

# ITEA Magazine 24

JUNE 2016



PO Days 2016  
Be there!

Focus on Spain

Success story  
DIAMONDS

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# Editorial



**Innovation:** ITEA is first and foremost Innovation, to contribute to societal changes in our global society. The EUREKA Innovation Week held in Stockholm was an inspiring moment where all the EUREKA Clusters gathered for the first time ever. Our challenges like smart health or smart mobility, as our Chairwoman said, are galaxies, each full of millions of stars. Each star is a customer, an opportunity, for the ITEA community. Our success is reflected in a diversity of successes. This event also provided an opportunity to say a kind goodbye to our former chairman: good luck, Rudolf, in your next adventures.

Francisco Marín and Juan Emilio Ayuso González from Spain, just before taking the EUREKA Chairmanship, deliver in this magazine a hymn to innovation, stressing the digital transition in all the businesses and the value of the EUREKA Clusters and, in particular, ITEA in supporting these transitions. Antonio Ventura from Datapixel delivers an entrepreneurship message based on innovation in industry 4.0 with its 3D vision offer. There is no innovation without awareness of the State of the Art: this magazine focuses on the DEMWatch SotA.

**Transition ... Digital:** Life is continuous transformation. Let's be sure ITEA is vividly alive. Our 3 ITEA Awards of Excellence and EUREKA Award are good examples of digital transition: ADAX transforms our way of looking at the fight to protect our digital assets; H4H transforms our way of looking at Moore's law with a new heterogeneous High Performance Computing architecture. Both of them were awarded for their business impact. RECONSURVE picked up an award for transforming how we innovate focusing on customers and end users. DIAMONDS, winner of the EUREKA Innovation Award for Added Value and the EUREKA Pitch award, transforms how we look at testing.

**Europe:** ITEA is European not in the sense of borders but in the sense of culture. This European culture is a unique strength to navigate in this changing global world that we are pleased to share all over the world. The EUREKA Innovation Week was a unique opportunity for our leaders to claim the importance of the global dimension of EUREKA and in particular of ITEA. It was also an opportunity to again meet our friends from Korea (with an exceptional introduction to their cultural music heritage to start their session), Canada and South Africa. Can Yanyali explains in this magazine how important it has been for Elektronet to be involved in ITEA to build its European and overseas dimension.

**Accelerate:** ITEA is recognised as successful, with regular unique success stories delivered by our projects. It could have been enough, but it is not enough for our Community because we are confronted continuously by new challenges. Ayuso González, Head of Business Development for Information Society at the Spanish MINETUR, reflects on the very short time cycles and the businesses that must adapt at the same tempo. It is exactly what we want to do in ITEA. ITEA will be transformed in a new Digital ITEA that will be aligned with the new challenges and will help us to accelerate even more. See you in the next few months, see you in the next few years in the future ITEA Community.

All these points are discussed in this magazine! Have a lot of joy reading it.

A handwritten signature in black ink, appearing to be 'P. Letellier'.

Philippe Letellier

# EUREKA Innovation Week



# Stockholm bursts with innovations that matter



In the chill of a Scandinavian spring around 900 participants warmed to the EUREKA Innovation Week in Stockholm from 26-29 April. In his opening address, Per Tervahauta, Chairman of the Swedish EUREKA tenure, reiterated EUREKA's mission to create growth and jobs as well as underlined Sweden's own specific targets during its Chairmanship.



## EUREKA Innovation Week

### Global platform for innovation

And so to the business of the day(s): global collaboration within the EUREKA community focused during this Innovation Week on the theme of Smart Cities. The need for a global platform for innovation was subscribed to by Pedro de Sampaio Nunes, head of the EUREKA secretariat, who cited the fact that the EUREKA and associate countries together have the top innovators, a billion consumers and a third of global GDP but warned, at the same time, that “Europe has some catching up to do with the US, which still holds the digital edge.” Responding to this call on the entrepreneurial front, Zeynep Sarılar, the new ITEA Chairwoman, spoke of the value of the EUREKA Clusters in general and the ITEA Community in particular, pointing to the uniqueness of the global – in all its senses – collaboration that defines and sets EUREKA apart: “It’s something I experienced myself as businesswoman. It is the opportunity the Clusters give for everyone to contribute to and benefit from all the expertise we have.”

### Open and collaborative

Outgoing ITEA Chairman, Rudolf Haggemüller, in his role as EUREKA Intercluster spokesman, emphasised the concept of ‘open’ in his vision of EUREKA’s role in globalisation and called on the community to embrace the “open innovation, open talent, open market and open money,” adding with a characteristically playful twist, “especially the money!” These views were referred to regularly by the other panellists in their debate on global collaboration, which saw contributions from Canada, South Korea and South Africa, all of whom extolled the

virtues of collaboration with Europe as four continents shared a single Swedish platform. Jae-Hoon Chung, President of KIAT, South Korea, commented that “the three associate members of EUREKA are ‘technological powerhouses’ representing Asia, Africa and North America. I hope that the relationship between the EUREKA Network and associate countries is further enhanced and a truly global network will be established in the future.”

With a clear consensus on the need and desire for progressive global collaboration on innovative projects in the future, the first fascinating morning closed and the sense of solidarity was evident among the richly diverse participants. The afternoon was devoted to the associate countries’ programmes. Further informal networking had an opportunity to thrive at the Gala Dinner organised that evening in the Stockholm City Hall, venue for the Nobel Prize awards and certainly a source of inspiration and innovation for all the guests.

### Smart Cities, Innovative Projects

As well as matchmaking B2B sessions, day two saw the topic of Smart Cities take centre stage along with a display of innovative projects from the EUREKA Clusters in the exhibition space. ITEA projects drew plenty of interest as they pitched their impressive projects and deliverables. SITAC was also present and project leader Ilan Mahalal explained how the project, completed in November 2015, had been a great success. “We were 18 members from 5 countries with 4 industrials, 8 SMEs and 6 academic partners. This gave us a perfect blend of competencies, ideas and contributions.”



The DIAMONDS project, also with a prominent stand in the exhibition space, was nominated for a EUREKA Innovation Award, and its pitch was well received as a suitable sense of drama saw good overcome evil in the battle to provide security. DIAMONDS has produced an effective methodology capable of strengthening the practices of security testing commonly used in computer science and various industrial areas. The jury commented that the “societal benefits are significant: security is an emergence topic for today and future societies.” Not only was this the EUREKA Innovation Award winner in the Added Value category but it also scooped the Pitch award voted for by the public and other participants themselves.

During the Living Labs and Frontrunner Cities parallel sessions C<sup>3</sup>PO and BaaS both gave good accounts of their projects and achievements. In the Living Labs session Barco’s Andy de Mets gave a very lucid account of the power of collaboration in solving smart city challenges. Franz-Josef Stewing presented Building as a Service, incorporating a video of their model building showing how a range of challenges can be addressed by automated solutions.

### Up close and personal

The final day of the conference gave the broader EUREKA Community the opportunity to ‘convene’ and take a look behind the scenes of an inter-cluster meeting as six Cluster leaders had an on-stage discussion of a few of today’s key issues





Regional Growth, who focused on strategic areas for future policy in digitalisation, and Daniele Quercia, of the Social Dynamics group at Nokia Bell Labs in Cambridge, whose ‘smelly’ rather than smart city approach initially caught the audience by surprise but in the end made surprisingly good sense. In closing, both Zeynep Sarilar and Jacques Magen, the Celtic-Plus Chair, promoted collaborative Clusters and looked forward to collaboration not only on a wider geographical but also on an inter-cluster scale. As Zeynep suggested on the first day of the Innovation Week, there is so much expertise to contribute to and benefit from throughout the EUREKA Clusters.

facing EUREKA. Zeynep Sarilar used the occasion not only to reaffirm the ITEA mission and bottom-up approach but also to tweak it by emphasising the “need to be a global player, to encourage more and more start-ups to participate in projects and to include venture capitalists in order to benefit from the open money notion.” She also expressed her own conviction in what may be regarded as ‘a call to arms’ that “the challenges we face like smart health or smart mobility are galaxies, each one full of millions of stars. Each star is a successful project that focuses on a specific innovative solution, collaborates with valuable global partners and aims to create an economic impact in global markets”.

#### Spotlight on success

Of course, no ITEA session could be complete without a review of the achievements of new, exciting programme highlights by the ITEA Vice-chairman Philippe Letellier. However, there was a surprise in store for the recipient of a very special award – Rudolf Hagenmüller. For once his composure slipped in a rare show of emotion and at a loss for words as he was presented with a retrospective of his 11 years (at the head) of ITEA – a unique collection of photos, sketches and stories written by former colleagues & friends. And then on to the presentation to the three winners of the 2016 ITEA Awards of Excellence. Philippe once again highlighted the quality and variety of the project achievements of the past year or so, claiming that the new “digital ITEA is getting closer to the customer” and that “the projects are making more and more tangible impact on business and society”. ADAX (cyber-attack detection and countermeasures simulation) and H4H (hybrid parallel programming for high-performance computing) won in the ‘business impact’ category while RECONSURVE (a reconfigurable surveillance system with smart sensors and communication) took the ‘user focus’ category award.

As the day, and the ITEA part of the Innovation Week, drew to its close, it was fitting that ITEA and the EUREKA Telecom Cluster, Celtic-Plus, should finish off with a joint session, and be ‘garnished’ with two compelling and visionary keynotes from Lena Carlsson, of the Swedish Agency for Economic and



# Focus on Spain

... where ICT is leading  
a revolution



The ICT industry is essential to the Spanish economy. Since the 1980s, this sector has become a mature industry and now accounts for almost 10% of GDP, according to a recent market and statistical analysis by CDTI. In 2013 revenues totalled exceeded 84 million euros, divided into nearly 1.8 million for ICT industrial companies and a little over 82 million for ICT services companies. At around half a million jobs and more than 50,000 companies, the ICT sector is well suited sector to Spain since ICT relies more on human capital and less on investment in physical capital, and Spain has a highly skilled and creative work force.



### **Rapidly evolving**

According to Francisco Marín, Director General of the Centre for the Development of Industrial Technology (CDTI) in Spain, “R&D is the engine of the development and growth of societies (and especially the most advanced ones) that increasingly rely on ICT because the global competitiveness of all sectors drives them to demand more and more ICT-based solutions to improve their productivity and competitiveness. And this means more R&D, especially with the phase in which we find ourselves – the 4<sup>th</sup> industrial revolution as evident in the global development of the Internet, Big Data, the development of Industry 4.0. and cyber-physical systems among other disciplines. In fact, this revolution is characterised by the fusion of physical and digital and, probably, biological worlds. So, in this context the ICT research role will be bigger than it is today.”

Juan Emilio Ayuso González, Head of Business Development for Information Society at MINETUR, the Ministry of Industry, Energy and Tourism, reflects on the very short time cycles and the businesses that must adapt at the same tempo. “Research and Development is the principal pillar on which the ICT Industry leans. Not only that but hardly any company is unaffected as ICT has become the core of its production systems. Just take manufacturing and the emerging connected industry 4.0 paradigms, the 4<sup>th</sup> generation of digital industry, whose goal is to take advantage of the new ICT enablers like Big Data or 3D printing throughout the value chain.”

### **Key enabling technology**

*So in what ways does Spain support and promote its software industry?* “As I just explained,” Marín continues, “the ICT sector has a great future and potential impact in our economy. In fact, its characteristics allow Spanish companies to compete on equal terms in the international arena and the role of ICT as a key enabling technology is critical for many industries in which Spain has comparative advantages, like advanced manufacturing technologies or Internet of Things (IoT).” Ever since the first National Plan for R&D (1988-1991) that included a specific National Programme for Information Technology and Communications, the Spanish Government has supported R&D in the ICT sector. Recently the

government launched the 'Digital Agenda for Spain' to support the ICT development from all perspectives (infrastructure, e-commerce, education, R&D...) and in the field of R&D&I the 'Plan Estatal de Investigación Científica, Técnica y de Innovación 2013-2016' includes ICT as one of the main societal challenges.

### Funding structure

Spain has a good policy mix to finance and promote business R&D&I initiatives, with a support structure based on tax incentives and direct aid (both grants and soft loans). "However, in order to promote the adoption of very new technology waves, like Industry 4.0," Ayuso González comments, "there are some important gaps that need to be supported, such as the professional capacity to develop new skills. MINETUR funds these programmes." Due to the diversity of the specialisation areas, Spain is characterised by its neutrality and horizontal approach. Every company that carries out an R&D&I project can make use of fiscal incentives to reduce its development costs. Recently, a refundable tax credit was introduced that allows businesses without profits to recover this deduction.

CDTI is the main Innovation Agency in Spain devoted to financing and promoting business R&D&I.

Marín explains, "Our annual budget is around 850 million euros for the direct financing of companies' projects. We have a horizontal

approach that implies that all technologies and sectors are welcome. We finance SMEs (around 65% of the CDTI's supported initiatives are developed by SMEs) and large enterprises. We have developed a wide portfolio of instruments to support the entire innovative cycle in a company, from the seed stage to the expansion and internationalisation phase. Our support is based on soft loans, grants and capital risk whereby we offer the instrument that is most suited to a company's need." Ayuso González adds that there is an essential difference between the CDTI and MINETUR approaches. "CDTI has an open call and is based on a mix of loans and grants whereas MINETUR has a limited and competitive basis call and funds as a grant."

### EUREKA Clusters

As the Spanish representative for ITEA policy, Ayuso González reiterates the importance of EUREKA Clusters in the "internationalisation that is one of MINETUR's strategic objectives. Spain has high quality software solutions and EUREKA programmes offer the organisational and regulatory framework to expand the market to the EU and even wider, like Canada or Korea, with the suitable partners and security needed. This applies not only to market access for Spanish products but also networking relationships. ITEA is the logical space for Spanish software market and has become the most important Cluster for Spain, in terms of company participation and invested funds. We have ITEA success stories with Spanish leadership that confirm ITEA as an efficient instrument to MINETUR goals."

CDTI's objective is well aligned with EUREKA's aim of fostering cooperation in research and innovation. "Our principal objective is to strengthen the international competitiveness of Spanish companies in Europe and third countries," Marín says. "For CDTI, supporting EUREKA activities and encouraging Spanish companies and research institutes to get involved in EUREKA project cooperation are excellent vehicles to help Spanish companies in their quest for internationalisation. Spain has been a EUREKA member since 1985 and our involvement can be underlined by the fact that in July this year, Spain will hold the chairmanship of EUREKA for the third time. The Cluster instrument brings together European

industry's research and collaboration interests, innovation capacity and national funding opportunities. CDTI is fully committed to these instruments and to accelerating the introduction of R&D&I results to the market."

### SME support

An important element in the Cluster consortia is the SME, and in Spain the role of SMEs cannot be understated. "At CDTI we studied a sample of 17 reference countries for companies of 10 or more employees. The percentage of SMEs in Spain was 86.6%, higher than the EU 28 average (83.6%) and the sample average (83.7%). In 2013 Spanish SMEs invested 1,167 million euros in R&D, at an average of 10,710 euros per company. The significant average expenditure and the large number of SMEs rank Spain third of the 17 analysed by SME expenditure on R&D. Given this business structure, the Spanish government has always given great support to these kind of companies."

Funding by MINETUR is based on a competitive basis, so no individual differences are possible but, as Ayuso González points out, "there is some difference in our funding instrument depending on the company size. Given its smaller capacity, SME usually have to take on a significant degree of risk when they front an R&D project. We try to compensate for this disadvantage by offering a higher funding ceiling than we do to bigger companies in the form of grants."

"At CDTI," Marín says, "we provide both funding and expert advice for structuring innovative business projects. In my opinion, more expert advice than funding is needed, especially for SMEs. CDTI proactively identifies and promotes new innovative initiatives and helps SMEs to apply for CDTI's funding. We also have designed some programmes, like CIEN, which generates a tractor effect on SMEs and allows them to incorporate innovation as a stable dynamic. But there is still much to be done, both nationally and on a pan-European level. My top three 'must-have' are a long-term stable policy, better coordination between programmes, and intelligent specialisation and focused support."

### More information

[www.cdti.es](http://www.cdti.es)

[www.minetur.es](http://www.minetur.es)

# Machine Vision Technology

## the Datapixel story

Apart from being the founder and CEO of Datapixel, Antonio Ventura is a specialist technological consultant for CARSA, Spain's oldest existing innovation management consultancy firm. He is also a member of the Executive Committee of the European Machine Vision Association (EMVA) and of some international committees working on standards, one of which is the OSIS committee (Optical Sensor Interface Standard) of the ia.cmm. On top of that, he finds time to be involved in ITEA projects like CREATE, aimed at developing self-configuring, flexible and evolutionary techniques for manufacturing.

### The bottom line

When Datapixel was founded in 1999 by machine vision engineer Antonio Ventura, the focus was not as sharply defined as it later became a couple of years further down the line when Datapixel began to concentrate on the manufacturing market to use machine vision technology to help companies improve their production efficiency and product quality. "We put our expertise in 3D optical inspection of production lines, from vehicles to components, to capture information and make three-dimensional contours of the part being manufactured. We are all too aware that non-contact measurement and 3D digitising systems are redefining the way we generate, process and use the dimensional information throughout the entire product life cycle. By introducing virtual pieces based on digital technology, digitised 3D point cloud and the application of virtual metrology and inspection automation solutions, our clients significantly improve their industrial processes and, as a consequence, their bottom line."

The Datapixel team has a range of expertise covering 3D vision, optics, electronics and software engineering. It develops innovative

solutions based on non-contact sensors, high-speed virtual point cloud processing, verification and real-time processes reverse engineering. "Our facilities are growing," Antonio says, "and our customers are increasingly looking for innovative and more profitable solutions. Our company is growing and strengthening with each new project and our great desire is to continue to share our success with our customers."

### Knowledge and prestige

Asking the question of how important software is in his industry brings a smile to Antonio's face. "Yes, of course, it is vital. Or should I say, it has become much more vital than some years ago when perhaps the hardware may have been just as vital. It makes the difference since we are pretty much using the same components as our competitors. It's the software that makes you 'smarter' than your competitor. It really is the key differential factor."

*And how do ensure you can get this differential factor?* "Research. It's a fundamental pillar in our industry. If I want to have a competitive company then I have to be innovative. And innovation requires R&D. And when developing innovation involves some risk before the benefits, then my view is that this risk, like the benefits, has to be shared by the community. So, public funding should be a given, especially for SMEs that need the backing of the public authorities to get the necessary research for their innovations in a very competitive market. Of course, one way they can help, apart from the funding, is the support they provide for us to be part of international programmes like ITEA, which give us access to knowledge. And prestige. It also gives us an opportunity to showcase our expertise – a nice marketing tool. It's a dual benefit. And it also gives us a kind of financial leverage for research and development that would be excessive for us to finance ourselves."



"Another good thing about being involved in ITEA projects is the evaluation of the quality of what we do. We can see what and where we need to improve. The international ITEA gives us a benchmark. What we must not forget is from a Spanish point of view – or any country in fact – is the need to synchronise our national programmes internationally if we want to go out and compete on the European and global stage. We're not yet spending enough on R&D when compared to other developed countries, and we need to do more in this respect to make sure we don't fall behind."

**More information**  
[www.datapixel.com](http://www.datapixel.com)

# Community Talk with: Can Yanyali

In this issue's 'Community Talk' column, Elektronet managing partner Can Yanyali looks at his and his company's involvement in the ITEA community and the benefits that both have gained from participation.

## ***So where did it all start for you?***

"I have been an entrepreneur for around twelve years now, having started my business life straight after I finished my studies abroad. That was back in 2004 when I went into the world of informatics and communication. I have specialised in R&D, manufacturing technologies and project management in the electronic manufacturing sector. Among other things, this gave me a good grounding to start up my first technology company, Iconn Technologies,

in California in 2007. But in order to diversify my investments around the world, in 2008 I became a partner in Elektronet Inc., a company that has been active in the informatics and communication sector for 20 years. It was then, as Chief Operation Officer, that I started to move Elektronet in the direction of an international platform.

"By focusing on R&D for payment systems and system integration, Elektronet has managed to manufacture self-service terminals like First National ATM, Electronic Toll-Collection Systems and Goldmatic. In addition, Elektronet Inc. has also become a business partner to the world's pioneering technology companies like Microsoft, Google, JCM Global, AZKOYEN Group and MEI. Since I head Elektronet's International R&D Projects division and the EUREKA programme falls under that umbrella, I also take part in the administrative body of the Istanbul Chamber of Industry (ISO), the Istanbul Chamber of Commerce (ITO), the American Chamber of Commerce in Turkey (TABA-AmCham), the Software Industrialists Association (YASAD) and the Economic Council of Germany (Wirtschaftsrat Deutschland)."

## ***Impressive. When did your relationship with ITEA begin and what kinds of projects have you participated in?***

"As Elektronet, our first meeting with ITEA happened thanks to our participation in the PO Days. We first heard of ITEA through TÜBİTAK, the Scientific and Technological Research Council of Turkey, while we were focused on R&D on a local level. But thanks to TÜBİTAK introducing us to ITEA, we are now able to sustain our R&D on an international level. Our involvement with ITEA has been on the basis of project development with partnerships; and I've transferred the gains I have made in terms of my R&D experience to my co-workers and my company. We focused on other companies' projects to help them sustain their projects on an international level by introducing them to ITEA platform. Also, today we are involved in three ongoing projects on the ITEA platform. It's really promising and encouraging for us, as we want to keep growing in terms of R&D."

## ***Over the years ITEA has changed. How have the changes affected the ITEA community of which you are part?***

"With new ITEA members joining on a regular



basis, new project opportunities arise. Also, while new R&D topics are being developed, ITEA helps to bring an international profile to the products that once started as projects. Our ITEA journey started with just one project but today we're up to three. This has helped Elektronet not only take on new responsibilities but also gain new project management experiences. One of the most important advantages ITEA provides to enterprising companies is that it enables them to reach out to leading experts and make use of their experiences. Also, ITEA helps improve our R&D culture, encourage SMEs in our country to be part of international projects and help create an international network."

***ITEA speaks about 'seizing the high ground'. What does this imply in your view?***

"I see this as a statement of intent as ITEA continues to focus on a progressive European market, developing a network of companies and co-created R&D projects. ITEA enables us to plug into new business, project and product innovation techniques which are being extended in the global innovation ecosystem. Along these lines, it is sustainable growth interacting with different business areas and enriching the knowledge for these areas under the ITEA umbrella. For instance, in 2007 investments in Europe for R&D projects were 5,3 billion euros in total while the US figure was nearly double that at 10.4 billion euros. The role that ITEA fulfils in the ICT sector will help close this

gap through to 2020 and help Europe shine more. Also, ITEA's principle of supporting innovative ideas is a good fit with my own business development principles and my point of view on the subject. ITEA has had important successes in automotive, communication, healthcare, aviation and social sectors. With a 2030 deadline in mind, there are plenty of innovative goals for ITEA to achieve in social and economic domains. That said, the new industrial revolution – known by Industry 4.0, Smart Industry or any of the other terms that are being used for the same shift – is inevitable. And the role that R&D has to play in this new era is equally inevitable and essential. So, thanks in no small measure to the ITEA principle of seizing the high ground, we are able to sustain our own essential role better and on an international level."

***'Happiness' is an important component in the new ITEA 3 approach. What does happiness mean to you in this context and how can the ITEA community and, more widely, society benefit?***

"When we think of happiness we think of the tremendous R&D projects and the synchronised way of working within the ITEA projects. Also, to create a platform to help make R&D projects a commercial success. So our understanding of happiness comes from the opportunity to work with international companies in harmony. Happiness through the opportunity to work for the people, our people, to improve people's quality of life. We feel this responsibility, and we are happy to take that on board and make the end user happy no matter how long it takes. Personally, as a manager, ITEA has helped me extend my vision as a whole, improved my relationships with my co-workers, helped my team learn to manage new challenges and goals, and forced us all to grow and to achieve greater success as a result. This makes me happy. But, most importantly, ITEA has given me the opportunity to represent my county in the EU. ITEA has helped us to be informed on new technology developments that have inspired us to participate in new conferences and to increase our knowledge. It is with a sense of happiness that I can return the favour to those that matter and continue to support our people in the process."

# ITEA project results enhancing people's lives

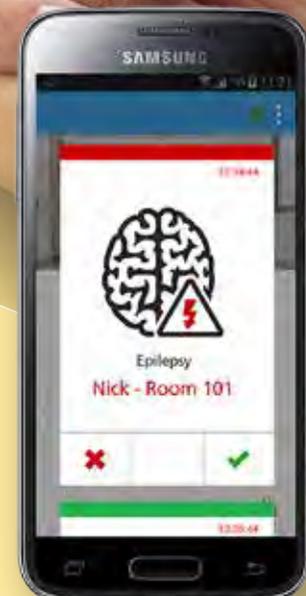
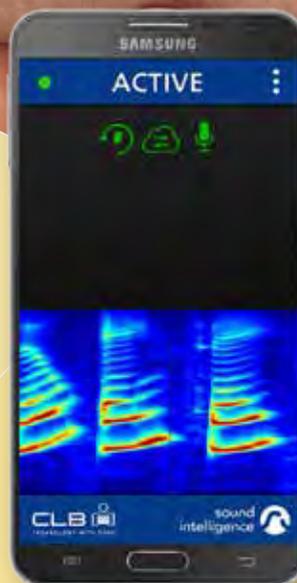
## A life-saving app

The CLB epilepsy app is an android app that is able to detect epilepsy via sound, continuously monitoring a sleeping patient via the smartphone's embedded microphone and using algorithms to detect sounds associated with epileptic seizures. Once these seizures are detected, an alert is automatically sent out to care providers who can then intervene as appropriate.

The patient activates the app before going to bed, places the smartphone on the bedside table and connects the charger to prevent battery drain. The three elements are a smartphone with the epilepsy app, a CLB Unicare Backend (running on a laptop) and a care provider app (CLB Medical Messenger). The key technologies are Proprietary Sound Intelligence algorithms, CLB Unicare communication protocol and CLB Unimessaging message router.

This solution not only improves the quality of care but also reduces invasion of privacy. It is a comfortable solution that requires no sensors to be attached to the patient, provides permanent monitoring (so when the patient is asleep). It is a discrete but potentially life-saving app.

ITEA 2 Project  
MoSHCA



# DEMWatch SotA on Autonomy of the elderly

By Philippe Letellier

Autonomy of the elderly supporting different kinds of degenerative illness is becoming a challenge for our society which is growing older and older as well as more individualistic. ICT will surely not replace human sharing, which is the first need and hope of the elderly, but will make their lives safer and more comfortable.

I recommend that you carefully read the DEMWatch SotA to check the different technologies being used to support the Alzheimer family of patients. This report is very well documented and focuses mainly on two topics: geo-localisation and ambient assisted living services.

Localisation is so important for the freedom of persons who lose their bearings. If we are not able to deploy some geo-localisation tools, these persons will be condemned to the four walls of their bedroom.

In this SotA you will discover:

- the associated localisation KPI (accuracy, coverage, ...), which is very important to be able to make a choice depending on the constraints of the situation,
- the different location-based services that take advantage of this geo-localisation
- the sensor medium to geo-localise
  - camera, which has been studied for many years
  - infra-red, which eludes low-light situations or dazzle
  - all the radio frequency system of triangulation
  - use of even the TV signal
  - the well-known global navigation satellite system like Galileo
  - the inertia system, which can be used when you receive no more signals
  - magnetic field disturbance like a pigeon
  - ultrasonic like robots



- besides these media, there is a set of technologies used to calculate the position
  - the strength of the signal, which takes advantage of a lack of wireless communication where the power decreases with the distance
  - time of arrival or time of flight, which depends on line of sight
  - time difference of arrival, which takes advantage of independence of the heterogeneity of the media of transmission
  - dead reckoning, which forecasts the position when you lose the signal

All these technologies are compared on the basis of previous KPIs, which is very interesting in making any choice to implement a solution.

The second focus is on the ambient assisted living technologies. While the list is close

to infinite, they define great categories that help to position this solution ahead of the competition, describing the different sensors used for the different functions (identification, motion, pressure, activity, ...). It analyses the architectures (tinyOS, wireless com).

The document by itself is very rich, describing the different concepts but also delivering some examples of implementation already in the market. Furthermore, it proposes a good list of references if you want to dive into even more details.

I encourage you to read this document if you intend to develop something for the elderly; it is a kind of Ali Baba cavern to visit before investing in any innovation. Let's imagine you find the light.

# ITEA 2 APPS project results already demonstrated

The APPS (Advancing Plug & Play Smart Surveillance) project consists of 15 companies and universities from four countries (Turkey, Netherlands, Spain and Republic of Korea) collaborating in the research and development of various comprehensive maritime surveillance technologies.

The APPS project set out to develop the following technologies:

- Visual sensor-based small vessel identification & surveillance technology
- IoT based sensor-interface technology
- Open interface between external systems and devices with Plug & Play technology
- Smart safe navigation analysis technology

## APPS demonstration in the Port of Rotterdam

Last December, APPS organised a live demonstration at the Port of Rotterdam, which was conducted by Thales NL, ViNotion, Sigura, Microflown Maritime, Microflown AVISA and GMT. At the demonstration, the APPS consortium demonstrated visual sensor-based vessel detection, tracking, identification; vessel navigation information interface through DDS (Data Distribution Service); collision analysis

with interfaced navigation information; and, lastly, ENC (Electronic Navigation Chart) based simultaneous display of identified small vessels, analysis results and other related information. The demonstration was successfully completed and received keen interest from the operators of the Port of Rotterdam.



Figure 1 *Demonstration in the Port of Rotterdam*

## Pilot for real-time monitoring and situation analysis

In the Republic of Korea, GMT is using the APPS project results for a pilot project for real-time passenger ship monitoring and situation analysis.

The pilot includes integrating various sensors on a passenger ship (e.g. for ballast water tank,



Figure 2 *Sensor interface and smart maritime surveillance system GMT pilot*

gradient, fire detection and weather) to analyse and comprehensively monitor navigational status.

Finally, the project acquired a patent for an algorithm based on various sensors such as tachometer sensor and GPS to detect unusual navigation patterns. Project partners have been participating in various international conferences and exhibitions in Singapore, France, China, Sweden and Republic of Korea in order to further promote the results of APPS.

# Chairwoman Zeynep Sarilar invited for the anniversary of La Nouvelle France Industrielle



On the occasion of the anniversary of La Nouvelle France Industrielle, Mr. François Hollande, the President of the Republic and Emmanuel Macron, Minister of Economy, Industry and Digital, gathered all big players in the industry. In the Elysée, the main lines of action for the coming years were defined. ITEA Chairwoman Zeynep Sarilar was invited to participate in this celebration as a representative of the European industry.

Zeynep: “While digitalisation, collaboration and commercialisation were strongly emphasised in the event for all industries, supercomputing, autonomous driving and Industry 4.0 were defined as the important verticals in France. In ITEA, we follow similar strategies. Therefore, it is not difficult to understand why ITEA has become very strong in France.”

# Digital transformation Masterclass

Learning from ITEA projects ACCELERATE, SCALARE and InValue

Digital transition is often seen as a threat for European industries especially for the more traditional ones, while it could be used as an opportunity. ITEA has already supported many projects around this digital transition and in particular:

- 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; and
- InValue: data management architecture for manufacturing

Now ITEA has decided to set up a masterclass taking advantage of all the knowledge gathered in these three projects. This masterclass is scheduled for September 2016 in Stockholm. For participants it will be a unique opportunity to meet a set of digital transition experts with a huge amount of industrial experience on the topic. They will be able to learn about the dimensions of the digital transition and for each dimension they will acquire:

- several methodologies to analyse their own case; and
- different concrete industrial use cases that can be used as an inspiration towards their own digital transition.

Digital transformation can have many faces. During the masterclass the following topics will be covered:

1. User focus
2. Data focus
3. Agility
4. New business models and “Servitization”
5. Security
6. New organisations

The target group for this workshop is all managers that are confronted with the digital transition of their organisation, and who would like to learn how the digital approach can be an opportunity to transform their organisation to be closer and closer to their customers.

## InValue: Barco ‘enlightens’ movie theatre owners with a new service model



InValue, an ITEA 2 Call 8 project, kicked off in July 2014 with participants from all around Europe. In an increasingly competitive world, processes are being remodelled, new partnerships formed, new business models adopted and the use of information and knowledge intensified. So InValue set out to

create an open and shared integrated service platform that supports the overarching data management processes in today’s industrial domains across the whole value chain of information.

Although the project has only been running less than two years, the first exploitation of the research results are already evident in Barco’s LightLease fast exploitation track. In the first release of this new service model of the Belgian company the light emitted by a digital cinema projector is sold at a fixed rate per projection hour. The light output quality is continuously monitored by capturing real-time sensor data from the device, transmitting it to the cloud and applying advanced statistical techniques to predict the light source’s future behaviour. Several Terabytes of historical sensor data were used to train the statistical models and various modelling techniques were applied and compared. Besides technical insights into the optimal technique to predict projector



light output, the Field Service Product Unit of Barco was able to build up strategic knowledge in data management, exploration and preparation, as well as in how to manage analytical projects. During the third year of the project Barco will further improve, extend and refine the model, with new releases to follow soon.

# SME in the spotlight

## Timing-Architects

Dr. Michael Deubzer, CEO & co-founder, and Prof. Dr. Martin Hobelsberger, co-founder of Timing-Architects Embedded Systems GmbH, made a promise to themselves, when they founded Timing-Architects (TA) in 2011. They promised to make a contribution to the embedded domain, especially the automotive domain, by solving the challenge of efficiently and reliably adapting multi-core processors in real-time systems. Before the foundation of TA, during his PhD, Dr. Michael Deubzer developed an algorithm to simulate the timing characteristics of a real-time software running on a multi-core processor device. This was the initial foundation for developing a tool chain called TA Tool Suite. Today, TA is a team of over 30 talented and motivated engineers and business experts, solving the new challenges of the automotive industry together with their automotive OEM and TIER1 customers and tool partners. Today's challenges address the timing behaviour of distributed functions for automated driving systems, build-up on usage of many-core processor systems and Linux real-time OS.



**Software is responsible for 80-90% of all innovations**

*How was Timing-Architects born?* “Actually TA came out of a German publicly funded research project for universities of applied sciences, where we addressed with the German automotive company, Continental AG, a leading TIER1 supplier for powertrain and engine management systems, and the OTH Regensburg (University of Applied Sciences) the question: How to handle multi-core processors for automotive control

units efficient and safe. My focus in the project was on the software distribution on a multi-core processing unit. With reaction times of just milliseconds, as you can imagine the scheduling of tasks is highly critical, safety critical. So you need to guarantee the timing behaviour with a high reliability. We built a model-based simulation tool for analysing these effects. When the project ended in 2010, Martin and I could see the multi-core ‘invasion’ coming and decided to take the change and establish a start-up. We



had special government funding in the first year of start-up period, so we could get our company off the ground. With this, the foundation for a company was laid out and TA was finally born in April of 2011.”

#### **No geographical borders to business**

*And began to grow.* “Indeed. Next, we got Robert Bosch GmbH on board as a customer from the outset and later on automotive OEMs like BMW AG, Volkswagen AG and Daimler AG followed. Now, we even have the Korean Hyundai Motor Group as a customer along with a number of other German and Korean TIER1 companies. Our team is over 30 people strong now, with mainly technical people, but also marketing and business administration personnel. What we are a bit proud of is that we have raised our company without any venture capital. Luckily, we got our first customer project right after the foundation – this, along with private investment, helped us to survive in the first couple of years and industrialise our research project results.”

*You mentioned Hyundai. Is your market global?*

“I guess Germany is our major market, but we have expanded beyond Europe to South Korea. Furthermore, discussions are ongoing with companies at US, Japan and China. Our main business area is the automotive industry, but we have also begun to diverge a little into the area of other transportation disciplines, construction machines and industrial automation. Our business model is basically the provision of software development tools. But we have moved on from just simulation tools to the whole tool chain, called TA Tool Suite, covering the entire development process from system specification and design to integration, and verification. All this is developed in house, but we do use open source frameworks such as Eclipse, to which, among others, we even contribute.”

*I suppose it goes without saying that software is crucial for you.* “Certainly in the automotive domain you are now able to see that software is responsible for 80-90% of all innovations. Nearly

all of the improvements are software-based or using at least a part of software. More intelligent data processing or data fusion to generate driving scenarios for fuel efficiency, for example. This is the trend that will continue strongly over the next decades. You are also seeing it in the automated driving area, which is an important topic in the industry.”

#### **Ongoing value of projects**

*Are publicly funded research projects still important for your company?* “Absolutely. These projects provide the environments in which large companies such as Bosch or AUDI can collaborate with SMEs and academia with a kind of freedom to exchange ideas while still, at the same time, keep a focus on a real industrial problem that needs to be solved. It is a nice mixture of fundamental and applied projects, which is quite important for our company too. It is a good reason to be involved in the ITEA community. Our employees can benefit from the collaborative environment and with our PhD students often working on such projects in our company. This provides us with a great opportunity to look at the talent and grow our team.”

*Does it not take a lot of time and effort as a SME to be involved in these projects?* “Not that much. I think the administrative burden has been considerably decreased in the past few years. Of course, we would not consider hosting a project ourselves yet, but as a partner in an ITEA project, this is a very attractive proposition. Our first ITEA project was AMALTHEA and then AMALTHEA4public. We got involved when we were PhD students and when our spinoff began. When it started, we had the contacts and were able to become part of the AMALTHEA project and AMALTHEA4public was a logical follow-up. I think that the bottom-up approach which focuses on real business needs is important because it helps getting the research results faster into business and industrial applications. In addition, we all benefit from it, on both the supplier, customer and end-user sides. It is an environment which we are looking forward to being part of in the future, especially as we continue to expand our business further.”

#### **More information**

[www.timing-architects.com](http://www.timing-architects.com)

## ITEA Success Story

# DIAMONDS

## Boosting software security for a connected world

**Our increasingly connected world is ever more prone to software vulnerabilities and security flaws. The new security testing paradigm and methodology developed and evaluated in the ITEA 2 DIAMONDS project has resulted in several European SMEs bringing new products and services into this fast-growing market, and continues to influence international standards.**

“Software,” as online pioneer and entrepreneur Marc Andreessen noted in 2011, “is eating the world”, with everything from governments to cities, industries to products like cars increasingly connected and in direct and continuous communication with us, our smart phones and much, much more.

This brings huge benefits, but also challenges and risks: these complex systems are vulnerable to attacks, potentially endangering human lives and undermining entire business sectors.

“Nine software security failures in ten are caused by software defects – generally, a hacker can exploit a vulnerability, which should have been avoided by secure software design and development, but at least spotted by software testing as early as possible in development,” explains Prof. Dr. Ina Schieferdecker of Germany’s Fraunhofer FOKUS, project coordinator of the DIAMONDS project. “The problem is that the systems’ complexity, their openness and dynamics make it hard to test them – it’s extremely difficult to assess what a new system’s security risks will be, or test the security of a system ready to deploy or being in operation.”

As a result, the market for security testing – particularly security test automation – is expected to reach €4.5 billion by 2019, doubling in size in just five years.

This market, however, is dominated by large US companies. The DIAMONDS project has placed software security testing on a more solid footing and helped several European SMEs develop new products and services.



### Setting the software security standard

The project brought together 22 industrial and scientific players from six countries to develop a new security testing paradigm and methodology and successfully demonstrated and evaluated it in eight industrial settings from four different industrial domains. Innovations on risk-based testing, advanced fuzz testing or autonomous testing together with the Security Testing Improvement Profiling (STIP) evaluation scheme helped shaping the scene.

“Software security is not a problem with a single fix – it’s too complex a field,” says Prof. Dr. Schieferdecker. “Instead, we developed a new paradigm, known as model-based security testing, along with a set of various efficient test

automation methods. We then tested those innovations in a wide array of case studies, brought by our project partners from banking, telecommunication, automotive and other sectors.”

### Industry-tested enabling technology

With the DIAMONDS methodology representing a unique enabling technology for testing the security of critical software systems, the project continues to deliver results years after it ended. Several standardisation documents have been adopted by the European Telecommunications Standards Institute (ETSI), for example, and have been forwarded to international standardisation bodies. These standardisation documents reflect the project’s case studies, where the partners fine-tuned the methodology for different industrial sectors.

“The case studies also accelerated the project’s results to market,” Schieferdecker points out. “This was particularly beneficial for the small companies in the project – overall, DIAMONDS enabled five new products, three new services and ten product updates.”

For example, the security analysis functionality of the Montimage Monitoring tool of the French SME Montimage, has been improved and integrated within the MMT tool suite and is now being carried out with the Thales TCS business division. Thanks to the business impact coming from the results of the project, Montimage’s workforce increased from five to nine people.

Similarly, Smartesting – another French SME partner – developed, prototyped and validated a new approach to testing Web application security, upgraded its CertifyIt product and forged new relationships with major European industrial clients.

And as a result of the DIAMONDS project, Fraunhofer FOKUS became recognised as an expert in the field of security testing in industry as well as in the academic realm. The System Quality Center at Fraunhofer FOKUS provides methods, processes and tools for the development and quality assurance of software-intensive systems that often perform business-critical or security- and safety-relevant functions in urban infrastructures, cars, trains, planes or

factories. In order for such systems to work fault-tolerantly, fail-safely and IT-securely, even in unexpected situations, the system quality has to be ensured throughout the entire development process, from the requirements analysis to the certification. Testing Technologies, a German test system provider that offers standardized testing technology, integrated the results of the project into its TTCN-3 test development and execution platform TWorkbench and thus extended the capabilities of this platform towards security testing. In addition, Testing Technologies successfully initiated standardization work on security testing at ETSI MTS.

These exploitation results show that ITEA is a perfect programme to create business impact for different kinds of partners in a project, both large and small.

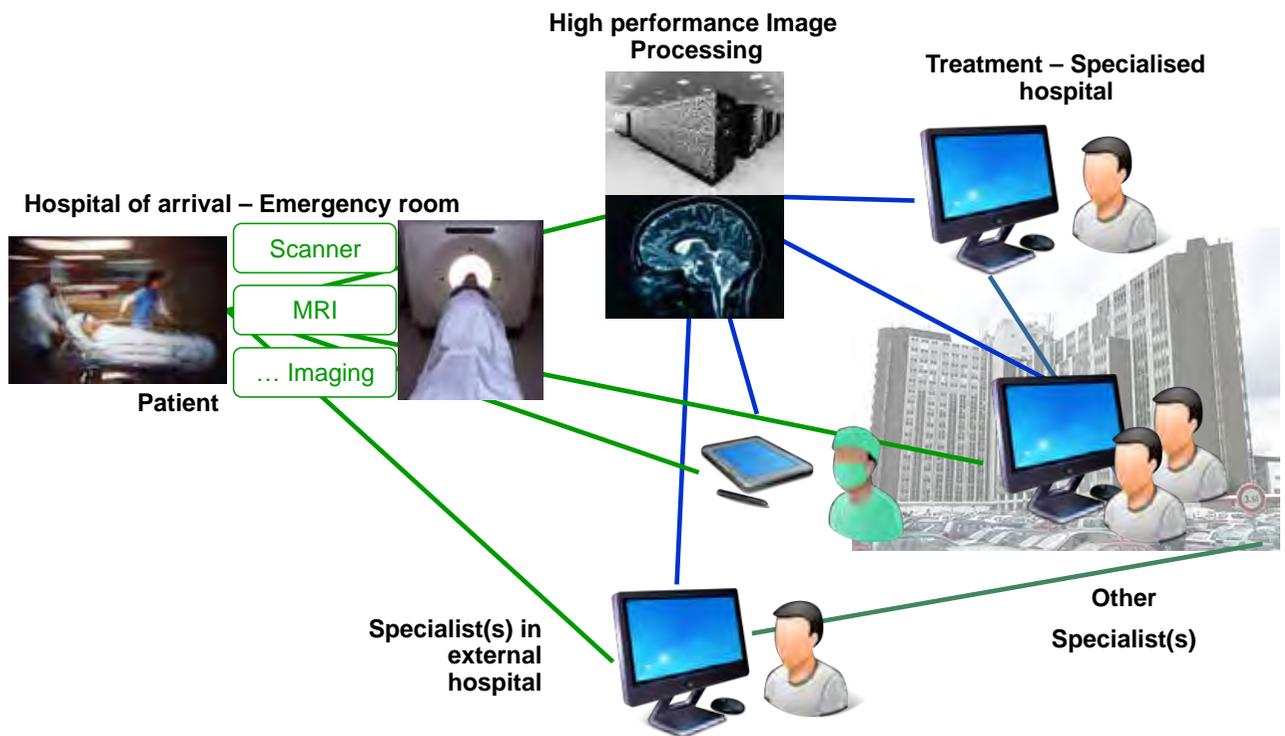
At the end of April 2016, the ITEA 2 project DIAMONDS was announced as the winner of the EUREKA Innovation Award 2016 in the category ‘Added Value’. Prof. Dr. Schieferdecker stated: “This prestigious award honours our work and that of our project partners for model-based security testing within DIAMONDS. Its innovative methods and tools obtain enhanced visibility. We want to use it at Fraunhofer FOKUS to strengthen the importance and dissemination of security-oriented testing methods and to develop further innovative approaches by our System Quality Center. Thank you also to ITEA, the EUREKA Network, and the national authorities. ITEA as a EUREKA Cluster programme is a solid partner for supporting innovative, industry-driven, pre-competitive R&D projects in the area of Software-intensive Systems & Services. I am looking forward to continuing our work on research and development of methods for security testing as it is an important and future-oriented topic.”

### Source

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

VIEWPOINT

# End users as project partners: no guarantees but huge potential



ITEA's goal is to support innovative R&D projects in the area of software-intensive systems. Oddly, the description does not explicitly mention whether these innovations should help an end user. Maybe this is because it is just too obvious, or maybe this is because we believe that the end user is unaware of potential high-tech opportunities and has to learn from the technological innovations. This latter is in line with the current hype of "disruptive technology": we bring something so new that it is inconceivable to the end user, and this new technology will revolutionise the way we think and work.

It is true that we have had great successes with disruptive innovations (the examples are very well-known: Google, Facebook, etc.) and we are lucky that these innovations have entered our way of living. However, how many disruptions would you like to happen in your life? Surely, you don't want to revolutionise how you work or communicate every other week. Given the number of running ITEA projects, I hope not all of them are successfully disruptive technologies ;-).

The alternative would be to ease, simplify, enhance and advance current methods of working. For this ongoing chain of innovations especially, it is essential to have your end users on board, particularly in the medical field where clinicians have become somewhat hesitant to embrace IT visionaries who have promised unrealistic and overambitious IT solutions for many decades. Considering that approximately 90% of R&D projects have failed to get a successful market introduction (according to Harvard business school review), it is difficult to get clinicians on board for overambitious technology projects. After all, we have to acknowledge that medical professionals are dealing with the health of patients, which makes them very conservative to major shifts in their clinical practice. And change, in most walks of life, professional or private, always take some time to get used to.

I have been involved in the ITEA 2 MEDUSA project whose goal was to advance medical image logistics and to virtualise medical image analysis. In this project we were lucky because our clinicians really started to get used to the

## BIOSKETCH



*Assistant Professor Cardiovascular Imaging and Image Processing  
Department of Biomedical Engineering & Physics / Department of Radiology  
Academic Medical Center, University of Amsterdam*

Henk Marquering has worked in the academia, large industry and SME sectors and is co-founder the spin-off company Nico-lab. He studied Geophysics at Utrecht University in the Netherlands, where he gained a PhD in theoretical and computational seismology in 1996. After two years as a postdoc in Princeton, he started working for Océ (now Canon) as a researcher and software engineer on document image processing. Then he returned to academia as a researcher in medical image analysis working on coronary CT Angiography. Subsequently, he started working for the SME company 3mensio, again as a researcher and software engineer, where he built the first prototypes of the now successful 3mensio structural heart. Since 2009 he has been assistant professor of cardiovascular imaging and image analysis at the Academic Medical Centre, University of Amsterdam. He was a WP leader in the ITEA 2 project MEDUSA and is involved in the current ITEA 3 projects 3DPathology and Medolution. Based on concepts and technology developed during MEDUSA, the spin-off company Nico-lab was started.

smart phone and tablet functionality, which helped us because they were themselves asking for common day functionalities to be virtualised.

To be honest, when we, the initiators, sat together and wrote down our ideas, we did not consider cloud-based solutions. However, after being funded, Cloud was screaming in our face. ITEA has been very flexible for us allowing us to change our plans accordingly during the running of the project. After the kick-off, we first started evaluating the needs of the potential users, which were neurologists, neuroradiologists and trauma surgeons in our case. Many of the advances they envisioned could be realised by creating a cloud-based solution for medical image analysis and remote consultation. To ensure there was a relationship with the end-user, the Academic Medical Center included a clinical researcher (with a background in mechanical engineering and medicine: excellent!) in its team to ensure it would have someone aboard who speaks the same language and understands the real-life problems of our stakeholders. During the final stages of MEDUSA, the same people who were consulted for their ideas at the initiation of the project also performed validation of the demonstrators, which allowed the project to have direct feedback of the advances made during the running of the project. Of course, the MEDUSA team was very pleased with the consistent positive feedback.

Is, then, the inclusion of end users and an intermediary in a high-tech project the be all and end all? It's not clear-cut. Of course, there is a risk in letting end users steer projects too much. End users often need "simple" adjustments of their current way of working, which may be solved by relatively small adjustments of current (software) products. There is no need for millions of euros to be spent on a disruptive technology to solve relatively small-scale technological problems. While a balanced team combining *critical* technological visionaries and experts with real-life stakeholders may offer no guarantees, it does offer huge potential to run a successful ITEA project.

## PROJECT SHOWCASE

# The Social Internet of Things

## Going beyond and above the cloud

SITAC is the acronym for Social Internet of Things Apps by and for the Crowd, an ITEA 3 project that finished towards the end of 2015 but whose results look destined to have quite an impact on and in the society of tomorrow. At the recent EUREKA Innovation week hosted by VINNOVA in Stockholm, the focus was on how new trends and citizens' knowledge could be opportunities in the smart city. Project leader, Ilan Mahalal, explained to an interested audience at his project booth how "SITAC enables any person to share information coming from his or her IoT devices with a chosen community or individuals, to create and share own services and applications by compositions of other existing ones and to change the sharing instantly yet with the confidence of having a chosen level of security and privacy." Ilan puts much of the success of the project down to "the perfect blend of competencies, ideas and contributions" from the 18 members of the project consortium from five different countries with four industrials, eight SMEs and six academic institutions all playing an important role.

### Origins

Internet of Things (IoT) is expected to grow exponentially in numbers of devices and bring with it a tidal wave of data. Those who can exploit it correctly will emerge with new kinds of service eco-systems while others will be left behind. This data explosion is driving changes in communications, storage and advanced analytics. In many cases the value of the data will outweigh the value of the device collecting the

data, transforming the value proposition. Devices will shift from passive sources to active (and even independent) participants in transactions. The challenge is to determine the tools and architectures for collecting and sharing the data in order to stimulate the creation of services and applications by the crowd that are informative, persuasive, social, business-oriented while, at the same time, targeting a totally new territory in respect of contemporary businesses.

**Project details**

11020 SITAC

**Project leader**Ilan Mahalal  
Gemalto**Partners***France*Gemalto SA  
Institut Mines-Télécom*MobiQuiThings*Sen.se  
Soft4Energy  
Thales Communications and  
Security  
University Paris-Est Marne-  
la-Vallée*Israel*

Starhome

*Portugal*GreenSphere Unipessoal. Lda  
Instituto de  
Telecomunicações*Spain*Alcatel-Lucent  
PLANET MEDIA

## Prodevelop

Universidad de Alcalá  
Universidad Politécnica de  
Valencia (UPV)  
University of Seville

## Turkey

Arçelik A.S.  
KoçSistem**Start date**

December 2012

**End date**

November 2015

**Website**[https://itea3.org/project/  
sitac.html](https://itea3.org/project/sitac.html)

offs. For instance, Planet Media has released the pub/sub engine that it developed in SITAC and has been labelled as OMNIALERT. This is currently included within its smart city solution catalogue as a product that can be integrated in legacy systems for performing ubiquitous monitoring activities. Gemalto is integrating a new authorisation manager within its Trust Management as a Service offer and an On Demand Connectivity (ODC) solution in its M2M offer. Customers of Starhome are being offered an optimisation service for selecting the most appropriate mobile network for IoT devices, based on Quality of Service and Cost parameters.

In an interesting development concerning ‘Social Smart City’ projects, Alcatel-Lucent has been able to employ the results to actively engage in dialogue with Malaga city hall, which is an important smart city in Spain. The idea is to evolve Malaga the smart city into Malaga the ‘social’ smart city. It is a promising project. Following the discussions, the Innovation department of Malaga city hall is very receptive to the ideas being proposed for their city. Furthermore, Arçelik and KoçSistem are collaborating to build an IoT SaaS platform and Arçelik is also planning to use the technical outputs for new smart home appliance products. KoçSistem will be using the SITAC Platform as a sub-module for other international R&D projects. Other developments include the acquisition of the Soft4Energy SME (using Wattometer’s underlying technology as a middleware) by an independent energy producer and of MobiQuiThings by Sierra Wireless for its strategic interactions with large OEMs (like Renault and GM).

**Unique**

The open creation platform will empower communities and end users to manage the complexity of data streams exchanged over billions of connected devices at much lower cost. For developers, too, more flexibility and greater opportunities can be generated from end to end across different vertical markets. The uniqueness of SITAC lies in the concrete solutions that go beyond and above the cloud. The potential impact on European technology and commerce is substantial, especially in terms of productivity and competitiveness.

**IoT as enabler**

For SITAC, the Internet of Things is an enabler for new and exciting social and crowd-based services. Its aim, therefore, was to provide an attractive ecosystem for managing the huge number of expected connected objects by leveraging on three successful paradigms: social networks, crowd-based applications and data analysis. What SITAC has produced is a highly innovative, social-media based platform that enables the development of Social IoT and crowd-based services and applications while stimulating a relevant and new business-oriented ecosystem. The project focused on integrating the three paradigms (social, data analysis, crowd) in a common IoT platform that enables mutuality and allows device owners to consciously select (or build) a relevant network infrastructure according to specific needs. Another important feature is the use of semantic interoperability and context-awareness techniques to facilitate the delivery of information or services at the right place and at the right time. Sharing resources and search leveraging through machine learning enhance recommendation techniques.

**Taking control**

So with a new paradigm for managing access control to resources, the casual user, for instance, can take control of massively

deployed objects securely and, in the economic domain, achieve low-cost maintenance and cooperation between different deployments. The business, social and technical models and solutions developed within the project were all validated by a set of demonstrators in a variety of domains. Examples include Social Green Building (services and data sharing with social circles, service creation by the crowd), solar energy production managed by users (secure data collection and sharing, social network of producers and their equipment, applications by the crowd), control and monitoring of home appliances (control of operation and monitoring, energy monitoring) and network identity and subscription management (M2M network enabler for connected objects introducing new business roles and solutions). A key common denominator of the framework for data processing and recommendation techniques, and crowd-based design by and for the crowd with the possibility to create applications, compose and share services as well as introduce new IoT resources into the SITAC platform without the need for prior programming skills is that they all have unified secure access control for resource sharing.

**Exploiting the possibilities**

Exploitation is evident in a number of products, transfer of results and acquisitions and spin-

# ITEA 3 Call 2 Projects

Smart, secure, sustainable ... key topics for twenty top proposals

## Vice-chairman's summary

In ITEA 3 Call 2 we received a very good set of high-quality proposals, with a total of 20 projects labelled. Again, they address a wide range of topics, but they can be clustered in the following main themes:

**Smart Health** is important for ITEA because of its impact on society, because we have surely in our community some of the most powerful actors in the world and because we have a long train of success stories in this domain. In this Call we labelled 5 proposals contributing to smart health:

- **ESTABLISH** – environmental sensing to act for a better quality of life,
- **EWatch** – Extensive Personal Monitoring & Watch Platform,
- **Panacea Gaming Platform** – development of a platform to enable game development with a suite of health games with a tracking platform for clinical purposes,
- **Safe Rescue** – to allow emergency dispatchers to track, locate and direct teams to rescue personnel who are at risk or down during emergency events,
- **SDHDMP** – focus on consolidating health data exchange standards for wearable sensor data, sensor fusion data and contextual awareness data.

This topic will be the subject of our international customer workshop in June.

**Automotive** is a second major application domain where ITEA has a long record of success stories gathering together some global giants and some very innovative SMEs. This year we labelled:

- **APPSTACLE** – aim to develop an open standard application platform dedicated to automotive,

- **DANGUN** – development of an Intelligent Perception System for Autonomous Vehicles based on low-cost components to speed up the deployment,
- **EMPHYSIS** – proposal for a new way to develop code through embedded systems with physical models in the production code software,
- **ENTOC** – proposal for a new engineering tool chain for efficient and iterative development of smart factories.



After our very successful international customer workshop on **Smart Cities** we labelled a set of strong projects on this topic such as:

- **CitiSim** – building a Smart City 3D simulation and monitoring platform,
- **MOS2S** – audio-visual Smart City technologies addressing the needs of its inhabitants,
- **PS-CRIMSON** – aim to break the information silos in cities, a clear demand arising from the cities themselves during our workshop.

We are building our future with **Digital ITEA** and projects contributing to it include:

- **Digital backbone** – a revolution in manufacturing through a full chain to design tailor-made personalised products,
- **SoMeDi** – unlocking the value hidden in the digital content and traces of human (inter) actions.

We are already setting up a digital masterclass with the results of the projects currently running: ACCELERATE, InValue and SCALARE.

You can have no digital world without strengthening the level of security. **Security** remains an important topic in ITEA with:

- **ALADIN** – securing the airport area,
- **HI-RISE** – proposal of a framework within which Unmanned Aerial Systems UAS and innovative UAS uses can be developed taking into account safety regulations and standards.

**IOT** is everywhere in our projects for many years and especially in:

- **Flex4Apps** – proposal for flexible monitoring and optimisation methods for large, distributed, cyber-physical systems,
- **PARFAIT** – development of a platform for protecting personal data in IoT applications and interoperable software libraries, tools and SDK elements.

**Sustainability** is a shared concern and ITEA has labelled:

- **NRG-DC** – a green design framework for new generation data-centres, enhancing sustainability, reliability, security and energy efficiency.

**Engineering** is a continuous enhancement:

- **REVaMP<sup>2</sup>** will offer more agile, round-trip engineering processes that better leverage legacy assets, and more systematic and automated variability management.

## Project overview

THEMES	CALL 2 PROJECTS
Smart Health	ESTABLISH, EWatch, Panacea Gaming Platform, Safe Rescue, SDHDMP
Automotive	APPSTACLE, DANGUN, EMPHYSIS, ENTOC
Smart cities	CitiSim, MOS2S, PS-CRIMSON
Digital ITEA	Digital backbone, SoMeDi
Security	ALADIN, HI-RISE
Internet of Things	Flex4Apps. Parfait
Sustainability	NRG-DC
Engineering	REVaMP <sup>2</sup>

**ALADIN – 15030**

*Airports Landside and air-land side Attacks' Detection and prevention*

**Project Leader:** Hisbim Hisarlar Information and Innovation Center (TUR)

The infrastructure of an airport relies on information communication technology (ICT) at check-in, baggage-check services, border control and aircraft handling operations. As airports increasingly rely on ICT, and cyber-attacks are growing in complexity, airports are facing a loss of confidential data and costly disruption to operations. The ALADIN project aims to prevent failures caused by a hacker at a Landside area such as parking and baggage check services, and Air-landside areas that include communication between aircraft on the ground and air-traffic control.

**APPSTACLE – 15017**

*open standard APplication Platform for carS and TrAnspotation vehiCLES*

**Project Leader:** Ericsson (Finland)

Today automotive software-intensive systems are developed in silos by each car manufacturer or original equipment manufacturer (OEM) in-house. This approach cannot meet the long-term challenges of the industry. One solution is to establish a standard car-to-cloud connection, open for external applications and the use of open source software wherever possible without compromising safety and security. The APPSTACLE result will include an open and secure cloud platform that interconnects a wide range of vehicles to the cloud via open in-car and Internet connection and is supported by an integrated open source software development ecosystem.

**CitiSim – 15018**

*Smart City 3D simulation and monitoring platform*

**Project Leader:** Grupo Abalia (Spain)

CitiSim's main goal is to create a new generation platform for the smart city ecosystem. This platform will provide a powerful monitoring and control infrastructure for planners to make critical management decisions on tactical and strategic levels. For a natural interaction and better understanding of the events that happen in the city, 3D visualisation techniques like augmented virtuality and augmented reality will be explored. CitiSim will provide service developers with a set of services, standards and tools for the development of applications for the smart city.

**DANGUN – 15042**

*Intelligent Perception System for Autonomous Vehicles*

**Project Leader:** Hanyang University (Korea)

Electric vehicles, connectivity and autonomous driving functions will revolutionise the automotive domain, which is a major challenge for vehicle manufacturers. Customers should be willing to pay for autonomous driving features that are a small part of the total car costs. The rationale behind DANGUN is that rather than using expensive sensors a comparable performance can be achieved through the close cooperation of suppliers of advanced perception sensors, vehicle manufactures and academia. The DANGUN project aims to develop a Traffic Jam Pilot function with autonomous capabilities using low-cost automotive components.

**Digital backbone – 15005**

*E2E digital product creation process for customer tailored products*

**Project Leader:** Philips (Netherlands)

At present most products are designed for a generic target group, while individualised products could potentially perform better, consume less energy and produce less waste, while increasing customer satisfaction. The "Digital Backbone" project will develop a complete solution which can be used to design tailor-made products. The heart of the Digital Backbone is a platform that facilitates connections between modules that can be owned by different companies and which each deal with a particular part of the product functionality.

**EMPHYSIS – 15016**

*Embedded systems with physical models in the production code software*

**Project Leader:** Bosch (Germany)

The major goal of the project is to develop a new standard (eFMI: FMI for embedded systems) to exchange physics-based models between modelling and simulation environments with software development environments for electronic control units (ECU), micro controllers or other embedded systems. Enabling advanced control and diagnosis functions based on physical models allows the production code in automotive vehicles to be enhanced and the cost and time for the software development of these embedded systems to be reduced.





### ENTOC – 15015

*Engineering Tool Chain for Efficient and Iterative Development of Smart Factories*  
**Project Leader:** Daimler (Germany)

ENTOC focuses on the engineering of smart factories as they are established in different domains like a highly automated body shop in truck manufacturing, partly automated final assembly in car production or machine building. Due to a dramatic increase of the complexity of production facilities, the efficiency of the engineering tool chain has to be improved by at least 20%, which can be facilitated by using smart tools. The main goals of the project are to develop standardised modelling strategies and to optimise the engineering tool chains used for complex production plants.

### ESTABLISH – 15008

*Environmental Sensing To Act for a Better quality of Life: Smart Health*  
**Project Leader:** TNO (Netherlands)

The objective of ESTABLISH is to convert environmental (sensor) data into actionable information for users to provide a healthier and safer environment thereby improving the quality of life. Smart adaptive services providing real-time feedback tailored to specific user and application needs will be developed by combining networked sensors and other data sources with adaptive models in a non-predefined manner. In this way, ESTABLISH closes the complete chain from sensor to application: collection, enrichment, interpretation, extrapolation and feedback.

### EWATCH – 15032

*Extensive Personal Monitoring & Watch Platform*  
**Project Leader:** Turkcell Teknoloji (Turkey)

There is great promise in wearable health monitoring systems in allowing individuals to closely monitor changes in their vital signs and providing feedback to regain or maintain optimum health. Monitoring hearth rate, blood pressure and blood glucose levels, oxygen saturation, physical activity and other physiological parameters will minimise the cost of treatment and enhance the quality of life. The overall goal of the eWatch project is to provide an extensive human-centric, personal monitoring platform.

### FLEX4APPS – 15025

*Platform for Application and Infrastructure Flexibility in Cyber-Physical Systems*  
**Project Leader:** VTT Technical Research Centre of Finland Ltd. (Finland)

The convergence of cloud, communication and IoT infrastructure plus the trend towards virtual applications (e.g. migrating software to the cloud) create new challenges for application developers and infrastructure providers. The resulting systems are complex with dynamic resources hiding possible problems. This creates a requirement for flexible monitoring and optimisation methods. The Flex4Apps project addresses the challenges of monitoring and optimising large, distributed, cyber-physical systems. The goal of the project is to provide a solution to manage the high data volumes and complexity of system monitoring whilst disturbing the target system as little as possible.

### Panacea Gaming Platform – 15002

*Panacea Gaming Platform*  
**Project Leader:** Kids Uncomplicated Inc. (Canada)

The project, ‘Panacea Gaming Platform’ (PGP), aims to develop a robust technology platform to enable game development for use in the clinical treatment of those with disabilities (15% of the paediatric population and up to 40% of the elderly population). The end results will be a suite of health games, a tracking platform that allows player data to be measured and analysed for clinical purposes, clinical guidelines and standardisation for game development, and the gaming platform itself, which can be licensed to software developers around the world.

### HI-RISE – 15009

*High Integrity RPAS by Innovative Software Engineering*  
**Project Leader:** MicroPilot (Canada)

To reach their full potential, Unmanned Aerial Systems (UAS), must operate over built-up areas such as towns and cities where there are many high-value tasks that a UAS can perform. Flying a UAS over built-up areas is not currently possible due to a perceived lack of safety. For this reason, there is a need for UAS that comply with recognised safety standards (e.g. DO-178C). HI-RISE is a framework within which UAS and innovative uses for a UAS can be developed taking into account safety regulations and standards.



**MOS2S – 15022**

*Media Orchestration - Sensor to Screen*

**Project Leader:** TNO (Netherlands)

The MOS2S project aims to develop and test audiovisual Smart City technologies addressing the needs of its inhabitants, and embed these solutions in a dedicated Smart City Playground. This playground provides a venue platform as stepping stone towards a full Smart City Operating System, and the support of proof-of-concepts and trials. As such, the playground has the unique potential to accelerate the creation and market introduction of new unique Smart City applications, based on a range of sensors and datasets, to improve profitability, sustainability, safety and customer experience.

**PARFAIT – 15004**

*Personal dATA pRotection FrAmework for IoT*

**Project Leader:** Turkcell Teknoloji (Turkey)

Interoperability, along with security and privacy of personal data, are the two most important limitations for the growth of the Internet of Things (IoT) market. Interoperability increases the complexity of service production processes and the cost of production. Lack of security and trust for the protection of privacy puts a barrier between service providers and consumers. To solve these issues, PARFAIT aims to develop a platform for protecting personal data in IoT applications and to reduce the complexity of integrating and deploying services in today's IoT technology by providing interoperable software libraries, tools and SDK elements.

**NRG-DC – 15029**

*eNeRGy-efficient Data Centres*

**Project Leader:** ARC Informatique S.A.S. (France)

The development of smart uses generates a huge pressure on data centres (DCs). While we save time, money and energy thanks to the use of improved data analytics, our impact on the environment keeps rising through the use of an ever-growing data storage capacity. At the same time, our dependency on the supply chain for data storage and processing increases, causing safety and security issues. NRG-DC intends to mitigate these side-effects by providing a green design framework for new generation data centres, enhancing sustainability, reliability, security and energy efficiency.

**PS-Crimson – 15026**

*Public Safety and Crisis Management Service Orchestration*

**Project Leader:** Elektronet Inc. (Turkey)

A key challenge faced by city operators, municipalities and political decision makers is the fragmentation of information into silo-oriented closed systems and organisation models. This project aims to deliver an integrated 3D digital model and information platform that facilitates information collection, sharing, management, analysis and dissemination from diverse public and private urban infrastructures and resources. The platform supports public authorities to improve quality and efficiency of municipal services. Furthermore, adequate security and authentication methods allow selected urban data sources to be exposed to the full smart city ecosystem, enabling new innovative data-driven applications and services.



**Safe Rescue – 15043**

*Software-instrumentation platform to improve situational awareness for emergency responders*

**Project Leader:** Innovative Trauma Care Inc. (Canada)

The Safe Rescue project has the potential to save the lives of victims and first responders by allowing emergency dispatchers to track, locate and direct teams to rescue personnel that are at risk or down during emergency events. Software will be created to increase the emergency dispatcher's situational awareness of an accident by providing a dashboard view of the incident location, superimposed with the status / locations of the first responders, with the status / locations of the workers, and with the status / locations of the victims.

**SDHDMP – 15031**

*Sensor Driven Health Data Messaging Platform*

**Project Leader:** Clinisys EMR Inc. (Canada)

The purpose of SDHDMP is to develop an ecosystem that will allow standardisation across sensor-based data. This can only be achieved collaboratively with the multi-national involvement of partners from diverse industries including semi-conductor manufacturers, wearable device developers, SW application developers, data architects, data carriers, data consumers, system providers, SMEs, academia, researchers and scientists working in next generation data exchange domains. The focus of the project is to consolidate the data exchange standards for wearable sensor data, sensor fusion data and contextual awareness data.

**REVAMP<sup>2</sup> – 15010**

*Round-trip Engineering and Variability Management Platform and Process*

**Project Leader:** Softeam (France)

Software-Intensive Systems and Services (SIS) adapt to innovative market disruptions and customer whims far quicker and at lower cost than their less software-based competitors. However, they also raise new engineering challenges. In particular, they require more agile, round-trip engineering processes that better leverage legacy assets, and more systematic and automated variability management. REVAMP<sup>2</sup> aims to conceive, develop and evaluate the first comprehensive automation tool-chain and associated executable process to support round-trip engineering of SIS Product Lines (PL). The first main end result of the project will be a prototype platform seamlessly integrating SIS Round-Trip PL Engineering automation services.

**SOMEDI – 15011**

*Social Media and Digital Interaction Intelligence*

**Project Leader:** VTT Technical Research Centre of Finland Ltd. (Finland)

The amount of digital interaction data has soared along with the digitisation of business processes and private communication since the advent of the Internet. The increased amount data will produce an almost unfathomable amount of interaction traces. The goal of this project is to research machine learning and artificial intelligence techniques that can be used to turn digital interaction data into Digital Interaction Intelligence and approaches that can be used to effectively enter and act in social media, and to automate this process.

# ITEA Project Outline Preparation Days 2016

## Why it is important to participate!

On 13 September, ITEA 3 Call 3 will open in conjunction with the ITEA Project Outline (PO) Preparation Days in Paris on 13 and 14 September 2016. This event will give you a head start in preparing a PO; you will learn and discuss about new project ideas, meet and partner up with consortium members and find out more about the Call details.

### Fire up a project proposal

You can already start preparing for this Call now at the ITEA Community website by using the Project Idea tool, the partner search and message board, accessible via <https://itea3.org/getting-started.html>. It is highly recommended to start shaping project idea(s) and identifying potential partners in advance to optimise your preparation period.

### ITEA PO Days in Paris: be there!

- *“A network is built from people and when you get to know them, you can know who to trust and you can build a consortium from that. Without meeting the people in person, this is more complicated,”* according to Pasi Kuvaja of the University of Oulu who has attended the PO Days since their very beginning in 1998;
- If you have a project idea, you have the opportunity to pitch it in 5 minutes to a large and highly qualified audience with a diverse set of expertise. Afterwards, you can discuss the details with the interested partners in several brainstorm sessions. If you are interested in joining an idea, you can listen to many pitches in a short period of time and choose the idea that suits your expertise best;

- 74% of the submitted ITEA 3 Call 2 POs resulted from the PO Days 2015, and similar results have been measured over the past few years;
- It is an opportunity to meet the Public Authorities that are present to discuss your idea in more detail, and learn more about the specific funding rules in your country well in advance;
- You can meet companies from all over the world in one spot, most probably including the EUREKA associated countries Canada, South Korea and South Africa;
- You can learn from best practices presented by the ITEA Office and see how the ITEA Office can support you during the full project lifetime.

### Register now

If you plan to participate in the ITEA PO Days 2016 and optimise your networking possibilities and exchanges, do not miss this opportunity and register now! Availability is limited and each year this 2-day brokerage event gets fully booked weeks before it takes place. Visit <https://itea3.org/podays2016/po-days-2016.html> for more information and registration.



# Calendar

22-23 June 2016

## INDUSTRIAL TECHNOLOGIES 2016

Amsterdam, the Netherlands

<http://www.industrialtechnologies2016.eu>

28-29 June 2016

## TERATEC 2016 FORUM

Palaiseau, France

<http://www.teratec.eu/gb/forum/>

13-14 September 2016

## ITEA PO DAYS 2016

Paris, France

<https://itea3.org/podays2016/index.html>

13 September 2016

## HOLLAND HIGH TECH ROADMAP EVENT

's-Hertogenbosch, the Netherlands

<http://www.hollandhightech.nl/nationaal/actueel/agenda/holland-high-tech-roadmapevent-2016-global-challenges-joint-solutions?state=online>

12-15 September 2016

## INTERNATIONAL CONFERENCE ON DISTRIBUTED SMART CAMERAS

Paris, France

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

16 September 2016

## CUT-OFF DATE NEXT CALL EUROGIA2020

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

19-20 September 2016

## INDUSTRY OF THINGS WORLD

Berlin, Germany

<http://industryofthingsworld.com/en/>

22 September 2016

## CELTIC-PLUS PROPOSERS DAY

Istanbul, Turkey

<https://www.celticplus.eu/event/cectic-plus-proposers-day-on-22-september-in-istanbul/>

22 September 2016

## EURIPIDES2 AUTUMN CALL 2016 – DEADLINE FOR SUBMISSION OF PROJECT OUTLINES

[www.euripides-eureka.eu](http://www.euripides-eureka.eu)

4-6 October 2016

## ARTEMIS TECHNOLOGY CONFERENCE 2016

Madrid, Spain

<https://artemis-ia.eu/>

14 October 2016

## CELTIC-PLUS AUTUMN CALL 2016 – DEADLINE FOR SUBMISSION OF PROJECT OUTLINES

<https://www.celticplus.eu/call-information/>

27 October 2016

## ITEA 3 CALL 3 – DEADLINE FOR SUBMISSION OF PROJECT OUTLINES

## SAVE THE DATE

9 & 10 May 2017

### DIGITAL INNOVATION FORUM

Amsterdam, the Netherlands

*More information will follow*



# ITEA joins EUREKA at the European Business Summit 2016



The 14th edition of the European Business Summit – held in Brussels on 1-2 June 2016 – focused on “A Time for Bold Moves - Sharp Policies to Enable Business Solutions”.

This year again, EUREKA was one of the active partners of this European event. The Chairman of the EUREKA High Level Group, Mr. Per Tervahauta participated in the session on “Innovation & Investment”, in which he stressed that “Transnational cooperation is key for innovation in Europe” and that “Innovation is building bridges not only between EU countries but across sectors”.



ITEA joined EUREKA in their stand in the Networking Village, presenting and highlighting EUREKA’s way of working, instruments (Network projects, Clusters, Umbrellas, Eurostars, E!NNOVEST) and success stories.

ITEA 3		13-14 September	ITEA PO Days 2016	Paris, France	<a href="http://www.itea3.org">www.itea3.org</a>
		27 October	Submission deadline - Project Outline ITEA 3 Call 3		
Celtic-Plus		22 September	Celtic-Plus Proposers Day	Istanbul, Turkey	<a href="http://www.celticplus.eu">www.celticplus.eu</a>
		15 October	Deadline Autumn Call		
EURIPIDES <sup>2</sup>		22 September	Submission deadline - Project Outline Autumn Call 2016	Stockholm, Sweden	<a href="http://www.euripides-eureka.eu">www.euripides-eureka.eu</a>
EUROGIA2020		16 September	Next Cut-Off date		<a href="http://www.eurogia.com">www.eurogia.com</a>

# Colophon

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An online version is available at <https://itea3.org>

**Publisher:**

ITEA Office - High Tech Campus 69-3 - 5656 AG Eindhoven, The Netherlands

**Editorial contributions and copywriting:**

CPLS text & copy - Goirle, The Netherlands

**Design and creative lay-out:**

Studio Kraft - Veldhoven, The Netherlands

**Printing:**

Drukkerij Snep - Eindhoven, The Netherlands

With thanks to the interviewees, project participants, ITEA Office, ITEA Presidium and other ITEA-involved persons for any assistance and material provided in the production of this issue of the ITEA Magazine.

**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](mailto:communications@itea3.org).

**Subscription enquiries:**

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