

# ITEA Magazine 28

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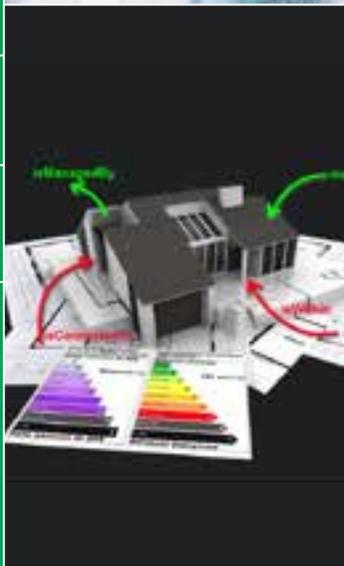
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# Editorial

## *Showing the impact*

### *Making speed*

The only constant is change. This is true for many aspects of economy and society, but surely also for ITEA. In the second half of 2016 we signalled some serious challenges for ITEA: a reduction in the programme size and only a limited improvement in the time span between project idea and project kick-off. Between industry and public authorities some measures have been agreed to address the situation: make the impact of ITEA projects more visible and put a deadline on project kick-off after the ITEA label has been granted.

Both measures are influencing the ITEA project community: our ITEA Office Communications team with the help of our copywriter are used to support the project consortia by developing their project success stories and promoting them via, for example, our website and this magazine. Since last spring we strengthened this by focusing even more on the impact of each project. This is not so easy because impact often takes some time to materialise after the project ends and, even then, it is not so easy to state the impact clearly enough to be appreciated by top management, politicians and the general public. But together with the project teams we are making progress and the first results are visible on the ITEA website.

In order to reduce the time between labelling and project kick-off, it has been decided to put a deadline on the validity of the ITEA label: projects labelled under Call 3 in March 2017 will have to start by January 2018, after that the ITEA label for these projects will be invalid. From the ITEA Office we actively monitor the status of the national applications and the funding decisions for each project and pro-actively support the consortia wherever we can. First indications are that both measures are bringing a further improvement to ITEA.

Customer orientation remains a strong focus in ITEA: in this issue the article on our customer workshops and the viewpoint by Tekin Gulsen illustrate this once again. You, as reader of our ITEA Magazine are also a customer. Therefore, we have conducted a survey on your satisfaction with this magazine and you appeared to be rather happy with it, with its contents, design and frequency. We see that you like in particular the focus on projects, events and people in ITEA and that is exactly where we put the main attention on.

We hope that you continue to appreciate our ITEA Magazine. This issue covers again many projects and highlights: the projects SEAS and M2MGrids, and the State-of-the-Art report of FUSE-IT, all on Smart Energy, a case of end-user impact from the project MOS2S. There is a short report on our recent PO Days in Berlin and a spotlight on Innovalia, a set of cooperating SMEs from Spain. Finally, Maria Rimini-Döring adds the personal touch to ITEA.

Enjoy the read,



Fopke Klok

# The ITEA PO Days 2017

## Customers in the lead, impact as a target

On 12 September, ITEA 3 Call 4 opened with the ITEA PO Days 2017, a lively 2-day brokerage event with over 300 participants and 74 project ideas presented. The record speed of incoming registrations, the record number of participants and the high number of submitted project ideas that approached last year's record, reaffirmed the importance of this event.

*It was a really well organised event. Thanks for your support and organization.*

Alper Sayar | Vitra



*The iterative matchmaking approach of the ITEA PO Days are the most efficient way of finding European partners of any EU research programme bar none.*

Peter Stuer | Spikes n.v.

Most participants came from the host country, Germany. Furthermore, the still growing number of Canadian participants was remarkable, as was the comeback of the UK, which has been absent for a few years. In total, 18 countries were represented.

### CHALLENGES

-  Safety and Security
-  Smart cities
-  Smart communities
-  Smart engineering
-  Smart health
-  Smart industry
-  Smart mobility





*Learned about new trends that are valuable for our business.*

Christoph Niedermeier | Siemens

#### Customers involved

For the second time, the project ideas were clustered by 7 challenges, defined by the ITEA community. Smart manufacturing was highly represented with more than 30% of the project ideas in this category. This was mainly thanks to the ITEA customer workshop on Smart manufacturing that was organised in June 2017 to gather actual painpoints from customers in the domain of Smart manufacturing, giving concrete ideas for innovation projects to start from. The Canadian delegation that joined the PO Days also gathered around this topic.

In addition to Smart manufacturing, Smart cities, Safety and Security, Smart engineering and Smart health were well represented. However, it should be noted that POs submitted in ITEA do not necessarily have to specifically fit these challenges; all innovative projects on software innovation are welcome!

#### It's about impact

To inspire participants and to see what can be achieved through an ITEA project, the ITEA Impact stream was released during the PO Days 2017 by ITEA Chairwoman Zeynep Sarilar. The ITEA Impact stream is a living publication that consists

*The pitch allowed us to attract interested persons to visit our poster. The networking sessions allowed us to further specify our idea and to sort in new partners.*

Marco Lützenberger | Technische Universität Berlin



#### PO Days 2017 in numbers

- 307 participants from 18 different countries
- 74 project ideas uploaded in the Project Idea Tool before the event
- 65 project ideas were presented during the poster session
- 65 pitches during the parallel sessions
- 23 final project ideas presented



of 2 main elements: 7 main societal challenges and a set of impact stories focusing on the impact highlights of successful ITEA projects. This publication will continuously be expanded with new inspiring stories. You are invited to check the ITEA Impact stream online at: <https://itea3.org/impact-stream.html>

#### Efficient event

The event was again highly appreciated with a 4.0 on a 5.0-scale and many positive comments were made in the evaluation survey. Peter Stuer, from Spikes n.v. stated that *“the iterative matchmaking approach of the ITEA PO Days are the most efficient way of finding European partners of any EU research programme bar none.”* Some suggestions for improvement were also raised. For example, the high number of project ideas and attendees sometimes makes it hard to join all the relevant pitches/discussions and to find the right people. This and other suggestions received via the survey will be taken into account to further improve future PO Days.



*It was again a “cosy” feeling to see the ITEA family and community spirit working.*

Franz-Josef Stewing | Materna

#### Project outline submission

The first 5 Project Outlines for ITEA 3 Call 4 were already shaped during the PO Days and at the deadline of 2 November, 31 Project Outlines were submitted. Currently, all these Project Outlines are being reviewed. On 11 December the projects will be informed whether they will be invited to submit a Full Project Proposal.

## VIEWPOINT

# On the outside ... looking in

By Tekin Gulsen

Tekin Gulsen is Global IT & Corporate Planning Director of the Turkish industrial company Kordsa a global player of the tyre, construction reinforcement and composite technologies markets. He was recently invited to attend the ITEA international customer workshop on Smart Manufacturing, an enlightening experience and one that was in keeping with his company's own attitude towards the importance of users in the development of innovation. He shares his observations with us here.

*So what was his impression of the ITEA international customer workshop and what did he take away from his first experience of ITEA?*

"Following the suggestion of the ITEA Chairwoman (Zeynep Sarilar) to attend the ITEA workshop, I decided to attend not quite knowing what to expect from the workshop since digitalisation topics are already on our agenda and I lead efforts in this direction within our company."

When Tekin arrived, he was rather surprised that it really was a workshop and not some kind of a technology marketing event. "It really was customer focused, by which I mean it was geared to customer problems. We had the opportunity to exchange ideas, explain our agendas, roll up our

sleeves and get to grips with finding solutions. A very cooperative and collaborative session. I don't know whether it was intentional or not but many of the other companies at the workshop were in similar lines of business or value chains, which had an added pay-off in itself by helping initiate contacts for other business units. Hence, it was also a rewarding experience to broaden our professional network."

*What do you think you can contribute as a customer to the innovation landscape within ITEA and to the innovation that is generated within projects?*

"As far as our own customers are concerned, their input is invaluable to enabling us to refine our innovation process. We do technology



**“Innovation should be in line with customer and market expectations, else we end up with a great product without any available market.”**

“So, in many ways, being at the ITEA workshop was a valuable opportunity, apart from anything else, to experience this process as an outsider, in other words, as a customer. We certainly have a lot to contribute by sharing our experience with the different representatives of the value chains and technology domains within the ITEA landscape. It is clear to us that the ITEA Community is one that we should be part of and explore. There is a likelihood that we will look to team up with other interested parties who share similar project ideas, and this may lead to proposing an ITEA project, which is my expectation for the next step.”

reviews, methodology testing and innovation evaluations based on our customer feedback. Addressing our customers’ expectations is our top priority. We have two well-established R&D centres, which focus on developing technology that makes a difference and creates value in tyre, construction reinforcement and composite technologies. In an effort to have a broader vision leading to new discoveries that ignite an organisation or industry, we get out of our cocoon and combine multiple existing ideas and disciplines and unite our power. Being a keen supporter of open innovation practices for some years now, we contact and have collaborations with institutions, companies and universities for projects that are outside the scope of our own area of expertise.

“In short, we are essentially a bottom-up, collaborative and market-driven company. R&D and innovation are an integral part of our corporate culture; however, innovation should be in line with customer and market expectations. After all, we may come up

with what we think to be a great product or technology; nevertheless, unless the customer is willing to pay for the additional feature or functionality, we end up with a great product without any available market. Therefore, we have a very well-defined innovation management process based on customer expectations to take every feedback into consideration and try to incorporate this feedback into our process. The key to all this is to understand the customer and his market. For that purpose, we have different kinds of customer interaction, from technical to marketing, including full-interaction workshops with our customers as part of that process. One of the key challenges for us is to manage to consolidate all of the data with a clear sense of purpose within the organisation for all the different functions to be part of the innovation initiative and have the same information. In a global organisation, as you can imagine, this is a considerable challenge. To this end, we have created a platform to capture and distribute this information.

*Having experience of customer workshops as organiser and participant, would you have any tips for ITEA?*

“One of the things that struck me as a new participant in the customer workshop was a need to have a better understanding of the role of the workshop in the whole process. In fact more clarity on the process as a whole would have been useful. I suppose if I had to suggest an area where some improvement could be made, it would be feedback and follow-up after the event. I feel this was lacking somewhat. I made some attempts to follow-up on the projects we identified with other participants but, unfortunately, I have not received much response yet and so have been unable to make much progress. So, that is an area to look at. As for the workshop itself, as I indicated earlier, it was a very effective session – hands-on, very interactive, engaged all the participants ... a real workshop!”

**More information**

<http://www.kordsa.com>

## Project showcase: M2MGrids

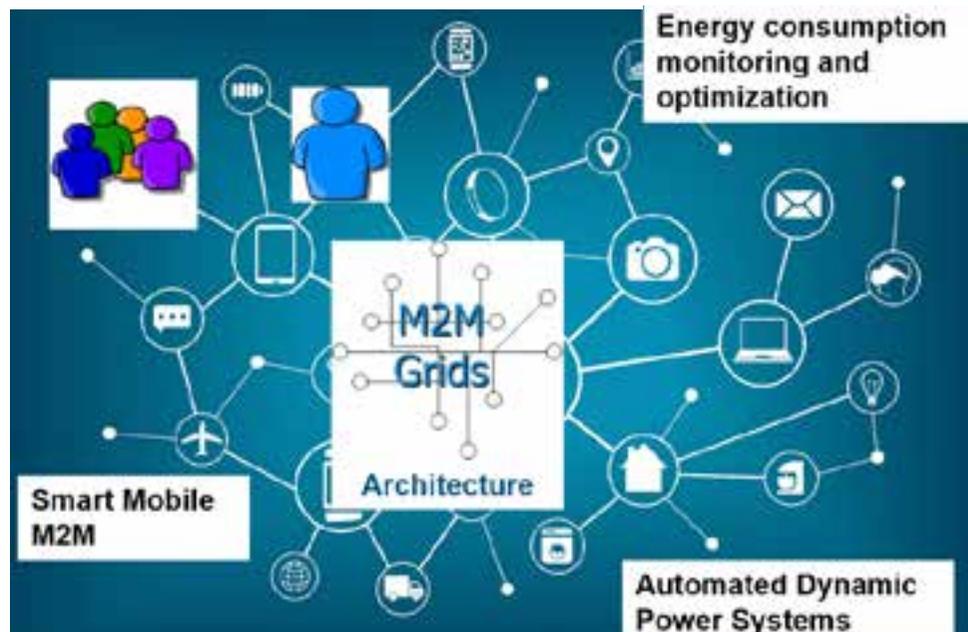
# Breaking down silos opens up opportunities

### From Machine to Machine (M2M) towards smart Cyber-Physical Systems (CPS)

The Smart M2MGrids ITEA project focuses on developing enablers to create a dynamic cyber-physical information business ecosystem, one that connects the physical world with the business processes of companies in real-time. To begin with, physical world sensors, actuators and various embedded devices and machines have to be connected with IT systems automatically or semi-automatically. This is done by applying and extending M2M infrastructures for communication and services that are based on horizontal open standards. Next, information management for embedded and distributed application must be enabled for smart interaction with physical M2M objects and IT back-office systems. Finally, smart information exchange must be facilitated between selected business cases related to energy, buildings, transportation and consumer M2M products and services in order to make the future world smart, smooth and secure for consumers/prosumers.

### From vertical to horizontal

M2MGrids project leader Juhani Latvakoski of VTT Technical Research Centre of Finland



explains the impact that this project, which involves 29 partners from Finland, Belgium, Israel, the Netherlands, Portugal and Turkey, is targeting after some two years. “In essence, our challenge is to enable the step from machine-to-machine towards smart cyber-physical systems. But a critical obstacle is presented by the vertical silo type development

in M2M industries, which seems to hinder the development of smart interoperable cyber-physical systems. We need the system to shift from vertical towards horizontal capabilities, and from offline data analysis towards more smart autonomic information-based online operation.” In order to tackle these challenges, the project has been working

**Project details****13011 M2MGrids****Project leader**

Juhani Latvakoski  
VTT Technical Research Centre of  
Finland

**Partners***Belgium*

Nokia Bell N.V  
Softkinetic International  
Spikes n.v.

*Finland*

Aidon Oy  
Bittium Wireless Ltd  
Empower IM Oy  
Polar Electro Oy  
Tracker Oy  
Valopaa Ltd  
VTT Technical Research Centre of  
Finland Ltd

*Israel*

LiveU  
Starhome

*Netherlands*

Alliander  
Delft University of Technology  
Eindhoven University of  
Technology  
IMEC  
Neroa  
TNO  
Target Holding  
Technolution

*Portugal*

Evoleo Technologies  
ISEP /IPP-GECAD  
ISQ

*Turkey*

Arcelik A.S.  
Eteration Bilisim Cozumleri ve  
Ticaret A.S.  
KoçSistem Information and  
Communication Services  
Phaymobile  
Vektor Telekom

**Start date**

November 2014

**End date**

May 2018

**Website**

<https://itea3.org/project/m2mgrids.html>

with M2M architectures and experimental systems related to selected business cases in energy and mobility sectors. “We have three business cases: automated dynamic power systems, energy consumption, monitoring and optimisation and smart mobile M2M. The M2MGrids project is trying to define a common horizontal M2MGrids architecture, and to develop horizontal technical solutions that are applicable for all of these business cases.”

### **An example of horizontal capability - M2Mservice platform**

Marc Roelands of Nokia Bell Labs zooms in on a specific concrete example of what can actually be enabled. “In the M2MGrids architecture system we have been demonstrating a horizontal capability called a distributed machine-to-machine service platform. We have implemented such a platform at Nokia Bell Labs – the World-Wide Streams Platform. Technically speaking, this is a data-stream processing platform for the Internet of Things. We see that the world is becoming one big cyber-physical system and these kinds of platforms are the horizontal key enabler for the automation of everything in that world.

“Let’s apply this to a simple example from the energy business cases. Suppose you are the owner of a charging-pole park for electric vehicles and you want to offer electric vehicle

owners a rebate on the electricity supply price in return for some flexibility in terms of where, when and the power demand for car-charging. With the increasing use of renewables, like solar and wind energy, it’s less about production and more about managing the fluctuations of the supply and demand. If you can somehow ‘manage’ the schedule of vehicle-charging, then you can help stabilise the smart energy grid. That requires, for this charging-pole park owner, a pretty complicated control service. The platform we have built makes this really easy to realise. Almost as easy as building a webpage. Say that this same charging-pole owner wants to be able to track the cars and predict when they will need charging and so anticipate what power needs will be demanded from the grid – that’s just a few clicks away. Of course, the drivers have to cooperate, but if they are getting a better price deal, then they are more likely to participate in this scheme. So this is a very concrete example of where such a platform enables a service like this.”

### **Recent demonstrations at the DIF 2017**

Marc again: “At this year’s Digital Innovation Forum (DIF), the M2MGrids project actually demonstrated that we can enable a whole ecosystem of different actors of the energy sector to launch multiple services on the distributed M2M service platform in such a way that they interact according to energy standards

with the distributed energy resources. In that way, you really get a cyber-physical ecosystem in which multiple actors from the energy domain interact.”

“We also had the smart mobile M2M proof of concept demonstration at the DIF,” Juhani adds. “where the other horizontal solution of M2MGrids architecture called as a virtual CPS communication hub (realized by VTT) enables mobile embedded products and services to interact and exchange information in a controlled and secure way. In our demo, the Valopaa street lamp and the Polar smart watch were capable of publishing information and subscribing to each others’ information. This was a simple example of how the information can be published, subscribed to and used by devices belonging to different owners in different verticals, energy and consumer sectors.”

### **Huge challenge, real contribution**

Juhani continues. “We want to make smart cyber-physical systems so that we no longer have to make all the solutions separately for each vertical. This challenge is huge for our entire industrial society, and it is not something we can accomplish within a single project. However, since we have selected specific business cases and have used these capabilities of the horizontal M2MGrids architecture in the demonstrators, we feel that we are really contributing towards making this goal possible in future.”

# Community Talk with: Maria Rimini-Döring

Dr. Maria Rimini-Döring received her degree in electrical engineering from the University of Pavia, Italy, in 1984 and her PhD in semiconductor physics from the University of Stuttgart, Germany in 1991. The same year she joined the Bosch group, at first within Bosch Telecom in the development of large application specific integrated circuits (ASICs). In 1999 she moved to Corporate Research as a senior expert and project leader in the field of human-machine interaction, driver monitoring and traffic safety. Since 2014 she has been coordinating the public funding research activities of the Division for Software Intensive Systems at the Bosch Corporate Research Centre. She is member of the ITEA Steering Group and represents Bosch in the competence network SafeTRANS and in the European Institute for Complex Safety Critical Systems Engineering (EICOSE). She tells us about her involvement with the ITEA community and reveals what she gets out of it.

## **Committed European**

Maria's relationship with ITEA began a few years ago when she was asked to take over the company's ITEA role from a colleague who was retiring. Maria admits to liking it right from the beginning. "I have an international background and I'm a committed European, so I was more than happy to join committees and clusters. I am responsible for the 25 or so publically funded projects of our Corporate Research Division of around 250 people. I'm also involved in the reviewing and submissions processes. I can give it sufficient time and attention because at the

time I started my involvement, my son had just graduated from high school and had gone off to university, so fortunately I didn't need to feel guilty about all the travelling that comes with the commitments."

While Maria had not been involved specifically in ITEA projects earlier, she had participated in other publically funded projects, both national and European. "I noticed certain differences, not least the bottom-up approach of ITEA projects. It's an approach that I like because the top-down approach I had experience of always runs



the risk of ‘missing’ ingredients that can be essential to being able to achieve the intended results. I don’t work in any of the projects myself but I am familiar with projects like APPSTACLE and ACOSAR. What I do is go to events like the PO Days, gather information and ideas, bring them to my colleagues and coach them when they submit proposals and, later on if the project is labelled, I act as a mentor to them. I also do the usual reviews of proposals and project progress reports. The other thing that I really like in ITEA is the very cooperative, goal-oriented and friendly teams. The steering group is a very special team of engaged and experienced people. It’s so interesting to be with them, talk and swap ideas and topics.”

#### **Different**

Maria attended the DIF 2017 event in Amsterdam, and it made quite an impression on her, especially the fascinating presentations and discussions as well as the contributions of the SMEs and start-ups. “One of the interesting things about ITEA is the mix. It was evident in Amsterdam. It is different from most European and national programmes. There is greater

diversity in the players and this could make exploitation both faster and more effective. I think this is one of the distinctive features that makes ITEA more flexible and agile than some other large programmes. It’s a very lean organisation with everyone devoted to getting the best out of the projects. The ITEA Office in Eindhoven is extremely supportive. If you have any questions, they answer right away and try to find solutions. And being such a relatively small group of people, that makes for short lines of effective communication. And you get the sense that everyone in the team is very open and cooperative.”

“My company, Robert Bosch, also benefits from its association with ITEA because this level of support enables the projects in which we are involved to get the best out of people and out of the project goals. It also acts as a kind of vehicle, helping us in setting the agenda at a very advanced level and growing a national consortium/eco-system for fast exploitation.” Although ITEA projects tend to receive funding of up to around 45%, the real value, according to Maria, is in the flexibility and efficiency. “This

brings in a very competitive factor compared with EU calls where you have hundreds of projects and the chance of getting your project awarded is really quite small. Also, to have the opportunity to come along with an idea and present this to others who may be interested, and actually get it started is another very attractive aspect of ITEA. The focus at ITEA is very clearly on knowledge rather than on funding. In the European framework programmes, there is a bit of a money race going on – of course, that’s a pull for the larger companies and scientific institutions – but at ITEA aspects like knowledge-sharing, idea-swapping, communicating and networking are accentuated.”

#### **Happy family**

And what makes ITEA an even more perfect environment, according to Maria, is the real sense of being part of a family. “Like the project progress reports meeting last month in Rennes. Philippe Letellier, our host, took us some 60 kilometres to the Brittany coast for dinner. What a wonderful location. We arrived during a beautiful sunset at a quaint old port looking out to a seascape lit by a full moon. Just the perfect setting. We talked about work, politics, the world and all kinds of things that matter to us as people, sharing our hopes and fears. I think we all felt free to express our opinions on anything. It was as if we were sitting down to a family dinner. And I would also like to add how good it always feels to read the strong and affectionate messages from my steering group colleagues after a terrorist attack (in Paris, Nice, Brussels, Istanbul, Berlin...). It gives hope and motivation to hold together for a better and innovative world. I am very thankful to ITEA and its people for these ties!”

#### **A funny thing happened on the way to the ‘forum’**

We cannot finish without an amusing anecdote. Maria recalls her introduction to her new ITEA colleagues. Having a little trouble understanding the accents, she had to ask a male colleague to repeat his name. It was Jesus. Ah, she thought, how coincidental. But then another ‘family’ member, who had overheard this, introduced himself. “Hello, I’m Joseph!” So there they were, Joseph, Maria and Jesus all in the same room. What was the chance of that happening? The ITEA family works in mysterious ways!

# ITEA project results enhancing people's lives

MOS2S develops, tests and embeds audio-visual technologies in the Smart Venue Playground.

## Coach on the couch

Fans can now share the joy and feel the frustrations of being the coach using augmented reality layers in an in-stadium smartphone app. They can determine their team's game tactics, follow a specific player, and get more information about the players and the game in real time. All this is made possible by a data-integrated interactive video system and mobile application combining tracking data and ultrahigh definition video images. At home, too, tracking and UHD video data streams shown via an app on an IPTV set-top box allow the couch potato to become the coach supreme and enjoy an innovative TV experience of a live sports or music event. Applications include live events, event security and crowd journalism, such as the tracking of medical and security personnel during live events to give the event management team better operational control in complex situations. By harvesting and combining the wealth of data and video in an orchestrated way, a variety of attractive applications for information, participation, entertainment and security is created.



Source: MOS26, SPORZA



Source: MOS25, KNVB, UNITED



Source: MOS25, KNVB

## Lively experience

The Tour of Flanders professional cycling race was enriched with live content contributed by the crowd watching the race. This enabled end users to become active participants as reporters in the field and co-create engaging, all-embracing and fully-absorbing viewing. Users are able to submit content (text, images, audio and video) as well as consume content shared by a broadcaster (e.g. radio, sports or news station) using an interactive application. From a broadcaster's perspective, sports editors can easily segment and collect user content by interesting race events or location. The editorial dashboard makes it easy to reach users for updates and polls. Besides content contribution, the app enables editors to search and analyse social media. By adapting their current workflow into a set of tools, editors can efficiently collect information, tailored to their news stories. Such novel editorial tools and end-user apps help to augment traditional coverage of professional cycling with professionally edited, crowd-contributed highlights to give viewers an enriching, immersive and multi-perspective race experience.

ITEA 3 project  
MOS2S

# Calendar

14-16 November 2017

## **SMART CITY EXPO WORLD CONGRESS**

Barcelona, Spain

16 November 2017

## **SWISS INNOVATION FORUM 2017**

Basel, Switzerland

<http://www.en.swiss-innovation.com>

16 November 2017

## **SMART ENGINEERING EVENT**

Hamburg, Germany

<http://www.idealism.eu/smart-engineering/>

20-22 November 2017

## **ENTERPRISE EUROPE NETWORK ANNUAL**

### **CONFERENCE 2017**

Tallinn, Estonia

<http://www.b2fair.com/eenconf2017>

27 November 2017

## **CUT-OFF DATE EUROGIA CALL FOR PROJECTS**

<http://eurogia.com>

27 November – 1 December 2017

## **9TH EUROPEAN INNOVATION SUMMIT**

Brussels, Belgium

<http://www.knowledge4innovation.eu/9th-european-innovation-summit-week-2711-112-2017-brussels>

28 November 2017

## **THINK DIGITAL 2017**

Brussels, Belgium

<http://www.thinkdigital.eu/>

29 November 2017

## **EIT DIGITAL INNOVATION DAY**

Eindhoven, Netherlands

<https://www.eitdigital.eu/innovationdaynl17/>

29 November 2017

## **DEADLINE FPP SUBMISSION EURIPIDES**

### **AUTUMN CALL 2017**

<http://euripides-eureka.eu>

30 November – 1 December 2017

## **SLUSH 2017**

Helsinki, Finland

<http://www.slush.org>

5-7 December 2017

## **EF ECS**

Brussels, Belgium

<https://efecs.eu>

13 December 2017

## **CELTIC-PLUS PROPOSERS DAY**

Luxembourg, Luxembourg

[www.celticplus.eu](http://www.celticplus.eu)

15 February 2018

## **DEADLINE FPP SUBMISSION ITEA 3 CALL 4**

<https://itea3.org>

## ITEA Success Story

# SEAS

Semantic web enables disruptive business models in the energy realm

**The ITEA project SEAS is at the heart of energy transition. Their revolution: cost-effective, environmentally friendly and customer-focused energy streams through efficient interaction between providers, consumers and prosumers ... everywhere.**

The project set out to enable interoperability of energy, ICT and automation systems at consumption sites, introducing dynamic and intricate ICT-based solutions to control, monitor and estimate energy consumption. It also explored business models and solutions to enable energy-market participants to

incorporate micro-grid environments and active customers. The SEAS platform will allow the charging of electric cars, the production of warm water, the triggering of home appliances (dishwashers, washing machines, refrigerators, etc...) and other activities requiring electricity, in accordance with weather information, available production capacity, local constraints of the distribution grid and many other factors. These operations will be enabled automatically, by remote control, without further consequences in the distribution of energy (over or under-voltage, etc.), at the best price for consumers.

The project resulted in three main outcomes:

1. The Smart Energy API Standard, a semantic information model, which serves as a means

for energy IT systems to connect intelligently to each other and transparently to users.

2. The Smart API software development kit (SDK), which makes it possible for system manufacturers, IT integrators and the like to apply this Smart Energy API Standard in an out-of-the-box fashion.
3. The Smart API Services reference framework, which is the reference design model for compatible IT systems and a highly innovative, future-proof open architecture that allows for interoperability, innovation and different kinds of business models based on an advanced dynamic ontology dedicated to the smart energy grid.

The added value of the developed architecture and the use of semantic web technology is a

high level of adaptability to the evolution of hardware and management of smart city, smart grid and smart home.

The scope and range of the project is evident from 120 use cases classified in six main categories along with 30 ontologies for the energy domain. In addition to two demonstrator scenarios defined on autonomous buildings and microgrids, 16 pilots in four different countries and distributed data platforms were installed and supplemented with a Microgrid Context Awareness Framework, including algorithms. This was demonstrated on a dataset of 40 houses (2125 metering points) and four billion data entries plus a Last Mile Data Acquisition Hybrid Network.

#### Cross-domain exploitation

In terms of revenues, the SEAS exploitation in the short term (2017) is expected to be €2 million, with medium-term exploitation (2018) anticipated to be €25 million and long-term revenues (2019 to 2021) as much as €600 million.

ENGIE (project leader of the SEAS project) introduced the DAPM (data access point manager), a dedicated middleware and appstore for city areas, open to third party applications and data. This new “City as a Service” model breaks down not only the energy silos but also other verticals in a first step towards interoperability. Data management thus operates horizontally across domains – transport, water, heating, lighting, even weather information and traffic regulation, bringing urban management to a higher level. DAPM has already been taken up by Aubagne (for public lighting) and is being considered in Rennes, Marseille, Saint-Nazaire in France and Barcelona in Spain. A partnership for prototyping has already been signed between ENGIE & Intel, the latter providing dedicated chipsets, cybersecurity and artificial intelligence solutions for large-scale industrialisation. The DAPM architecture has been chosen by ENGIE as the reference architecture for the company’s overall service platform. The market potential using the service platform including the applications (cumulative from 2017 to 2020) is approximately US\$70 billion for the geographical regions where the ENGIE competence already exists.

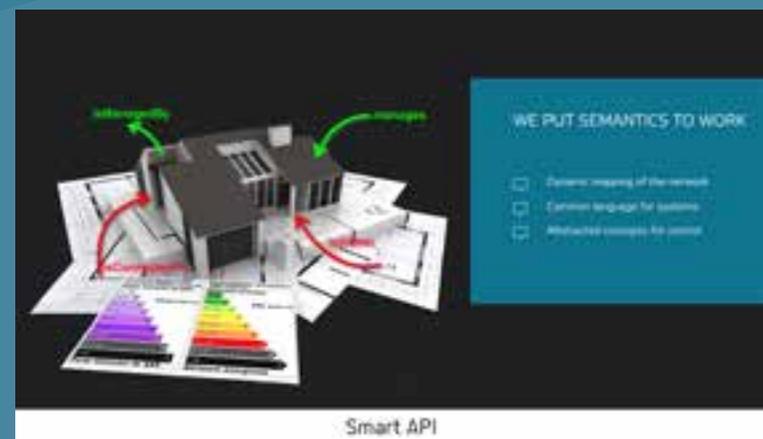
The impact of the results is wholeheartedly underlined by Engie’s CTO who compared the impact of SEAS with that of the international banking standard SWIFT that allows safe and secure money transfers between banks all over the world.

*“SEAS is a standard that will allow any kind of energy – heat, cold, gas, electrons – to be transferred securely and automatically with embedded artificial intelligence between devices that either produce, store or consume. This is a really, really major development in the IoT for energy, one that is going to transform the future.”*

Finnish company Asema Electronics markets the Smart API SDK and its specification. Furthermore, Asema IoT Central is a software that embeds the functionality of the Smart API into a development platform that can be used by organisations who want to implement their own energy and mobility IoT solutions. The Asema IoT Central is used in smart cities for smart waste management, smart lighting, vehicle sharing, smart charging and building management – this offers a single, holistic view of all city data across various departments and organisations within the city. Coordination between departments and organisations can now be made much more effortlessly and automatically. For instance, cities can combine the routes and tasks of people managing infrastructure: an electrician repairing a street light can check the status of waste containers and water pipes while on site, plan daily routes based on tasks from multiple interconnected systems, and report these to the corresponding systems with one interface. Planning and coordination can be shared between subcontractors from whom the cities buy services, while the city management gets one integrated map and dashboard of the city, including service vehicle locations, street lights, electric vehicle charging and parking.

The Enerim EMS (Energy Management System) from the Finnish partner Empower also builds

on the SEAS results. It is an energy domain network and market-process orchestration system that allows the network to be balanced with market and control functionalities. Enerim EMS enables energy companies and energy-intensive communities or industrial customers to manage their energy assets and market positions more efficiently. Market participants and renewable energy integrators benefit from Enerim EMS enabled access to multiple market levels and can create shared energy positions based on the distributed energy resources. The Enerim CIS (Customer Information System) solution that builds on SEAS knowledge in connectivity is gradually becoming the premier new energy customer information management and billing solution. It is deployed now to facilitate emerging data-hub enabled retail markets in Finland with over 45% of the national distribution metering points it manages over the next years. Finally, Empower is already taking the concept further within another ITEA project (M2MGrids) involving NOKIA as a multinational connectivity enabler.



As SEAS project leader and senior project coordinator at Engie, Philippe Bourguignon, explains: “SEAS was the first ITEA project on semantics with a big impact, but it will not be the only one. M2mgrids and BaaS are two ITEA projects with the same semantics technology as SEAS, with the involvement of big players like NOKIA and Siemens. Thanks to this, ITEA can have a big footprint.”

#### More information

<https://itea3.org/project/seas.html>

SME in the spotlight

# Innovalia

Innovalia Group is a strategic alliance, part of the Basque Technology Network. It consolidates the business activities and development of eight companies with a technological base. As Silvia de la Maza, a Mechanical Engineering graduate with an MSc in Knowledge Management and head of the organisation's Madrid office, explains, "we are not an SME in the traditional sense. Innovalia is more of a philosophy, a way of working based on open cooperation that is permanently evolving through technological innovation."

## Feeding innovation

Innovalia aims to establish new mechanisms whereby technological innovation can generate added value to society and business; particularly SMEs. This vision is fostered by the creation of an open ecosystem that supports the innovation as a strategic ecosystem of technology-based SMEs and offers products and services in a continuous transformation. Innovalia has grown and developed its business in four areas: Digital Transformation Consulting, Quality Control Solutions, ICT and Technological Development. Its international activity involves extensive cooperation and a team of highly skilled professional researchers engaged in industry-driven R&D activities. Innovalia is also actively

involved in the European strategy for Digital Innovation Hubs (DIHs) promoting different activities in the network as well as leading a DIH in Spain on IIoT/CPS. This role is in line with Innovalia's aim to bring technology to SMEs with a clear market purpose.

"Innovation we believe is an intrinsic business process," Silvia stresses, "for maintaining business efficiency and competitiveness. Each SME within Innovalia has innovation as its key driver and is very active in this aspect. What I would also like to underline here, is that it is innovation with a purpose, by which I mean that the companies listen very attentively to what it is that their clients need. In other words, the client



feeds the innovation that the SMEs create to nourish the technology that that client ultimately uses for their competitive advantage.”

#### **David(s) and Goliath**

Although Innovalia is based in the Basque Country, its clients act in a global marketplace, and the SMEs within the association work internationally on a daily basis. “So much so,” says Silvia, “that they take the global nature of their work for granted, whether that’s in European R&I projects, e.g. in ITEA or facilitating clients around the world. For example, our SMEs provide cutting-edge products and services to clients wherever they are based. “As a small company you have to innovate and be able to adapt to the changing market. It’s a David and Goliath scenario. The small companies have to be quick and agile, in mind and body, to be able to compete with their bigger rivals. So the ability to innovate is an essential slingshot in this fight for market share.”

One of the strengths of Innovalia lies in there not being just one David, but several Davids. “Through the different SMEs we are able to offer a united service,” Silvia explains. And the SMEs gain the benefits of this multidisciplinary approach. One area in which this is probably most evident is Industrie 4.0, where most of the production processes are characterised by the assembly of different parts and components. This is where Innovalia comes into its own. Innovalia Metrology is formed by Trimek, Datapixel and Unimetrik, who join forces to offer clients the best zero-defect manufacturing solutions, thereby helping to improve the productivity and efficiency

of production processes. But it doesn’t stop there. The cooperation and collaboration extends to mutually beneficial marketing – the clients of one SME may also become the client of another due to the united services provided. “It is part and parcel of our strategy. We are very close to our clients so we can often see opportunities for both the SMEs in the group and for the clients themselves to benefit from options they may not have been able to find on their own.”

#### **Client interaction**

Innovalia is keen to ensure that research results really do get back into the technological innovation process and that they are translated into actual products and services. “Client interaction is an essential part of our approach here. The interaction is not only with the client but also with the R&D team that is close to the client. This means that we can capture the needs of the clients and address them through the innovation projects in which we are working.” Sometimes clients are even invited to participate in these projects. “It is an opportunity for them to become involved in the whole development process,” Silvia says, “and we can learn from each other. Having a full context, a sense of what’s happening around you, is a valuable asset.”

#### **Nothing goes to waste**

“Of course, we aim to get our innovation through development and production and into the market as fast as possible but some of the innovation is a little futuristic,” Silvia says, “so that will take a little longer. We use all we develop. It depends on the technology readiness

level (TRL). But if it can’t be adopted in our products and services straightaway, then it is often an ingredient in an initiative that one of the SMEs may take in the future. Nothing goes to waste.”

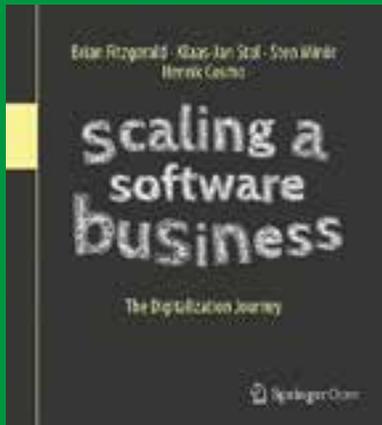
#### **Parallel lines**

Innovalia is also a contributor to the ITEA innovation landscape. Silvia: “At one time or another all of our SMEs have been involved in an ITEA project in various roles, either as coordinator or as consortium partner. We really value these projects. That much is evident from the fact that we have been part of ITEA projects from the beginning, despite the declining Spanish funding over the years. The collaboration and networking are such positive aspects that we remain keen participants. ITEA projects are industry-driven projects with a clear market focus on software-intensive systems and services, which are very important in most of the key areas of our activities. Perhaps it is not an exaggeration to say that ITEA is becoming more relevant today. We attended the last ITEA workshop on manufacturing, one of our lead areas of work, and it seems as if our growth path is running parallel with the focal areas of ITEA. We have become increasingly focused on the software and embedded side over the past few years and the digital transformation is gaining momentum among our clients. I’m sure our paths will continue to cross.”

#### **More information**

<http://innovalia.org/en/>

# Scaling a Software Business – SCALARE book available now!



In December 2013, the three-year ITEA project Scaling Software (SCALARE) kicked off with partners based in Germany, Ireland, Spain and Sweden, under the leadership of Schneider-Electric in Spain. The goal of the project was to develop a roadmap for industry that helps companies to scale their software development capacity. This is important, given the increasingly vital role of software, and the increasing

amount of software that is needed in modern products and services.

One of the key outcomes of SCALARE is the Scaling Management Framework (SMF), which organisations can use to help scale up their software development capability. Companies in every domain face this need to develop expertise in software development, including those

domains that we don't traditionally consider software related. The SMF is an analytical tool that companies can use to assess where they are, and define the steps to take to improve their software process.

The SMF and a rich set of case studies are reported in a practitioner-oriented book published by Springer. The book is open access, and can be downloaded for free via the QR code below. The book provides a gentle introduction to how a variety of companies across several domains, including services & consultancy, are able to scale up their software development capability, which we hope can be an inspiration for the whole European industry sector.

Scan the QR code and download the e-book:



**More information:**  
<https://scalare.org>

## Spin-off ITEA Project Metaverse1 uCrowds - Simulating crowds

How can a city safely accommodate 500,000 people during an event? How long does it take to evacuate a train station? Where and when can potentially dangerous situations occur, how can we detect these, and what can we do during an event to avoid these situations? These are important questions that start-up uCrowds tries to answer by means of a model for simulating crowds in big infrastructures, events or computer games.

### Roots in ITEA

The roots of uCrowds can be found in the award-winning ITEA project Metaverse1, which ran from October 2008 to March 2011. The project made it possible for information to be shared between different virtual worlds and the real world, and has led to the development of an international standard. Roland Geraerts, Assistant Professor in Crowd Simulation and founder of uCrowds, was an associate for Utrecht University in the Metaverse1 project. "The ITEA programme has given us a rich ecosystem of researchers, entrepreneurs and users, which allowed the

completion of the whole value chain from fundamental research to product. Moreover, the project has greatly enriched our network," explains Geraerts.

### Virtual simulation, clear exploitation

The uCrowds software already has clear exploitation results. For example, in collaboration with its partner Movares, it was used to investigate the amount of time it takes to evacuate several metro stations of the North/South metro line in Amsterdam. Together with this partner, the start-up also analysed a large



*Virtual Grand Départ visitors at the Jaarbeursplein in Utrecht*

range of scenarios that could occur during the Grand Départ of the 2015 Tour de France in Utrecht, as the city wanted to know whether the crowd would be safe should the city draw anywhere from 600,000 to 800,000 spectators. Based on the simulations, the city decided to move some fences, installed some pedestrian bridges, and had one-way traffic at certain places.

Finally, a plug-in was created for a popular game engine, Unity3D, to enrich computer games with big and believable crowds.

#### More information

<http://www.ucrowds.com/casestudies>

<https://itea3.org/project/metaverse1.html>

# FUSE-IT State of the Art

Integrating energy, facility, ICT and security management into a modular System of Systems

*By Philippe Letellier, ITEA Vice-chairman*



Energy is a very important topic for our society and a place where some key achievements have been ensured by ITEA and its projects.

I encourage you to re-read the FUSE-IT SotA. The aim of FUSE-IT was to connect security and energy management. So besides the Energy & Smart Grids themselves, you will discover elements on Facility & Building Automation, Information & Communication and Security of Premises. During the project it was pointed out that energy management and security so often interact together in real life.

More specifically for the Energy SotA they present the different kinds of dedicated sensors and associated networks along with the dedicated network for smart grids and micro grids.



They focus also on management level targeting the most recent energy monitoring management systems with special attention to the security of smart grids, the main focus in the project.

They have extensively described the different standards concerned by the underlying layers. Beside the standards themselves, they propose a long list of references for previous projects on similar topics that help to understand the actual status of SotA on this topic.

From this in-depth analysis of the SotA they propose their own analysis of limitations observed in the SotA and on which the FUSE-IT project is focused.

If energy management is an important topic for you, this SotA certainly deserves your detailed review.

ITEA, an incredible mine of information!

# ITEA Customer workshops

## How useful are they so far?

In 2015, ITEA started with yearly International customer and end-user workshops to be able to stimulate the ITEA projects to be even closer to the market, to ensure that real customer needs were solved and to enhance the chances of strong market and business impact.



Each year a specific theme is chosen: Smart Cities for 2015, Smart Health for 2016 and Smart Manufacturing for 2017. With the help of a dedicated organisation committee containing expert ITEA Community members from the specific domains, around 35-45 customers and solution providers from large industry and SMEs are invited to an iconic location linked to the theme – an intimate setting, allowing many face-to-face exchanges and group discussions to find out the main challenges the customers are struggling with.

The three workshops were very lively, creating strong input for project ideas, and participant feedback right after the workshops was very positive:

*“Having end users in the same workshop is a brilliant approach! This gets more interest from my organisation as people in contact with these potential customers also feel accountable, rather than seeing R&D collaborations separate from their daily business reality.”*

– Fatma Ozdemir | Ericsson

### How do the workshops work out now?

Now, a few years after the first workshop and a few months after the latest, what can we actually say about the usefulness? It is still too early to see if the final goal of solving real customer needs has been met, as the first projects have only just had their first review. Therefore, we have requested feedback from the participants to see how useful the ITEA customer workshops have been for them so far. 79% of the respondents still feel that the workshop was very useful for them. It helped them to:

- get in contact with (big) customers;
- find relevant and highly motivated contacts for a new ITEA project;
- get input for an internal deliberation about current lines of investigation;
- get (better) insights into the real needs and developments of the market; and

- get confirmation that an “ecosystem” of the specific domain is clearly present within ITEA.

Thanks to this, some of the participants were able to restructure their project idea before coming to the PO Days, where the impact of the workshops of the last two years was definitely visible in the number of project ideas presented within the specific domain, with more than 35% covering the chosen topic. And in the PO phase, the effect is still highly tangible.

Even if there are still some points for improvement as mentioned in the Viewpoint of Tekin Gulsen (page 6), a first conclusion is that the workshops work for the participants. But let’s come back to this in a few years to see which customer challenges have really been solved!

### Some facts & figures

	Smart Cities	Smart Health	Smart Manufacturing
# of participants	47	37	36
# of workshop participants attending the subsequent PO Days	9	11	11
# of project ideas within the domain presented in the subsequent PO Days	3	29	28
# of derived project ideas from workshop attendees	1	8	4
# of derived POs in the subsequent Call	1	7	7
Evaluation results - overall score (1-5)	3.7	4.2	4.1

# Finnish EUREKA Chairmanship 2017-2018



On 1 July, Finland took over the EUREKA Chairmanship from Spain. “Finland celebrates 100 years of independence this year and we are proud to chair EUREKA for 2017/2018. The theme of Finland’s Centennial Year fits in perfectly with the spirit of EUREKA: Together!” says Heikki Uusi-Honko, EUREKA Chairperson.

In line with the EUREKA 2020 Strategic Roadmap, the Finnish Chair has defined three priorities:

## 1. Smart EUREKA

- Implement lean governance – maintain and include customer focus in all efforts
- Secure the implementation of the Strategic Roadmap
- Secure the use of EUREKA secretariat’s resources to further the network’s strategic goals
- Improve communication about EUREKA’s offerings to all stakeholder groups

## 2. Extensive EUREKA

- Enhance EUREKA’s engagement with countries outside Europe
- Develop cooperation with associated countries as key partners in the network
- Support activation across the entire European network

## 3. EUREKA in European innovation policy

- Ensure synergies with EU R&D&I initiatives and networks
- Enhance EUREKA’s presence as a key innovation stakeholder and advocate for European innovation policy
- Champion the use and development of Eurostars. Establish a commitment for continuation of the programme beyond 2020
- Promote the use of GlobalStars as a cooperation tool

# Chile joins EUREKA

On the 3rd of July, “Chile became the first Latin American country to join EUREKA, the biggest innovation network in Europe” tweeted Chilean President, Michele Bachelet.

“The EUREKA Initiative welcomes Chile as an Associate country,” said Luis de Guindos, Spanish Minister of Economy and Competitiveness who signed the Association Agreement, echoed by all EUREKA Ministers and representatives. “We expect this association will result in the development of mutually beneficial, innovative R&D projects and will strengthen the competitiveness of both European and Chilean economies.”

With this agreement, Chilean companies will gain soon more access to the international market through EUREKA.



# Impact Assessment of EUREKA Cluster Projects and Network Projects

This major study, carried out by a consortium led by Prognos AG and its research partners, Joanneum Research and Professor Cincera (Université Libre de Bruxelles), focused on the impact of EUREKA grant-based support to companies in the period 2001-2015. ITEA projects were included in this study.

The methodology involved analysing the performance of 3,096 participating companies,

compared to a control group of 54 814, and employed counterfactual econometric methods (using a difference-in-differences design) alongside surveys and interviews.

EUREKA Member countries mobilised an estimated €11.2 billion in project costs for Cluster and Network projects in the assessed period.

## Key results

1. Annual turnover of participating firms 15% higher for Network projects and 13% higher for Cluster projects one year after project end.
2. Annual employment growth is 4% higher for Network Projects and 7% higher for Cluster projects one year after project end.
3. Participating firms recognised or expected a strengthened economic position through the EUREKA project, in particular by entering



markets, improved market share or increased exports.

4. The **high degree of flexibility** of EUREKA, building upon a strong bottom-up approach, is an essential asset for many participating firms.
5. Aside from the rapid exploitation of research results, improved behaviour in managing and performing international R&D collaboration leads to a variety of benefits to participating organisations; intangible changes pertain in particular to **improved strategy and competitiveness**.
6. Shorter projects involving smaller consortia were more successful in bringing their products and services to market in a short period of time.

The study also recommended a number of avenues for further exploration and development by the EUREKA Network:

- Synchronise and accelerate funding decisions
- Harmonise funding opportunities and funding rules
- Explore and test “Speed-boats” in Clusters – smaller projects with shorter duration which can be more effective for fast-developing markets
- Use progress checks to validate market perspective and strengthen commercialisation efforts
- Explore complementary opportunities for financing of EUREKA SMEs e.g. ESIF, S2E

Download the full report by scanning the QR code



## EUREKA Cluster events and call dates

	15 February 2018	Deadline ITEA 3 Call 4 FPP Submission		<a href="https://itea3.org">https://itea3.org</a>
	13 December	Celtic-Plus Proposers Day	Luxembourg, Luxembourg	<a href="http://www.celticplus.eu">www.celticplus.eu</a>
	29 November	Submission deadline - Full Project Proposal Autumn Call 2017		<a href="http://www.euripides-eureka.eu">www.euripides-eureka.eu</a>
	27 November	Next Cut-off date		<a href="http://www.eurogia.com">www.eurogia.com</a>
	5-7 December	EF ECS	Brussels, Belgium	<a href="https://efecs.eu">https://efecs.eu</a>

# Colophon

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

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**Submissions:**

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

Please submit your information to [communications@itea3.org](mailto:communications@itea3.org).

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