

ITEA 2

M

Magazine

DECEMBER 2012 • NO. 14



Focus on Turkey

PO Days 2013 & TUBITAK-ASELSAN interview

Co-summit 2012

Looking back at a successful event!

ITEA 3

What will it mean for the ITEA community?



INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

European leadership in Software-intensive Systems and Services – www.itea2.org

ITEA 2 is a EUREKA strategic ICT Cluster programme

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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.

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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

Dear colleagues & friends,
Dear members of the ITEA family,

The highlight of the year 2012 for ITEA has been the labelling of ITEA 3: **ITEA 3 is Σ! 7632**. We received this due to the joint efforts of ITAC, Board Support Group, Steering Group, Office, Board and Directors Committee. Let me begin this editorial with a wholehearted thanks to all of you for your strong support and your commitment.

ITEA 3 projects will run until 2025. Therefore we had good reasons to work on a Vision 2030. We shared this work with our partners from ARTEMIS and presented the result as the theme of our Co-summit 2012 "Sharing a vision for ICT innovation". The Shared Vision 2030 is based on the observation that the time ahead of us will be full of change and disruptions. We have identified several areas of major change.

GLOBALISATION AND DEMOGRAPHIC CHANGE

In the years ahead globalisation will accelerate due to two demographic developments:

- The world population will grow from 7 billion people today to 8.3 billion in 2030, with 95% of this growth happening in developing and emerging countries.
- Globally, the growth of the middle-class in these countries is even more impressive; from 1.8 billion people in 2009 to 4.9 billion people in 2030.

As a consequence, the way we live and do business in 2030 will be radically different from today. Our Vision 2030 strongly recommends considering this figure as "8 billion business opportunities".

MANAGEMENT OF SCARCE RESOURCES

There is a clear need to better manage scarce resources like energy, water, food and scarce materials. EUREKA has already responded to this by initiatives on food in addition to EURO-GIA and ACQUEAU, the clusters on energy and water. The information systems needed to manage these scarce resources span many layers from networked sensors and actuators to global platforms for monitoring and control, and information management.

URBANISATION

Already by 2025 there will be 29 mega-cities, i.e. cities with more than 10 million inhabitants. The administration of these mega-cities and the management of their infrastructure rely heavily on ICT. The management of energy, mobility, waste disposal, water, city lighting, safety and security – all is based on appropriate information systems.

HEALTHCARE AND NUTRITION

The health sector is becoming one of the most important future markets driven by the convergence of medicine, pharmacy and biotechnology. Progress in molecular diagnostics and cost-effective gene analysis opens new possibilities for personalised health and nutrition.

In all these areas ICT plays a major role in mastering the changes. And in all areas a combination of networked sensors and actuators and software-intensive systems and services will be needed to stay ahead of the waves of changes. ITEA with its adaptability, its Living Roadmap and its open-minded approach to research and innovation is ready to take responsibility and to deliver for European competitiveness and well-being.

ITEA 3 will respond to these challenges by addressing all categories in which ICT is appearing to leaders of economy or society and which are needed to master the changes ahead of us:

Industrialised non-differentiating services

- Customised services
- Smart products
- Smart services
- Innovative engineering
- Smart infrastructure
- Security of systems and services

And throughout the years we will observe exciting project results demonstrating innovation, business impact and fast exploitation.



Rudolf Haggemüller
ITEA 2 Chairman

However, as I already announced in my opening of the Co-summit, for ITEA it is time now to raise our ambition. Innovation, business impact and fast exploitation will remain in our focus. In addition, our projects are seizing the high grounds. Our ambition is to occupy high positions from where we can overlook the field of competition and react quickly to emerging opportunities. And even with this extension, our ambition is not yet complete.

The **new ambition** of ITEA is, to be number 1 in five categories:

- Innovation
- Business impact
- Fast exploitation
- Seizing the high grounds
- Happiness

In a time of change the **happiness of our people** is as important as **seizing the high ground** with our results.

With this in mind, I wish you a merry Christmas and a successful new year in 2013.

Sincerely yours,

Rudolf Haggemüller

ITEA & ARTEMIS Co-summit

30 & 31 October 2012, Paris



With the futuristic backdrop of La Défense the ITEA & ARTEMIS Co-summit set up shop at the CNIT Conference Centre to share a vision for ICT innovation. The visionary architectural landscape of La Défense, bathed in morning sunlight and casting a stunning futuristic backdrop to this fifth ARTEMIS-ITEA Co-Summit, perfectly complemented the theme of this Co-Summit. This fifth Co-summit was strongly supported by the Ministère du Redressement Productif, DGCIS, Airbus, Alcatel-Lucent, Bull, Institut Mines-Télécom, Technicolor and THALES.

The exhibition floor hosted a wealth of fascinating projects, with a special focus area section on reliability, and over the two days there was plenty of opportunity to look at how the future was already happening now in the ITEA 2 and ARTEMIS projects and, of course, to give the project representatives the chance to share insights with their colleagues from other projects. Guided tours also gave all the projects the chance to present the impact of their work to various guests. Inspiring keynote speakers captivated the audience with inspirational addresses and skilful moderators stirred challenging debates among expert panellists.

Jointly opened by Klaus Grimm (President of the ARTEMIS Industry Association) and Rudolf Haggemüller (Chairman of ITEA 2), the Co-summit was welcomed to the French capital by Cécile Dubarry,

Director for ICT at the Ministère du Redressement Productif, who had brought the Co-summit in Helsinki to a close a year earlier.

A VISIONARY SPEAKS

In his keynote address, Thierry Breton, Chairman and CEO of ATOS, revealed himself as a man of vision and a man willing to take risks, something that had already been evident during his term as Director of France Telecom when he decided, controversially at the time, to implement ISDN nationwide. History backs his choice. So, during this speech, when he boldly asserted that internal e-mails in his present company would be a thing of the past by the end of next year, his conviction and his arguments for driving this shift through were such that it was clear that the future was already accelerating into the present. This example of

not only the speed of change but the intrinsic kind of change that is taking place in our society would be echoed in the panel session that followed. "We are a society that is not undergoing evolution or revolution but a metamorphosis." It is a time to be visionary and now, more than ever, it is a call to ITEA 2 to meet this future full on through a shared vision for ICT innovation.

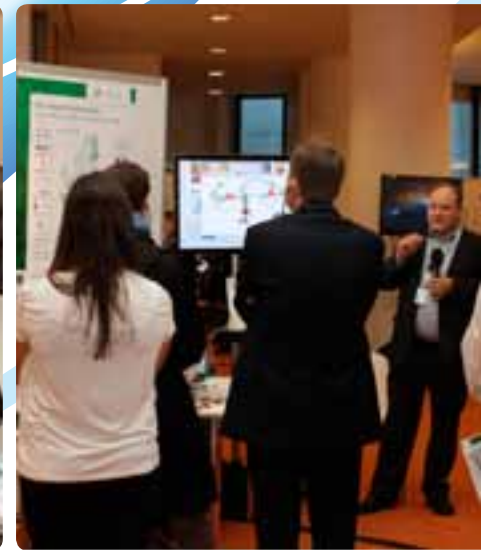
PLENTY TO THINK ABOUT

Taking up this theme, the stage gave way to a panel discussion hosted by Emile Aarts, formerly Chief Scientific Officer at Philips Research and now Professor of Computing Science at Eindhoven University of Technology. This very lively debate, featuring five prominent players from different fields, was inspiring and gave the captivated audience plenty to think about. For instance, when asked "What did you not anticipate?" when looking back on the impacts of technology during the past twenty to thirty years, panellist Heinrich Daembkes, Vice President of System and Software Engineering at CASSIDIAN, answered: the spectacular impact of social media – the size and speed at which it happened. Even more revealing by implication, then, is what it is we don't know about what will happen tomorrow. The three parallel sessions in the afternoon – EIT ICT Labs, Vision 2030 Living Roadmap/Repository and Reliability (the special focus area of this Co-summit) – pursued these and other relevant questions.



SHARING A
VISION
FOR ICT
INNOVATION





PARALLEL SESSIONS

There were three panel sessions scheduled for the Tuesday afternoon. One focused on the structural link established with **EIT ICT Labs** at the previous Co-summit in Helsinki and the notion of combining the business-oriented innovation power of ITEA with the dissemination power of EIT ICT Labs. This session examined how complementary EIT ICT Labs catalysts were being prepared for several ITEA 2 projects, such as safety at home among the elderly and very young, the results of which were being applied in real home-based cases by the EIT ICT Labs catalyst 'Test Beds, Testing Platforms and Simulation Tools'.

Reliability was the special focus theme at this Co-summit, and the parallel session devoted to this revealed both the complexity of reliability issues and the need to resolve them. Four top projects – TIMMO2USE, RECOMP, DIAMONDS and CHARTER – highlighted some of the innovative approaches and solutions that were being applied to resolve these issues. The rise of new technologies like multicore processing and the need to optimise cost while integrating both critical and non-critical technologies underline the major challenges being presented to the modern design paradigms of safety-critical systems. This session focused on the very latest techniques being employed for high-reliability system design and the discussion turned to forward-looking issues, including mixed-criticality systems, to guarantee safety using new hardware architectures and system security.

Vision 2030 and the Living Roadmap explored the implications of change for the project communities. Co-presented by Laila Gide of ARTEMIS-IA and Philippe Letellier of ITEA 2, the session began with

a review of the European research community against the background of a changing world. While the changes that are taking place, ranging from population growth to the growth of the healthcare sector, are clear challenges to society at large, they provide distinct opportunities for the ICT sector. The European ICT sector has clear weaknesses such as fragmented investment, speed of reaction, the brain drain and the growth of off-shoring; however, these were counterbalanced by strengths in terms of competency and the existence of the research ecosystem. The opportunities and challenges of such profound change are responded to in the ITEA-ARTEMIS Vision 2030. Some of the ideas are developed in the ITEA Living Roadmap - which will allow steady, consistent adaptation to changes as they manifest themselves in the market. An important element of the Roadmap is the SotA document database developed by ITEA which will allow better communication and knowledge sharing across ITEA projects and, in time, with similar developments at Artemis. The audience was then given the opportunity to get hands-on experience of the Roadmap.

HAPPY FAMILY

Following on from the ARTEMIS Community session, ITEA 2, in the person of its Vice Chairman Philippe Letellier, opened its Family session. He announced to the ITEA family that approval had been secured for ITEA 3, and underlined the need to 'seize the high ground' by spotting new gaps in the market and moving quickly into them. "We must adapt continuously," he reminded the audience.

Turning to specific objectives, he referred to the new Living Roadmap. This is very tangible evidence of the

way in which ITEA 2 is continuously adapting. "These developments will help us to be ready to move as soon as there is a market opening," he reiterated.

Turning to the projects nominated for the Achievement Award, he praised the consistently high level of innovation, business impact and speed of exploitation.

He pointed in particular to the 23 patents registered by DiY Smart Experiences, the rapid uptake of MODELISAR throughout the automotive industry and beyond, and the dramatic achievement of JEDI in creating satellite transmission of 3DTV and in yielding 15 new products and 5 patents. The three nominees then literally took centre stage as their presentations captivated the audience with the excellence of their work.

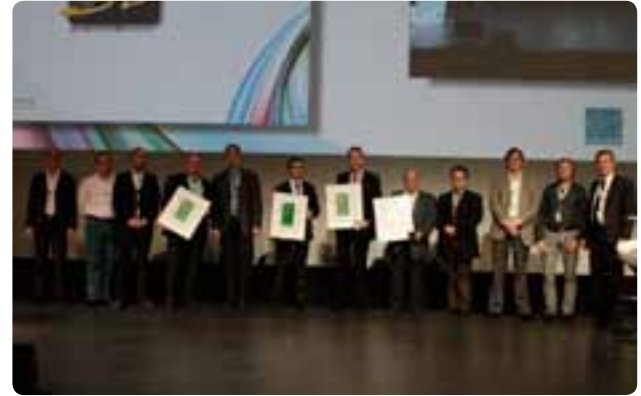
In the end, the very difficult choice saw a deserved winner of the Gold Award in the **JEDI** project.

This 2012 Gold Award winner has created a new project pattern; through intensive participation in DVB standardisation, the consortium was ready for DVB Phase 2 in June 2012. The JEDI project delivers BluRay-3D quality, or full HD per eye, at broadcast through a user-centric approach to complement the technological and business orientation of the project. The targeted market and fast exploitation cover the value chain from 3DTV content, post processing, encoders, delivery, IPTV, cable and STB to interactive applications, HDMI display port, display and audio.

Silver Award winner **MODELISAR** has closed the loop between the Modelica simulation environment and AutoSar, the automotive standard. Dynamic modelling of different software systems can be used together for software, model and hardware-in-the-loop simulation and for embedded software – a sort of plug-and-play approach for components in the simulation framework. The other Silver Award winner, **DiY Smart Experiences**, shows the potential of the Internet of Things for and by the end consumer as well the encouragement it gives to the IoT community to look further. DiYSE has delivered a huge quantity of practical results, including security of the contiki OS, a semantic layer to describe the sensors and ensure interoperability, and underlying distributed architecture.

But in the end, all the projects deserve acclaim through the contributions they make to boosting the value of innovation for society.

The Co-summit exhibition award prizes based on votes cast by participants for the best and most understandable projects went, as in Helsinki, to



should be plenty of scope for happiness and fun; sometimes hidden but essential ingredients in the innovation mix and certainly central to the wonderful atmosphere that pervaded this very successful Co-summit. The closing address was presented by Dr Charlotte Brogren, Director General of the Swedish governmental agency for innovation systems,

the ITEA 2 **DIAMONDS** project, a unique feat for this project that is developing a new, model-based approach to software testing with applications in multiple industries – such as banking, transport and telecommunication.

AMBITION WITH HAPPINESS AND FUN

The final afternoon of the Co-Summit was devoted to innovative engineering. Gérard Roucairol, President of Teratec and former Vice-Chairman of ITEA 2, challenged four panellists to confront this very challenging subject for the research and innovation community. Such as the extremely different lifetimes of software and the products in which software constitutes a vital embedded element. Or the growth of 'multi-X' dimensions of software and systems engineering. With demand for the three essential ingredients of software-intensive systems and services – safety, security and reliability – continuing to increase, innovative engineering was a very pertinent topic for this final debate.

Serious though such challenges are, both Rudolf Haggemüller and his ARTEMIS colleague Eric Schutz underlined in their joint ambitions that there

VINNOVA. Pointing to the Swedish tradition of ICT innovation and world leading companies like Ericsson, she looked forward to the Co-Summit 2013, which will be held in Sweden in December. And so, proceedings drew to a happy close and thoughts started to turn to Stockholm and yet another milestone along the path of this successful, happy partnership.

ICT industry in Turkey, an essential ingredient for a country in transition





Information and Communication Technology (ICT) is not only a core policy component of particular countries but it lies at the heart of the national social and economic strategies of many countries in different stages of development. “This indispensability can be explained,” suggests Okan Kara, EUREKA network chairman, “through the potential of ICT in generating and disseminating knowledge, together with its role as a catalyst in the creation and development of new sectors.” In terms of creating new jobs and boosting efficiency, ICT has a substantial role in achieving a knowledge-based economy and directly increasing GDP.

RESEARCH IS THE KEY TO CHANGE

“Turkey is a highly ambitious country capable of creating substantial added economic and social values. We are working hard to find our place among the top ten economies of the world,” Kara admits. “Demand is growing for ICT products among Turkey’s young and dynamic population. Also, public and private sectors need these products to adopt rapidly changing market rules. Import is a short-term solution to satisfy this demand, but in the long term we need a strong internal market. In this regard, ICT has been identified as one of the strategic technology areas to support. To adopt the rapidly changing world, research is the key player.” In the last century, major technological breakthroughs in ICT were achieved as a result of research activities. The first computer ENIAC was developed by engineers from University of Pennsylvania’s Moore School of Electrical Engineering for the US Army while the first transistor was developed in Bell Labs and www (world wide web) was invented by a researcher working in CERN. Such examples suggest that this tradition will continue and research activities will shape the technologies of the future.

TUBITAK

The Scientific and Technological Research Council of Turkey (TUBITAK) acts as an advisory agency to the Turkish government on science and research issues and is the secretariat of The Supreme Council for Science and Technology (BTYK), the highest level science, technology and innovation (STI) policy-making body in Turkey. As well as supporting the government in formulating Turkey’s STI policies, TUBITAK promotes and funds academic or applied research and development projects undertaken by universities, industry, the private and public sector and, moreover, conducts exemplary R&D projects and develops cutting-edge technology through its ten research centres and institutes.

Between 2003 and 2011 TUBITAK channelled 20% of R&D grants for the private sector to actors in the field of ICT. According to The National Science, Technology and Innovation Strategy (2011-2016) of Turkey, the ICT sector has been identified as one of key sectors in which Turkey has a strong R&D&I capacity and is a focal point for mission-oriented approaches. “In order to increase this capacity and prioritise the development of critical technologies in ICT,” Kara says, “new R&D&I projects calls have been launched for embedded systems for automotive applications, defence applications, consumer electronics, telemetry applications, biomedical applications and for integrated circuit design and development. In the scope of the Turkish government’s Vision 2023 Project, we expect the ICT sector share to reach 8% of GDP and we want to become one of the top ten countries in e-transformation.”

FUNDING AND SUPPORT

There are different funding schemes for the Turkish business sector. At the operational level, the leading actor in the system is TUBITAK. The Technology and Innovation Funding Programmes Directorate of TUBITAK was founded to support the STI research of all private sector enterprises regardless of size and sector in order to accelerate the process of translating technology into social benefits. The Small and Medium Enterprises Development Organisation (KOSGEB) and the Technology Development Foundation of Turkey (TTGV) are the other main bodies that implement

industrial R&D support measures. In April 2012, a new, call-based, top down R&D&I support programme was initiated by TUBITAK to foster multi-disciplined, multi-national and inter-sectoral research for market oriented R&D activities. Financial support as a proportion of project budget is fixed for all types of projects: 60% for large companies and 75% for SMEs. The upper limits of project budget can be up to €4.7m more for joint projects submitted by two or more firms.

INDUSTRIAL SMES IN TURKEY

“SMEs are the most important basis for the development of the Turkish economy,” Kara affirms. According to the Turkish Statistical Institute, SMEs constitute 99.9% of the total number of enterprises, 77.8% of employment, 51.5% of wages and salaries, 64.8% of turnover, 55.5% of value added at factor cost and 41.1% of gross investment in tangible goods. “They are also considered to be the most effective mechanism for balancing the economic activity among different regions of the country and thus demonstrate potential for ensuring regional development.”

THE VALUE OF THE EUREKA CLUSTER AND EU FRAMEWORK PROGRAMMES

EU Framework Programmes and EUREKA are trying to reach the same ambitious target, to reinforce the technological bases and improve European industrial competitiveness. Within the scope of National Science, Technology and Innovation Strategy of

Turkey one of the main focal points is to disseminate the culture of multilateral and multidisciplinary RDI cooperation. “International relations have great significance for Turkish industry’s entry to the international market, increasing its technological competence and achieving competitive advantage,” according to Kara. “The Turkish research community has gained experience in the culture of collaboration and innovation by participating in international programmes such as European Framework Programmes, EUREKA and ITEA 2 with EU companies.”

“When it comes to innovation,” Kara points out, “ICT is more sensitive compared to other technological fields so researchers and innovators have to realise continuous self-improvement and be able to create innovations that, in turn, boost competitive power. International partnerships present opportunities for the transfer of know-how that would otherwise require substantial amounts of time and resources that are hard to obtain alone in the long run.” EUREKA clusters established with the need, demand and vision of the European industry, present a unique platform for realisation of co-opetitive innovation. In line with the European leadership vision on thematic technology areas, EUREKA clusters create significant added value for European competitors against other markets.

MORE INFORMATION:
www.tubitak.gov.tr





Benefiting from a cooperative boost

ASELSAN is a leading electronics and electronic systems company whose major clients include the Turkish Army. It designs, develops and manufactures complete electronic systems for military and other industrial equipment such as electro-optical and infrared devices, avionics systems, unmanned platforms, radars, and communication systems – systems which comprise electronic, mechanical, software and optical elements.

Cengiz Erbaş, Manager of the Image Processing Department at ASELSAN and project leader for ITEA 2 project RECONSURVE, explains that the importance of software for homeland security and defence electronics is increasing rapidly. The products of the industry are a range of sensors and devices which are made smart only by the software they contain, and the added value provided by the software is steadily rising.

Turkey has a fast-growing software industry, not only in economic terms but also when it comes to the supply of graduates. Technical universities are producing a large number of good graduates, and companies like ASELSAN are able to select the cream of the crop. Once they are taken on, retention rates are remarkably high.

RESEARCH DRIVES INNOVATION, INNOVATION DRIVES COMPETITIVENESS

“It is an undisputable fact that competitiveness comes from innovation,” Erbaş says. Turkey’s distinct culture means that people – and entrepreneurs – take ownership of problems, rather than relying on governments to do so as is the tendency in Europe, he asserts. But it is equally undeniable that publically-funded research does stimulate innovation.

“Such funds are invaluable for R&D teams. They allow them to pursue timely high-risk/high-return research projects that might otherwise not get funding.” At the national level, research programmes receive funding from a range of organisations, and the role of TUBITAK is significant. “ASELSAN is one of the most active participants in the national research programmes,” he adds.

LOOKING BEYOND THE BORDERS

ASELSAN began to contemplate participation in European research projects in 2007. Participation in ITEA happened in 2009 following an ITEA brokerage event staged in Turkey. In particular, there was a desire to expand its network of international research partners and to seek funding for R&D efforts. “Globalisation is a reality,” he insists. “Today, we have to look all over the world in order to find the best partners to cooperate with.”

After putting out feelers to several knowledge clusters, cooperation soon began. “ASELSAN has been part of three FP7 collaborative projects in the security thematic area. One of these, TALOS, was completed in 2012; a second, HYPERION, has just started while a third project, SUBCOP, will start in 2013. We have also benefited from the FP7 Marie Curie programme, with four Marie Curie fellows at ASELSAN funded through International Reintegration Grants.”

SUCCESS WITH ITEA

ITEA has been another successful route for ASELSAN to explore. Erbaş himself is project leader for RECONSURVE, while ASELSAN also participates in the ITEA 2 project SPY.

He is enthusiastic about RECONSURVE. “It has real business users,” he affirms, citing the active partnership with TCGC – the Turkish Coast Guard Command. RECONSURVE has identified a gap in the market through its integration of UAV technology and vessel classification, allowing the identification of suspicious vessels. “The demo will impress the end-users in the consortium, and from there we can launch it to the rest of the world.”

“RECONSURVE has given us the opportunity to collaborate with strong industrial and academic partners from France and Korea,” he continues. “Without such a large consortium, the outlook would be much narrower; the project is giving us the opportunity to introduce our technological capabilities to international markets.”

HIGH TRANSACTION COSTS

Erbaş then turned to what he saw as a weakness of European research programmes – they have relatively high transaction costs and low exploitation rates. “ITEA is in a much better position than other framework programmes in this respect,” he comments. Nevertheless, he feels that one useful area for ITEA to look at would be the comparative cost of participation in research projects in Europe versus the US. “Maybe there is something to be learned there,” he says, and he would love to see the results of such a study in an ITEA publication.

COOPERATION AND CONVERSATION

Overall, he feels that the benefits of participation in ITEA are great. “Over and above the funds ITEA provides, events such as Co-Summit are extremely useful,” he comments, “and the range of associated publications it produces are truly valuable. They are extremely helpful for us to disseminate our message to a wide audience. And we’re learning all the time – from casual conversation in addition to formal cooperation.”

MORE INFORMATION:

www.aselsan.com.tr



How will ITEA 3 pan out for the ITEA community?

The major milestone, the labelling for ITEA 3, has been achieved as announced in our previous magazine. To achieve the launch of ITEA 3 a phased approach has been chosen with clear milestones. Currently ITEA is in the third phase where we are already implementing the plans defined in the earlier phases that were a prerequisite for getting the ITEA 3 label.

For each of the four improvement goals concrete actions have already been defined and are being processed. Although the work up to now has mainly been done within the ITEA Office with support from the ITEA bodies, some results are becoming visible for the broader ITEA community and, in the near future, more details will emerge.

LIVING ORGANISATION

In order to continuously adapt the ITEA 3 programme to the fast changing environment a quality management system has been defined along with the major processes in ITEA and their Key Process Indicators (KPIs). With the support of the ITEA bodies annual goals will be defined for the different KPIs and regularly monitored. One of the main actions visible for the ITEA community will be the instigation of a customer satisfaction measurement system. Individual stakeholders of the ITEA 3 programme, the members of the ITEA bodies, project leaders and project members will be requested to give their feedback on the programme.

EXPLOIT A STRONG RELATIONSHIP WITH OTHER INITIATIVES

Not being a closed programme on its own, ITEA 3 strives for better cooperation with other initiatives, such as the close cooperation that exists with ARTEMIS, visible via the annual Co-summit, but also via the common high-level Vision 2030 that was presented at the last Co-summit in Paris. An ARTEMIS-ITEA Cooperation Committee (AICC) has been established to advise the governing bodies of the two programmes on new cooperative initiatives. Cooperation with EIT ICT Labs has been established, resulting in some concrete actions where ITEA project results will be further supported for exploitation and educational purposes. A more intensified cooperation and exchange of information between the different EUREKA clusters and within the EUREKA community should lead to a stronger and more visible EUREKA as a whole. Furthermore, initiatives with different regional clusters are foreseen in the near future.

SHORTEN THE PERIOD FROM PROJECT IDEA TO PROJECT START

Shortening the time from project idea to project start is one of the most urgent goals and therefore an investigation has been done among a selected group of project leaders and with the Public Authorities of the major ITEA countries. The result has been an adapted schedule for the PO-FPP phases.

From 2014 onwards the Calls will open in September and close in March of the following year. This new schedule fits better to most of the national programmes and therefore provides opportunities for faster funding decisions taking at national level. The major consequence of this new schedule is that the PO days will take place in September while the Co-summit will be held in the first half of the year. In 2013 and 2014 there will be a kind of transition period. The PO days will take place in March 2013 and September 2014, while the Co-summit will be held in December 2013. For 2014 and 2015 the Co-summit is still to be decided, with at least a major event in spring 2015.

LIVING ROADMAP

To better support the initiation and evaluation of new ITEA projects and to support the management of ongoing projects, a State of the Art (SoTA) database with public deliverables from ITEA projects has been established and extended with information about projects, challenges and people as well as the links between them. A first demo was presented at the Co-summit in Paris. The Living Roadmap will become operational for a larger audience during the next PO days in March 2013.

Timeline

2013

- ▼ PO Days & opening ITEA 2 Call 8: 19-20 March
- ▼ PO submission deadline: 24 May
- ▼ Invitation for FPP: 28 June
- ▼ FPP submission deadline: 31 October
- ▼ Labelling: 3 December
- ▼ Co-summit: December

2014*

- ▼ PO Days and opening ITEA 3 Call 1: September
- ▼ PO submission deadline: November
- ▼ Invitation for FPP: December
- ▼ FPP submission deadline: February 2015
- ▼ Labelling: March 2015
- ▼ Co-summit: to be decided

2015 and onwards*

- ▼ Co-summit like event: spring
- ▼ PO Days & opening ITEA 3 Call x: September
- ▼ PO submission deadline: November
- ▼ Invitation for FPP: December
- ▼ FPP submission deadline: February of the following year
- ▼ Labelling: March of the following year

* Exact dates will be set in due time taking into account holidays, weekends, etc

Vice-Chairman's viewpoint: the SotA database

In the past, around 70 senior experts created the ITEA Roadmap; an open and structured vision of future uses of ICT and of ICT-based services, and thus a quality tool for anticipating technology changes in software-related businesses. To move with the ever so quickly changing world and emerging key ICT trends, ITEA has evolved its Roadmap to a dynamic Living Roadmap.

Besides the business impact of the research, the main ITEA focus is innovation, hence the State of the Art (SotA) of a particular project's domain. While often of very high quality, this project document, usually not confidential, is used only to initiate and steer the project while it could have huge value for the rest of the community involved in this domain. Such a situation led to the decision for ITEA 3 to be more flexible and create the Living Roadmap that contains the Shared Vision 2030 with ARTEMIS, key challenges and the SotA database.

As ITEA 3 projects will run until 2025, the Shared Vision 2030 describes the domain to be covered by ITEA projects from a higher vantage point. However, ITEA projects are definitively bottom up. To stick to the actual needs of the market it is very important to gather the challenges arising from the projects themselves.

In our rapidly accelerating global economy, the key success factor has become even more: speed. This means that any industrial player must focus on unique added value and generalised mash-up for all the other parts of the system. The dynamic Living Roadmap helps to ensure the level of innovation, as the project R&D must be regularly positioned in the SotA database. Its conceptual model is very simple: the projects, the SotA documents themselves with their publication date, the project leaders and SotA editors, the companies involved in these projects. The tool to browse the database is a full text search engine.



Philippe Letellier
ITEA 2 Vice-Chairman

The dynamic Living Roadmap helps to ensure the level of innovation.

This SotA database can be used in a variety of ways:

- to support the proposers to create ITEA proposals with a good level of innovation;
- to support the proposers to gather a good consortium identifying the key experts of the community and the significant partners (industrials, SMEs, academics);
- integrated in the ITEA processes to evaluate the level of innovation of the proposals;
- integrated in the ITEA processes to steer the

- project throughout its course towards innovation; and
- to support the Public Authorities to understand the global impact of the ITEA programme on the SotA.

This SotA database will extend beyond the ITEA community, with ARTEMIS agreeing to deliver some of their key SotA documents on some of our domains. Furthermore, we intend to have a dedicated parallel session in the future Co-summits where key international organisations with expertise on our domain are invited to challenge our Living Roadmap to detect potential gaps and to complement it with high quality input.

Having assessed more than 100 documents, 53 have already been qualified for incorporation in this SotA database. It will be open to the ITEA community for the next PO days in March for use in the next Call for project proposals. From this assessment four main categories of documents emerged:

- Scientific contents (in-depth technical contents)
- Didactic contents (conceptual documents to structure the understanding of a domain)
- Industrial visionary contents (mixture of business and technology vision to draw directions)
- Engineering contents (detailed technologies description with product references)

This is actually an Aladdin's cave in which many new topics can be discovered and understood and key people and organisations identified.

I invite you to check it and take advantage of it during the next PO days.

Seizing the high ground from a solid foundation!

Philippe Letellier, ITEA 2 Vice-Chairman

ITEA Success Story: EPAS Supporting the Single Euro Payments Area

The European card-payment industry has entered a period of dramatic changes following deregulation, leading ultimately to the creation of the Single Euro Payments Area (SEPA). SEPA should make all electronic payments across the euro area by credit card, debit card, bank transfer or direct debit as easy as domestic payments are now. However, this requires a full harmonisation of payment-card use – a necessary step to ensure the complete interoperability of national card-payment schemes. The ITEA EPAS project (2006-2008) aimed to overcome the obstacles to interoperability by delivering three major open and interoperable card-based protocol standards.

EPAS has paved the way to standardised universal specifications free of royalty and charges. This is now enabling the key stakeholders in the European card-payment value chain to benefit from a single, common solution available on various platforms provided by global key-terminal manufacturers and solutions providers. And this valuable experience has been extended worldwide with the endorsement of the EPAS specifications as an ISO 20022 standard, improving Europe's competitiveness.

In October 2009, major players in the payment industry created EPASOrg, based in Brussels, to promote, develop and maintain common card-payment protocols and ensure the continuity of deployment after the end of the ITEA EPAS project. Live demonstrations were carried out at the EPASOrg Annual Conference in October 2012, announcing the first EPAS implementations in the coming months. The year 2013 will see the emergence of the first EPAS pilots on the field.

Pierre-Antoine Vacheron, Chairman of General Assembly of EPASOrg said, "EPASOrg heard the strong interest expressed by the users as regards the need of common, open standards. I'm proud to announce the setting-up of an operational implementation framework to facilitate the deployment of EPAS standards, allowing retailers and solution providers to build concrete business cases for the future."

For William Vanobberghen, Secretary General of EPASOrg and former coordinator of the ITEA EPAS Project "EPASOrg has demonstrated that its standards developed in the framework of ITEA meet the requirements of both retailers and the whole card payment industry. By anticipating the expectations of the market, EPASOrg has been delivering standards which meet regulators requirements in Europe by breaking down technical barriers and delivering open and royalty-free specifications."

Source: www.epasorg.eu

Nordic countries

PAN Nordic Card
Association

Germany

ZKA/SRC
Atos Worldline Germany
RSC
Wincor

Luxembourg

Cetrel

Austria

PayLife

Portugal

SIBS

Spain

Sermepa
Thales e-Transactions
Spain
Wincor

Belgium

Atos Worldline Belgium
Integri

UK

BP
Galitt

France

Cartes Bancaires
Thales-e-Transactions
Ingenico
Lyra Network
Total

The Netherlands

Equens

Person Years

32

Project Leader

William Vanobberghen

Project start and end date

January 2006 - August 2008

Website

www.epasorg.eu



Care4Me and MEDIATE

one target, two perspectives

With average survival rates and the age of the Western population continuing to rise, healthcare services are coming under increasing pressure as the number of chronic diseases requiring long-term treatment grows. The resulting costs and shortage of personnel present real challenges and healthcare innovation is being pushed to the limit to come up with clinical and technological solutions to collate medical data and knowledge from different sources and domains in order to address the continuum of care of all of those medical conditions.



Care4Me and MEDIATE are two ITEA projects that share the same goal – to boost healthcare efficiency – but do so from different perspectives. Care4Me is active at the diagnostic stage while MEDIATE focuses on treatment. Roel Truyen and Herman Stegehuis of Philips Healthcare talk about their projects and the impact they are having, and will have, on this vital area of society.

FIRST STAGE OF A MEDICAL IMAGING ROADMAP

Care4Me, which came to the successful conclusion of its three-year term this year, set out to improve quality and productivity in healthcare using advanced medical imaging and decision-support methods combined with different knowledge sources, from early diagnosis to treatment and monitoring. With the ultimate goal of developing clinical prototypes for early diagnosis of cancer, cardiovascular and neurodegenerative diseases connected to hospital information systems in a new systems architecture, this project represents the first stage of a roadmap for future medical imaging systems, like X-ray and Magnetic Resonance (MR) imaging systems.

Roel Truyen (representing Project leader Frenk Sloff for this occasion) explains. “Care4Me focused on improved early diagnosis in three specific and diverse medical domains – oncology, or cancer diagnosis, cardiovascular diseases and neurodegenerative diseases – in which there was plenty of cross fertilisation in the techniques that could be developed.” Herman Stegehuis chips in. “In MEDIATE we are also targeting three different application areas: cardiac and oncology, as in Care4Me but our third area is orthopaedics. The idea in MEDIATE is to make the medical intervention more efficient by enabling the physician to see at a glance all the pre-operative and operative data on a single screen. Which means that he can then concentrate on the patient rather than having to search through different information sources. To this end we have developed an architecture that will be able to manage this integration, not only of the information but also of the robotics that is increasingly becoming a feature of surgery. This will also be of benefit for instantaneous interventional support by medical specialists to remote situations such as in peripheral hospitals and makeshift battlefield hospitals where not all the expertise is to hand. So we are using the three applications I mentioned to check and verify the integration architecture we are developing.”

Care4Me

ITEA 2 08004



Frenk Sloff

*Project leader,
Philips Healthcare*

Partners

Alma IT Systems
Bull
CEA List
CIMNE
CVSS
Duodecim
Erasmus MC
Embedded Systems Institute
Fundacion Tecnalia Research & Innovation
Tecnalia Robotiker
INRIA
Industrial Systems Institute
Leiden UMC

MediConsult
Medis
Nokia
Philips Healthcare
Philips Medisys
Pie Medical Imaging
Pohjola
Prowellness
UMC Utrecht
VTT Technical Research Centre of
Finland

France
Greece
Netherlands
Spain

Project start

June 2009

Project end

September 2012

Website

www.care4me.eu

Countries involved

Finland

CONTINUITY IS CRUCIAL

The significant commonality that exists between the projects – ‘a cluster of healthcare projects’ is how Truyen refers to them – has its advantages. While the people engaged on a specific project are totally focused on that project, the expertise and knowledge that exist and are developed are readily available to others within the cluster. Expertise ‘on tap’. Truyen points out the importance of continuity in this regard. “This is why a roadmap is so essential. If you just go from project to project without a clear overview of what you want to achieve, then it just becomes a sequence of one-offs. So, for example, those things that are not ready to be productised in MEDIATE can be taken into a successor project and on to the next level. Our roadmap provides for such eventualities. And the same goes for Care4Me. We hope to be able to continue our good collaborative research work in the framework of future ITEA 3 projects”

INVESTING NOW PAYS DIVIDENDS LATER ON

In September the final review of Care4Me took place. Truyen looks back on the project and the things it achieved. “Like MEDIATE, Care4Me uses the combination of information and knowledge from multiple sources to enable better decisions to be made. One particular success relates to assessing the risk of coronary artery disease. While you can see the occlusion on the artery wall, for example, perfectly well with existing X-ray techniques, intravascular ultrasound is a technique that will allow you to determine in much more detail the state of the artery wall and the risk of it tearing in the event of an intervention or whether it is stable enough to allow an

intervention. So it is this combination of X-ray and ultrasound that is one of the very impressive results that this project has produced.” But wouldn’t the addition of an extra measure make the intervention more expensive? “It might seem that way if you take a short-term view but if you can make the right assessment immediately following the intervention and know that the intervention has succeeded, or not, costs will be saved in the long term. Using more modalities does cost more than using a single modality but where this allows you to make better choices now, then money can be saved later on. We need to optimise the entire episode of care and not limit ourselves to the current medical encounter. The same applies to oncology. You can see the cancer through imaging but integrating other information such as smoking history, pathology information and patient lifestyle can help target the right, personalised treatment and save costs later on.”

“But it is the combination of personalised treatment and early recognition,” Stegehuis interjects, “because if you can get in early enough you can take preventive measures and when you can do this, then you can have a real impact on the costs and you can improve results for the patient, of course.”

“Quite,” says Truyen, “and indeed the aspect of prevention was also one of the successes of the Care4Me project. This had to do with cardiovascular diseases in which the use of mobile devices to record data such as blood pressure, weight, exercise patterns and how people feel enabled trends to be extrapolated and feedback to be given – continue exercising in the

same way, modify diet, take time out – as a kind of lifestyle coach. Pilots done in Finland on such out-of-hospital activity at the interface of lifestyle and healthcare really showed how this coaching helped to significantly reduce blood pressure, which will eventually lead to preventing cardiac problems.”

KEY RESULTS OF CARE4ME

By developing advanced medical image analysis and combining this with more functional and quantitative information, Care4Me enables physicians and clinicians to make earlier and more precise diagnoses. The key technical innovation in Care4Me lies in developing new medical image-processing software capable of extracting relevant image information from very large data sets and combining this with other types of medical data and knowledge.

The key results of the Care4Me project can be summarised as:

- an open and dynamic hospital-wide, service-oriented architecture (SOA) integrating models of anatomy and pathology, computer-aided detection and diagnosis components as well as decision-support tools;
- models of healthy and diseased organs and tissues that provide the knowledge needed to create a new generation of computer-aided detection and diagnosis processes;
- image-analysis packages for computer aided detection, quantification and diagnosis of disease progression over time;
- computerised decision-support systems to provide the clinician with a consistent overview

of all information which is relevant for the individual therapeutic options or assessments and risk evaluations, taking into consideration the different medical procedures in the diagnosis and treatment of cancer, and cardiovascular and neurodegenerative diseases.

STRONG PROGRESS

While Care4Me has successfully concluded its work, MEDIATE is two years through its three-year term but there are clear indications of strong progress. Stegehuis: "We have already defined the architecture I referred to earlier and now have a composite screen containing all the necessary data from various sources in a clear, easily navigable way according to the particular procedure the physician is engaged in.

"is the development of filtering capabilities of which Care4Me has been part. By cleverly filtering dynamic X-ray images, doctors can reduce the X-ray dose to patients by a factor of three to four, which is really significant. So, the same image quality at a lower dose of radiation."

MARKET OPPORTUNITIES

The future healthcare challenges being faced by society create, of course, opportunities for the kinds of innovations being generated in projects like Care4Me and MEDIATE, not only in the healthcare imaging market. As Stegehuis points out, "You see that some of the techniques we are developing in MEDIATE can be used in other domains like traffic and microscopy. And then again, we are seeing a mechatronics

MEDIATE

ITEA 2 09039



Herman Stegehuis
Project leader,
Philips Healthcare

Partners

Alma IT Systems
Amsterdam Medical Centre
Atos
Barco
CEA List
Cedrat
Demcon
Digisens
EndoControl
Erasmus MC
Haption
IAC3
IBBT

Institut Mines Télécom
Leiden UMC
Nucletron
Philips Applied Technologies
Philips Healthcare
Philips Medisys
Prodrive
SurgiQual Institute
Technolution
Therenva
UMC Utrecht
Universitat de Girona
Université de Rennes 1 – LTSI
VICOMTech

Countries involved

Belgium
France
Netherlands
Spain

Project start

September 2010

Project end

December 2013

Just as in Care4Me we manage the project through taking a number of clinical use cases in the beginning to serve as the basis for the practical demonstrators in the final year of the project that will go beyond the state of the art. We are now making these demonstrators. We are also getting input from our hospital partners who are providing the medical expertise and feedback that will go into the demonstrator stage."

MEDIATE already has initial results, such as a distributed visualisation system for use in the medical arena and improved magnetic resonance imaging for patients who have implants as well as participation in standardisation committees for MR and optical coherence tomography (OCT) imaging. "Just an addition to the productisation," Tryuen adds here.

company becoming involved in the healthcare field, using its specific expertise to develop a robotics application for precise needle placement. So, as you can see, there is plenty of opportunity for exploitation from other domains and in other domains."

Tryuen adds, "You actually see a lot of new entrants in the healthcare domain, often small companies who have specific expertise and who want a piece of the pie of perhaps the largest and fastest growing industry. So while the proportion of healthcare-based projects is currently relatively low in the ITEA programme, the growth of the market certainly provides plenty of opportunity to boost this proportion in the future."



Fascinated by mathematical problems

After graduating in mathematics, specialising in numerical analysis and with a fascination for solving mathematical problems with computer algorithms, the turning point in Jean Vanderdonckt's career came in the late 1980s. The pull of developments in computer science occurring in the United States drew him towards the magnet of information technology in general and human-computer interaction specifically. Jean Vanderdonckt is currently Full Professor of Computer Science at the Université catholique de Louvain in Belgium, where he is President of the Louvain School of Management Research Institute.

"I discovered Human-computer Interaction in 1987. A year later, I entered into this absorbing field for the rest of my life. I switched allegiance and embarked on an MSc to try to discover the importance of interactive information systems. This was a pioneering era as far as such systems were concerned: the first really interactive systems appeared around that time. So I began to study how to develop user interfaces and went on to complete my PhD in computer science. Human-computer Interaction is an open area that is ripe for discoveries and that is ultimately geared to the end user." Vanderdonckt became involved in software development largely through R&D projects (the first project in this area was the TRIDENT project, already in 1988, that automatically generates user interfaces specified in Dynamic Specification Language (DSL)) but he also undertook a number of internships to help him understand how interactive software is managed from the end user point of view.

STANDARDISATION IN MIND

When asked about what he considers to be among his successes, he immediately cites the ITEA 2 UsiXML project (<http://www.usixml.eu> and <http://www.usixml.org>) that is due to finish in March 2013. "We already had extensive experience in model-driven engineering of interactive systems in the past. But we quickly realised that there was a need for a large consensus to switch from R&D to real practice. So, when the UsiXML project was submitted, the standardisation was

in mind." UsiXML (User Interface eXtensible Markup Language) consists of a User Interface Description Language (UIDL) that allows designers to apply a multi-path development of user interfaces. In this paradigm, a user interface can be specified and produced at and from different, and possibly multiple, levels of abstraction while maintaining the mappings between these levels if required. UsiXML is intended for developers, as well as analysts, designers, human factors experts, etc. Thanks to UsiXML, non-developers can shape the UI of any new interactive application by specifying it in UsiXML, without requiring the programming skills usually found in mark-up and programming languages.

BROAD AND FLEXIBLE

"One of the reasons why I came on board the ITEA/EUREKA programme is the attraction of working with a much wider spread of organisations within a project. In terms of coverage, this makes for a broader consensus. While not every organisation actually participates in all aspects of the project, they do all contribute in one way or another – be it through advice, comments or active contribution and development. Without such a participatory approach from organisations, especially in the corporate environment, one could go on researching forever and a day, but their critical views ensure that we focus on a realistic and viable search for practicable solutions. In fact, during the course of the project we created a user group (http://www.usixml.eu/end_user_club) that acted as an advisory board for the developments. This had not been part of the remit initially but it does point to one of the key advantages to working in ITEA programmes – the scope within the ITEA projects to engage a more dynamic form of management that is adapted to the project's evolution. I'm not suggesting that this should be exaggerated but certainly where adaptation to the real world is justified, it could be beneficial. This also applies to delivery, with deliverables grouped and arranged in order to meet a dynamic objective that does not require extensive justification. And given the nature of the environment around us nowadays, one that changes quickly and constantly, it is vital that we are able to respond."

WHAT IS THE NEXT STEP FOR YOU?

"We expect the standard emerging from the W3C Charter group on Model-based user interfaces (http://www.w3.org/wiki/Model-Based_User_Interfaces) to be released by November 2013, and so I think it would be a good idea to take a step back so that we can monitor how things evolve. Of course, we have to see how companies implement the standardisation, how it works and then after some time perhaps engage in a follow-up project to come back with something even better. While doing this, I believe that a promising area for the future is Distributed User Interfaces (DUIs), where a single user interface is distributed across different users using various devices in different environments."

DO YOU HAVE OUTSIDE INTERESTS?

"Well, I must admit that in science, I have personal fascination for mathematical formulation and the visualisation of fractal geometry, and I even developed some early software for this purpose and published some journal papers. Quantum theory is also a subject that I find really interesting. But moving away from things mathematical, I am a great fan of aviation history, especially World-War II aircraft, or so-called warbirds."



Calendar

19-20 MARCH

ITEA 2 PROJECT OUTLINE PREPARATION DAYS 2013 – OPENING CALL 8

Istanbul, Turkey

During this event you will be able to brainstorm on new project ideas, start working on a Project Outline, locate potential partners, join existing consortia and find out more about the specifics of the ITEA 2 Call 8.

▷ www.itea2.org

15-16 JANUARY

ARTEMIS BROKERAGE EVENT FOR CALL 2013

London, UK

▷ www.artemis-ia.eu

23-24 JANUARY

AENEAS & CATRENE COMMON BROKERAGE EVENT 2013

Paris, France

▷ www.catrene.org

6-7 MARCH

CELTIC-PLUS EVENT 2013

Kayseri, Turkey

▷ www.celtic-initiative.org

5-9 MARCH

CEBIT 2013

Hannover, Germany

▷ www.cebit.de

8-12 APRIL

HANNOVER MESSE 2013

Hannover, Germany

▷ www.hannovermesse.de

Innovation Reports

ROLE-ID

(ITEA 2 ~ 08007)

It's not who you are
but what you do that counts

TIMMO-2-USE

(ITEA 2 ~ 09033)

Getting more for less
More predictable development, less time to market

ROLE-ID

(ITEA 2 – 08007)

Aline Andrillon, Cassidian Cybersecurity,
France

It's not who you are but what you do that counts

Use of information and communications technology (ICT) has grown enormously in every sector of business and public services in recent years. The economic well-being of enterprises in Europe has come to depend increasingly on instant access by all companies and their customers to an unlimited flow of information based on interoperable public networks and information technology (IT) systems. Weaknesses and vulnerabilities in these networks and systems pose an increasingly serious threat to the proper functioning of key value chains in Europe. The magnitude of this threat increases with the growing number of network users and the value of the transactions they carry out. Identification is therefore a key element, and security a vital strategic aspect of European e-business.

ROLE-ID has developed an organisation-oriented identity extension of role-based access control, built on a role-centred vision. It provides a set of innovative and modular security components and processes that will enhance role management within the infrastructure identity level and provide innovative role functionalities. The concepts were demonstrated in three application domains: healthcare, public safety and cyber defence.

INNOVATIVE CONCEPT OF FUNCTION IN IDENTITY

Identity control currently centres on a user-centred approach: e-administration concentrates on the citizen, while e-business is focused on the private customer. However, while organisations also have a crucial need for identity control, several specific issues

had not been satisfactorily addressed, prompting a shift towards role-based access control (RBAC) that breaks down each task into its component parts. For organisations, the two main issues concerned:

1. Managing great complexity – a large number and a disparity of users, teams, divisions, enterprises, applications, services, intranet, extranet, roles, job functions, etc.
2. Continuous change – frequent reorganisations, mergers and acquisitions, people changing jobs, international, European or national regulation changes, etc.

To address these issues, ROLE-ID developed an organisation-oriented identity extension to RBAC

based on a role-centred vision by introducing an innovative concept of function in identity. The aim is to improve notions of context sharing and delegation, create a new concept of virtual user to enable rich dynamic role attribution, develop new means for organisations to model a great complexity of identities and roles, adapt and improve existing methodologies to administrate a complex organisation identity database, and provide enhanced tools for identity provisioning that are relevant to real-life constraints.

EXTEND AND ENHANCE

Briefly, ROLE-ID adds the notion of function and virtual role to user identity. In essence, ROLE-ID simplifies the identification management process in

large, complex organisations through context-based filtering – Mr Smith as purchasing manager or as software engineer rather than Mr Smith as opposed to Mr Jones or Mrs White – so that information commensurate with that particular function, rather than the individual, is accessible. In organisations where personnel change or turnover is regular or sudden, a role defined identifier provides both optimum access and security.

The purpose was not to develop a completely new identity framework but to work from identity products, standards and concepts already developed by the different partners in the consortium and extend them. In addition, existing theoretical concepts and methodologies from around the world were also used and extended, and implemented in actual existing products. Furthermore, some innovative concepts were introduced in the field of identity management along with several new organisation-oriented identity modules that have been proved through demonstrators in the three main application domains addressed: healthcare, public safety and cyber defence.

The technological achievements and general results have been incorporated in concrete applications that are directly supported by users' partners or indirectly tested by developers' partners. Information security was emphasised in every phase of the development lifecycle through testing and reviews including design, implementation and business logic.

BUSINESS IMPACT ON HEALTHCARE

The innovative approach of role identity has been demonstrated in the field of healthcare and in generic use cases whereby identity is validated on the basis of self-accreditation from external credentials. In the event of an accident, for instance, the data and information concerning the accident itself and any persons involved are disseminated according to role identity. A journalist may have access to accident details specific to his public reporting needs whereas for the requirements of the emergency services, for instance, information about a person's medical history and condition may be vital to ascertaining treatment on the spot.

In the ORBAC model that set out to define a conceptual and industrial framework to meet the needs of information security and sensitive healthcare communications, information sensitivity, integrity and confidentiality are key parameters. ROLE-ID offers a way of facilitating the transfer of a confidential patient file and delegating the responsibilities of individuals involved in patient care and treatment.

BUSINESS IMPACT ON E-GOVERNMENT

The collaboration and cooperation within the consortium of French and Finnish partners enabled the problems and challenges to be addressed and value to be added in a variety of applications and sectors. For example, the formalisation of specific options and constraints across various e-gov services and the establishment of the semantics and syntax of user attributes for the (Finnish) public sector federation. Dissemination came through 21 conference articles and 5 journal papers along with 5 PhD doctoral dissertations and 7 Master theses.

The added value for organisations (public safety, healthcare and commercial) comes through lower user management costs and higher employee efficiency, increased levels of security and more user-friendly system use by end users. Citizens and society benefit from better public organisation efficiency and greater trust in privacy protection while sharing more information (right to know). The project partners have improved their solutions and will use the results in the next versions of their solutions, with some having already deployed some of the results.

FAST EXPLOITATION OF RESULTS

The results of the ROLE-ID have already been implemented and/or are being planned for implementation among many of the partners. For instance, a partnership initiated between the large Cassidian company and Ilex SME qualifies for 'research as a business development tool' given the partnership's drive to get a solution to market. This solution in the form of new role management software has already been sold to customers, such as the French ministry of security.

Other examples of quick exploitation of the results include the incorporation of ROLE-ID by Telecom Bretagne to improve versions of MotOrBAC tool and the OrBAC API that allow easy web service integration and a new plug-in. Ubisecure is an instance of how the deeper knowledge gained on role-based models has been incorporated to extend the functionalities of handling roles/identity attributes. In fact, project results have now been included in five major and sixteen minor Ubisecure product version upgrades, with several commercial installations in place. Entr'ouvert has gained extended knowledge in access control centralisation, session management centralisation, role and attribute-based access control to implement new features in its main products: a centralised access control administration point and a centralised decision point module in Authentic 2. Insta is developing service concepts in Identity and Access Management areas with the prospect of including these concepts in public safety development work.

POWERFUL YET PRAGMATIC

The fruits of the ROLE-ID project have created new market opportunities with new products and solutions, thereby strengthening the competitive position of European industry in the selected sectors, based on its improved capacity to implement and deploy powerful yet pragmatic identity and security mechanisms and solutions, mandatory for business operations in these sectors.

MORE INFORMATION:

www.roleid.org



TIMMO-2-USE

(ITEA 2 09033)

Daniel Karlsson, Volvo Technology,
Sweden

Getting more for less

More predictable development, less time to market

The automotive industry is one of the main driving forces behind economic and employment wellbeing in Europe. Currently, European automotive suppliers and manufacturers are leading in electronic control for comfort, safety and environment protection. Within this context, the European automotive industry has continuously improved development and logistics processes whereby the AUTOSAR standard is the key factor in significantly strengthening the supply chain and achieving better quality and warranty at lower cost.

Innovations in the automotive sector require new development approaches in order to cope with the increasing complexity of large and decentralised control systems. In modern vehicles both existing and new functions must be integrated into a common electronic architecture such as comfort functions (e.g., park assist, climate control, navigation), safety functions (e.g., stability control, airbag, belt pretensioner), and functions for protecting the environment (e.g., direct fuel injection, catalytic optimisation).

In recent years there have been several approaches to manage the complexity challenges of new automotive electronic systems. AUTOSAR can be seen as the basis for a common in-vehicle software infrastructure and can already be found in series production cars. For comprehensive architecture description features, the EAST-ADL language, which dates back to the ITEA project EAST-EEA and has been enhanced in the EU FP7 projects ATESS2 and ATESS22, offers a viable means for specifying in-vehicle electronic architectures. But there is still a lack of sufficient support for handling timing information and constraints throughout the entire development process of complex electronic automotive systems. Timing is often deemed relevant in late development phases only such as the implementation and integration phases. As the effort for the development of innovative automotive functions steadily increases, new functions can often not be implemented in a cost-

efficient way in the context of a considerably complex supply chain. In particular, when designing distributed real-time automotive systems, mastery of different types of timing constraints and dynamic behaviour in the supply chain of the complex development process is crucial. This requires adequate management and transformation of timing information in the complete development process as well as efficient exchange of timing information between different tools and various roles in the overall tool and supply chain (e.g., between OEM and Tier-1 suppliers).

BRIDGING THE GAP

A first step in this direction was undertaken by the ITEA 2 project Timing Model (TIMMO) with the development of the Timing Augmented Description Language (TADL) and the description of timing information on higher abstraction levels by referencing discrete events in the underlying EAST-ADL or AUTOSAR model. TIMMO-2-USE aimed to significantly increase automation for more predictable development cycles in order to substantially reduce development risks and time-to-market. To increase reliability, safety, robustness and fault tolerance by a much higher degree of design automation, TIMMO-2-USE addresses the specification, transition and exchange of relevant timing information throughout different steps of the AUTOSAR-based development process and tool chain. In other words, it bridges the gap between the continuous control domain (functional)

and the software domain (implementation). The result is greatly improved methodology with respect to the derivation and tracing of different types of timing information and requirements with true design process improvements.

PROJECT STRUCTURE

The project was composed of seven work packages. Work packages 2, 3 and 4 developed technical extensions with respect to the state-of-the-art concerning language, algorithms and tools, and methodology respectively. The work was driven by use cases and requirements, developed in Work package 1 at the beginning of the project, encompassing issues covered by the technical work packages. This ensured that the work conducted in the work packages was well harmonised and suitable for practical use. Work package 5 validated the results of the main work packages by the means of validators based on the use cases defined in Work package 1 and validating Work package 1 requirements. The validation result was to be fed back to the respective main work package for evaluation and appropriate measures.

FOUR CORNERSTONES

The timing framework developed in the project consists of four cornerstones. The first is use cases that define industrially applicable timing problems that have been addressed in the project. They serve as a harmonising factor for the other cornerstones. The



second cornerstone centres on the development of a *methodology* that gives advice on how to approach the timing problems formulated by the use cases. The methodology consists of a set of independent processes (with tasks and work products), each dedicated to a specific use case. However, in order to keep them harmonised, they all share the same structure – called Generic Methodology Pattern (GMP). In this way, users are guided in combining the use case processes and to adopt them in their own organisations. The third cornerstone concerns *tools and algorithms* for management and analysis of timing information management and conversions in the development process as suggested by the methodology. The fourth cornerstone is an advanced *timing modelling language*, called TADL2, in which data can be transported between tools in a standard and unambiguous way, and is fully compliant and aligned with the AUTOSAR and EAST-ADL standards. The tools and algorithms and the language moreover relate to the methodology via tool mentors and TADL2 guides in order to create a harmonised whole. Tool mentors are attached to tasks in the methodology suggesting appropriate tools to perform the task. TADL2 guides provide a hint on how to use TADL2 to describe the necessary input and output work products of the tasks.

KEY ACHIEVEMENTS

The major achievements of TIMMO-2-USE were a formal XML-based language, Timing Augmented Description Language 2 (TADL2), which is used for system wide

timing constraints of automotive functions, and a systematic development methodology which supports the practical application of the TADL2 within (real-world) automotive development cycles so that timing requirements can be specified over different stages of development. Both TADL2 and the corresponding methodology of TIMMO-2-USE are strongly based on AUTOSAR and EAST-ADL. The aim is to enhance the existing concepts within these initiatives.

The applicability and industrial relevance of the TIMMO-2-USE developments are guaranteed by the strong consortium of the TIMMO-2-USE project with renowned European automotive companies, system suppliers, tool vendors, and research institutions, including AbsInt, Arcticus Systems, Chalmers University of Technology, Continental Automotive, Delphi France, dSPACE, INCHRON, INRIA, Märadalen University, Rapita Systems, RealTime-at-Work, Robert Bosch GmbH, Syntavision, Technical University of Braunschweig, Time Critical Networks, University of Paderborn, and Volvo Technology.

TIMMO-2-USE established an OEM advisory board for early feedback and transfer of project results during the course of the project. The participation of leading automotive organisations not only guaranteed a high level of automotive engineering expertise but also excellent exploitation of the project's results. As many TIMMO-2-USE partners are AUTOSAR members, the project results will be deployed in the respective AUTOSAR working groups. This

joint partnership with AUTOSAR has proven to be successful, giving TIMMO-2-USE an excellent internationally competitive position.

BENEFITS

The impact that such results have generated include shortened, predictable development cycles, reduced time-to-market through massive reuse, more efficient communication and collaboration between different parties involved in development, and less development risk with improved quality. The benefits need not be restricted to the automotive or transportation domains since they apply to any domain that needs to distribute functionality over a cluster of computation units.

In the near future, the TIMMO-2-USE results will be applied during the development of time-critical systems while the long-term strategy will see continuous standardisation through AUTOSAR, including adequate tool support. Also, as new releases of AUTOSAR are adopted in the development process TIMMO-2-USE results will be naturally exploited. Furthermore, TIMMO-2-USE results will enhance and adapt real-time modelling and verification while from an academic perspective, project results will be exploited in the form of scientific publications, and increased tool support for experiments with novel analysis algorithms.

MORE INFORMATION:

www.timmo-2-use.org

Call opening

ITEA 2 PO Preparation Days – 19-20 March 2013

Come and join us and start preparing for ITEA 2 Call 8!

On 19 March 2013, ITEA 2 will open its eighth and last Call for projects. To help you start preparing a Project Outline (PO), to brainstorm new project ideas, locate potential partners and consortia, and find out more about the specifics of the Call, we are organising our PO Preparation Days on 19 and 20 March 2013 in Istanbul, Turkey.

Once a year ITEA 2 offers the opportunity to submit project proposals. In a two-stage procedure, the quality of the project proposal is evaluated and improved, finally leading to a selection of high quality project proposals that receive the official ITEA 2 label. The public authorities are fully involved in the evaluation and labelling of projects. After labelling, partners must apply for funding through their national public authorities. The ITEA 2 label is endorsed by all EUREKA member countries.

Project consortia with at least two different partners from two different EUREKA countries can submit a proposal. Consortia can be composed of representatives from large companies, small and medium-sized enterprises (SMEs), research institutes, universities and user organisations (profit or non-profit). The main

Each Call follows a two-stage procedure:

Producing a Project Outline (PO):

This PO gives a short overview of a project, mainly to describe the project goals, innovation, targeted business impact and consortium. Project Outlines which are positively evaluated are invited for the second stage.

Writing a Full Project Proposal (FPP):

This FPP describes the project plan and how the project will be executed and managed. Approved FPPs will receive the ITEA 2 label.

characteristics of an ITEA 2 project are that it is industry driven, technically innovative and business oriented.

ITEA 2 PROJECT OUTLINE PREPARATION DAYS 2013

These days are organised to help you prepare for this eighth Call. Participation is free of charge and open to all those with an interest in the Call.

The aim of this meeting is to help organisations form consortia and generate preliminary outlines for projects by bringing together interested companies, research institutes and universities with innovative ideas for projects in ITEA 2.

In short, this meeting will enable you to:

- Receive general information about ITEA 2 and the project call process;
- Present your idea in a poster session and an elevator pitch;
- Discuss and brainstorm project ideas in workgroup sessions; and
- Contact other interested parties/potential partners from all over Europe.

If you plan to participate in this Call and PO event, now is the time to explore what is going on, start defining your project ideas, look for potential consortium partners and investigate local funding possibilities. Please make sure you check our website (www.itea2.org) regularly as more details will be made available at the end of 2012.





EUREKA News

EUREKA at the Co-summit 2012

Paris, 30-31 October



During the ITEA & ARTEMIS Co-summit 2012, Okan Kara, EUREKA High Level Group Chairman of this year's Turkish Chairmanship, participated in the plenary panel session on 'Sharing a vision for ICT innovation'. He contributed: "Turkish people are very able to adapt. We have shown this during the economic crisis. And this ability to adapt will serve us well in the transitional phase we are in, a phase in which ICT and ICT innovation play an important role."

As previous years, ITEA was very happy to welcome the EUREKA Network in a joint ITEA 2-EUREKA stand on the project exhibition.

