cross-domain management and control services in today's buildings, which demands the integration of building automation systems with ICT systems and other building related information over the complete building lifecycle. By establishing a generic service platform for commercial buildings that integrates traditional building automation and management systems with ICT infrastructures, the BaaS project supports the development and deployment of novel valued added services and applications.

Calendar

8-12 APRIL  
HANNOVER MESSE – INTEGRATED INDUSTRY  
Hannover, Germany

▷ [www.hannovermesse.de](http://www.hannovermesse.de)

23 APRIL  
ARTEMIS POST BROKERAGE EVENT FOR THE  
'EXPRESSION OF INTEREST'  
Brussels, Belgium

The EoI is an informal, non-compulsory procedure and runs parallel to the FPP Submission. The advantage of this approach is the early visibility and feedback it generates.

▷ [www.artemis-ia.eu](http://www.artemis-ia.eu)

15-16 MAY  
EUROPEAN BUSINESS SUMMIT  
BRUSSELS, BELGIUM

▷ [ebsummit.eu/index.php](http://ebsummit.eu/index.php)

16-17 MAY  
OPEN FORUM 2013 – BRIDGES NOT WALLS  
Stuttgart, Germany

*Software Competence for the Future at the Open Forum Stuttgart*

Software Competence for the Future is an open discussion platform which connects networked technologies with new ways of structuring and managing intra- and extra-organisational collaboration. The event's theme is 'Bridges, not Walls'.

The event will include workshops on agile systems development, integrated change management and two Keynote speeches:

- The connected Company - Dave Gray, entrepreneur from St. Louis, well-known for his books "The Connected Company" (2012) and "Gamestorming" (2010), the playbook for innovators, rule breakers and change makers.
- War of the Worlds – Will the IT industry determine the shape of the embedded industry? - Jesús Bermejo, ITEA 2 Board member for Telvent and project leader of the ITEA 2 SCALARE project

▷ [www.open-forum.net](http://www.open-forum.net)

30 SEPTEMBER – 2 OCTOBER  
EUROPEAN INNOVATION SUMMIT  
Brussels, Belgium

▷ [www.knowledge4innovation.eu](http://www.knowledge4innovation.eu)

4-5 DECEMBER  
ITEA & ARTEMIS CO-SUMMIT 2013  
Stockholm, Sweden

More information will follow soon!

▷ [www.itea2.org](http://www.itea2.org)

News • ITEA 2 news facts

# SAFE project

## Open for feedback from the community



Although the SAFE project has still more than one year to run, the consortium is happy to announce the publication of several concept documents in March 2013 and the publication of the integrated meta-model in May 2013.

These conceptual results are the core of the SAFE project. The target is to use model-based techniques to comply with the requirements of the ISO26262 norm. The set of published concept documents consists of proposals to extend existing meta-models for

- hazard and environment modelling
- safety requirement expression modelling
- safety case modelling
- software and system modelling
- hardware modelling
- error failure and propagation

The concepts are integrated in a meta-model. To enable the development of tools, an Eclipse Ecore file and XML schema will also be published.

All documents are draft versions as the project still continues until June 2014. However, at this moment, the consortium is requesting a review by the market. With the help of your feedback they will improve the concepts during the remaining project lifetime.

The documents are available via:

- the ITEA 2 project webpage for SAFE: [www.itea2.org/project/index/view/?project=10108](http://www.itea2.org/project/index/view/?project=10108) and
- [www.safe-project.eu](http://www.safe-project.eu)

Please address your comments before June to the project leader, Stefan Voget of Continental Automotive GmbH ([stefan.voget@continental-corporation.com](mailto:stefan.voget@continental-corporation.com)).



# PO Preparation Days 2013

## Interest in ITEA 2's eighth Call very high

The considerable interest in ITEA 2 Call 8 was clearly shown by the high number of participants during the Project Outline Preparation Days, held in Istanbul on 19 and 20 March. A record total of 281 participants from 18 countries actively participated in the different sessions and discussions.

The programme opened with a warm welcome by EUREKA Chairman Okan Kara. The presentations that followed prepared the participants for the event by delivering introductory information about ITEA and the structure of the PO Days.

After the plenary session it was up to the participants themselves! During the well-visited poster session, some 50 project ideas were presented and during two parallel sessions that followed, 52 project idea pitches were given. The second day started with plenary presentations detailing the project submission process, but the majority of the day was used to continue the project idea discussions between newly forming consortia.

The lively group discussions resulted in 15 plenary project idea presentations, some of which were already presented at the end of day 1, while others were held at the end of day 2.

Like last year, the event was evaluated well with a high overall score of 4.0 out of 5.0 (45% questionnaire response). In general, most of the comments made were positive. Improvements for next year are still to be made in the organisation of the group discussions and in the event app, which was introduced during the event this year.



### ITEA 2's Call 8 is open now!

The submission deadline for the Project Outlines is 24 May.

Are you still looking for partners, wanting to join a proposal or have another question about the Call? Please contact the ITEA 2 Office for further assistance ([info@itea2.org](mailto:info@itea2.org)) or reach out to our community via our LinkedIn Group or Twitter.

For further information: [www.itea2.org/po\\_phase](http://www.itea2.org/po_phase).



### FOLLOW US ON



[www.twitter.com/ITEA2](http://www.twitter.com/ITEA2)

[www.linkedin.com/groups?gid=2012287](http://www.linkedin.com/groups?gid=2012287)

# Exceptional State-of-the-Art document on User Interface Description Language – UsiXML

Written by Philippe Letellier, ITEA 2 Vice-Chairman

SotA editors: Prof. J. Guerrero and J. Gonzalez, Benemerita Universidad Autonoma de Puebla, Mexico



User interface, or UI, is the first contact with any new product or service, so it is a key element for the customer quality value evaluation.

While it might appear to be a straightforward matter for any new entrant to deal with, failures make it apparent to experienced software developers how complex it is to specify and design this part of the product.

So it is so important for the ITEA community to have efficient dedicated user interface description languages, UIDL, to be able to very quickly specify, design and test different user interfaces and find the one that the final users most appreciate. Of course, we all realise there is no unique best user interface. Furthermore, another challenge for the modern user interface is surely adaptability: the continuous modification of the product or service, the capacity to run on different kinds of platforms, the heterogeneity of user interface modalities available on the platforms. To optimise the software development productivity as well as the level of quality of the final product service, we need tools to describe these different variants of the user interface software. Historically, the

UIDL demand arose when the user interface was employed like any other software modules to ensure the global modularity of the code. The need was reinforced when it became clear that UI design decisions had to be shared among a lot of stakeholders in an understandable form like a set of specifications. The final refinement to ensure adaptability of the product service resulted in the proliferation of UIDL adapted to different constraints given that there is no unique definitive solution for widespread adoption.

Jean Vanderdonck and the UsiXML ITEA project team have written an in-depth, very didactic paper on the state of the art of this topic. They defined a very clear systematic analysis grid which will help you to understand which UIDL is the most appropriate for your specific purposes and specific constraints on your product service development chain.



This document contains a set of XML based languages like the standards VRML, X3D or software vendor solutions like Macromedia MXML, Lucent Several Interface Single LogicSisL, Microsoft XAML, Mozilla XUL, W3C DIAL or EMMA, InkML for digital ink data, VoiceXML the unique standardised language based on voice, MariaXML, USIXML and many others. Furthermore, the UsiXML language designed during the ITEA 2 UsiXML project has been submitted to the W3C Charter Group on Model-based User Interface Design - [www.w3.org/wiki/Model-Based\\_User\\_Interfaces](http://www.w3.org/wiki/Model-Based_User_Interfaces).

Their analysis grid details for each UIDL:

- The available components models like the task model to describe the tasks to be accomplished by the user, the domain model to describe the objects manipulated by the user through the UI, the presentation model to describe the static representation of the UI and the dialogue model to describe the conversational aspects of the UI
- The methodology to specify and model the UI
- Availability of author tools
- Supported software languages to translate the UI model in executable format
- Supported platform for these languages
- Variability target (mono/multiplatform, mono/multiuser, mono/multi-environment)
- Abstraction level of the model
- Number of tags available in the language
- Expressivity to describe the complexity but also to measure the simplicity of usage for the developer
- Openness of the language to create new tags
- Coverage of concepts
- Level of standardisation
- Public availability of the UIDL
- Level of usage
- Organisations behind the language

Whether you are a beginner in this user interface topic or an old hand, I am sure you will learn a lot from this document as I have done. It is very rich because of the width of their coverage of the domain, because of the clarity of their analysis grid and because it was not just a pure literature analysis but they also actually implemented some user interfaces with the analysed tools.

Their work is definitively very valuable for our ITEA community. I invite you to have a look on it and I would like to thank Jean Vanderdonck and the UsiXML ITEA 2 consortium led by David Faure of Thales for the impressive quality of their results.

**MORE INFORMATION:** [www.usixml.org](http://www.usixml.org)

# Pioneering in the blood

Zeynep Sarilar was born in Izmir, Turkey, and after gaining her BSc in Electrical and Electronic Engineering at Eylul University in 1989, she joined the Netas (Nortnen Telecom) R&D department in Istanbul as a software engineer and team leader for international gateway switches. Five years later she moved Alcatel Bell Telecom in Antwerp, Belgium, to become a consultant in the research department for Service Gateway. In 1997, she extended her experience at Globalstar in San Diego, USA, as a software and system design consultant in the network management department. A year later she returned to Turkey and following different jobs joined Mobilera in 2002 as co-founder and CTO. She is responsible for product development for Mobile Marketing and Community Management. She manages EU and Turkish funded research projects on wearable computers, digital home management, ontology on embedded systems and digital home entertainment systems.

## A SERIES OF HIGHLIGHTS

"I must admit I fell into software development, although it was a rational choice. While I was studying I realised that computer science was a necessity and, furthermore, offered good job prospects. But then I realised I was pretty good at it and began to strike up a closer bond and emotional attachment with software development. My curiosity and thirst for knowledge were also fed by the series of jobs I had and the experience I gained all the way from Turkey to Belgium, across the Atlantic and back to Turkey where I seized the opportunity to become part of a fascinating and dynamic new company, Mobilera. This was certainly a major highlight of my career so far, and there have been more since then: Mobilera became the first Turkish R&D centre for mobile campaigns in 2002 and a few years later the first Turkish mobile community with 360° integrated campaigns. In 2006 Deloitte quoted Mobilera as the fastest growing Turkish tech company, and this has been followed by further firsts and awards, including being the first Turkish company to participate in an ITEA project." A pioneering spirit? "I suppose I have pioneering in my blood. It drives me on to explore new avenues and successful ventures. I also hope that I can contribute to developing entrepreneurship in Turkey through entrepreneurship training centres as well as adapt the training methodologies in the USA and Europe to the Turkish situation."

## THE ITEA CONNECTION AND ITS REWARDS

"The ITEA connection began really when a friend of mine in the Netherlands told me that Philips was looking for partners to be involved in the ITEA AMEC



project. So I introduced myself and my company, and we were accepted as a partner. At the time I didn't realise that we were the first Turkish partner to be involved in an ITEA project. This project provided a communication platform for devices, applications and services to intelligently use each other's capabilities. The role of Mobilera was to design and develop the

AMEC framework, implement mobile communications and create an open-channel community. From there we went on to further ITEA/EUREKA project participation, becoming the international project leader in LifeWear – Mobilised Lifestyle with Wearables. I think our contribution has been well recognised as ITEA has nominated us for two awards. This kind of recognition also brought us more invitations to participate in projects. I couldn't say no to any of them! I would also like to point out that we are well supported from the Scientific and Technological Research Council of Turkey (TUBITAK). But back to ITEA and participating in projects. I would recommend this to anyone because it really does provide the right environment to network, share knowledge and ideas, create innovation and focus your research on the market. In that way it is quite different from the FP7 type of project. The exploitation factor in ITEA projects makes the difference. And there are opportunities for everybody."

## BACK TO BASICS

"I must admit that I have a very busy life but once a month I try to take the opportunity to get away from all the hustle-bustle on my sailing boat. It gives me the tranquillity I need. Sometimes I'll take my laptop with me to work on a report or prepare a presentation but when I am on holiday, it's definitely a case of leaving the electronics on shore and getting back to basic, navigating manually and doing everything by hand. That puts and keeps things in perspective. And, of course, I like other simple pleasures like listening to music and going to the movies. A counterweight to the complexities of business."

# ITEA success story: MODELISAR

## An international standard for systems- and embedded software design in vehicles

Modelling is not new in automotive systems development but enabling interoperability between different subsystem components from various disciplines has always been a challenge for the engineers. The objectives of the MODELISAR project (2008-2011) were to boost collaboration and innovation across system and software disciplines and to test the vehicle behaviour earlier, faster and at a lesser cost in the virtual world.

During the project, an international and open Functional Mock-up Interface (FMI) standard was developed to conveniently exchange and interoperate models from different modelling and simulation environments. Functional Mock-Up is the next generation of the Digital Mock-up to enable the simulation of the vehicle functional behaviour, leveraging Modelica for vehicle behaviour modelling & simulation, and AUTOSAR for embedded software generation, but also supporting other modelling languages.

“MODELISAR is a key example of a project which ‘seizes the High Ground’, it created a global standard which revolutionises the relationship between OEM and their suppliers.”

*ITEA Chairman Rudolf Hagenmüller*

Exploitation of the developed open FMI standard has been widespread. Currently, FMI is commercially supported by over 35 modelling, simulation, code generation and testing tools and is used by automotive and also making a breakthrough in non-automotive organisations. FMI adoption Geos are throughout Europe, Asia and North America. For example Daimler uses software-in-the-loop simulations for all gearbox projects of Mercedes-Benz passenger cars.

“Thanks to a strong vision, and the high professional commitment of the partners, the FMI fundamentals were able to emerge and be proven; a long-term organisation is now bringing the newborn standard to maturity.”

*MODELISAR Project leader Patrick Chombart*

To continue the cooperation beyond MODELISAR, the core FMI development partners decided to find a new home for their activities under the roof of the Modelica Association; a new Modelica Association Project “Functional Mock-up Interface” (FMI MAP) was created. 23 companies are now participating to the FMI definition.

At the end of 2012, 11 automotive OEMs have initiated the setup of a standard process for simulation model exchange between OEMs and suppliers based on FMI.

**MORE INFORMATION:**

[www.modelisar.com](http://www.modelisar.com)

[www.fmi-standard.org](http://www.fmi-standard.org)

[http://en.wikipedia.org/wiki/Functional\\_Mock-up\\_Interface](http://en.wikipedia.org/wiki/Functional_Mock-up_Interface)

**Austria**

AIT  
AVL

**Belgium**

LMS International  
Triphase  
Verhaert

**France**

ARMINES  
Dassault Systèmes  
Geensoft  
IFP Energies nouvelles  
LMS Imagine  
Trialog

**Germany**

Altran  
ATB  
Atego Systems  
Daimler  
David  
DLR  
FhG First, IIS EAS, SCAI  
Halle University



INSPIRE  
ITI  
QTronic  
SIMPACT  
TWT  
Volkswagen

**Sweden**

Dassault Systèmes AB  
Volvo

**Person Years**

178

**Project Leader**

Patrick Chombart, Dassault Systèmes

**Project start and end date**

July 2008 – December 2011

**Website**

[www.modelisar.com](http://www.modelisar.com)  
[www.fmi-standard.org](http://www.fmi-standard.org)

# Gérard Roucairol

Former ITEA 2 Vice-Chairman, is elected President of the National Academy of Technologies of France

*Interview by Philippe Letellier, ITEA 2 Vice-Chairman*

*As ITEA 2 vice-chairman it's my privilege and honour to interview Gérard Roucairol who has just been elected President of the National Academy of Technologies of France (NATF). Gérard, can you tell us how your candidature came about?*

Back in 2005 I was elected by the Academy Fellows as an academician. At that time I was Executive Chief Scientific Officer of the Bull Group that I had joined in 1984 and for which, among others, I contributed strongly to the positioning of Bull in the High-Performance Computer market. Prior to that, I was a Computer Science Professor at the University of Paris. At the Academy I have been active in the ICT working group that I chaired from 2008 to 2010. Then I was elected to the Academy Board, and at the last election the previous president asked me to become his vice-president (2011-2012). And here I am now, president, elected by the General Assembly with more than two-thirds majority, the statutory consensus required to appoint the president.

*Can you tell us more about the French Academy of Technologies?*

In the Academy of Technologies, we are proud of the fact that we have more than 60% of industrial players and 40% of architects, philosophers, sociologists, economists, doctors, academic researchers, all of whom enable us to study all the facets of technologies, not only the technical aspects. Thus the Academy of Technologies is not only a place where members are recognised by their peers, it is also a very efficient place to debate and to produce reports, advice and recommendations in an interdisciplinary framework. The excellence associated with the term Academy is, of course, guaranteed by the quality of its members as well as by some very well structured decision-making processes. A systematic rotation of position every two years ensures that no one remains in the same position at governance level. There are 270 academicians.



*You stress that the academicians are there to produce, but to produce what?*

Our mission is to be used as the technology reference in France by the State services, by industry managers, by civil society stakeholders and the public at large. There is no disciplinary organisation but an activity field organisation (energy, environment, urbanism, transport, ICT, society, education, ethics, ...) to ensure our studies remain relevant and our recommendations systematically structured. On the basis of this approach, the Academy produces and organises:

- Academic reports (voted in plenary sessions)
- Advice notes for ministerial departments (voted in plenary sessions)
- Seminars for civil servants as well as for research organisations
- A forum for the public
- meetings with the regional officials

The objective of all this production is to contribute to the analysis and decisions concerning technologies in France which fulfil our motto: *Sharing Reasoned, Chosen Progress*.

As ITEA we also have our own success stories:

- Medicine at home: experimentation in the Champagne Region with 10 000 patients
- Multimodality mobility charter: a multimodality charter agency has been created and with more than 80 operators signing the charter, France is now considered the reference

*You are President of the NATF and you have been Vice-Chairman of ITEA. Where does the coherency lie?*

First of all, NATF is not only part of Euro-CASE, the association of 21 sister academies in Europe, but it has provided and housed its General Secretary since the beginning. Thus Europe is always present. Hence I continue to work in the same two dimensions: the technological and the European dimensions, with the aim to enable France and European countries to master their welfare and economic future through innovation. Moreover, in both organisations technological aspects are approached with a similar systemic and interdisciplinary view.

Of course, ITEA is a multinational organisation which operates together and draws on the strengths in Europe (large companies, innovative SMEs, academics) around R&D projects. The Academy of Technologies positions itself at the level of ideas in order to inform both the decision-makers and the general public. The two tools are coherent and are pushing in the same direction: more mastery of the technologies in Europe to respond to today's and tomorrow's societal challenges.

Innovation Reports

**ACDC**

(ITEA 2 ~ 09008)

Using cloud computing to manage resource-hungry video content distribution

**SUS**

(ITEA 2 ~ 08010)

Smart urban spaces  
The benefits of interoperability for e-city services

**ACDC**

(ITEA 2 – 09008)

Patrick Schwartz, Thomson Video Networks,  
France

# Head in the clouds

## Using cloud computing to manage resource-hungry video content distribution

The proliferation of video content on the Internet, from both service providers and consumers, is placing great strain on existing public infrastructures and slowing many services to the point of unusability. With Internet broadcasting (Web TV) and streaming video on demand (VoD) becoming more popular, increasing bandwidth on communications infrastructures is being taken up by the delivery of such content. So much so that conventional video-processing systems, search tools and content-personalisation mechanisms are becoming saturated and threatening to overload public infrastructures.

**MOVING TARGET**

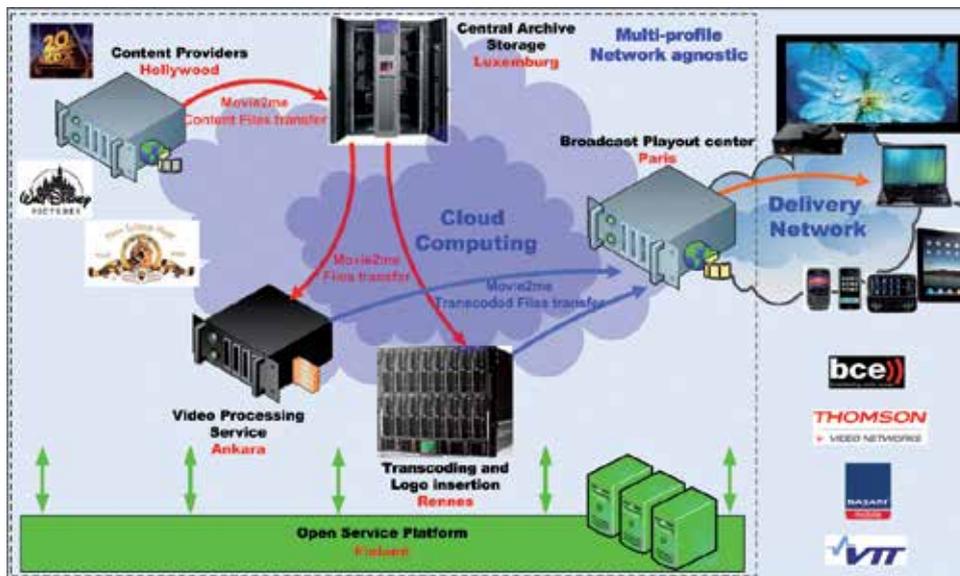
The ongoing fast penetration of cloud computing technology in all sectors of ICT based systems reveals the technical and strategic relevance of the ITEA 2 ACDC (Adaptive Content Delivery Cluster) project; the project results are increasingly relevant to lowering the cost and raising the competitiveness of multimedia and entertainment services delivery. Cloud computing is still a relatively young and fast-moving technology and research area within ICT. In each application domain, and between different application scenarios, the security, trust, scalability and availability requirements as well as business models can vary considerably. This makes it challenging or

even undesirable to select only one cloud computing deployment model for the implementation of a complex end-to-end system with multiple actors, services, applications and business models involved (e.g. ACDC system). Rather the variance in requirements of different end-to-end application scenarios favours an approach where deciding among different cloud computing deployment models can be made per service or application. In terms of system architecture and cloud service models, the approach of ACDC project is to use service-oriented system architecture with Software as a Service (SaaS) model, also allowing programmatically accessible services. This approach leaves the decision on the type of cloud computing

deployment model to the service provider, based on security, trust, scalability, availability and business requirements per service while interoperability with other services possibly using a different cloud deployment model are retained. The feasibility of the ACDC project service model as well as integration and interoperability approach is validated in the ACDC demonstrations.

**CLOUD WITH A SILVER LINING**

While the usage of video delivery over Internet is growing exponentially, the complexity also is growing, with more and more contents types, more devices and uses, as evident in the appearance last



year of new protocols to cope with varying bandwidth, such as Apple's HTTP Live Streaming (HLS), Adobe with Flash-based Dynamic Streaming, Microsoft with Smooth Streaming for Silverlight and MPEG DASH (Dynamic Adaptive Streaming over HTTP) ISO standard. Such growth of traffic and such a multiplicity of streams and codecs show a critical need for efficient video delivery over IP solutions.

The ITEA 2 ACDC project set out to tackle this problem using the resources of 'cloud computing', which offers practically limitless resources from an online virtual infrastructure, and pave the way for a range of new services and applications based on semantic-knowledge technologies. This involves computers and other devices sharing resources, software and information over the Internet on demand, much like the electricity grid. Using the resources offered by such virtual infrastructures could make possible much larger-scale, digital-content processing, storage and delivery, and underpin more efficient end-to-end transmission of multimedia content. The goal of ACDC was to develop and demonstrate an adaptive content-delivery cluster with intelligent multimedia applications such as web and mobile TV, video on demand, personal video recording and targeted advertising services, all using different networks and delivered to a variety of user terminals.

#### FROM USE CASES TO DEMONSTRATION

The pathway to success has been achieved in three steps. Firstly, following a thorough study, 25 elementary use cases were completely reworked into four consistent and fully comprehensive master scenarios: the business case of a cloud infrastructure

that allows broadcasters and mobile operators to offer and request transcoding services; the case of a service provider proposing a huge volume of video content through a public site that relies on the ACDC Transcoding & Delivery services to stream videos in a format adapted to the end-user's device and network capabilities with high level performances and low investment; new kinds of value-added convergence services and advertising models that allow television broadcasts to create an interactive and augmented viewing experience via linear broadcast; and an on-line gaming service that can increase the number of consecutive game plays and end-user loyalty, allowing more advertisement views for the gaming service provider. Scenarios for final demonstrations were then defined and implementation begun so that the results could be demonstrated during the Co-summit and final review in November 2012.

From a technical point of view, the main contributions came by way of defining business case implementation scenarios and requirements as well as the development of partners' components and constituting the prototype, platform installation and configuration. Work then focused on the design and implementation of the user awareness services of the ACDC software and services platform while comprehensive scientific contributions advancing the state-of-the-art were made in the form of numerous scientific publications. The final demonstration took place in Luxembourg with the presentation of four demonstrators that comprise a B2B approach for one business case scenario addressing content delivery and transcoding in the cloud and three B2C approaches, one demonstrating optimised content delivery and adaptive processing, the second

one showing smart Hybrid broadcast broadband TV (HbbTV) services with cross-device mobile notifications and advertisements and the final one showing semantic recommendations for efficiency in web gaming.

#### DISSEMINATION AND STANDARDISATION

As far as communication is concerned, several articles were published on paper and online media while a lot of effort went into preparing this dissemination in the form of an international workshop with NextMedia in Finland in March 2012. There were 40 peer-reviewed documents (scientific publications, Master's thesis, book chapters) and extensive participation by the project partners in international & national events (workshops, conferences and International exhibitions such as IBC, NAB, WMC, EBU, SCTE Cable-Tec...). Electronic tools have also been utilised (extranet, addresses reflectors, internet website...) along with promotional material, project presentations (video, leaflets, posters, slides...) and project newsletters.

In terms of standardisation, Institute Mines Telecom participated in and contributed to the standardisation of an HEVC-based 3DV codec by ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 1, Joint Collaborative Team on 3D video coding extension development. Bull is involved in the OpenStack ecosystem, and is leading the CompatibleOne project geared to the need for interoperability in the cloud (Implementation of the OCCI standard). Interoperability tests and a proof of concept have been realised between the ACDC and CompatibleOne projects. In addition, Thomson Video Networks has been involved in the standardisation of MPEG DASH following several ISO/IEC JTC1/SC29/WG11 meetings and is involved in the MPEG DASH promoter group. Sofia Digital joined the HbbTV consortium, participating in the HbbTV standardisation work and contributing especially to conformance and interoperability testing of the specification, applications and receivers.

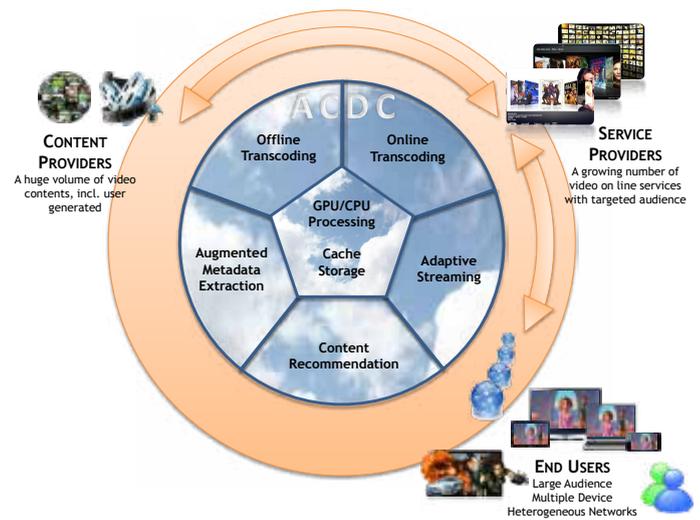
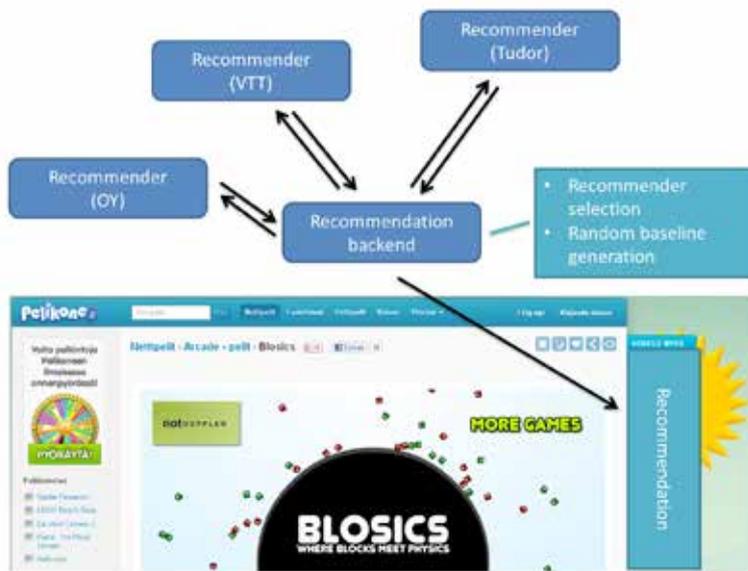
#### OPENING A DOOR TO NEW MARKETS

ACDC results are expected to be significant drivers for new and competitive multimedia services in Europe, a market based on cloud-computing infrastructures for user-aware entertainment applications. The cloud will provide the resources for content and semantic-knowledge processing, storage and delivery, thereby opening the door to a whole new marketplace for the European computing industry. Such advances will enable semantic content and knowledge technologies to be progressively exploited in Europe and so boost the competitiveness and, consequently, the value of European multimedia and entertainment applications.

A few cases studies from the project are illustrative of the impact that the innovative ACDC platform is already having at customer level and of the threshold of a television revolution. For example, a service company within the RTL Group (the Luxembourg-based radio and television business), BCE, used the results of the ACDC project to implement RTL India via the cloud from Luxembourg. The success of this is being seen as a springboard to implementing a cloud service in Luxembourg for the whole global RTL Group. Another example is provided by Thomson Video Networks, which provided to NHK the unified

video files to be transported quickly and securely through the cloud. BCE initiated first test installations for the major production studios in California and New York, which are now commercially operational. Also RTL's new RTL India channel, as indicated above, will receive its broadcast material via this service. The usage of cloud transcoding and storage is currently being evaluated. The idea is to better allocate the available resources within the RTL Group worldwide and so significantly reduce costs and accelerate the media handling in the workflow from production to broadcast.

Sofia Digital has been working as chairman of the Finnish HDTV-Forum (HbbTV working group) responsible for TV-markets self-regulation in Finland. After ACDC project demonstrators were shown to TV market key players in Finland, the Finnish HDTV-Forum announced it would employ the NorDig specification for hybrid television. Sofia Digital started HbbTV Trial Broadcasts with Digital in Finnish national DVB-T2 network on 19 June 2012 using the HbbTV server product and applications partly developed and demonstrated in the ACDC project. The Sofia Digital HbbTV server was delivered to and used by all the major



system developed in the context of the ACDC project and commercially deployed under the name of VS7000 to show more than 35,000 video clips of the London Olympics to more than four million viewers. (see <https://www.thomson-networks.com/en/news/nhk-japan's-public-broadcaster-chooses-thomson-video-networks'-vibe™-vs7000-support-online-vod-> ).

The new generation of Video Transcoder/Streamer (BVS-NG) enabling multiple user device support (set-top-box/ipad/tablet/android) has been integrated in the Bull Offer and has been proposed to several telecom operators with a first commercial deployment. In addition, work done in ACDC is contributing to enhance the Bull Cloud offer.

TV channels in Finland for their internal HbbTV trials. The Thomson Video Networks Unified System studied in the frame of ACDC project is a fully-integrated IP video solution tailored for all new convergent applications such as Web TV and Over-The-Top (OTT) service delivery, as well as traditional IPTV and IP/ Cable delivery. This Unified System, now known as VS7000, was tested in several field trials deployed worldwide in 2012.

The benefits of using the cloud to relay such services mean that all the heterogeneity inherent in current practice can become homogeneous, ultimately leading to more speed and efficiency as well a higher level of accessibility and making non-linear and interactive television a much more realistic and practicable option. TV in and from the cloud signals not just an innovation but a revolution.

**FAST EXPLOITATION**

Several partners have transformed the results of studies and research done in ACDC with their customers. Among the many examples is the Movie2Me Service developed within the context of the project that allows

Kit Digital integrated ACDC transcoding and delivery services into its platform (OVP) and its Kit Cloud is now compatible with ACDC services and could be customised for any customer with any ACDC transcoding and delivery services. Sanoma has used the recommendation system analytics tool prototypes developed during ACDC to measure the effect of various recommendation algorithms on user session lengths and click-through rates. This has shed some light on the actual benefits (increasing user activity on the web site, and thus being able to display more advertisements) that can be achieved by varying the recommendation algorithms.

**SUS**

(ITEA 2 08010)

Jean-Pierre Tual, Gemalto,  
France

# Smart urban spaces

## The benefits of interoperability for e-city services

In the context of ongoing globalisation and fiercer competition, most European cities are confronted with the need to attract investment, a qualified workforce, tourists and consumers with high purchasing power as well as improve the quality of life for their residents and optimise internal productivity. To do this, cities have to differentiate themselves by enhancing their local identity, consolidating their regional positioning and boosting their international profile. All this requires optimum infrastructures that foster the ever changing needs of their stakeholders.

The aim of the ITEA 2 SUS (Smart Urban Spaces) project was to bring suitable design frameworks and urban standards that will enable European cities to introduce easily and seamlessly the most advanced mobile technologies in new interoperable e-services for their citizens. Such services target improving not only the daily lives of European citizens but also the productivity and efficiency of local administrations, especially in terms of their relationships with both citizens and urban service providers. Other targets included linking the users and use cases directly with the latest technology concepts and designs pertaining to mobile ubiquitous computing. To achieve these goals, the SUS project linked nine cities from three EU countries that were strongly committed to offering pilot sites for the project together with providers of technology, connectivity and services as well as research organisations.

**INTEROPERABILITY THROUGH URBAN STANDARDS**

The project employed a global development strategy to identify and develop scalable and interoperable technological building blocks on the city scenarios. This interoperability of services between European cities raised specifically the aspect of service standardisation (for example, in mobile payment and mobile ticketing, which still tend to be proprietary initiatives, or electronic poster, e-city tourist guides and loyalty programmes) and resulted in a proposal for a set of associated “urban standards” and a first network of interconnected cities aimed at sharing best practices, tools and platforms

at European level. In brief, the project has provided software technology bricks and design frameworks that can be used for designing and adopting mobile, context-based, local and interoperable services in cities/urban spaces. Furthermore, a start has been made on building a network of European cities aimed at specifying, clustering and validating those local and interoperable services through pilot experiments in line with their e-administration strategy, promoting this at European level. Consortium contributions to international bodies and intense discussions with the cities involved in the project led to an initial set of European urban services standards.

The common interest business verticals for the cities in the consortium was initially very large and included mobile payments, mobile ticketing (with a specific focus on transport, especially for cancelling costly and inefficient paper tickets for tourist visitors), smart posters, couponing and loyalty, taxi services, city event and building management, and tourism (interactive visit). In some cases, the project delivered specific mobile interfaces for elderly or disabled people and, as such, contributes to the global European effort on e-inclusion. Of course, specific attention was paid to privacy and identity management in the urban context, with the objective of providing the minimum set of information on service users to enable cities to continuously monitor quality improvement in respect of European privacy and security regulations. The ITEA 2 project SUS supported the e-city vision by

providing a new service infrastructure and delivery platform using the latest mobile contactless and context aware technologies available, and prototyping the resulting platform on a set of local and innovative or cross-city interoperable services representing the needs of modern cities in an integrated Europe.

**CENTRALITY OF PILOTS**

Eight work packages provided the stepping stones to both establish and improve the proof of concept of the SUS architecture and related technology blocks, and to ensure that clear progress was achieved in finalising the project’s deliverables. The technology developments work package finalised the SUS Administration Platform (SUS-AP) with clear improvements in the service provider perspective to enable easy integration of new services. Defining the methods for personalising the services for the final user in the SUS-AP interface was done through data collection and analysis from user interface, privacy and identity management pilots. The evolution of the end-user perspective, contained in the end-user framework WP, improved usability, self-registration and reuse of existing profiles while the scalability and interoperability of the implementation was assessed in terms of the city perspective.

The pilots being run in all the countries were monitored and candidate pilots selected for integration in the SUS-AP architecture and for the interoperability review. In all, there were 47 pilots proposed that were clustered



# MUSEUM QUEST MUSÉE DE NORMANDIE



## CE JEU VOUS A PLU ?

Alors prolongez l'expérience avec le parcours Guillaume le Conquérant à Caen. Sept des trente-trois étapes du parcours sont équipées de la technologie NFC et de QR Codes vous permettant d'avoir accès à un supplément d'information sous forme de vidéo et de texte.

Facilitez aussi vos déplacements, les arrêts de bus et de tram Twisto sont tous équipés de tags NFC et de QR Codes : vous pourrez ainsi connaître les horaires de passage en temps réel.

**Musée de Normandie**  
MUSEUM QUEST  
Musée de Normandie  
Château - 14000 Caen  
02 31 30 47 60  
mdn@caen.fr  
www.musee-de-normandie.eu



Conception Graphique : Clémence Tarrière - Impression : Imprimerie Municipale

# MODE D'EMPLOI

**Jouez avec vos enfants et  
(re)découvrez le Musée de Normandie  
grâce à votre mobile**

in four main areas: ticketing, education and day care, transport and city visits. A common e-city service delivery framework was developed, providing identity management, privacy management, user profiling creation and management, and social networking. The development of a SUS Administration Platform provided the user interface to the end user, the city and the service providers. Furthermore, a set of recommendations was

produced for both pilots and future rollout of e-city services concerning compliance with European and national regulations.

In addition to regular monitoring and contributions to the relevant standardisation bodies, some specific contributions were brought by the project; e.g NFC antenna reported issues from the pilots were dealt

with and relevant standardisation and certification programme explored. The definition and measurement of interoperability criteria spanned many of the work packages whereby input from almost all the work packages, involving multiple perspectives (technology, societal, legal, and experience from pilots) was integrated, resulting in a paper published in a scientific review and an internal interoperability review of selected pilots.

### DEMONSTRATING THE BENEFITS

In terms of innovation, the SUS project has especially proposed an extensive NFC service delivery environment to extend it from single applications to the clustering of services in one single "bouquet". This technology is very clearly experiencing a powerful surge and half of all smart phones are expected to contain NFC by 2015 thereby enhancing the market for new services and applications as well as a strong increase in NFC ticketing and payment. Below are a few of the demonstrations that reveal the benefits.

Museum Quest is an NFC-based quiz game for museums that demonstrates how interactivity, immersion, fun curiosity and interest can encourage kids to get back to museums and people to talk together. Everything works offline and foreign tourists are therefore not subject to any extra connection fee. The museums gain effective added value as the contents can be enriched through cutting-edge technology and the application, which is unique for each museum, can be extended and refined through regular updates.

Another demonstration concerns e-ticketing for small events that often need a cheap, simple and lightweight e-ticketing system; this is enabled by NFC and mobile applications, with one client application to browse through a list of events, download and present tickets at the event entrance and one validator application. With the secure element not involved and no internet connection needed at validation time, no expensive infrastructure is required, just smartphones. This is cheap, fast and easy to deploy.

### EXPLOITATION PROSPECTS

Important international technology events have provided a showcase for the SUS project to present and profile its aims and achievements. The broad audience at such events in 2012 makes possible multiple contacts between SUS partners and many interesting companies and corporations. This boosts the prospects for exploitation.

The results of the Smart Urban Spaces project are already on track for fast exploitation by most of the industrial partners. This is a result which has been enabled by the very close cooperation established between the industrial or academic partners and the cities involved in the project. Equally, the project results will be exploited in Finland through companies such as Fara, Bonwal and While on the Move as well as in cooperation with VTT and other partners. VTT as an R&D provider will help cities to

identify the services that could benefit from mobile solutions. In the second phase VTT will do research on multi-application micro-services in general and in education and ticketing in particular. Some large-scale deployment based on project results has also started in all Spanish cities involved in the consortium, in most cases initiated by the prototypes developed by the local SME members of the consortium. Within this context, service interoperability emerges as a major challenge: the results of the Smart Urban Spaces project will be a real support to the process of demonstrating the relevance and the feasibility of service interoperability.

A good part of the success of the SUS project can be attributed to the way in which the innovation has been propelled close to the market and the benefits from the strong involvement of end users. There are many instances of exploitation, beginning with Gemalto. In Europe, Gemalto provides Mobile Network Operator Trusted Service Management (MNO TSM) to three of the five largest mobile network operators including Vodafone group, T-Mobile group and Telecom Italia. Gemalto is also TSM for Orange France, 4 additional European MNOs and provides the SP TSM for 8 service providers. In October 2012 in the USA, Gemalto launched a commercial MNO TSM service for ISIS, which is the joint venture of three of the four largest MNOs: Verizon, AT&T and T-Mobile. In addition, Gemalto is providing SP TSM services to three major US banks, including Chase. In Singapore, Gemalto has been delivering commercial TSM services to Singaporean customers since August 2012, including local banks/SPs and mobile network operators. StarHub, M1 and Singtel. Finally, in Japan, Gemalto has announced that it will release its TSM solution to KDDI, one of the country's leading mobile network operators, for the deployment of the world's first commercial NFC airline boarding service. This will enable quicker and more convenient flight boarding for more than 37 million passengers who fly with Japan Airlines (JAL) each year.

Another example is NXP Semiconductors in France; the SUS project represents the opportunity to accelerate the deployment of its technologies (MIFARE and NFC especially) and to enlarge the number of applications through the testing of business models and the solving of interoperability issues between the cities. NXP is in discussion with the French national railway transport system to eventually connect its service to the SUS proof of concept. NFC chips have enabled several applications to be successfully tested in Caen: information, ticketing, identification and payment. National certification as a "Digital Town" early in 2012

promises to accelerate the deployment of contactless mobile services. Viacités, the Caen conurbation's public transport mixed syndicate, will be equipping its entire network with a new ticketing system, associated with a Twisto application, by the year end. Caen la Mer is concurrently working, in partnership with the Caen Chamber of Commerce and Industry and the professionals involved, on the development of a Pass Tourisme (Tourism Pass) and a Pass Commerce (Shopping Pass), both mobile versions of existing services.

CBT (Spain) developed a SUS service, called MUGI65+. In Basque it means "moving the over 65s". This SUS service has been developed to assist elderly people to make city itineraries within Bilbao, events or municipal facilities, using public transport. It is an Android App and it uses a leaflet with POIs (Points of Interest) of the city of Bilbao. The MUGI65+ leaflet also includes NFC tags, QR Codes and a customised front end designed for older people. NFC tags have also tactile information detectable in the surface texture for helping elderly or disabled people to use SUS technology.

A final example relates to the public transport field, the FARA Inspector. On-board passenger ticket inspection in the public transport arena needs highly operable, reliable and ergonomically designed equipment as well as a modern mobile solution. Inspection is very profitable for authorities, so more inspection means more profit and reduces the number of passengers travelling with an incorrect ticket. The prototype developed in SUS has been industrialised and is ready for market commercialisation. The SUS derived solution will be compatible with all standard ticket products including ISO 14443 RFID card products, NFC, 2D-barcodes (QR-codes), contactless-EMV. Expectations of this business case are very high. Solutions have already delivered to the first customer and a second delivery has been started.

Within this context, service interoperability emerges as a major challenge: in order to be of genuine interest to users, mobile services must enable them to validate a transport ticket, access the local swimming pool, order a taxi. With several challenges in mind – enrolment (identification), multi-support (telephone or multi-service card), the services portal and, ultimately, the payment system that will need to be set up with them – the results of the Smart Urban Spaces project will be a real support to the process of demonstrating the relevance and the feasibility of service interoperability.

### MORE INFORMATION:

[www.smarturbanspaces.org](http://www.smarturbanspaces.org)

# New Head of EUREKA Secretariat appointed



On 4 February 2013 EUREKA welcomed its new director, Pedro de Sampaio Nunes.

In his first statement, the Secretariat's new director made his ambitions clear for EUREKA: *"This organisation's full potential still needs to be unleashed.*

*Many people ignore the achievements of EUREKA in terms of investment – 30 billion euros in 27 years – or in its many concrete results, from gsm*

*and mp3 technologies through to innovative energy and environmental technologies."*

Mr. Nunes has longstanding experience in the European Commission. He has worked as the director of many R&D programmes in the field of energy and information technology until he moved to the Portuguese Government as Secretary of State for Science and Innovation.

With his extensive international experience, de Sampaio Nunes is well-placed to steer the Secretariat and advise its Network at this critical time where austerity measures must be carefully balanced with greater public support for innovation, to maintain Europe's position in an increasingly competitive global market.

## Korea EUREKA Day Gateway to Korean & European Innovation Istanbul, 28-30 May

The Korea EUREKA Day event is organised by the Korea Institute for Advancement of Technology (KIAT) in partnership with the Korean Ministry of Knowledge Economy (MKE) and the Turkish EUREKA Chairmanship.

Over the years, this event has brought success for both Korean and European companies by catalysing the identification of business opportunities, the development of innovative project ideas and new R&D collaborations in the framework of the EUREKA initiative.

Representatives from approximately 600 Korean organisations, including government research institutes, large companies and SMEs, are expected to attend. This year's programme consists of three sessions:

- An informal seminar on preparing EUREKA projects
- An open forum on future Korean-European collaboration
- Matchmaking sessions to provide a platform for the initial discussions necessary in the early stages of the innovation and R&D process

For more information and registration: [www.eurekaday.kr](http://www.eurekaday.kr)



Source: [www.eurekanetwork.org](http://www.eurekanetwork.org)