

ITEA Magazine **26**

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DIGITAL
INNOVATION
FORUM
2017



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Editorial



Dear ITEA Community,

Nowadays, it is almost impossible for any single organisation, whether a company or an institute, to get all the valuable information it needs to create an innovative product or service. Innovation needs the participation of different countries, organisations and people. While the process of innovation is closer to the end-users/customers, it still needs a deep knowledge base from academia and research departments of companies. And innovation without a business model or market value chain is an obsolete concept. Therefore, the Open Innovation concept is more distributed, decentralised and interactive with its participants; it can be a vehicle to fill the gap between new research ideas and customers.

For Open Innovation to be a fertile environment, you need an Open Community willing to share its knowledge base, curious about other people's ideas and technologies, motivated to discover the needs of its customers and cooperate with each other in a union of trust. I believe we do, as members of the ITEA Community, have this fertile environment for Open Innovation. Open Communication is essential to Open Innovation and it all starts with trust and interaction. When the Community believes in common interest and mutual benefit, the door to active participation is wide open. Companies and people interact to design an innovative solution more collaboratively, they are happier to be a part of the experience of creating a solution, and also more motivated to share their Impact Stories.

The Open Community we enjoy in ITEA means that newcomers joining our community, either from recently integrated countries or from our actively participating countries, are always welcomed with enthusiasm. The growing ITEA culture is embraced almost seamlessly by the experienced partners. And the diversity of the ITEA Community supports creativity and the dynamism of ideas and solutions.

In the Digital Innovation Forum, we open the door to new types of members, such as Venture Capitals and innovative SMEs/Start-Ups. DIF 2017 is where we exhibit our projects, meet with each other to discuss new ideas, discover the achievements of ITEA Community and present our award-winning projects as we did previously with ARTEMIS-IA in the Co-summits. Additionally, we have different panels and workshops designed for audience interaction and enjoying each other's company at dinner in a dynamic networking environment.

The ITEA magazine is also another means to interact with each other and share stories. Like the SOTA of the ACCELERATE project which focuses on Open Innovation or the story of strength and collaboration by our Celtic-Plus Chairman. Finland is the next EUREKA Chair and so we believe it is the right time to bring a Finnish focus to proceedings. We also feature an SME Impact Story of Open Innovation from Germany, where TWT interacts with open-minded people in diverse industries from automotive to aerospace. In ITEA, we share, create and monitor happiness via project results such as those in the C³PO project.

I wish you happy reading and look forward meeting you at the DIF 2017.

Sincerely

Zeynep Sarılar

Refocus on Finland

Adapting to a changing landscape

“And talking of enablers, ITEA today continues to be an attractive and a valuable partner for Finland.”



The country focus in the ITEA Magazine issue 18 (May 2014) featured Finland. Less than three years later, Finland is back in focus. A refocus. Tekes is still the key publicly funded expert organisation for financing research, development and innovation in Finland, and its goal remains the encouragement of a wide range of innovation activities in research communities, industry and service sectors. But, as Kari Komulainen, now director responsible for small and medium-sized enterprises at Tekes, says, “things have changed over the past few years. The landscape is constantly changing and we have to adapt to it if we want to ensure we can realise our goal.”

So while much of the article on Finland in 2014 remains applicable today, this time around we concentrate on bringing the landscape up to date, with Kari Komulainen again our guide. Just to recap briefly, Tekes promotes a broad-based view on innovation, not only funding technological breakthroughs but also emphasising the significance of service-related, design, business and social innovations. It adds value through funding for companies and research organisations as well as by promoting networking between industry and academia, creating incentives for research to work with industry and so competitive advantages in the competition for public funding.

“To be or not to be, that is the question”

“The pace of digital transformation I spoke about last time has picked up considerably,” Komulainen says. “Then it was something about to happen and now we’re right in the middle of it. Technological advances mean that we have reached the hockey stick curve where very rapid progress is occurring. One of the very positive things coming out of this is that many of today’s retail, banking, insurance and manufacturing

companies are rethinking their strategies and renewing their business models in order to benefit from the opportunities of digitalisation as well as cope with the business that is declining due to the digital transformation. For example, one of Finland’s largest financial institutions, OP, recently announced its intention to invest millions of euros in healthcare and in mobility as a service in what is quite a radical diversification for a bank. One of the reasons for this is the decline in traditional banking services and the onset of digitalisation. So it’s not simply a matter of streamlining by replacing bricks-and-mortar banking with an online presence but of creating completely new business areas. So this is a new landscape that was not there a couple of years ago. The flipside of this is that 60% of the service industry companies in Finland, according to a recent survey, don’t regard digitalisation as a significant enough opportunity to take this on board. Which is quite worrying, especially with the knowledge we have about the disruption caused to retail by online shopping. The dilemma is, I suppose, whether to wait and see what impact the disruption has or whether to be part of the process of disruption.”

CDO for hire

Tekes employs a range of options to help businesses become aware of these changes. Funding activities enable companies not only to develop technologies and innovate but also to rethink their whole business model. “This is a very important aspect because the business models of the digital era are rather different from those of the industrial era,” Komulainen explains. “One specific scheme we introduced towards the end of 2015, and have continued with great success, is called ‘Digital Boost’. This is a funding scheme (50% of payroll cost) through which companies can hire a digitalisation expert, a sort of CDO (Chief Digitalisation Officer). It provides a real incentive, certainly for SMEs, whether in the manufacturing or service sector, to digitise not only on an operational level but also on a strategic level and engage in the whole digital transformation process. It is also a way of utilising the talent that was released in the major reorganisation of the telecom industry in Finland. This initiative has been very well received by SMEs here.”

Legislate to enable

Since the last interview Finland has had a change of government. The new government made digitalisation a key priority, especially in the delivery of public services. “In this respect there are two things worth mentioning here,” Komulainen says. “The intention is to streamline public services and make them more consumer friendly and more affordable to provide. The other aspect is the desire to use the purchasing power of the public service itself to create a lead market. Our government is very vocal and ambitious when it comes to using public procurement as a driver for digitalisation. And also to use regulation as a driver, not as an obstacle. One area in which a lot of progress has been made is in Mobility as a Service, for the transportation of both goods and people. In fact, Finland wants to attract national and international companies in this area to use Finland to develop and experiment with technologies, like robot-controlled public transportation or the use of drones. So these are examples of legislation as an enabler.”

Challenge and opportunity

“And talking of enablers,” Komulainen adds, “ITEA today continues to be an attractive and a valuable partner for Finland. It provides the framework where our companies and researchers collaborate not only at the level of technologies and platforms but it increasingly helps create contact with the stakeholders – the buyers of the technologies. The challenge, and indeed the opportunity, now is to include the financial sector. These actors have not really been involved in the European research and innovation landscape. I think it’s about time we generate greater awareness among these actors about this landscape. By we, I mean the national funding agencies along with ITEA and other such European programmes. It has to be a joint effort.”

Global ambition

Collaboration is key, then? “Today even more so than back in 2014, yes. Successful digitalisation is based on successful collaboration, not only of the ITEA kind but also between authorities and governments on a pan-European scale. Especially in view of the competition coming from outside Europe. We cannot afford to rest on the laurels of our achievements to date. We have to push on aggressively to ensure we succeed. We have only entered the dawn of digitalisation. We are at the Industry 4.0 stage. We will be at the next stage sooner than later. Both in Finland as well as the rest of Europe, it is vital that we recognise and exploit the opportunities that digitalisation affords. Business as usual is a non-starter. Online shopping is the prime example of where a domestic market offers no protection. Consumers can go to local vendors, maybe out of loyalty, or to any other vendor in any part of the world to get the best deal. This is the reality of retail. But it is a reality that will happen in more and more sectors. This is digitalisation in practice. The domestic market is a global one. Our ambition is global. The Finnish government sees itself as an enabler in this environment. And at Tekes so do we.”

Moven

a company with the

The predecessors of Moventas, Metso Drives and Valmet, began manufacturing industrial gearboxes in the 1940s. “In 1979,” says Jari Toikkanen, Manager Conceptual design & Analysis team in Moventas, “we designed our very first kW class wind gearbox and delivered it in 1980. Which means that we have been in the business of wind turbine gearboxes for over 35 years.” Moventas has become the wind gearbox expert, lowering the cost of energy across the power generation lifecycle, from superior gearbox design and manufacture to extensive multi-brand service for gearboxes in twenty different brands of wind turbine.

tas

(digital) wind in its sails



Hardware product with a software heart

“We engineer hardware – gearboxes – but nowadays the role of software has become an indispensable tool in our engineering. Reliability is crucial in wind turbine power. Failure is not an option; 100% reliability is a requirement. The costs of maintenance and repair at over a hundred meters up mean that you have to get things right on the ground.” Toikkanen points to two key aspects: the design process and quality control. And both are software-intensive. “Most torque dense gear units like Moventas Exceed have been created in the state-of-the-art design environment MoVE (Moventas Virtual Environment). Full compatibility with the iterative drive train design process according IEC 61400-4 2012 secures short concept development time and the best possible product.” The MoVE design environment and Moventas development

process NCI (New Concept Introduction) shorten the concept and specification time significantly down to just a couple of weeks, including an accurate determination of mechanical safety, drive train dynamics and operational efficiency. “By ensuring the right configurations in our design environment, we are able to target the most cost-efficient solution whereby efficiency simulation provides a realistic efficiency analysis over the whole LDD (load duration distribution) and energy yield during the

turbine’s lifetime can be set as a single selection criterion.”

Integral role of digitalisation

“Quality control, based on the statistical analysis (SPC) from digitalised big data, also plays an important role in ensuring uncompromising product reliability. Measurements from component suppliers, internal component manufacturing, assembly and product tests produce massive amount of data. We have been working to radically update our global working environment to achieve a high-quality level and understand, based on the information, which changes lead to true improvement of the product and/or operation. In practice, there is a developed data acquisition environment for meta and numerical data for statistical analysis and traceability to internal and customer needs. Digitalisation is

becoming an integral part of our process, and we are implementing it with the help of the ITEA CAP project.”

Gaining a competitive edge

“Publicly-funded projects,” Toikkanen explains, “make it possible for us to also increase our competence in this new big data topic. They create expertise networks and the possibility to have high-level benchmark cases that get state-of-the-art methods quickly implemented in practice. We actively seek new fundamental technologies related to the product itself, design methods, quality systems and any other topic that could help Moventas to gain a competitive edge or lower the cost of renewable energy. Right now we are involved in the ITEA CAP and AVANTI projects. In the Horizon2020 Programme for Research and Innovation we are looking at the call for new applications while we are also involved in national projects funded by Tekes.”

Benefits of engagement

Toikkanen explains the benefits of engaging in such research projects and environments. “We have neither the funds nor expertise as a single company to develop the fundamental research that is both useful and necessary. This is where universities and research institutes come into their own. Such projects and programmes are very important. Many projects target long-term goals and therefore the risks are high due in the light of volatile market environments or the changing political climate, for example. Without financial or human resource support from an expertise network, many projects or innovations could not be done. In the wind business we are witnessing the trend of following more mature industrial areas such as automotive in terms of complying with quality requirements like VDA 6.3. So joint projects with different kinds of consortium partners give us a new perspective of the business potential and methods, especially in acquiring information about big data and digitalisation. What’s more, Moventas products are mainly exported to other countries, so it makes sense also to be involved in international projects and stay in touch with developments around Europe and beyond.”

DIGITAL INNOVATION FORUM 2017 on Digital Transformation

Towards a vision on the future for
and built by industry

The RAI in Amsterdam will be the venue for our international industry-driven event: The Digital Innovation Forum (DIF) 2017, on 10 & 11 May next. With a diverse programme, including four themed workshops, an innovation market and sessions for start-ups & SMEs, a full-scale R&I exhibition and over 30 speakers and panellists, the event will show results and emerging challenges towards a vision on the future for and built by industry.

DIGITAL INNOVATION FORUM 2017

RAI Amsterdam
10-11 May

Digital transformation

DIF 2017 focuses on Digital Transformation, a globally important topic, which encompasses a profound and accelerating transformation of business activities, processes, competencies and models to fully leverage the changes and opportunities of digital technologies. This is recognised by the Dutch Ministry of Economic Affairs, which is lending its full support to the Digital Innovation Forum. The Ministry's Director for Innovation & Knowledge, Jasper Wesseling, has been invited to give a welcome address on Wednesday 10 May.

While digital transformation is often seen as a threat to European industries, especially the more traditional ones, it should actually be exploited as an opportunity to create value for business and society. In fact, digital transformation is crucial to stay competitive in the future and it is important not to miss that boat. In the domain of Healthcare, the importance of digitalisation will be addressed by CTO of Royal Philips, Henk van Houten, of in his keynote speech.

All in all, then, DIF provides the perfect occasion to join the digitalisation debate.

Smart is key – interactive workshops on emerging challenges

The afternoon of day 1 will focus around four thematic workshops on emerging challenges

for industry. These workshops on the first day include panel discussions featuring top industry leaders, recognised researchers and relevant opinion makers in each domain, including the Canadian Institutes of Health Research, Cancer Research Center of Toulouse, Eleka, Empower, Enel, Engie, Gemalto, Nokia, NXP Semiconductors, OFFIS and SINTEF.

- **Smart Energy:** this workshop will focus on highly sensitive and relevant issues for the current energy domain like DER (distributed energy resources) and grid integration, active grid monitoring, energy consumption optimisation, trans-active energy and disruptive energy technologies.
- **Smart Health:** The target of the workshop will be to discuss trends and innovations which can impact the market. Among the trends, we see the digitalisation of almost all domains in Healthcare impacting care at home, in care centres and in hospitals. A lot of connected devices will deliver data which can be used to the benefit of individuals and populations and to improve the care in hospitals. Healthcare will become more directed to individual persons and will be value based. In order to keep the growing cost of healthcare under control we see an industrial approach in managing care processes over the care continuum.

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ARTEMIS-IA & ITEA

DIGITAL INNOVATION FORUM 2017



- Smart Manufacturing:** The digitalisation is affecting production and is expected to enable efficient lot size one and customer tailored production and/or support the servitization of the business, while minimising environmental footprints and overall costs. This workshop will address a couple of important aspects for the efficient and secure implementation of digitalisation technology in production systems. Topics to be addressed are: IT-security proactivity and mitigation, automation/digitisation engineering efficiency, servitization of products, lot size one and personalised production. The expected outcome is identification of technology, operational and organisational gaps for which new knowledge and strategies are needed.
- Smart Mobility:** Following the recommendations of the Declaration of Amsterdam of the European Commission (2016), this workshop will contribute by addressing topics and trends from the perspective of large as well as small and medium-sized enterprises and research organisations. Future “Smart Mobility” needs

both technical and societal cooperation to master the reliability, the connectivity and complexity challenges on the one hand and the acceptance, safety, security and privacy challenges on the other, in front of the whole value chain from system-on-chip to the vehicle and vehicle context. The workshop gives room for a discussion platform on the latest and most critical issues as well as emerging technologies along the way to connected, cooperative and automated mobility. Renowned experts from the industry and academia will discuss the state-of-the-art and will also factually predict what changes in mobility we can expect in the near and more distant future.

These workshops will have extensive time for Q&A, opening up the floor for discussion between experts and the audience, setting the tone for the rest of the workshops. On Day 2 the conclusions coming from these four parallel workshops will be presented in plenary session.

SMEs and Start-ups: pitch your innovation to industry top executives and VCs!

The DIF 2017 will explicitly focus on supporting

digital
transformation



innovative SMEs and Start-ups to access key industry representatives and Venture Capitalists from Europe and beyond, including delegations from Canada and South Korea, by organising the innovation sessions and market related to the emerging challenges mentioned earlier. SMEs and Start-ups will be able to pitch their idea to a high-ranking jury composed of industry top executives, VCs and entrepreneurs, showcase their innovation to the global software innovation community in a two-day innovation market and network with industry top executives and potential business partners, customers and investors from around the globe.

Among the confirmed jury members are:

- the CEO of STMicroelectronics Italia
- the CEO of Swiss Life Health & protection
- the General Director for Industry and Energy at Indra
- the Director of Technologies at ENGIE
- Director of Business Creation at Philips Research
- the VP Ecosystems, Market Enablers & Customer Innovation Centers at Nokia
- Venture Capitalists including Isource Venture Capital, Sofimac Partners, ACT Venture partners and Hi Inov

The innovation sessions and market are an exclusive opportunity for SMEs and Start-ups to get noticed by Venture Capitalists and key influencers from the global software innovation community, including European leaders such as Airbus, Barco, Bosch, Bull, Daimler, Ericsson, Indra, Koçsistem, Nokia, Philips, Robert Bosch, Siemens, Thales, Turkcell and many others.

Interested to pitch your innovation to industry top executives and VCs?

Visit <https://dif2017.org/innovation-market-sessions.html> for more information and application.

From challenges to results – key examples of impact

During the whole event there will be a possibility to visit the full-scale R&I exhibition displaying the results of state-of-the-art research projects from ITEA, ECSEL-JU and Horizon 2020 and big industry players in the field, such as NXP and Thales, who strongly back the DIF event as sponsors. Through live demos, visitors can experience themselves how the results of the projects can enhance the daily lives of many people.

ITEA Community session

ITEA is about delivering on innovation, business impact and fast exploitation. This will be clear during the ITEA Community session held in the morning of day 2. Apart from an introduction by our Chairwoman Zeynep Sarılar and programme highlights presented by Vice-chairman Philippe Letellier, a set of four recently completed innovative ITEA projects will be presented with an ITEA Award of Excellence for their outstanding contributions and results.

- **AVANTI** will receive an ITEA Award of Excellence for Innovation. This is a project in the domain of one of ITEA's key topics, Smart Manufacturing, and set out to increase the efficiency and level of maturity in system development processes through the automated creation of virtual production systems.
- **MoSHCA** will receive the ITEA Vice-chairman's award: the ITEA Award of Excellence for SME Success. MoSHCA is a very successful SME-led project geared to improving patient-doctor interaction and controlling chronic diseases.
- **SEAS** will be awarded with an ITEA Award of Excellence for Innovation and Business impact. The goal of SEAS (Smart Energy Aware System) is to enable 'communication'

between energy production and related data, from whatever source, to energy consumption, regardless of location, time and use.

- **SoRTS** is selected for an ITEA Award of Excellence for Innovation and Business impact. This project addressed productivity and effectiveness in relation to cancer treatment and reduced patient risk by supporting healthcare professionals in the transition from invasive, open surgery to minimally invasive, image-guided intervention and treatment (IGIT). The project has achieved incredible exploitation results, thanks to a unique international partnership between Philips and ELEKTA.

All projects will present their impressive results and be presented with their awards on stage during the ITEA Community session.

Amsterdam Foodhallen – Networking in an energetic atmosphere

During the evening of 10 May, DIF 2017 will be organising an evening programme in the Amsterdam Foodhallen to energise you and enable DIF 2017 participants to meet and to talk to each other in a relaxed fashion. The Foodhallen provides an open setting to stimulate networking. You can expect a walking dinner, strolling between stands to decide what you would like to eat and in the meantime network with other DIF2017 attendees.

REGISTER NOW!

Join the digitalisation debate and register now! Visit <https://dif2017.org/> for more information and registration.

Community Talk with: Anders Sixtensson

Anders Sixtensson is about to embark on a timeout, a six-month preview of what life could be like in retirement, exploring the options in advance. It's an approach to life that is not too different from what he does in his job on a daily basis – preparing the ground for the future. “We need to know what level we can live at. How far the money goes. Do we switch to idle and then reboot? We're fortunate to have the opportunity to do this.” But before he goes, he took time out to talk about his experience and relationship with the ITEA Community.

Can you dip into the past and tell us how your career journey began?

“I graduated as a Master of Science in electrical engineering and since then I have been a consultant for the past thirty years. With one break. I went back to university for a two-year stint and took a degree that, in Sweden, is somewhere between a Master and Doctor. You could call it a Master of Philosophy, I guess. And then I went back to consulting. I've always been in the business of software process improvement, helping companies be more productive, cut lead times, boost effectiveness. Initially I worked with the big telecom companies in Scandinavia, like Nokia and Ericsson, before I joined three other guys

to start our own consultancy company in a time when everything seemed possible, around the turn of the millennium. It was called Kipling Consulting (after Rudyard Kipling) and was also floated on the stock exchange. Then I branched off on my own in the field of supply chain analysis. In 2005 I got a call from the owner of Softhouse Consulting who was looking for a new impulse in their software process field. I joined as a partner and set up the software business improvement sector. Once that was up and running I became a member of the management team at Softhouse Consulting and continued working as a senior consultant on a 50% basis. Which is what I do now. So that's my career to date in a nutshell.”



So how and when did you become involved in ITEA?

“Well, a few of the guys I know in my network had an idea a few years ago for the SCALARE project and they asked me and Softhouse if we were interested in becoming a partner in the project. So that’s how I became involved in co-writing the project proposal and was the Softhouse representative. Of course, twenty or so years ago I did have some experience with various consortia in funded projects. Even then I saw the value of working with other people from different companies, countries and cultures. You could grow your network, get some interesting business opportunities and, essential, it was fun to work together on challenges. I must admit that I haven’t followed the trends in ITEA over the past couple of decades but what I can say is that I find the approach today more applied and practical than twenty years ago. Then it

was more research oriented. As consultants we can offer something extra to ITEA projects. We come up with business ideas for the project research and results. As a consultant, we cannot survive if we cannot communicate the benefit of these results. That’s how we earn our living. So in SCALARE we were the partner that was responsible for promoting the results in a way that decision-makers are able to ‘consume’ – not a white paper but concise material that is actually read and understood. Like the SCALARE magazine (<http://scalare.org/scalare-magazine-issue-1-is-out/>), which is a nice example of how we communicate the results in a management-friendly way. It’s also a way of telling the world that we are involved in a successful project. Win-win. We are now preparing to become involved in a new project that we hope will begin next September, when I return from my sojourn.”

What’s your view on ‘seizing the high ground’? What does this imply in your view?

“Difficult to say – there are so many ways of interpreting this. I understand the ambitions of helping boost the competitiveness of European industry. I think it’s up to the participants to take the opportunities that ITEA projects present. So I think we have to help people seize the high ground. We cannot push technology for the sake of technology. It must not become some kind of self-fulfilling prophecy. We see our role as getting the focus on the user. How can technology support society and the human beings that are the component parts? For me, if we can do that, then we really will seize the high ground.”

How do you think technology can have an impact on our lives? Can we benefit, become happy?

“We live in a very uncertain world in many ways. Politically volatile, the threat of terrorism, changing demographics. Security is one big issue that technology has to try to resolve. If we are secure, we are happier. Looking specifically at the SCALARE project, for example, I think that the users of the results will be happier having the benefits in their business processes, making them more agile and able to add more value. And this should give people a better feeling at work. They should be able to derive more satisfaction from what they do. The lean and agile message that is part of the Softhouse philosophy is that a sustainable working pace is allied to job satisfaction and, therefore, a happier workforce. And through my involvement, I have become happier. I’ve extended my network, my contacts. Feel part of a broader community. Proud of what has been achieved. Softhouse has benefited and so have I. And I’m keen to continue. That’s not something you commit to if you don’t feel happy doing it.”

Calendar

14-16 March

EMBEDDED WORLD 2017

Nuremberg, Germany

www.embedded-world.de/en

21 March

EIT DIGITAL'S ANNUAL CONFERENCE

Brussels, Belgium

www.eitdigital.eu/conference/

27-31 March

DATE 2017

Lausanne, Switzerland

www.date-conference.com/

12 April

HOLLAND HIGH TECH EVENT 2017

Eindhoven, the Netherlands

www.hollandhightech.nl/nationaal/actueel/agenda/holland-high-tech-event-2017

24-28 April

HANNOVER MESSE 2017

Hannover, Germany

www.hannovermesse.de

25-26 April

4TH INTERNATION B2B SOFTWARE DAYS 2017

Vienna, Austria

<https://events.b2match.com/e/softwaredays2017>

8-10 May

edaWORKSHOP 2017

Dresden, Germany

www.edacentrum.de/en/events

10-11 May

DIGITAL INNOVATION FORUM 2017

Amsterdam, the Netherlands

<https://dif2017.org>

15-19 May

OPEN EUREKA INNOVATION WEEK

Barcelona, Spain

www.eurekanetwork.org/content/open-eureka-innovation-week-2017

16-17 May

IMEC TECHNOLOGY FORUM 2017

Antwerp, Belgium

www.itf2017.be

18-19 May

CELTIC-PLUS EVENT 2017

Barcelona, Spain

www.celticplus.eu/event/celtic-plus-event-in-barcelona/

22-23 May

EUROPEAN BUSINESS SUMMIT

Brussels, Belgium

www.ebsummit.eu/

13-14 June

ECSEL JU SYMPOSIUM 2017

St. Julian, Malta

www.ecsel-ju.eu/web/events/ESC2017.php

ITEA Success Story

SAFE

Sustaining automotive safety standards and standardisation

Driving on the road is a way of life – whether for work or for leisure. Being able to get safely from A to B is something we take for granted. And today driving is safer than it was ten years ago, and ten years before that, and in ten years time it will be even safer. This progress can be measured – fewer accidents, fewer injuries, fewer deaths = less cost to society, in both human, financial and environmental terms. So the benefits of safe driving are crystal clear. But to get to that stage, a lot has gone on, and is still going on, behind the scenes and particularly in the software that has become the key ingredient of every modern mode of transport, the road vehicle being no exception.

Functional safety

When the ITEA SAFE project finished in 2014, it had played a vital role in establishing the safety as we increasingly know (and demand) it today in our daily driving. “Essentially, SAFE is part of a long chain of ITEA projects, part of an ongoing story, if you like,” project leader Stefan Voget explains, “to improve the functional safety of electrical and/or electronic systems in production vehicles. What it managed to achieve was the standardisation of a modelling language for use throughout the development cycle, from requirements to the

hardware and software phase. In November 2011, the ISO26262 was introduced and at that moment nobody had the knowledge how to use it in their processes, while it was very important to comply with it; for domains where the safety is very critical you either comply with the standard or you are out of the market, or at least severely lagging behind. Our goal was to enable the automotive industry to comply effectively with ISO26262 by providing model-based development processes that integrate functional and safety development based on existing development lifecycle processes.”



Impact

The measure of the success in achieving this goal was underlined at the ITEA-ARTEMIS-IA Co-summit in Berlin in March 2015 when the SAFE project was the recipient of the Award of Excellence in the category ‘Standardisation’. This award recognises the high-level technical contribution that a project makes through true international collaboration to generating significant results and promoting the programme and its goals. SAFE was also an integral part of the EAST-EEA success story published in the ITEA magazine in January 2014 (number 17). As Stefan said at the time, “the results of the EAST-EEA project, although it finished a decade ago, act like a reference platform for further development in new projects.” The same can be said of SAFE; it may have finished but its impact continues to be felt. And one of the reasons why the impact of the project is still felt today is that not only does the tool enhancement support the users in safety modelling and analysis but it also directly influences how the processes in the automotive market change towards the integrated modelling of both functional and safety aspects.

Eye-catcher

Of course, impact is best measured through implementation. So how have the project results fared? The project partners had already been involved in the standardisation activities of the EAST-ADL and AUTOSAR projects, and then in producing the ISO 26262 – SAFE was another, essential part of the jigsaw. The establishment of ISO 26262, and compliance with it, was crucial to get functional safety to a higher level. However, apart from the standardisation activities, it was the Eclipse-based tool platform

activities that created visibility and generated interest in the market. “And since the tools in the SAFE project were developed by both commercial tool vendors and research institutes, these were already integrated in existing bigger toolsets from the beginning on,” Voget adds, “fast exploitation was facilitated by delivering new versions of the commercial tools as well as by publishing new features in the research tools.”

Exploitation

On the back of its involvement in the SAFE project, Dassault Systèmes, with aerospace industry roots and experience with the energy and railway domains, has developed a Smart, Safe & Connected Car solution that offers customers the 3DEXPERIENCE platform© (including PLM) to give automotive developers a very specific way to manage the kind of embedded systems that have become a growing challenge in the automotive industry. This new solution is also designed to help customers ensure they are compliant with the ISO26262 and Automotive Open System Architecture (AUTOSAR) safety standards. It contains four modules: an Electronics & Electrical Architecture Definition, Behaviour Modelling and Simulation, Electrical Engineering and Functional Safety Delivery. This last module is designed to give users the ability to track the ISO 26262 safety standard throughout the product design process and took benefit of the SAFE project on Preliminary Risk Assessment, System Safety Concept, Fault Tree Analysis and Failure Modes & Effects Analysis; in this Dassault Systèmes’ solution, the proof of the pudding really is in the eating. The solution is currently under negotiation with several automotive customers.

Thanks to the SAFE project, Continental established the ISO26262 compliance in two major domains, namely the safety critical domains of power trains and chassis break systems. These domains represent 40% of Continental’s product share and if it they hadn’t participated in the SAFE project, Continental would have had an important setback compared to others in the market.

Other examples of successful exploitation of the project’s results include Vector Informatik, which implemented FMEA, a model-based qualitative safety analysis method, and added malfunction modelling capabilities in its PREEvision tool, a software application that supports architects, network designers, development engineers and test engineers through the entire development process. Thanks to the SAFE project the integrated modelling of safety aspects is now possible. And pure::systems managed to seamlessly integrate pure::variants into the SAFE platform, thereby enabling the variant management capabilities of pure::variants for contexts with safety related assets. Through tool supported variant management the development process becomes more efficient, faster and more reliable up to 20%.

Ongoing story

“And now, in 2017, three years after the end of the project, we have even got together with one of the former partners, Fortiss, to continue the story by applying the SAFE safety methods to new emerging functionalities,” Voget says. “This is the direction that is occurring at the moment – the need for more flexibility to update and upgrade the software in the car. This was not a scenario we had in mind at the time of the project; we are now seeing the element of security playing a more important role. So, it’s safety and security. We are facing a new challenge, then, one that has been given an extra dimension, so to speak. However, because the SAFE project has given us such a good basis in terms of safety – we know how to cover the functional safety – we concentrate our efforts on the security challenges that come with growing connectivity – the Cloud, the internet – in the automotive domain.” And so the story continues!

Strengths of the EUREKA Clusters

The example of Celtic-Plus

In April 2016, ITEA Chairwoman, Zeynep Sarilar shared the podium with Jacques Magen, Chairman of Celtic-Plus, at the EUREKA Innovation Week in Stockholm. The click was evident as both chairs of the two Clusters presented powerful cases for the work of their specific Clusters and the strength of the EUREKA family.

“Yes, that is what we are,” says Zeynep. “We are one family in EUREKA but we are siblings, each Cluster, with our own personalities, own strengths and own direction. We share the common goals and values of EUREKA but we, Clusters, have our own way of doing things. The focus of ITEA is on software innovation and Celtic-Plus is on telecommunications. However, it is clear that we both need each other’s initiatives – software cannot do without advances in telecommunications and vice versa. We are stronger if and when we build solid relationships within Clusters. So, with this in mind, I have invited Jacques to tell our community about the Celtic-Plus Cluster through the vehicle of the ITEA magazine so that we can get to know a bit more about our EUREKA sibling.”

An evolving ecosystem

Jacques takes up the invitation: “The Celtic EUREKA Cluster was initiated in 2002. At that time, the European telecommunications equipment manufacturers and operators were facing the implosion of the Internet bubble. Although for most of it they were not directly impacted, they knew that the Internet ecosystem was changing deeply and that their business models would need to evolve, to cope with all the demands for new services and applications that would follow. Thus, creating a new initiative to support projects where both manufacturers and operators could work together towards the network end-to-end systems of the future made sense. Since then,” Jacques continues, “Celtic, and then Celtic-Plus, has contributed to and followed the evolution





The strengths of Celtic-Plus in a nutshell

- Supported by the relevant European industrial ecosystem and by Member States, forming together strong complementary stakeholder ecosystems that are key to establishing new projects
- Projects have commercial outcomes and have direct or eventual impact on company turnover, specific products or solutions as well as strategy
- A perfect instrument for Member States to strengthen their strategic industrial priorities in the domains covered, both in their own countries and at European level
- A capacity to respond to the needs of industry and the public authorities through large ‘flagship’ projects (up to 80 million euro investment)
- Following the EUREKA principle, the projects are industry-driven, bottom-up: each company is free to decide at a given moment what priority and what topic to include in each project, with support from EUREKA countries if their national priorities are addressed
- Very efficient Celtic Office with low operational costs

of the telecommunications ecosystem and technologies by adding projects dedicated to services and applications to the traditional network infrastructure projects that still constitute a large share of our projects. Besides that, other domains, such as security and privacy and smart cities are being addressed by the Celtic-Plus stakeholders as well. We foresee that soon areas such as Industry 4.0 or Fintech could become the subject of choice in new projects.”

Heading towards 5G

In terms of the new trends in telecommunications that can support the digital transition and the impact of the digital transition on the network, Jacques points to the evolution

of the Internet and the demand for new digital services and applications as key drivers for the digital transition. “I believe that we are now in a situation when the network is not only facing bandwidth requirements, to cope for example with increasing demand for mobility and for video, but is also confronted with other types of requirements, mainly driven by connected objects – not only sensors and actuators but also vehicles or other large objects that are becoming more and more connected, going way beyond what was originally anticipated in the ‘Internet of Things’. Such requirements include latency, downtime, speed (or rather perception of speed) or energy efficiency. This is where research and innovation is needed now, and will lead to what we call ‘5G’, the 5th generation of telecommunications networks.”

The strength of the family

The question of how Clusters can support each other to stay strong – is there a synergy – is a pertinent one. Like siblings that may be ‘doing their own thing’, supporting each other is essential to a strong family. “Technology is in a state of a never-ending evolution, when it is not a revolution,” Jacques explains. “This means that research, development and innovation is more than ever in the heart of our society – and technology and society need to work hand in hand. Everyone is conscious of that fact: industry, researchers and public authorities alike. However, we have been facing a difficult economic situation for some years now, which has led to some cuts in terms of industrial and governmental budget in almost all domains,

including in research and innovation. This situation is shared by all EUREKA Clusters, even if the solid stakeholder ecosystems and the support from industry and the public authorities mean that we can still run many innovative projects with a large impact. We probably need to work more together and better express in a comprehensible manner how strong and complementary we are and why we need to continue and dedicate a large amount of effort in research and innovation related to making our lives better – and this goes hand in hand with an efficient digital society. I am certain that if we continue to reinforce the relationship between ICT-related EUREKA Clusters, as well as with non-ICT Clusters and with EUREKA as a whole, we can help create a better future of our children.”



PROJECT SHOWCASE

IDEaliSM

Fast, robust, low-cost product development and manufacturing

Europe's high-tech industries, like automotive and aerospace, operate in a fiercely competitive global marketplace. Yet within this environment, collaboration with multiple partners and in multiple locations is crucial to providing specific engineering and manufacturing services. The ITEA 2 project IDEaliSM (an acronym for Integrated & Distributed Engineering Services Framework for MDO (Multidisciplinary Design and Optimisation)) set out to drastically improve the time-to-market and development cost of high-tech structures and systems.

Collaboration in the virtual environment

Project leader, Stefan van der Elst of the Delft-based KE-works that specialises in the optimisation of engineering intensive projects in the manufacturing industry, explains the rationale behind the project. "The consortium partners share a common objective in the same domain: to make product development more affordable and reduce the lead time in the mobility market, predominantly aerospace and automotive. They are driven themselves by the consumer, who expects a better quality product and higher performance at less cost and with a lower ecological footprint. We also tackle the

issue of digital transformation – how engineers can collaborate in the virtual environment that is increasingly characteristic of a global marketplace where services are becoming more and more important. IDEaliSM focuses on the design of such service-oriented and distributed engineering processes in this world."

Integrating people, process and technology

Later this year, the project will come to its conclusion but already significant progress has been made in its goal of delivering a new distributed flexible and service-oriented development framework for multi-disciplinary design and optimisation that is capable of integrating people, process and technology.

In brief, the targeted developments are:

- An advanced integration framework for distributed multidisciplinary design and optimisation enabling engineering teams to collaborate and offer and share engineering services.
- An Engineering Language Workbench: a set of domain-specific and high-level modelling languages, ontologies and data standards to enable the flexible creation of engineering workflows and services.
- A methodology for service-oriented development processes to redefine the product development process and information architecture to allow distributed teams to collaborate and apply alternate design strategies.

Paradigm shift

The resulting development framework will support European industries in their efforts to enhance integration and flexibility in product development thereby reduce the effort (50% efficiency gain), cost and time-to-market (by up to half) in designing innovative aircraft and automotive structures and systems. Such high-performance engineering capabilities will enable Tier 1 and Tier 2 companies in the high-tech engineering domain to capitalise on their corporate design knowledge and significantly reduce the cost in derivative design within product families. However, this requires a paradigm shift in product development. On the one hand, organisations will be compelled to further specialise on their core business while, on the other hand, greater specialisation will require more flexible collaboration and a higher level of integration throughout the design chain, on all levels of people, process and technology.

Aircraft Design Challenge

IDEaliSM has employed three use cases to illustrate and demonstrate its framework. In the Aircraft Design Challenge, consortium partner Airbus Defence and Space wanted to improve the established processes for early aircraft design by including multidisciplinary design optimisation as well as increasing the degree of automation. This new process is expected to enable geometric, mass and performance data to enter the next development phase in an improved aircraft design with the prospect, within the project, of including a new, IT supported aircraft design process. The findings of IDEaliSM, therefore, will be used to devise and implement a new aircraft development process within the company, one that boosts product quality while cutting development time and resources, ultimately leading to significantly improved competitiveness of European aerospace industry. In another component of the use case, Fokker Aerostructures wanted to develop an aircraft rudder within a single month, as opposed to the current development lead time of 12 months - to a level that corresponds to the normal results of the Full-Scale Development (FSD) phase up to the Critical Design Review (CDR). IDEaliSM provides the starting point for a radical new way of working (High Performance Engineering) within the company.

Project details
13040 IDEaliSM



Project leader
Stefan van der Elst
KE-works

Partners

Belgium
iMinds-DistriNet, Katholieke Universiteit Leuven
NOESIS Solutions

Germany
Deutsches Zentrum für Luft- und Raumfahrt
EADS
Fraunhofer LBF
IILS
Lisa Dräxlmaier
University of Stuttgart

The Netherlands
Delft University of Technology
Fokker Aerostructures
Fokker Elmo

KE-works
Norway
Jotne EPM Technology

Spain
IDEC

Start date
October 2014

End date
September 2017

Website
<http://www.idealism.eu>

10-day harness

The second use case focuses on a ‘10-day harness’ and responds to the innovation goal of Fokker Elmo, which is to develop a wire harness in 10 days - instead of several months - to a level that corresponds to the normal results of the detailed design and production preparation phases (including tool and assembly definition) up to Production Readiness Review (PRR). Within this use case, the Wiring Interconnection System (EWIS) design is being optimised by applying process automation and multidisciplinary optimisation techniques. The resulting cost and lead time reductions will strengthen Fokker Elmo’s position with respect to aircraft OEMs and contribute to the main objectives of aircraft development.

Cockpit in 3 weeks

Finally, the ‘Cockpit in 3 weeks’ use case describes the overall innovation goal of DRÄXLMAIER, which is to develop an automotive cockpit wire harness within three weeks. The challenge in the automotive cockpit development is to integrate mechanical, electrical and electronic components inside the provided installation space including the interconnecting wire harnesses. During the development process the mechanical and electronic requirements have to be considered and met while daily design

changes also have to be taken into account. The automation technologies developed and provided within the IDEaliSM project will significantly cut cost and lead time in the cockpit wire harness development, without any concessions to quality. Ultimately, DRÄXLMAIER will be more strongly positioned towards automotive OEMs and DRÄXLMAIER will make a powerful contribution to enhancing wire harness development processes.

Enhancing global competitiveness

“In Europe one of our distinctive strengths is innovation – it’s where we excel – but, of course, we need to ensure that this innovation gets to market and can compete in that market. In order to do this, we have to ensure that our product development becomes an enhancing factor. We have shown in our use cases that the IDEaliSM framework is capable of generating the kind of product development benefits that automotive and aerospace manufacturers and suppliers demand and need from high-performance engineering services. IDEaliSM delivers the integrated solution.” With its coherent set of methods and tools to generate, apply and re-use engineering knowledge, the IDEaliSM project goes some way to delivering the fast, robust and low-cost product development and manufacturing services that will help the European aerospace and automotive industries be strong competitors on the world stage.

SME in the spotlight

TWT: Bridging the gap between technology and industry

Michael Ditze is Head of ICT & Systems Engineering, Head of Product Development Autonomous & Connected Driving at TWT GmbH Science & Innovation, a company for whom technical-scientific transfer means the rapid implementation of scientific expertise into technologically advanced projects covering both, information and engineering technologies. “This really provides an ideal foundation for successful cooperation with our international business and research partners.”

Where did it all begin?

TWT GmbH was founded in 1986 at the Stuttgart Technology Centre and when the company won a Framework contract with Daimler AG in 1987, this became the start of an intensive partnership at the highest technological level. “The mid-nineties saw significant growth and a move to new headquarters close to Stuttgart airport and the A8 motorway,” Michael explains. “It was in this period that we successfully participated in our first European research project. We realised that continued involvement in European research projects could only strengthen our innovation potential and internationalisation goals. In 2010 we topped 150 employees and a year later celebrated 25 years in business.” Awards for being the top automotive employer

and innovator followed, and by 2015 TWT had several branches throughout Germany (currently Stuttgart, Munich, Friedrichshafen, Ingolstadt, Böblingen, Weissach). “We now have 250 employees whose goal is to bridge the gap between technology and industry. Our business centres around digital transformation of the product, its development and its production at the interface between information technologies and systems engineering. While most of our clients are from the automotive and aerospace sectors, we also have a few clients from the healthcare and energy domains.”

How essential are software solutions in your business?

“The automotive industry is perhaps the



most striking example of where software has superseded hardware as the engineering focus. Software solutions are vital to the increasingly smart vehicle we drive today and in the future – one, for example, that senses its environment, both internally and externally and connects to other vehicles or road objects, to improve comfort and safety. It is therefore a challenge to us to ensure that our technology expertise can anticipate the software needs of the future so that we can consult and supply our customers with state-of-the-art solutions meeting their technological demands. Another challenge is the introduction of autonomous driving, which requires extensive testing. But to get autonomous driving more quickly on the roads and to reduce the costs of doing so, we need virtual environments. And this is a matter of software. Today, innovative software solutions can run on any conceivable device working with any conceivable amount of data. The development of respective user- and customer-centred solutions with advanced technologies for cloud computing, mobile applications and smart data analysis and management are part of our daily business.”

What role do publicly-funded research projects play in your business approach?

Markus Pfeil, Head of Innovation Management at TWT: “Research is integral to our company’s vision and strategy. Publicly funded projects are very important because the research we want to do is innovative research at the edge of the state of the art. They enable us to do the research we need to have in place to be prepared for our market while alleviating much of the risk this entails for a company of our

size. We write somewhere between 45 and 50 project proposals each year and there are very few funding programmes we are not part of. They also help us get high-profile consultation with key managers in the automotive and aerospace industries. To give you a concrete example. We recently had a successful negotiation with ESOC (European Space Operation Centre) about consulting ESOC on the co-simulation standards that came out of an ITEA project (MODELISAR). We are now showing them that this is the approach they need within their realm. And being involved in international projects like this gives us a very good overview of the state of the art as well as a very comprehensive network of partners we can use not only to expand our knowledge but also commercial opportunities. Nowadays the automotive and aerospace industries are increasingly demanding comprehensive solutions. Having access to the networks we build through participation in publicly-funded projects means that we can take on such assignments that would otherwise be impossible for us to do on our own.”

And what role does ITEA play specifically?

Michael again: “One of our goals as an organisation is to transfer knowledge. And ITEA is one of the key vehicles we can use to do this. The company has been involved in ITEA projects for a number of years. I remember my own involvement in the MODELISAR project that began in 2008, the results of which enable the collaborative design, simulation and test of systems for automotive software and systems. And more recently the ACOSAR project that aims to develop an interface called Advanced Co-simulation Interface (ACI) that allows real-time systems, including those of

different producers, to be linked over topological distances to form a virtual, simulated overall system. Interestingly, in the AVANTI project that just finished, we were able to transfer our knowledge gained in the MODELISAR project to the virtual commissioning solutions produced by AVANTI. In all of these and other ITEA projects in which we have been involved, we have had the opportunity to lay the foundation for offering innovation tools and services to our customers and cooperate with them during the early stage of generating knowledge for product development. An added benefit is that we can learn about other domains that interest us, like energy and health, and cooperate with partners from around Europe or even other parts of the world, like South Korea. So ITEA projects are actually an important feature of our business strategy as an innovative SME.”

“And in fact,” Markus chips in, “publicly-funded projects, as you would expect, help finance our research efforts. However, the real support we are looking for from ITEA is to be involved in the strategy for critical digital technology development in Europe – this is a good way of getting direct feedback on how we can align our vision of digital transformation and IT infrastructure for the customer with that strategy. A good deal of this we get from participating in the various ITEA events. And, of course, support in terms of the paperwork. Indeed, I can say that ITEA is one of the more benign instruments in respect of grant preparation. Finally, it is important to receive support in disseminating the results. ITEA provides an excellent platform for doing this. Not forgetting, of course, this magazine!”

VIEWPOINT

The ITEA Masterclass - reaching out beyond the community

By Jonas Bjarne, Vinnova and Philippe Letellier, ITEA

That ITEA generates many successful results is common knowledge among the ITEA and related communities but there is clear evidence of a wish (and indeed a need) for these successes to reach a wider audience. ITEA's Masterclass represents a new tool of ITEA to pass on the lessons learned during the projects, boost the impact of the projects' results and take a step closer towards the future 'Digital ITEA'; its aim is to contribute to the growth of European industry by providing knowledge and concepts based on solid R&D.

As reported in the last issue of this magazine, this first Masterclass, on Digital Transformation, held in Stockholm and co-organised by ITEA and the Swedish funding agency Vinnova last year, focused on best practices for industrial digitalisation and thereby on how to best accelerate business operations through digitalisation. A specific focus was on the more traditional industries for whom digitalisation could have a significant impact, and the Masterclass thus provided an excellent opportunity for them to learn about the potential benefits for their production. How each company approaches the path towards digitalisation is a matter of individual choices but by creating the environment in which the companies can feed off the experiences of others that have already laid

out a path, or are in the process of doing so, the choices a company makes can gain a more than useful point of reference. And essentially, this is what ITEA wants to do through the Masterclass vehicle – disseminate the results, and thus the benefits, of projects on a wider scale.

Just to recap, the Masterclass consisted of sessions on:

- New digitally enabled business models and services
- Speed to market
- Digitalising manufacturing

The Masterclass was based on results from three ITEA projects:

- ACCELERATE: a platform for the acceleration of go-to market in the ICT Industry
- SCALARE: a database of industrial best practices and tools to support enterprises in their transitions
- InValue: data management architecture for manufacturing

Open space

Besides the sessions, Open Space discussions were held whereby participants were able to pitch in with their own problems to be discussed by the project experts. Putting real issues, problems, approaches and solutions on the table in a highly interactive setting was considered very valuable. For example, Husqvarna, the Swedish producer of lawnmowers, among other products, already realised some years ago the impact that the digital era was going to have on business and industry. In this 'traditional' sector, the degree of connectivity achieved by Husqvarna has become substantial. By learning from such real industry use cases and the results of projects such as those referred to above, participating companies can be expected to find new business opportunities following Masterclasses like this one. The idea is to plan more Masterclasses in different countries in the future. The next one will be organised in May 2017 in Vienna, Austria.

Best practices

Jonas Bjarne of co-organiser Vinnova spoke enthusiastically about the Masterclass. "I think it went down really well and generated lots of useful information and interactions/discussions. The feedback from the participants was also positive. The three ITEA projects on which the Masterclass is based have achieved some impressive results on digitalisation best practices, and these are certainly worthwhile harvesting and disseminating to a broad audience." Considerable effort (10 countries, 325 Person Years) and funding (€30 m) lie behind these results on digitalisation best practices, many of which will soon be freely available. The ITEA project SCALARE has even produced a comprehensible and comprehensive book on digitalisation that will be

downloadable from ITEA and Vinnova websites as soon as it is published. "This book is directed more towards CEOs than CTOs," Jonas points out, and hopes that this book will be made available in as many countries as possible.

Spreading the word

The book also highlights another key aim of the Masterclass – to spread the word, as it were, beyond the ITEA Community to a wider, related audience. This is important, and is a concept encapsulated in Jonas' personal take-away from the Masterclass. "In an Open Space discussion a representative from a quite large Swedish company far from the ICT world said that studies had shown their business could be enhanced by offering ICT-based services on top of their currently completely mechanical products. However, they did not know what to do or how to do it. The representative received very detailed and practical suggestions from five project persons and was quite busy writing it all down. If this Masterclass does not result in anything more than this company implementing a few suggestions, then I believe this is a success."

Food for thought

The score for the overall impression of the Masterclass as gained from post-event evaluation and feedback was 4.1 on a 5-point scale. Perhaps more telling was the response to the question of whether business opportunities could be derived from participation. The answer was an overwhelming and unanimous 'yes'. A few of the quotes regarding new opportunities include:

- a boost to excel the creation of new offerings and services
- prospects of collaborating with ITEA and other research/company partners of this event
- interesting suggestions on how we as a company can

work on the challenges of digitalising manufacturing

- using some of the material for internal business development
- the need for opining to reinforce the topic of digitalisation in own organisation

Plenty of food for thought was provided not only for this but also for any future Masterclass. As the first such Masterclass there was also plenty to be learned (as well as taught) but that is something that can be expected of any 'first run'. Overall, while there was room for improvement, a lot of value was derived and there was enthusiasm in abundance about the Masterclass notion and the prospect of another one.

Participant's view

Viktoria Fagerfjäll, of the Strategic IT Business Development department at Stena Metall AB in Sweden, was one of the enthusiastic participants of the Masterclass. "In my job I try to help clients get more out of their business through the help of IT, so the digital transformation aspect of this Masterclass was particularly relevant for me. I particularly enjoyed the breakout sessions – the open discussion – especially hearing the input from the various companies present, like Husqvarna, about their experiences with digitalisation. People who are facing the same kinds of challenges as you are. I'm really glad I had the opportunity to participate. This was a really good, well conceived one-day event. I think that more events like this in the future will help people get a better grip of the implications of digital transformation and what they can do in their particular situations."

Results from ITEA project EASI-CLOUDS laid foundation for Materna's Cloud Computing business



The ITEA 2 project EASI-CLOUDS ran successfully from September 2011 to March 2015 and gathered 30 partners from Denmark, Egypt, Finland, France, Germany and the Republic of Korea. Its key challenge was to provide solutions to recurring concerns about the migration to Cloud Computing: vendor lock-in, quality of service guarantees, data protection and unclear financial impact of cloud-based business models. Public cloud providers as well as solutions to run private clouds (such as OpenStack) were already commonplace. However, seamlessly switching to the appropriate provider according to cost, location

or quality was still a technical challenge, and one that would open a wide range of business opportunities.

OpenStack was quickly identified as the most promising solution for virtual infrastructure management – the dynamic allocation of virtual compute, storage and network resources in a data centre that is the cornerstone of an Infrastructure-as-a-Service (IaaS). During the project, partners gained expertise by setting up several IaaS testbeds and business models enabled by the EASI-CLOUDS platform even contributed with code to the OpenStack community.

The project's results were already visible right after the completion of the project and its success was recognised in winning the Korea EUREKA Day Award for developing the most innovative and commercially viable EUREKA project and the ITEA Award of Excellence in the category 'Business impact' during the Co-summit 2015.

Materna was one of the EASI-CLOUDS partners and the members that participated in the project played an important role to further develop Materna's cloud computing business and portfolio. They had, and still have, a leading role in launching and maintaining the Materna OpenStack demo center for customers and were also involved in important project pitches at the customer front.

In October 2016, Materna won a large customer deal based on IBM Blue Box, an OpenStack hosted private cloud environment. Furthermore, one of Materna's executive vice-presidents gave a keynote speech at the OpenStackSummit in Barcelona in October 2016. Materna will organise the Materna IT Forum, a customer event taking place on 26th January 2017 with a dedicated workshop on Cloud Management. More information on this event can be found at the website <http://www.materna-itforum.de/>

These results clearly show that Materna's participation in EASI-CLOUDS and the knowledge and results gained from it laid a foundation for Materna's current Cloud Computing business!

More information

<https://itea3.org/project/easi-clouds.html>

Taiwan, a promising newcomer in ITEA!

ITEA is continuously looking to innovate itself to reach new horizons via new partners and new countries. We see that the effort contributed by new countries is increasing in ITEA and from experience with Canada we know that each new country can have a strong impact.

While France is the highest effort contributor to the ITEA 2 Programme, followed by Spain and Finland, Turkey is leading the ITEA 3 Programme (Call 1 and 2), currently followed by the Netherlands. Canada, which started only recently in ITEA 3, is already ranked 8th.

We are very proud to welcome Taiwan now as a newcomer in ITEA, with active participation from Bio Ma-tek in the smart health project 3DPathology. With the financial support of the Taiwanese Ministry of Economic Affairs (MOEA) they will strengthen this project as a solution provider for nano-biomaterial characterisation and analysis.

We hope we may welcome many more Taiwanese partners in ITEA in our future Calls!

SAVE THE DATE

12-13 September 2017

**ITEA PROJECT OUTLINE
PREPARATION DAYS 2017**
Berlin, Germany

 <https://itea3.org>



ACCELERATE SotA

Innovation forever, innovation for success in the market

By Philippe Letellier

Innovation means the latest technology in a new vision of usage with a dedicated process and business model deployed in the market.

Speed is now the alpha and omega of innovation. Thus acceleration of the go-to-market is a key focus for today's industry. ACCELERATE is one of our success stories on this topic and its public SOTA that can be found in ITEA SotA database (<https://itea3.org/community/roadmap/document/1993.html>). It deserves to be read carefully in the light of the European paradox: great science, poor marketable innovation.

Its SotA provides answers to:

- How can we develop a methodology for acceleration?
- What role can ICT technology itself play in acceleration?
- How do we get towards a "market" of acceleration services?

First of all, it considers the definitions of the different kinds of innovation and, in particular, the characteristics of software innovation as well as lists the different kinds of organisation that deliver innovation, with a special focus on teamwork, which is often the key to transforming a company into an innovative company. Neither does it forget to stress the role of user focus in innovation. We are in a period where proposals

proliferate and the best way to filter these is through actual user priorities, not simply through direct co-design but rather through indicating the day-to-day problems to be solved. ACCELERATE describes many tools to handle this user involvement in the innovation process.

It proposes an exciting comparison of innovation in SMEs and large companies. It helps to understand the strengths and weaknesses of these two kinds of organisation ahead of innovation. Its vision of accelerating innovation go-to-market and commercialisation is indeed derived from an interplay of different theoretical origins (entrepreneurial marketing, branding, effectuation and creation theories, social commerce, business modelling and experimentation, ...). It is valuable to understand the impact of all these theories. It doesn't miss the lean start-up trend and compares this with the more traditional way to innovate. You will learn a lot from it.

ACCELERATE defines acceleration as a combination of means - processes, tools and methods - which help companies go faster to the right markets. It defines a four-phase approach:

- **frame the opportunity:** the focus is on the transformation of ideas to concepts that are quickly evaluated by intended user groups and ecosystem partners
- **frame the solution:** After selecting the most promising idea, the focus shifts to developing a minimally viable solution
- **frame the market:** the development and testing of business model becomes crucial
- **frame the resources:** finally, the viral coefficient must be greater than 1 to have

viral growth. In other words, the last phase emphasises that a single customer acquisition should result in more than one customer, on average, by means of the customer referral

The actual methodology needs coming from SMEs and large organisations are listed and analysed in terms of the advantages and limitations for each methodology. In addition, the service offers are also subject to analysis.

The project shares the lessons learnt during the different concrete industrial use cases worked on during the project. It is very fruitful to accelerate your choice of methodology and services to speed up the innovation process itself and increase the actual quality. From reading this SotA you will get all the information you require to understand what is at stake for an innovative organisation. It will give you all the theoretical basis to understand the topic as well as some very simple concrete recommendations to make your choice and a unique base of references on theory, methodologies and service offers.

I cannot recommend more highly the benefits you will gain from carefully reading this document.

Innovation forever, innovation for success in the market.

 **ACCELERATE**

Open EUREKA Innovation Week

15-19 May, Barcelona - Spain



From Monday 15 to Friday 19 May, the EUREKA Spanish Chair will organise the Open EUREKA Innovation Week. The event will take place in Barcelona's International Conventions Centre (CCIB) in Barcelona, Spain. This event will be an opportunity for all the participants to meet, share ideas, interact and discuss with the stakeholders from European industry, SMEs, academy, policymakers, representatives from regional and local authorities and many more.

The EUREKA Innovation week will start with the EInnoVest Venture Forum, which enables innovative SMEs to meet and pitch to international investors. The second day will encompass the Open EUREKA Days with an inspiring conference programme, during which the EUREKA Innovation Awards will be presented. The Annual EUREKA Korea Day will take place in parallel. Day three, 17 May, will start with the Annual Eurostars Day.



Thursday will be the EUREKA Clusters Day during which the EUREKA Clusters, including ITEA, will organise a joint conference programme and have parallel information sessions per Cluster. On

the closing day, Celtic-Plus will continue with its annual Celtic-Plus Event.

EUREKA Innovation Award: ADAX selected in the category Competitiveness

The judging panel for the prestigious EUREKA Innovation Awards selected the ITEA project ADAX as winner in the category Competitiveness. ADAX will present itself at the exhibition of the EUREKA Innovation Week. Besides that, on 16 May, ADAX will pitch its project in a contest together with the winners in the two other categories. The best pitch will be selected by public vote and win an extra prize.

In addition to their presence during the EUREKA Innovation Week, the award-winning projects are also invited to participate in the EUREKA Innovation Award ceremony at the Ministerial Conference in Madrid on 30 June 2017.

ITEA 2 project MEDUSA - Saving time, saving lives

Medicine in the Cloud

EUREKA has published a success story on the ITEA 2 MEDUSA project:

MEDUSA combines advanced data processing, image analysis, virtual collaboration and medical decision-support to save lives. Products and services from at least three companies are already on the market. [...]

“Our aim was to develop a generic approach through which medical staff could collaboratively analyse patient data and decide treatments, no matter the medical condition,” project leader Frank van der Linden explains. “The common factor is that bringing medical staff, patient data and support software together accelerates and improves medical decision-making, which saves lives.”

Virtualisation platform

The key to MEDUSA's vision is a platform through which many different eHealth systems - data management, visualisation and analysis, decision support and more – can be “virtualised”, or made available via the cloud. This allows previously incompatible systems to work together, provides virtual workspaces for medical staff to collaborate, and assures patient data privacy.

“Apart from allowing different medical systems to ‘talk’ to each other, this also means that hospitals can now access the latest image processing and other systems as cloud-based services,” adds van der Linden. “This is inherently more efficient than every hospital buying their own hardware and software, and constantly keeping it all up to date.”

MEDUSA significantly augmented Philips' medical technology suite, now marketed as the Health Suite Digital Platform. It also improved the image processing tools of University of Amsterdam's Academic Medical Center spin-off Nico-lab, and helped Dutch SME Sopheon virtualise their data processing processes, allowing their decision support systems to respond in microseconds.

In France, finally, one of the PhD students who worked on the project while at Institut Mines-Télécom has now launched the company uStartApp to further commercialise the software virtualisation approach developed in the project.

Visit www.eurekanetwork.org to read the full article.



The EUREKA Innovest Programme 2017

Innovation meets capital

The EUREKA Innovest Programme (EInnoVest) supports innovative SMEs seeking private investment by taking them through a tailor-made process to become investment ready. The most promising SMEs are promoted towards the investment community and matched up with international investors.

The programme is open to all SMEs having participated in EUREKA projects (Clusters, EUREKA Network projects and Eurostars) as well as to all SMEs from Denmark, Finland, Norway, Portugal, Slovenia, Spain, South Korea, Sweden and Switzerland. Participation is free of charge.

What does EInnoVest offer to companies?

- **Raise their knowledge:** Live webinars with experienced coaches and investors about sources of investment, the fundraising process, how to communicate with investors, how to prepare an investment ready business plan, business development, scale-up challenges, and more.
- **Get investment ready:** Business and Venture academies to improve business proposals, learn the investors' criteria to invest, and practise successful pitching to investors.
- **Develop business proposals:** Individual One2One Mentoring with EBN and EBAN coaches to discuss and review the business development issues at the core of your company.
- **Maximise exposure:** Contacts to active international Venture Capitalists and Business Angels in your industry.
- **Investor matching:** EInnoVest Venture Forum (Barcelona, 19 May 2017) and other Investment Forum events to meet and pitch to the right international investors.

The programme is organised in collaboration with EBAN, EBN and Tech Tour and will take place at various locations across Europe throughout 2017.

Further information and registration: <http://eurekainnovest.eu/>

Source: EUREKA Network – www.eurekanetwork.org

	10-11 May	Digital Innovation Forum	Amsterdam, the Netherlands	https://dif2017.org/
	12-13 Sept	ITEA PO Days 2017	Berlin, Germany	https://itea3.org/
	7 April	Deadline Celtic-Plus Spring Call		www.celticplus.eu
	18-19 May	CelticPlus Event 2017	Barcelona, Spain	
	9 May	Submission deadline - Full Project Proposal Spring Call 2017	Stockholm, Sweden	www.euripides-eureka.eu
	26 May	Next Cut-off date		www.eurogia.com
	22-23 June	EuroNanoForum 2017	Valletaa, Malta	penta-eureka.eu

Colophon



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Submissions:

The ITEA Office is interested in receiving news or events linked to the ITEA programme, its projects or in general: R&D in the Software-intensive Systems and Services field.

Please submit your information to communications@itea3.org.

Subscription enquiries:

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