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ITEA 3

Focus on Sweden

ITEA Success stories
SoRTS and Metaverse1

ITEA PO Preparation
Days 2019

Contents

3 **Editorial**
Philippe Letellier

4 **Country focus: Sweden**
An innovative force in a sustainable world!

10 **ITEA PO Days 2019**
Join us in taking innovation to the next level

12 **ITEA Success story: SoRTS**
A system of real-time systems for more effective healthcare

15 **SotA highlight**
Semantic technologies and very traditional industries like Building

16 **Community talk**
Fopke Klok

19 **End-user happiness**
FUSE-IT's results enhancing people's lives

20 **EUREKA Global Innovation Summit 2019**
Innovating across borders for business growth

23 **News**
The ITEA 3 C³PO participation pavilion receives Core77 Notable Strategy & Research Award / Mathijs van Dijk joins the ITEA PR & Communications team

24 **ITEA Success story: Metaverse1**
The missing link between the real and the virtual

27 **Calendar**
Upcoming events

28 **Customer Workshop on Smart Mobility**
WANTED: experts in the domain of Smart Mobility

30 **SME in the spotlight**
IKANGAI

32 **ITEA 3 Call 5 projects**
Happiness, openness and trust

38 **EUREKA News**
The Netherlands EUREKA Chairmanship 2019/2020

Focus on SWEDEN

4

ITEA PO Preparation Days 2019

10

ITEA Success stories SoRTS and Metaverse1

12/24

Editorial

ITEA's environment is an ever changing one. And another change is just ahead of us. By the end of 2019, Fopke Klok will be leaving the ITEA Office! It is hard to imagine... On behalf of the ITEA Community, I thank him warmly. He has been at the heart of the engine ensuring that excellence of operations has steered us on a stable course when the climate has been tough and when we have been continuously rejuvenating ITEA. Merci Fopke! Read about his journey in ITEA in this edition.

On 21 March, the ITEA Board labelled 17 innovative R&D projects from ITEA 3 Call 5. The report on this Call gives me the opportunity to push a few messages: ITEA is open (54% of the partners are new companies), ITEA has impact on human capital with the unique experience acquired by ITEA project leaders (74% of the ITEA project leaders have not been an ITEA Project Leader before). ITEA is a unique position to analyse the last trends in innovation, especially on Artificial Intelligence (AI). Have a look at this report to learn more on this.

Today's digital society is about efficiency and dangers. Have a look at the FUSE-IT end-user happiness story around building security and you will find good news. Also check the Metaverse1 Success Story, which connects real and virtual perception in a unified world of the future. You will also appreciate some of the impact ITEA has on standards.

Vinnova is a strong believer in ITEA. Vinnova's Programme Manager, Andreas Allström, tells us how many companies like car or aircraft manufacturers consider themselves software companies. He explains how Sweden recovered from the telecommunication crisis through the rise of digital SMEs. The new focus for Sweden is AI and ITEA will continue to support Vinnova in this direction.
We welcomed Saab into the ITEA Board, joining Ericsson, to represent Sweden. ITEA Board member Stefan Andersson stresses in his interview why cooperation is important to ensure innovation. The ITEA OPENCPS project helped them to learn and implement innovations in AI and machine learning, and win the race in the cyber environment.

Artificial Intelligence is our next frontier and ITEA has been exploring this new world for some years. Read the State of the Art around semantic technologies in traditional industries like Building and Construction.

ITEA likes to highlight projects and innovative SMEs. IKANGAI, an Austrian SME, is creating the new digital tools for retailers confronted by competition with the ecommerce giants. The ITEA project SoRTS solved the challenge to couple real-time feedback of imaging and therapy systems during interventions. This world premiere drastically reduces the cancer radiotherapy side effects on healthy cells by tracking body movements during radiation.

In May, the UK EUREKA Chairmanship team organised the EUREKA Global Innovation Summit 2019 in Manchester. 200 Korean companies joined this event showing the impact of Europe when we all collaborate together and when are open to the rest of the world. Martin Benedikt from VIRTUAL VEHICLE Research Centre showed how the ITEA project ACOSAR impacted the market, and many members of the ITEA Community stressed some innovation directions we are working on. Casper Garos from Philips explained how ITEA partnerships between large companies and SMEs delivered global market impact. The ITEA project AVANTI was among the 5 finalists for the EUREKA Innovation Award 2019. The EUREKA NL Chairmanship team 2019/2020 is already preparing the next EUREKA Conference, on 5 September, the day after the ITEA PO Days 2019, so make sure to be there, and don't delay your registration for the PO days 2019. It will be full. See you in Amsterdam!

Philippe Letellier

Focus on Sweden

An innovative force in a sustainable world!

Photograph by Niclas Albinsson/Folio/imagebank.sweden.se

As Sweden's government agency for innovation, Vinnova funds innovation projects and the research needed to develop new solutions as well as invests long term in strong research and innovation environments. Its aim is to make Sweden an innovative force in a sustainable world, a leading global player in research and innovation and a country that is attractive for investment and entrepreneurship. Investments in research, development and innovation are paramount to economic growth, job creation and solving grand societal challenges. Among these spearheads, a focus on strengthening international cooperation is key.

> "Swedish companies really benefit from being involved in ITEA projects and, by association therefore, Swedish industry also reaps the rewards."

Andreas Allström works as a programme manager at the Vinnova department for Industrial Technologies, focusing on information and communication technologies and software innovation. He is involved in both international programmes (ITEA 3 and ECSEL JU) and national ICT and automotive programmes, so he's a good person to bring us up to date on the state of play in Sweden at the moment.

Software is taking over

Andreas refers to the 2015 publication 'Small and beautiful - The ICT success of Finland & Sweden' aimed to provide understanding of the mechanisms that have taken Sweden (and Finland) to leading positions in ICT and digitalisation. "Although we are almost 4 years down the road," Andreas says, "the findings of this study are still valid and valuable today. Learning the lessons contained in the study is key to the ongoing improvement of Vinnova's strategies and activities." In Sweden the ICT sector plays a predominant role as a source for economic growth, as a key employer and as a provider for solutions to societal challenges. "Many companies consider themselves software companies," Andreas remarks, "even those the consumer might think of as hardware producers like car or aircraft manufacturers. This really underlines how the lines between software and hardware are becoming blurred as the latter becomes increasingly dependent on the former. I mean, you just have to look at the car, truck, aerospace, robotics and other 'hardware' producers and the increasing heterogeneity in their product range – various versions of the same model – and you realise that production is really being controlled and managed – even shaped – by software." Backing up this claim, a recent statistical survey in 2018, performed by Statistics Sweden (SCB) on behalf of Swedsoft, investigated the importance of software development for all Swedish industry segments, and all company sizes from four employees and up. A brief excerpt of the results shows that:

- 35% of all companies develop software in house;
- 45% of all companies are hindered in growth because they cannot hire software developers (which could indicate that more companies would develop software in-house if they were able to hire competence);
- 100% state a dependence on software for their business model.

Disruptions – the ups and downs

Since the turn of the millennium global developments within the ICT sector, in particular the advent of cloud computing, big data and mobile internet as well as the convergence of previously distinguishable ICT sub-sectors, amounted to something that can justly be called the 'second disruption'. The first disruption was the arrival of GSM that enabled Sweden to break into the global scene as a major provider of ICT. This second disruption hit Sweden hard, and counting on winning large network equipment delivery contracts from telecommunications operators worldwide, the market went into recession. Ericsson slumped and by 2004, Ericsson's global and Swedish employment had more than halved on their previous levels. The ICT sector outside Ericsson was hit even harder as tens of thousands workers in ICT-related development, consulting, maintenance and research suffered the knock-on effects.

Dynamics, resilience and innovation

"But there was also a positive flipside," Andreas recalls. "Swedish expertise in technologies underlying the second disruption triggered an intensive period of start-up activity in internet services and software, and successful repositioning in what was still, despite the economic bubble bursting again, a vibrant global market. Sweden had the dynamics, resilience and innovation to respond and overcome adversity. In Sweden, according to the 2015 study, the ICT sector accounts for 5-6% of GDP and 3-4% of total working hours. Software and services is the biggest ICT sub-sector, with ICT consulting, which accounts for about a quarter of all ICT employment. It's a pretty diverse and dynamic sector and one in which Vinnova invests a substantial portion of its SEK 3 billion budget each year to foster innovation related to digitalisation. Most of these funds are allocated via Calls for proposals in which companies, academia, public sector actors and other organisations apply for funding. We try to constantly monitor and evaluate all the investments and regularly analyse the impacts of our investments."

Learning lessons well

The ICT sector in Sweden is a rapidly growing sector of the Swedish economy with a high concentration in and around Stockholm. The landscape is dominated by software and service companies with less than a quarter of employees employed in a hardware company (Ericsson still occupying a very dominant position). As mentioned already, the ICT sector is characterised by great dynamics. Many companies have been acquired by domestic or foreign corporations, in part due to Sweden's international reputation as a highly ICT productive environment and Stockholm's position as a major hotspot for ICT. Despite the ICT sector and ICT development in general flourishing, Sweden faces a shortage of

programmers, system developers, etc. “but,” as Andreas points out, “we are good at learning lessons and in terms of competence, there are plenty of role models to lean on: companies who have already been down the same roads and can give guidance.”

Challenge of AI

Digitalisation and Artificial Intelligence are ‘hot’ topics, that’s undeniable, and Swedish society is characterised by a high degree of digitalisation compared to most other countries. IT infrastructure is well developed and has a high capacity in large parts of the country. Digitalisation in working life has come a long way in many sectors, while a majority of the population is connected to the internet and has a high level of IT experiences. This is evident from another study commissioned by Vinnova and published last year to investigate the development to date of Sweden’s use of AI along with the AI skills needed for business and public services. “AI competence will be crucial to realising our AI capability,” Andreas explains. “While computer science skills are important, successful AI development often requires extensive software development. So access to AI competence will be a significant challenge. With AI applications expected to increase drastically in the next few decades, there will also be a sharp rise in global demand for AI competence, so it will be a challenge we will have to address. Dynamics, resilience and innovation – we’ve shown we are capable!”

Value of EUREKA Cluster programmes

That EUREKA in general, and ITEA in particular, are valuable vehicles for Sweden to implement its ICT strategies can be seen in the growing commitment by Sweden in ITEA, with participation over recent years having been increased substantially. Sweden was sixth in terms of effort per country in ITEA 3 Call 5 FPP submission of 14 February 2019. “Since 2016 we have increased our budget for EUREKA Clusters by 150% and in 2019 the budget is €10 million”, Andreas says. “From Vinnova’s point of view, EUREKA and the Clusters are vital to our internationalisation strategy, and they provide the industry with a trusted framework for international collaboration for innovation and standardisation efforts.” The Swedish Public Authorities and ITEA have demonstrated how serious they are about promoting this growth, hosting several events in the past few years like the EUREKA Innovation Week, the pre-PO Days event and the ITEA Digital Transition masterclass, the SSF – Vinnova conference on Software for Competitiveness and the ITEA Project Outline Preparation Days, the annual brokerage event, to facilitate even more Swedish participation in the upcoming ITEA Call. With Saab now bolstering the Swedish ‘voice’ on the ITEA Board, the statement of intent is loud and clear. “Swedish companies really benefit from being involved in ITEA projects and, by association therefore, Swedish industry also reaps the rewards. It’s not an easy task to quantify the impact but from our dialogue with industry, it is very clear that they rate these projects very highly, and their continued – even increasing – participation confirms that.”

More information

https://www.vinnova.se

Saab AB

Commitment to trustworthy software innovation

Saab is a global market player whose world-leading products, services and solutions boost security, from military defence to civil security with the aim of keeping people and society safe. With operations on every continent, Saab continuously develops, adapts and improves new technology to meet customers' changing needs. With around 17,000 employees, Saab's annual revenues amount to around 3 billion euros, of which about 23% is reinvested in research and development.

Stefan Andersson, an Applied Mathematics postgrad, joined Saab thirty years ago where he is now programme manager for the study and concept definition of Saab's next aircraft systems. He is former chair of the Swedish non-profit organisation Swedsoft, which promotes Swedish software education, software research and software innovation, and very recently he signed the agreement whereby Saab became a member of the ITEA Board, confirming the intention to "contribute with research needs and industrial use-cases related to large-scale development of trustworthy software-intensive systems."

Change and growth

Stefan gives a brief history of this prominent Swedish company that was founded in 1937 to help provide the resources to protect Swedish air space during the turbulence leading up to the Second World War. It still has that aerospace focus, but has grown into many other product areas over the past eighty years. During the last few decades Saab has acquired most parts of the Swedish defence industry: Celsius in 2000, Ericsson Microwave Systems in 2006 and Kockums in 2014. "We also acquired foreign companies such as Grintek, Sensis Corporation and HITT in order to grow globally and strengthen our product portfolio," Stefan adds. Today Saab has six business areas or product lines: Aeronautics, Dynamics, Surveillance, Industrial Products & Services (including ATM, Avionics, Aerostructures and Combitech), Kockums, and Support & Services.

Core enabler

What has become evident, certainly over the past decade and heading into the future, is that software innovation has become the "core enabler for all our products," Stefan says, "it realises smart interacting systems and the possibility of continuous upgrades. For us, software and computing platform technologies are central since they enable the design of increasingly complex, dynamic and interconnected systems with more and more features. However, aspects such as security, safety and flexibility are often neglected or underestimated. In the aerospace and defence industry we have realised that we need to exploit the emerging technologies in order to become better and more cost-effective in developing future systems, but within the constraints of existing industry standards and practices. There is a need for technologies, methods and tools that improve our ability to design and sustain large-scale, complex, smart and evolving systems cost-effectively – with shorter lead times – while at the same time ensure, and prove to the authorities of course, system characteristics such as reliability, security and safety."

Driver for new technologies

In this respect, although Saab commits significant funds and effort to research and development, it cannot do everything alone. To be and remain competitive on the global

"The future is filled with complexity and risks but through collaborating in projects we can win the race."

stage, publicly-funded research projects play a key role, "also in the understanding and use of new technologies, methods and tools as well as provide a driver for standardisation and Open Source that serve as a vital complement to Saab's own in-house development of processes, methods and tools," says Stefan. Looking at the membership of the ITEA Board, this is a welcome development for both parties. Stefan explains: "ITEA is very much geared to projects where the impact of applied research is the real target. At Saab our applied research addresses real needs and contributes to our efficiency and competitiveness. We view the application and execution of projects in terms of a pragmatic and simple process: the focus is on industrial impact rather than project reports. We are keen on international cross-domain research collaborations with industrial application players and tool vendors as well as with research institutes and universities – ITEA provides an excellent platform for engaging in such collaboration." With one of the key research areas for Saab being Software Intensive Systems, which is the main enabler for the digitalisation of Saab's products and product development environment, publicly-funded research projects can offer better methodology and tools to enabling more optimised products at lower cost. "Such projects allow us to establish new or contribute to existing open-source projects and standards enabling, for example, better tools and to share costs across multiple industry domains. Furthermore, the development of human capital and research in these projects complements our own in-house as well as national research programmes."

At home and abroad

Research collaboration on both a national and international scale takes on a special significance for Saab, and this is evident in the strategic partnership it has with various Swedish funding programmes. Stefan: "We have strategic partnerships with all the main universities in Sweden and we are active in national programmes such as WASP (Wallenberg AI, Autonomous Systems and Software Programme) and NFFP (National Aerospace Research Programme) and other projects funded by the Swedish Innovation Agency (Vinnova), the Swedish Foundation for Strategic Research (SSF) and Knowledge Foundation (KK-stiftelsen)." In addition to ITEA 3, where Saab is leader of OPENCPS, a project that focuses on interoperability between the standards Modelica/UML/FMI, improved execution speed of (co-)simulation and certified code generation, the company is actively involved in several other European programmes and projects."

The race between opportunities and threats

"As software intensive solutions increasingly pervade applications, we will struggle with system complexities and connecting these systems. So we need to ensure that through initiatives like the ITEA OPENCPS project, we can learn from and implement innovations in areas like AI and machine learning, and win the race in the cyber environment between opportunities and threats. Edge computing, cyber security … I could go on. In a nutshell, the future is filled with complexity and risks but through collaborating in projects with industrial and research partners, both at home and abroad, I believe that we can create the conditions for opportunities to win the race."

More information

https://saabgroup.com

ITEA Project Outline Preparation Days 2019

Join us in taking innovation to the next level

You now have the chance to become part of ITEA's future, together we can take innovation to the next level! Join us at the Project Outline Preparation Days (PO Days) 2019, which will be held on 3-4 September in Amsterdam. This year we will not only look ahead with the presentation of the next generation of successful projects ideas, you can also learn from the best ITEA projects during the ITEA Award of Excellence 2019 ceremony.

The PO Days event has proved to be the perfect steppingstone to kick-off your new R&D&I project in the software innovation domain; over 80% of the submitted Project Outlines in ITEA were presented first at this inspiring brokerage event.

In short, the ITEA PO Days 2019 will enable you to:

- Present your project idea(s) and/or learn about other project ideas in a poster session and during parallel project idea pitch sessions
- Discuss and work on your project ideas in workgroup sessions
- Meet companies and potential partners from all over Europe and beyond
- Meet Public Authorities to discuss your idea(s) and learn more about the specific funding rules in your country well in advance
- See how the ITEA Office can support you during the full project lifetime
- Learn from the best during the ITEA Award of Excellence ceremony

ITEA Award of Excellence 2019 – a set of perfect examples

Each year the Board Support Group together with the Steering Group nominate three outstanding ITEA projects for the ITEA Awards of Excellence. This year the award ceremony will take place at the PO Days, at the end of day one. During a panel session led by ITEA Vice-chairman Philippe Letellier, the project leaders of these next-level innovative projects will show the strong results their projects achieved in 'Business impact', 'Innovation' and 'Standardisation'. The PO Days attendees can thus be inspired and learn from the best how innovation is done in ITEA.

Don't delay your registration!

The participation fee for the PO Days is 200 EUR, VAT excluded (non-refundable). If you plan to participate in the ITEA PO Days 2019, do not miss this opportunity and register now at https://itea3.org/podays2019/registration-7.html (subject to availibility).

SAVE THE DATE:
EUREKA Stakeholder Conference 'Creating Ecosystems for Innovation' - 5 September 2019, Amsterdam

On 5 September, the day after the ITEA PO Days 2019, the EUREKA NL Chairmanship team 2019/2020 will organise the EUREKA Stakeholder Conference in Amsterdam (participation is free of charge). Participants from the ITEA PO Days can thus double benefit from their business trip to Amsterdam and meet the EUREKA Community as well.

More information and registration

https://english.rvo.nl/news/events/eureka-stakeholder-conference-creating-ecosystems-innovation

ITEA Success story

SoRTS

A system of real-time systems for more effective healthcare

Radiotherapy affects not only cancer cells but also healthy cells in the area that is being treated, so it is important that as little healthy tissue as possible is affected. The problem is that the movement of a tumour under the effect of respiration, for example, risks damaging surrounding tissue, whereas MRI, the only imaging modality that can visualise the tumour well, traditionally takes minutes to create the image.

While there have been considerable advances in recent years in the oncological and radiotherapy treatment of cancer, a major challenge still faced by image-guided intervention and treatment is the availability of coupled real-time feedback of the imaging and therapy systems during interventions. Nucletron, Philips, Technolution and UMC Utrecht in the Netherlands, Philips in Finland and Elekta in Sweden, all partners in the value chain for state-of-the-art image-guided intervention and treatment (IGIT), teamed up in an ITEA project to solve this challenge. The goal of the SoRTS project was to develop a system of real-time systems to support healthcare professionals in the transition from invasive, open surgery to minimally invasive IGIT.

The successful technological solution, real-time coupling of imaging and treatment systems was demonstrated in 3 use cases:

- The Magnetic Resonance Imaging (MRI) systems of Philips, for example, are made suitable for low-latency, real-time feedback during image-guided interventions while therapy systems, like brachytherapy, linear accelerator (Linac) and high-intensity focused ultrasound (HIFU) can destroy malignant tissue via a minimal or non-invasive method.
- UMC Utrecht developed and optimised clinical procedures to determine the most effective and efficient usage of automated image-guided interventional systems, validating such procedures in several radiotherapy applications.

- Finally, a Real-time Therapeutic Procedure Supervisor integrated image-controlled therapy by independent systems allowing the deployment of specific algorithms. These are developed according to the needs of any partner in the chain, without any upgrade or replacement of individual systems being required.

The SoRTS project resulted in state-of-the-art technology for Philips MR diagnostic systems and allows the exploitation of real-time motion correction. The innovations provide Philips with a competitive edge, creating a higher market share. With these key innovations Philips MRI will sell 50-100 systems in Europe in a new market, meaning an addition of more than 5% to the present MRI market of €4.5 billion. In 2017, Philips released a new MR clinical application, Compressed SENSE, an acceleration technique that can speed up all routine 2D and 3D clinical MR applications by up to 50% with virtually equivalent image quality. This development got additional relevance, since it is crucial for the the SoRTS real-time behaviour. Compressed SENSE is also featured in Philips' new 3.0T MR solution, Ingenia Elition, which was announced in March 2018. The Ingenia Elition helps clinicians perform MRI exams up to 50% faster, with no compromise in image quality.

One of the key outcomes of the SoRTS project for Elekta was the MR-linac (Magnetic Resonance Imaging - Linear Accelerator) system, commercially introduced as the Elekta Unity. It is designed to improve the targeting of tumour tissue while reducing exposure of healthy tissue to radiation, allowing physicians to precisely target a tumour, even when tumour tissue changes shape, location, size or composition during treatment. The Elekta Unity is the only MR/RT system that integrates a premium quality 1.5 Tesla MR scanner from Philips with an advanced linear accelerator and intelligently designed software. In September 2017, 7 Elekta high-field MR-adaptive linear accelerator (MR-linac) systems were installed worldwide and by December 2018 Elekta got the CE-marking of the system with 510(k) approval. Furthermore, in March 2019, Elekta won the Red Dot Award, a world-renowned design prize for the Elekta Unity. This award further underlines the real benefits of an

"The Elekta Unity allows physicians to precisely target a tumour, even when tumour tissue changes shape, location, size or composition during treatment."

Medical pioneer
Sixty-five-year-old Barry Dolling, who is a prostate cancer patient, became a medical pioneer on 18 September, as he was the UK's first to be treated with Elekta Unity MR-linac at The Royal Marsden. The PRISM trial (Prostate Radiotherapy Integrated with Simultaneous MRI) is a 30-patient Royal Marsden study to assess the technical feasibility of delivering radical radiotherapy for prostate cancer using Elekta Unity, including the feasibility of changing the radiotherapy plan on a daily basis to mirror internal anatomy changes. Dr Tree explains: "I've been quite encouraged and pleased with the image quality we're getting with Elekta Unity. It enables me to contour the capsule of the prostate, while the cine MRI pulse sequence we use lets us easily track the motion of the target and surrounding organs while the beams are being delivered." Mr. Dolling recalls. "If I had chosen surgery, I could have been out of action for three months or longer, not to mention the complications that can happen with surgery. With radiotherapy I could still carry on working as usual."

Source: https://focus.elekta.com/2019/03/the-era-of-mr-rt-in-the-uk

First prototype of MR-linac, used for testing initial SoRTS developments

intelligent, evidence-based design approach in delivering success. In May 2019, around 39 Elekta Unity systems had already been sold.

On 19 May 2017, less than six months after the end of the SoRTS project, the University Medical Centre (UMC) Utrecht treated the first patient as part of a clinical study with Elekta Unity. In February 2019, UMC reported on a first series of patient treatments using the company's Elekta Unity MR-linac system. In the published study, "Feasibility of stereotactic radiotherapy using a 1.5T MR-linac: Multi-fraction treatment of pelvic lymph node oligometastases," the investigators used Elekta Unity to deliver stereotactic body radiotherapy (SBRT) treatments to five patients with lymph node lesions. The study demonstrated the feasibility of MR-guided radiotherapy by satisfying three criteria: treatment delivery using the MR-linac, with full online planning; maximum session time of 60 minutes and passing all quality assurance (QA) tests. Kevin Brown, Global Vice President Scientific Research at Elekta says: "The UMCU study, in particular, demonstrated that clinicians can – for each treatment session – use the MRI in Elekta Unity to determine the daily position and shape of the anatomy". (Source: https://focus.elekta.com/2019/02/elekta-mr-linac-consortium-publishes-first-clinical-paper-on-mr-rt-feasibility/) Until May 2019, about 175 patients had been treated by 7 clinical sites in Europe and the US.

Technology integrator Technolution benefited from its participation in SoRTS by improving its core business in providing solutions for real-time, multi-core hardware for medical and for non-medical applications. With the results of SoRTS, Technolution was able to develop its video-over-IP solution, SigmaXG, which is now used worldwide. The Erasmus MC university hospital in Rotterdam has selected Technolution partner Inter Visual Systems' Sensumed platform, within which SigmaXG performs video-over-IP, for 26 new operating theatres in its building. This new solution ensures flawless technical processing of image, sound and user input. Because the images are clearly presented on just one screen, this solution is much more user-friendly for doctors and operating theatre staff.

SoRTS has accomplished great benefits for all stakeholders; Philips, Elekta and Technolution have already achieved impressive business growth, physicians can work faster while maintaining quality and last, but not least, patients benefit from a less intrusive treatment enabling them to continue their daily lives.

More informaton
https://itea3.org/project/sorts.html

"Patients benefit from a less intrusive treatment enabling them to continue their daily lives."

Semantic technologies and very traditional industries like Building

Have a look at the BaaS State of the Art (SotA) to discover how the semantic technologies (a part of Artificial Intelligence) are useful and impact more traditional industries like Building.

Today's challenge is to propose some kind of flexible open building service platform facilitating the generation and deployment of value-added building services at a considerably lower cost. This requires a data model providing additional meta-information to simplify the engineering of value-added services and applications, and the integration of legacy systems.

Imagine you want to add two different services on the platform, especially some legacy. They must access the same information but since they will have been developed by different companies on different timing, under the same format is not possible. But if your platform is equipped with some domain ontology and semantic modules, the different data formats of your services can be translated automatically and so open your platform, as an editor, to the service operators to describe how to automatically interface a new service on the platform.

For example, the Kieback&Peter Integrated Building Management System integrates all the technical equipment (like HVAC, IT, access) for operational efficiency, economy, user comfort, productivity as well as safety and reliability. Independent applications can be installed, customised and uninstalled in the iBMS at any time, with data obtained in the system supplemented by semantic and location-related information and available to all applications. To deal with dynamic adaptability, security, self-healing/self-management and low cost in the context of a distributed system, these semantic technologies must be stretched to their limit to deliver the results of BaaS.

This SotA covers many exciting topics, including:

- self-adaptive products (Self-Management, Self-Configuration, Self-Healing, Self-Protection, Self-Optimisation)
- data mining for building automation
- semantic web
- taxonomies and ontologies
- secure authorisation using OAuth, a security protocol that allows users to grant third-party access to their (web) resources without sharing their passwords via a security token with limited rights and limited lifetime that a user may revoke at any time and thus prevent further access.
- ontologies based access control
- pervasive computing

It describes standards like:

- Constrained Application Protocol a kind of HTTP but adapted to resource constrained devices like IOT
- OSGI
- restful web service
- efficient XML interchange
- BACnet, one of the predominant standards that defines network stack and application layer for communication in building automation and control systems (BACS)
- Open Building Information Exchange is an OASIS specification with an XML-based data model that is exchanged via Web service interfaces between different building automation components.

This SotA describes all these semantic technologies, how to apply them to a traditional business and how much a traditional business can be impacted by these Artificial Intelligence technologies. Beyond the pure mathematical knowledge on AI algorithms, there is also a specific art to applying and adapting it to traditional businesses. This cross-fertilisation is surely a key place to generate value from AI and it is where ITEA is investing in a large majority of our projects.

Community Talk with:

Fopke Klok

The Klok is ticking … on life at ITEA … and beyond

Fopke Klok has been Office Director at ITEA for a dozen years – on 1 June to be precise. Time for him to take centre stage in this Community Talk column, before he retires and moves on to other things.

A potted history

Before embarking on his professional career at Groningen University and Delft University of Technology, Fopke studied Mathematics at Groningen University. In 1986 he joined Philips Electronics as a CAD Systems analyst but it was between 1988 and 2007 that he gathered the knowhow and experience that would later stand him in perfect stead to steer the ITEA ship. During this period, Fopke held various managerial positions in the Netherlands and in the UK at Philips Research, where he covered areas like Computer Graphics, Compiler Technology, Wireless Communication and User Interfaces. In 1998 he became Head of the Strategy and Programme Office and was responsible for Planning & Programming at Philips Research. He is also Chairman of the Scientific Technical Council of SURF, initiator of ICT-based innovation in higher education and research in the Netherlands as well as an active member of the VVD (Dutch Liberal Party). Now, anno 2019, how does Fopke look back on life at ITEA, what were and are his aspirations and, indeed, how will he fill the 'void' when he relinquishes the reins to his successor later this year?

The story begins …

"… when ITEA and I first met. It was pretty much love at first sight. I was ready for a new career challenge and ITEA was in the market for a new Office Director. It was an opportunity for me to operate in an environment in which there was a mix of large and small enterprises, government and academia – new and refreshing, and a good possibility to use the knowledge and skills I had acquired in programme management and apply them to a wider context. From day one I have enjoyed every aspect of my work at ITEA. I must say that the move I made back then has provided me with one of the best periods of my professional life."

What has happened since then …

"Well, it is interesting to talk about changes, but perhaps what has not changed is equally important. That is a set of core values in ITEA: an R&D programme, managed by industry and focused on impact while being flexible and supportive to its project partners. It is a far less institutional set-up than many other R&D programmes. I feel it is really operating like a customer-focused SME with companies and Public Authorities. The main changes concern the dynamics of the environment. In the past, ITEA was the only show in town for industrial software innovation. There were EC programmes, but they generally had a more scientific nature. During my period in ITEA we helped with the creation of ARTEMIS, followed by ECSEL, Eurostars was created, new EUREKA Clusters, etc. At the same time, our Public Authorities had to do more work to safeguard the political and financial support for ITEA. All this pushed the focus even more towards the impact of our projects and, especially, on making the impact visible. This has been reflected in many changes in the way we set up our communication, our website, our social media presence and also our core processes around the project creation and monitoring, which have been completely digitised. And to demonstrate our flexibility in combination with our professionalism we acquired the ISO-9001 label for the first time in 2013. We have also created many new events: the ITEA-ARTEMIS Co-Summit, customer workshops, and now we are preparing ITEA projects to demonstrate their results in an even more customer-oriented environment: the Smart City Expo World Congress in Barcelona, which attracts more than 20 000 participants."

Active engagement

"This expansion meant that my own role also became more dynamic. Of course, at some level of abstraction my day-to-day tasks as Office Director have remained more or less constant: ensuring the quality of operations of the ITEA Office and maintaining the positive atmosphere and team spirit. But I gradually started to travel more, attend more and different meetings, conferences and events. Not only that, but through ITEA I also have gained hands-on knowledge and experience of legal, tax and financial matters, for example, or human resource management – I guess I have become a jack of all trades. In brief, though, my role in managing the Office – in facilitating people – has remained pretty much unchanged throughout the years. I'm not someone who goes around issuing orders. I want to create an atmosphere of shared responsibility, and I think here at the ITEA Office we have managed to get to a situation where we are all on the same page of what we consider to be important. A constant factor over the years has been the good team spirit along with the openness and reliability with which we communicate. I hope this sense comes through to our Community."

Working relationships

"Over the years I have been privileged to work with and get to know a number of interesting people in the ITEA Community, including

Rudolf Hagenmüller with whom I worked closely in tandem. Both of us were educated as mathematicians and the arithmetic added up – we were both relatively new, had similar ideas and together we shaped ITEA to become what it is today. Our collaboration became increasingly intensive and in the last few years of his Chairmanship he was a frequent visitor to the office in Eindhoven, for example when he pushed the introduction of our quality system and the key value of happiness. And when he deemed it time to step back, the Chair passed on to Zeynep Sarilar, who brought a somewhat gentler style and a different creativity, one derived from her background as an engineer and business woman. She is very sensitive to how people relate to each other. Perhaps more intuitive than pigeon-holed by hard and fast rules. And in between the two Chairs is a common thread and another constant factor for a long period – our current Vice-chairman Philippe Letellier, who has brought many new ideas and new initiatives into ITEA in terms of how we help in creating and monitoring our projects for optimal impact and how we run events. He really is the creator of our highly appreciated annual customer workshops. Philippe's constant focus on impact coupled with new ideas has certainly enriched ITEA over the past years. There are more people I could mention, the whole team in the office is great to work with. There is always a positive spirit, and everyone is totally committed to quality and teamwork. It is a really unique team and all have been real pillars of support. I just want to mention Erik Rodenbach, who has contributed to ITEA nearly from the beginning with customer orientation, quality and experience, often a bit in the background but always one of these pillars and a very reliable one."

Impactful projects …

"What we have seen recently is the growing role of Big Data and Artificial Intelligence as components in the projects, many of which are concerned with 'smart' and 'digital' domains. I think ITEA will continue to play an important role in the software innovation that is needed in this increasingly digital, mobile and personalised society we live in. There will be technological advances that we cannot imagine today, but equally fascinating is the relationship that we as human beings have with all of these technological shifts that are occurring. The future path is not one that is easy to predict but I think that digitalisation will lead to more collaboration, global connections and will enable individuals – companies and people – to reach out, cross borders and interact. As long as ITEA remains agile, I think that as an organisation we can continue to engage in the future as an active player in the international environment."

… and enjoyable moments

"I have learned a lot from so many different countries and cultures. I've been privileged to have journeyed to many parts of the world through ITEA, to have acquired different culinary tastes that have enriched my palette and to have met a wide variety of people who have added value to my life. Like having a drink with a Spanish corporate executive and the CEO of a Turkish SME together with a couple of colleagues from research organisations in the Netherlands and Sweden, discussing the benefits of a successful recent project or swapping stories about family or holidays – that's really great to see. And the exposure to Korean innovations and culture that I experienced in EUREKA and ITEA will for sure remain in my memory."

Midlife crisis

"I think that when I actually do leave ITEA, I will enter a kind of midlife crisis. I don't have to work, which is a comforting feeling, but I can't imagine myself doing nothing. Exactly what I'll do, that is something I have not yet decided upon. I am a member of the municipal council of Eindhoven, so that's a 'hobby' I'll continue. Maybe I'll go back into the classroom – I used to be a mathematics teacher and there is a bit of a shortage now, but whether they'll have me or not is another matter. I've been a manager in one way or another for over 30 years so when the moment comes that the only person I will be managing is myself, I'll probably 'wake up' into a whole new world of possibilities. A midlife crisis awaits me – how will I be able to choose between them all? Perhaps the answer is to become totally Zen for some time and do nothing? That's the conundrum I face."

"The move to ITEA has provided me with one of the best periods of my professional life."

ITEA project results enhancing people's lives

Security of Smart Buildings: saving energy and lives!

Imagine, a malicious hacker is taking over the heating, ventilation and air conditioning system from a hospital, changing the temperature in such a way that diseases can easily spread in the hospital, where people actually are supposed to be healed. A bit of a scary scenario, but with all the equipment and facilities more and more connected to make the systems smart and save a lot of energy, this has become a serious threat that needs to be taken into account. Should we then be afraid to go to a hospital now? Luckily not, as also cybersecurity champions are becoming increasingly successful in addressing these issues. And one of these success stories can be found in the FUSE-IT project.

FUSE-IT addressed the need for sustainable, reliable, user-friendly, efficient, safe and secure Building Management Systems in the context of Smart Critical Sites. From a site management perspective, it solves the dilemma between efficiency and security in intelligent buildings. At the user level, a smart unified building management interface enables the daily monitoring and control of a building, while a full security management interface enables supervision of both physical and logical security throughout the premises. And at the end-user level, this can save both energy and lives, not to mention operation and maintenance costs!

To achieve this, the project developed a Smart Secured Building System, resulting from cross-domain innovation between energy, facility, ICT and security activities that are traditionally very segmented. The system can be deployed as standalone components, as a fully integrated system or as a service. Innovative business models have been defined to provide holistic building management and security monitoring either as a turnkey system for customer-lead operation, as a passive remote monitoring service for decision support, or as fully outsourced control service with binding Service Level Agreement (SLA).

The hospital attack scenario has been demonstrated in Centro Hospitalar São João (CHSJ) in Porto, Portugal, one of the FUSE-IT partners. A complete surgery floor of CHSJ with inpatient rooms, technical room, kitchen, nursery office, access to HVAC and power system were provided for the demonstration. This live environment enabled to demonstrate interoperability between legacy equipment and smart IoT sensors, deployed under severe health and safety constraints. The defensive capabilities proved efficient in ensuring detection, alerting, decision support, response and recovery against a complex attack scenario involving physical intrusion, power system hacking, HVAC system hacking, and biological threat.

Thanks to the FUSE-IT project, hospitals can now continue to save energy by using smart grids and IoT and at the same time be protected against cyberattacks and thereby protect their patients' lives.

ITEA 2 Project
FUSE-IT

End user happiness FUSE-IT

EUREKA Global Innovation Summit 2019

Innovating across borders for business growth

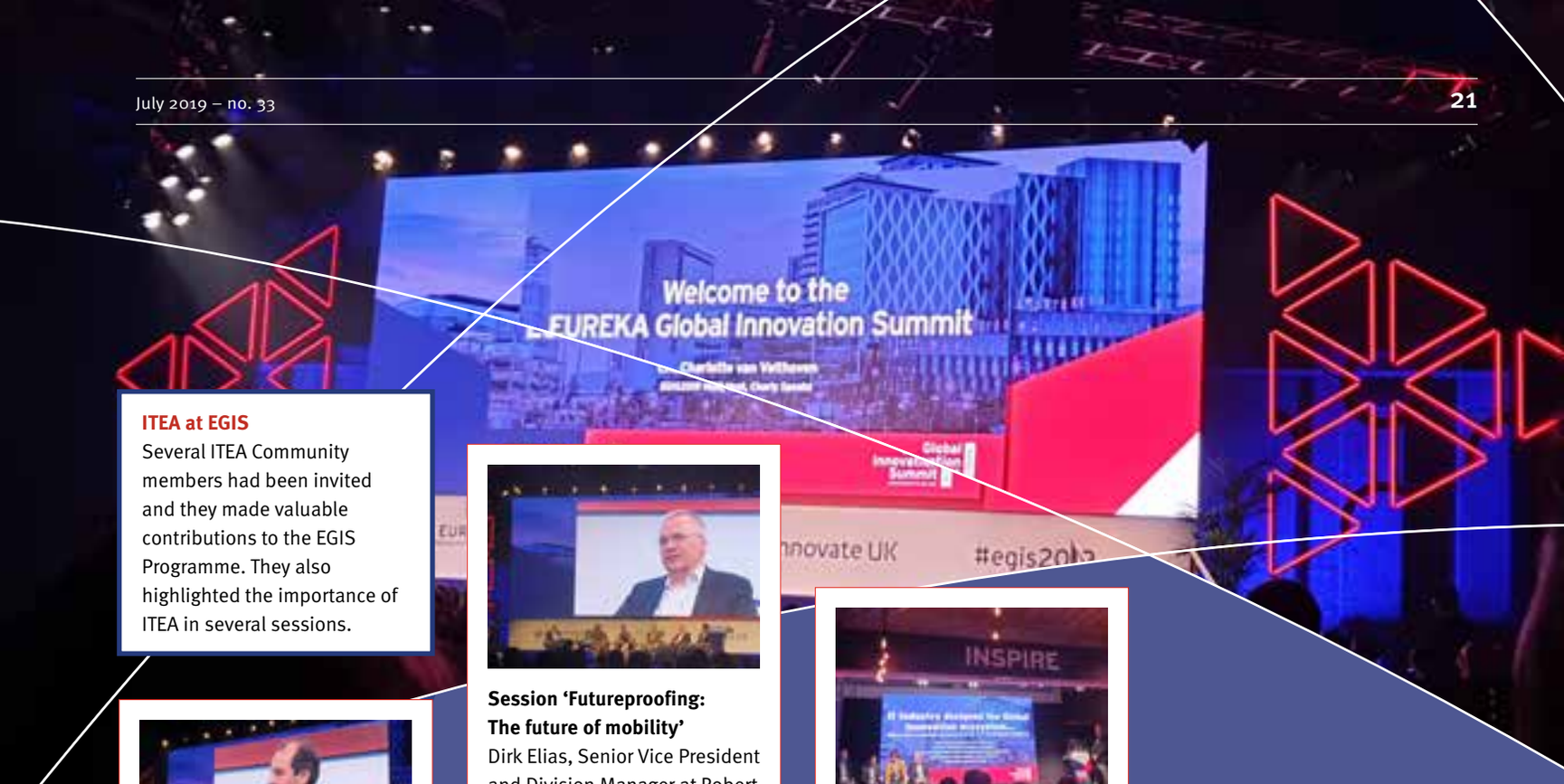
From 14 to 16 May, the UK EUREKA Chairmanship team organised the EUREKA Global Innovation Summit 2019 at the Victoria Warehouse in Manchester. The 2000 registrants from 45+ different countries, showed a clear interest in the EUREKA Programme. ITEA partners also highlighted the importance of ITEA in several sessions of the programme.

The EUREKA Global Innovation Summit was full of features, stages and showcases with over 50 sessions to choose from and, most importantly, plenty of places to network and make valuable new connections. In addition to the conference programme, a diversity of side events took place at the venue, including the 10th anniversary of the EUREKA Korea Day, bringing together over 200 Korean companies, which deserves special mention!

The EUREKA Clusters at EGIS

The Clusters were again well represented at this year's flagship event. Together they organised several sessions and provided numerous speakers for the EGIS Programme. On Wednesday 15 May, InterCluster spokesperson Peter Connock, moderated an information session during which attendees were able to learn more about the Clusters. ITEA Chairwoman Zeynep Sarılar highlighted the Clusters' benefits while Rémy Renaudin, EURIPIDES² Operation Manager, went into detail on the Call calendars and SME engagement. Public Authority representatives Simon Haafs from RVO, Juana Sanchez from CDTI, Irina Slosar from FFG and Tanja Äijö from Innovate UK concluded with "why and how to apply for national funding support in Clusters".

On Thursday, the session "Business Impact of EUREKA Clusters", led by CELTIC-NEXT PR Manager Milon Gupta, demonstrated the positive impact of the EUREKA Cluster programmes in addressing societal and industry



ITEA at EGIS
Several ITEA Community members had been invited and they made valuable contributions to the EGIS Programme. They also highlighted the importance of ITEA in several sessions.

Session 'Shared Futures'
Joost Schut, Commercial Director at KE-works: "See it from the customer's point of view, then you can make a difference!"
Customer orientation is also a strong pillar in ITEA 3.

Session 'AI & Data'
Jop Spoelstra, Innovation Program Coordinator at Technolution, showed how the ITEA project M2MGrids was a core part in the developments of the smart grid and how big data applications can grow from reliable measurement sensing towards being more valuable to customers.

Session 'Futureproofing: The future of mobility'
Dirk Elias, Senior Vice President and Division Manager at Robert Bosch, highlighted the role autonomous vehicles can play in the last mile, especially in the countryside. "Multimodal is important and it can make it easier to live in the countryside again."

Session 'Benefits of SME and Large Industry Collaboration'
Casper Garos, Head of Public-Private Partnerships at Philips, explains how SME and Large Industry collaboration can lead to new business: "Ten years ago at the ITEA PO Days, a medical university research centre and an SME got us on board to work in the cloud. Nowadays these cloud health platforms are a core business for Philips."

Session 'If Industry designed the Global Innovation Ecosystem'
As an expert in Innovation Management, Huub Rutten, VP of Research and Application Development at Sopheon, shared his ideas on the session's subject.

Session 'Futureproofing: Healthy Ageing'
In this session Casper Garos, Head of Public-Private Partnerships at Philips, emphasised: "Look more actively into cross-sector and cross-country partnerships. Philips is in favour of Open Innovation and has been active in international collaborative research since the 80's. It's about learning from each other."

Session 'Business Impact of EUREKA Clusters'
Martin Benedikt, Head of Co-Simulation & Software at the VIRTUAL VEHICLE Research Center, provided a strong testimonial on the protocol that was developed in the ITEA ACOSAR project that he led. This protocol saves a huge amount of time and money and increases safety.

challenges and needs. Representatives from large companies, SMEs and research institutes shared their insights on the substantial (business) benefits they gained from working in Cluster projects. ITEA partner Martin Benedikt, Head of Co-Simulation & Software at the VIRTUAL VEHICLE Research Center showed how the Distributed Co-simulation Protocol (DCP), developed in the ITEA project ACOSAR can save a huge amount of time and money as well as increase safety. Even competitors and non-funded partners collaborated in this project because of its importance.

During the entire event, attendees were able to get advice about the international funding landscape and the tools and instruments available to businesses at the Global Expert Bar. Representatives from all Clusters and other EUREKA Instruments were present to exchange ideas on how organisations could best benefit from participating in EUREKA.

SAVE THE DATE: EUREKA Stakeholder Conference 5 September 2019

While the UK EUREKA Chairmanship has now come to an end, the EUREKA NL Chairmanship team 2019/2020 is already preparing the next EUREKA Conference. On 5 September (the day after the ITEA PO Days 2019), they will organise the EUREKA Stakeholder Conference in Amsterdam. More information about this event, which will be free of charge, can be found on https://english.rvo.nl/news/events/eureka-stakeholder-conference-creating-ecosystems-innovation.

ITEA project AVANTI finalist of EUREKA Innovation Award 2019

And last, but certainly not least, we are very proud of the ITEA project AVANTI, selected as one of the 5 finalists for the prestigious EUREKA Innovation Award 2019, handed out by the UK EUREKA Chair Tim Bestwick during the EUREKA Global Innovation Summit (EGIS) on 16 May in Manchester.

With this spot in the final, the EUREKA Network recognises that AVANTI has shown true innovation and a significant impact on the economy and society on a global scale. The project was shortlisted as one of the 5 finalists from all EUREKA projects funded within the last 5 years (since 2013), across all EUREKA instruments. From these 5 finalists, EUREKA selected the Celtic-Plus project SIGMONA and EUREKA Eurostars project Kids4Life as this year's winners.

On behalf of the AVANTI project leader Thomas Bär, Matthias Riedl from ifak, coordinator of the German sub-consortium, was present to receive the 'Finalists certificate' for AVANTI. Matthias Riedl: "We are very proud to be one of the finalists for the EUREKA Innovation Award 2019. This nomination recognises the outstanding results that came out of AVANTI. During the project we had an excellent collaboration and the results are the basis for ongoing and future research projects and bilateral collaborations.". We congratulate AVANTI on this impressive achievement.

More information
https://itea3.org/project/avanti.html

The ITEA 3 C³PO participation pavilion receives Core77 Notable Strategy & Research Award

The Studio Dott participation pavilion that was designed and developed as part the ITEA 3 C³PO (Collaborative City Co-design PlatfOrm) project, has been selected as 'notable' in the category Strategy and Research at the Core77 Design Awards.

Recognising excellence in all areas of design enterprise, the Core77 Design Awards annually celebrate the richness of the design profession as well as the insight and perseverance of its practitioners. Now in its eighth year, the Awards programme remains dedicated to excellence and inclusivity, offering both students and professionals the opportunity to promote their best work on a global scale across 14 distinct design disciplines.

The Studio Dott participation pavilion was deemed as a 'notable' project in the Strategy and Research category dedicated to projects or products that predominantly utilise design research and strategy. The Studio Dott participation pavilion bridges the gap between online and offline urban participation and is a physical installation that is placed at strategic locations throughout a city or municipality. Through the pavilion citizens are consulted about new urban development plans or policy issues the city wants to bring forward. In order to give feedback on the issues or proposals presented by the city, citizens are invited to pick up the phone and answer a number of pertinent questions. All replies are recorded and digitally processed for further anonymous pattern analysis supported by linguistic algorithms (for the Flemish - Dutch - spoken language).

The award to the participation pavilion is a result of the ITEA 3 project C³PO. With five billion people likely to be living in cities by 2020, the challenges confronted by urban design can be tackled to no small degree by ICT through a Cloud collaborative and semantic platform for city co-design. This is the goal of the C³PO platform that covers the whole urban project development process whereby cities empower, encourage and guide different stakeholders to co-develop an urban project.

For more information, please check: https://designawards.core77.com/, https://itea3.org/project/c3po.html and https://studiodott.be/en/2018/09/26/c3po/

Mathijs van Dijk joins the ITEA PR & Communications team

On 8 April 2019, Mathijs van Dijk joined the ITEA PR & Communications team. Mathijs is a technology enthusiast with extensive experience in software development.

Before joining ITEA he was responsible for the Marketing and Communication for a Dutch SaaS technology company that developed an online GIS mapping platform, so he is used to translating and promoting technical project results into customer-friendly language. During his career he also experienced the challenges of software product innovation and how to keep up with a rapidly changing industry.

Mathijs is committed to helping ITEA grow and looks forward to learning more about ITEA, the projects and of course all the people involved. You will be seeing him at the various ITEA events, like the upcoming ITEA PO Days in Amsterdam.

Feel free to contact him to discuss any matters at mathijs.van.dijk@itea3.org. He will be happy to assist you!

ITEA Success story

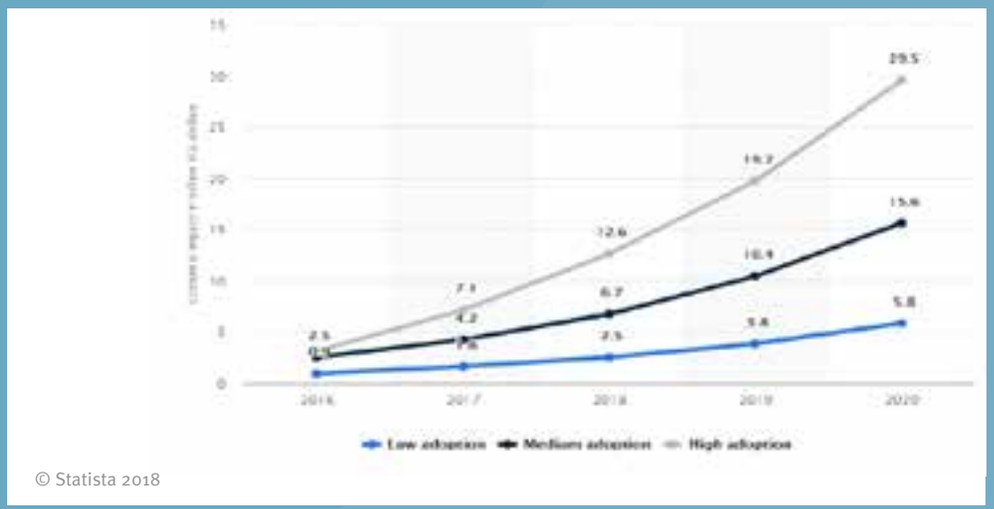
Metaverse1

The missing link between the real and the virtual

Pokémon GO, a location-based augmented reality game, became a real hype in the summer of 2016, generating over USD 1.2 bn in revenue and 752 m downloads globally already by July 2017, as reported by VentureBeat. And at CES2018, Nvidia expressed its expectation that 50 million VR headsets would be sold by 2021.

Promising figures for a market with a high growth potential, according to a Statista study showing the projected economic impact of virtual and augmented reality technologies worldwide from 2016 to 2020 (in USD bn). In the high-adoption scenario, the economic impact of VR/AR is forecasted to amount to USD 29.5 billion in 2020.

But let's go back in time. Ten years ago, virtual worlds were already found in serious computer games and simulation models. However, they were mostly standalone and independent of each other with little or no connection to the real world. The ITEA project Metaverse1, initiated by Jean Gelissen from Philips and Yesha Sivan from MetaverseLabs, which successfully ran from October 2008 to March 2011, set out to overcome this isolation – defining a standard to enable connectivity and interoperability between virtual worlds and with the real world. The objective was to define interoperability in such a way that it would be possible to exchange information between worlds. Even more important was the development of a standard interface between the real physical world and the virtual – simulation/ serious games – world. This made it possible to attach real world sensors, such as body parameter or environmental sensors, to provide input to



© Statista 2018

The projected economic impact of virtual and augmented reality technologies worldwide

simulations or alternatively obtain feedback from such models into the real world, for example to control lighting, temperature or ventilation or for personal wellbeing.

Many of the technologies required were not new, but it was necessary to identify what was missing and develop suitable solutions. Some 18 missing items were defined, and the necessary technologies developed. Among the missing items were:

- Being able to transfer data and actions between systems in terms of available sensor signals to avoid clicking a mouse and keying in information;
- Feeding real-time 3D video streams into a virtual world;
- Providing support for multiple languages – crucial in social contexts;
- Support for inclusion of real audio input – for example taking original sounds such as fountains or the beach and integrating them into a virtual tourism application.

A signal for action

A key outcome was an international standard within the ISO/IEC Moving Picture Experts Group (MPEG). The first version of the ISO/IEC 23005-1:2010 (MPEG-V, Media context and control) standard was published in January 2011. MPEG-V defines boundary conditions, but the real added value is in the applications – transforming the signal into something useful. MPEG-V is applicable in various business models/domains for which audio-visual contents can be associated with sensorial effects that need to be rendered on appropriate actuators and/or benefit from well-defined interaction with an associated virtual world. Currently the 4th edition of this standard is under development and Elsevier Inc. published a book on the standard in 2015 (https://www.sciencedirect.com/science/book/9780124201408#book-info).

In the Netherlands, the start-up uCrowds, which offers a model for simulating crowds in big infrastructures, events or computer games, has its roots in this project. The founder of the start-up was an associate for Utrecht University in the Metaverse1 project and co-developed a planning method which formed the basis for the crowd simulation framework. This software is already used to investigate the amount of time it takes to evacuate several metro stations of the North/South metro line in Amsterdam and to analyse a large 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.

Enriching the cultural experience

In the case of Innovalia, the Metaverse1 project has been a key step to create new business, products and services related to 3D modelling and virtual tourism. Within the Metaverse1 project, Innovalia Spain (in association with

other partners from the consortium) developed a new island in Second Life, which represents the hot spots of Gran Canaria Island. Second Life is a virtual world launched in 2003 with 57 million accounts created in 15 years and 350,000 new registrations on average per month, from about 200 countries around the world. One of the most important products developed in the Metaverse1 Virtual Island was the “Virtual Museum”, where users could get access to cultural information in real time. Thanks to this virtual product, in 2012 Innovalia developed a new platform for the personalisation of cultural routes in museums based on the personal preferences of each individual user, which has been used by 3 museums located between Basque Country and Tenerife. Afterwards, and after developing this concept further, in 2014 Innovalia launched a new mobile application in the cruise tourism sector, eGuide providing an innovative solution for short breaks in a city. The app is already working in the city of Santa Cruz de Tenerife, one of the top five cruise ports in Spain. Based on eGUIDE, Innovalia has developed another app for fairs and congresses: iSANCHO, used in more than 50 events in just one year.

After finishing the project and aiming at bringing the results to the market, Innovalia launched a new company, KUMO Technologies. It was a start-up company seeking to forge breakthrough technologies to eliminate entry barriers to the high-quality 3D market. KUMO was born with the aim of creating 3D models of high fidelity and quality. Today, KUMO employs over 25 high-skilled workers, is technology provider of large companies such as ORANGE, develops high-tech projects On the five continents and cooperates with the top researching international centres in 3D. In fact, KUMO is one of the success cases within the Global FIWARE universe. One of the last achievements of KUMO is the development and commercialisation of its own Big Data visualisation tool and its innovative application in arts and culture in several creative projects worldwide.

Based on the project results, the INRIA Talaris team in France developed multilingual tools, which made the tourist’s experience in a virtual world even more interesting by adapting the immersive 3D to the language selected by the user. LORIA / INRIA Nancy - Grand Est contributed and lead the definition and specification of the Multi Lingual Information Framework standard (MLIF) [ISO DIS 24616] which was confirmed in December 2017.

More information
https://itea3.org/project/metaverse1.html

"Metaverse1 set out to overcome isolation by defining a standard to enable connectivity and interoperability between virtual worlds and with the real world."

Calendar

15-18 July 2019
EKC 2019
Vienna, Austria
https://www.ekc2019.org/

10-16 August 2019
IJCAI-19 - 28TH INTERNATIONAL JOINT CONFERENCE ON ARTIFICIAL INTELLIGENCE
Macao, China
http://ijcai19.org/

3-4 September 2019
ITEA PO DAYS 2019
(opening ITEA 3 Call 6)
Amsterdam, the Netherlands
https://itea3.org/podays2019/index.html

5 September 2019
EUREKA STAKEHOLDER CONFERENCE
Amsterdam, the Netherlands
https://esc2019.b2match.io/

23-25 September 2019
INDUSTRY OF THINGS WORLD
Berlin, Germany
https://industryofthingsworld.com

25 September 2019
SOFTWARE-CENTRIC SYSTEMS CONFERENCE
Eindhoven, the Netherlands
https://softwarecentricsystems.com

6-10 October 2019
39TH GITEX TECHNOLOGY WEEK
Dubai, United Arab Emirates
https://www.gitex.com

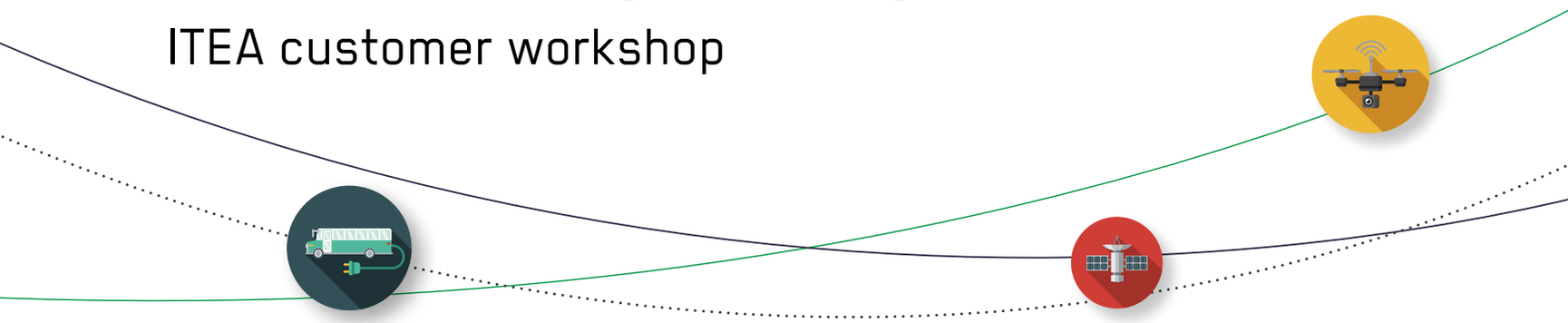
9-11 October 2019
TRIZ FUTURE CONFERENCE 2019
Marrakesh, Morocco
http://tfc19.ma/

14-16 October 2019
CASTOR SOFTWARE DAYS
Stockholm, Sweden
https://castor-software-days-2019.github.io/

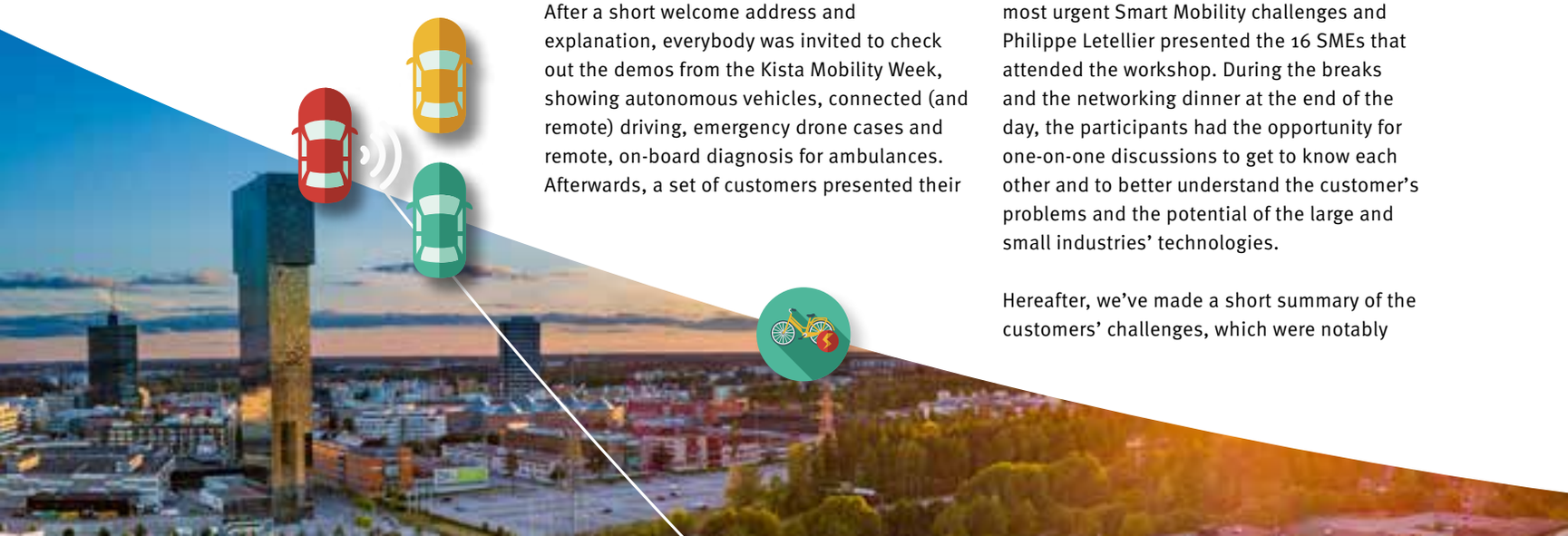
31 October 2019
ITEA 3 CALL 6
Deadline submission of Project Outlines
https://itea3.org/

WANTED: experts in the domain of Smart Mobility

to solve the challenges resulting from the ITEA customer workshop



For the fifth time, ITEA has put the customer in the spotlight during the ITEA international customer workshop. The workshop took place on 12-13 June – during the Kista Mobility Week – and was kindly hosted by Ericsson, for which we are very grateful. This year's focus was Smart Mobility and - with over 50 participants - it was the biggest workshop that we've organised so far. This clearly shows the importance and relevance of the topic of Smart Mobility.



After a short welcome address and explanation, everybody was invited to check out the demos from the Kista Mobility Week, showing autonomous vehicles, connected (and remote) driving, emergency drone cases and remote, on-board diagnosis for ambulances. Afterwards, a set of customers presented their most urgent Smart Mobility challenges and Philippe Letellier presented the 16 SMEs that attended the workshop. During the breaks and the networking dinner at the end of the day, the participants had the opportunity for one-on-one discussions to get to know each other and to better understand the customer's problems and the potential of the large and small industries' technologies.

Hereafter, we've made a short summary of the customers' challenges, which were notably

rich and diverse. The full report, including additional explanations per challenge, can be found at:
https://itea3.org/publication/download/final-report-itea-smart-mobility-customer-workshop-2019.pdf.

1. MaaS challenges
The multiplication of different means of transport leads to a demand for Mobility as a Service (MaaS) that covers all means of transport, a common payment solution and a travel planner. MaaS must ensure a balance of all of a city's macro-needs, such as:
- Energy and carbon optimisation
- Pollution reduction
- Accident reduction
- Improved accessibility
- Better connections to sparsely populated areas

Other MaaS challenges cover real-life data acquisition, infrastructure costs, individualised journeys, multi-tenant digital twins, multi-criteria optimisation for end users and cities, political demand and the value chain stakeholders' collaborations.

2. Business models
Creating sustainable business models is a challenge. Many questions arise:
How do we uphold a margin with open data? What is the role of open data and the data economy (scalability)? How can we maintain a cost-effective single-fare traffic system? In addition, challenges exist regarding supportive regulations, such as tax legislation (benefit taxation, tax rules for the sharing economy, rental car legislation, etc.).

3. Specific challenges
In addition, some more specific challenges were mentioned by customers.
- The mobility industry is being challenged by new technologies (e-mobility + connected cars) and consumer trends (sharing economy + ecological awareness).
- Autonomous vehicles intend to be a big change in the full value chain, going from OEMs to e-commerce for car manufacturers.
- How do we cross a river in an efficient way without a bridge or tunnel?
- The optimisation of parking.
- Sloped topography and historical environments.
- Rubbish disposal, elimination of human labour, the optimisation of street occupation, noises and smells.
- Increasing safety through more automation for transport agency workers.
- The deployment of drones requires public & private support, ground & air synergies and co-creation with citizens.

4. Internal challenges for cities
- Cities' populations are projected to grow.
- Politicians can change every four years, so who decides what and when?
- Data sharing, taking into account social security and integrity, is a prerequisite for development and trust.
- City planning uses a lot of different simulators (city fluidity, security situations, sound, air quality) alongside GIS and visualisation tools that target different sectors of the public.
- The issues of identification and personal confidentiality are constantly being updated.

PARALLEL BRAINSTORM SESSIONS AND MAIN RESULTS

After this first day, in which the challenges for cities were gathered, the second day was dedicated to a large, open brainstorm between customers and industry. This analysed the potential room for solutions and identified some areas which deserve R&D projects, targeting impact on the market as we are so used to set up in ITEA.

This brainstorm was organised along three parallel sessions working on:
- Session I: System of Systems
- Session II: Rules, Legal Aspects and Business Models
- Session III: Different Vehicles and USPs

During these parallel sessions, several zones of interest were identified:

Session I: System of Systems
Six topics of interest have been selected:
1. Open MaaS platform
2. Autonomous vessels
3. Traffic control & safety
4. Logistical organisation
5. Drones
6. Energy

Session II: Rules, Legal Aspects and Business Models
Two ideas for potential proposals have been identified:

1. Control Tower
This control tower will target different purposes (land-based traffic), each involving several use cases including standardisation, data categorisation and sustainable and successful business models.

2. Urban Logistics
A challenge is to match freight exchange (shippers, carriers, etc.).

Session III: Different Vehicles and USPs
Autonomous ferries and autonomous shuttles were discussed together and this led to a set of research challenges:
- Acceptance/accessibility/cybersecurity
- Crowd control
- Well-designed interactions between vehicles and passengers
- Interaction rules for other traffic
- Risk management
- Impact on city planning
- Changing the mindset of people and companies
- Winter conditions in the current operational domain of shuttles
- Evaluation of sensor quality

It would be very interesting to investigate the design of possible connections from the ferry onto the shuttle.

More information on each topic discussed during these sessions can be found in the full report: https://itea3.org/publication/download/final-report-itea-smart-mobility-customer-workshop-2019.pdf.

We invite you to read the full report and to use this valuable input to create or join a customer-oriented idea for a project proposal in ITEA 3 Call 6!

SME IN THE SPOTLIGHT

IKANGAI

Your partner for mobile customer engagement

Founded in 2009 by Martin Treiber and Christian Scherling, IKANGAI is an independent mobile solutions factory with years of expertise in developing and implementing digital business solutions. With a strong focus on mobile marketing and customer communication, they help customers with their mobile marketing strategy by integrating new efficient digital products and services, like their qonnect® platform, which enables retailers to reach their customers at the right moment with information they need.

Co-founder and current project leader of the ITEA SOLOMON project Martin Treiber shares his story with us. “The idea of starting a business began while we were at school. As thirteen-year-olds we already had the ambition to develop our own business but, at that time, our idea was to create a great experience for people to hang out – a bar or something like that. Fortunately, this didn’t happen. We went off to study – I did computer science and Christian did architecture. Afterwards, Christian went off to Japan to work as an architect and I became a university assistant. But when he returned, we got in touch again and discussed the idea we had talked about at school. In 2007 the iPhone had just hit the market and so we thought about developing mobile software. Putting our designing and computing talents together.”

Good idea

The company’s name derives from the Japanese word ‘IIKANGAE’, which translates as ‘good idea’ – a good idea indeed when “we first started developing software in 2008 for the fun of it, for data exchange, and experimented with a small social media network called Moody.” Word soon spread, and before they knew it commercial enterprises were calling on Martin and Christian to develop mobile solutions for them, mostly apps. Later, realising that their rather small home market of Austria meant there was the risk of running out of customers, Martin and

Christian shifted strategy. The time was ripe for the two partners to cast off their daytime jobs and devote their efforts full-time to their new venture. The search began for new investors and there was a key change from project-based work to developing a platform. By 2014 the company had assumed its present shape with expertise ranging from software engineering, web development and graphic design to motion design, mobile marketing and business consulting.

Hurdle-free customer engagement

"Our main product is qonnect®," Martin explains. This communication platform enables brands and retailers to create new mobile moments on their customers' journey and to reach these customers at the right moment with information they need. It uses mobile web, native apps, push notifications, geolocation, chatbots, smart speakers and interactive displays to help achieve revenue targets and to simplify mobile engagement. "Although it may seem to be a bit of a contradiction, we removed the registration process and replaced it with freedom of choice. This is actually one of the main qualities of qonnect® - it provides the customer the best possible hurdle-free experience. Through qonnect® customers tell the brand or retailer what they are interested in, thereby providing the means for personalised messages. We can build new customer solutions on the qonnect® platform rather quickly and so keep extending its possibilities."

IKANGAI is certainly beginning to make a name for itself. Very recently the company was listed among the top App development companies in Austria. "We're happy and proud that all our hard work is being recognised."

Crossing paths

IKANGAI is in a business where software innovation is crucial but "as a small company we have to be careful about the new technologies in which we invest. Jumping into new technology always involves risk. But that's where public funding comes into play. Austria is good from that point of view and we make use of the opportunities they provide and this brought us to ITEA. I was scanning the internet to see what was around and I came across the SOLOMON project, and got in touch." In May 2017 IKANGAI took charge of this ITEA 3 project. "I suppose you could say that we and ITEA crossed paths somewhat fortuitously," Martin explains, "and also fortunately."

SOLOMON

Martin is project leader of this consortium that targets the integration and further development of new technologies for the customer experience of the future. "We want to connect different technologies and information sources into seamless services with scope for interaction between the retailers, shop personnel and consumers." With E-commerce having drastically transformed the retail industry, SOLOMON aims to improve the customer experience in bricks-and-mortar stores by defining a 'shop operations and experience' platform. The platform emphasises the use of mobile devices for rich user experiences with the provision of a flexible and re-configurable software infrastructure. "The Micro Pop-Up Store (MPUS) with Self-Checkout is our showcase scenario," Martin says. "It combines most of the technologies currently being developed for SOLOMON. We imagine MPUS being positioned in receptions areas of hotels, fitness clubs, events and similar locations with indirect human supervision."

Endorsement

ITEA Vice-chairman Philippe Letellier calls SOLOMON a "small but very innovative and dedicated project [covering] many sides of this [E-commerce] revolution." It is inventing many new paths, e.g. to ensure a coherent online/offline experience, customer self-services on mobile devices such as self-payment, digital assistants, and monitoring customer behaviour in the online store. Using modern technologies, an ontology is created to describe all the interactions between the different stakeholders and develop a DSL (Domain Specific Language) to allow the store manager to change the interaction quickly and make easy use of the previous ontology.

"We have gained a lot so far from being involved in this ITEA project – apart from the money being provided by our funding agencies in Austria, we learn about working in an international team and looking beyond our own market. Furthermore, ITEA projects are really focused on impact and fast exploitation. That's really important for us as well. Our research has to target a potential product so at the end of the project, there have to be tangible results. That's a clear common goal we share with ITEA. Ideally, it would be great if we could find commercial uptake within the ITEA Community," Martin concludes, tongue-in-cheek. "That would be the icing on an already very fruitful cake!"

More information

https://www.ikangai.com/

ITEA 3 Call 5 projects

Happiness, openness and trust

Introduction by Vice-Chairman Philippe Letellier

The fifth Call of ITEA 3 delivered 19 submitted Full Project Proposals (FPPs) and on 21 March, 17 projects were labelled, involving 16 countries and 3065 Person Years. This Call illustrates again how innovative SMEs and start-ups are involved in our Programme with more than 1600 Person Years (PY) compared to the 1000 PY for the large industrials. Nevertheless, the presence of these large industrials is key in the ITEA success recipe to help innovative SMEs to impact the market at global level and to scale up. A unique story.

Another very interesting exercise is to analyse how much the game is open in ITEA. The ITEA Founding Companies (IFCs), the large companies who manage the ITEA Programme, have less than 300 PY among them but their in-kind contribution for the management of the Programme is of premiere importance as it is this that gives ITEA its unique industrial and business orientation. 54% of the Call 5 partners are new companies in ITEA while 15.79% of the project leader companies have not been in an ITEA project leader position before. It means the ITEA Community is continuously rejuvenating. Another look at our statistics shows the impact we have on human capital. 73.68% of the ITEA project leaders have not been an ITEA project leader before. When you take into account that these project leaders must gather a unique set of qualities – International, High tech, Market Impact, HOT (Happiness, Openness, and Trust) value – then you realise that we are building the high profile required by the industry to help it be globally competitive.

The balance of content this year reveals its usual strong Smart Engineering orientation with 6 proposals, Smart Health is back, Smart Industry remains high and Smart Communities after the dedicated costumer workshop is high with 4 proposals. The Security focus has been reduced with only 2 proposals, Smart Mobility and Smart Cities are rather low this year. A new domain around finance seems to be apparent with one proposal.

At the technology level after the overwhelming focus of the IoT, we can say that the latest trend is towards the digital twin concept. It is everywhere in ITEA projects nowadays with, as you can imagine, a lot of AI components to master understanding of the actual behaviour to match with the model, raise the alarm or generate feedback to the design team.
This year we have received a good set of proposals targeting rather innovative domains. These include food ingestion analysis for better health, automated farming, burnout management, learning for human capital, GDPR registry management, marketing, interoperable distributed ledger techno, synchro cloud / edge, trusted sharing data among CPS devices to allow machine learning, digital twin for HCI to adapt products, and textual graphic engineering.

Hereafter you will find a short project description of each labelled Call 5 project.

OVERVIEW OF PROJECTS

Challenge	Projects
Smart community	ADiMa, I-DELTA, OWE4SC, TIoCPS
Smart engineering	BUMBLE, EMBrACE, ExA, IVVES, OXILATE
Smart health	Food Friend, Mad@Work
Smart industry	HU-Twin, MACHINAIDE
Smart mobility	SMART
Safety and Security	APE, DEFRAUDify, CASCADE+

BUMBLE – 18006
Blended Modelling for Enhanced Software and Systems Engineering
Project leader: Alten (Sweden)

BUMBLE aims at providing an innovative system and software development framework based on blended modelling notations/languages (e.g. textual and graphical). The framework provides automatic generation and management of fully-fledged blended modelling environments from arbitrary DSMLs. Blended modelling environments are expected to greatly boost the development of complex multi-domain systems by enabling seamless textual and graphical collaborative modelling.

ADiMa – 18005
Analytical Digital Marketing system for high performance user impact
Project leader: JOT INTERNET Media (Spain)

The ADiMa project represents a new marketing approach where the service offered will centre on data, campaign performance and market impact through the participation of the entire technology and data value chain. By accomplishing this, ADiMa will generate two different business models that will increase the delivery of marketing services to SMEs, agencies and IT service providers, in turn promoting the visibility and competitiveness of European companies.

APE – 18003
Automatic Privacy Explorer
Project leader: Softeam (France)

Every company has to build its GDPR registry. Listing all personal data managed every day by the company can be an easy task but finding all other data rarely used and stored internally can be a real challenge. Automatic Privacy Explorer will help company's Data Protection Officer to explore all the company's resources (files, Excel, emails, databases,) and identify which data is personal and has to be listed in the GDPR registry. In addition, APE will be able to synchronize the GDPR registry with the actual data sources of the company helping to keep the registry up to date.

DEFRAUDify – 18007
Detecting Fraudulent activities on the internet
Project leader: TNO (Netherlands)

DEFRAUDify aims to develop tools that help private businesses to detect fraudulent behaviour on the internet. These tools are partly based on existing tools that have been developed for Law Enforcement. They will be adapted to become relevant for private businesses as well. DEFRAUDify aims at businesses that encounter negative impacts from internet organised fraudulent behaviour. The tools will consist of a set of interoperable tools that jointly analyse suspicious behaviour and provide situational awareness.

TIoCPS – 18008
Trustworthy and Smart Communities of Cyber-Physical Systems
Project leader: VTT Technical Research Centre of Finland Ltd. (Finland)

The motivation for the TIoCPS project arises from the grand challenge facing cyber-physical systems (CPS): the lack of trustworthy, smart and interoperable information/data sharing and value exchange prevents the establishment of the data economy around CPS. The objective of the project is to technically enable trustworthy and smart communities for CPS systems (TIoCPS concept) for solving the grand challenge in the context of selected industrial use cases dealing with energy, mobility and user/owner CPS systems. The TIoCPS concept combined with the use case solutions are envisioned to boost the business of the respective industries and enable more trustworthy, smart, interoperable and sustainable industrial CPS ecosystem and society.

ExA – 18013
Execution Trace Analytics
Project leader: Expleo Germany GmbH (Germany)

Systems often produce traces in the form of textual logs, which are difficult to analyse. Most platforms allow logs to be filtered or checked against fixed properties, or they visualise logs in a few hard-coded ways. ExA (Execution Trace Analytics) will combine filtering and visual analysis to create next-generation system analysis tools that allow humans to understand the behaviour of large, complex systems. ExA will be the next-generation, visual log analysis toolset that addresses needs that are not covered by today's tools.

HUTwin – 18014
Digital Twin for human product interaction: Human-device interacting Digital Twins
Project leader: Philips Electronics Nederland (Netherlands)

HUTwin aims to create model-based interacting digital twins (DTs) to understand human-device interaction. Digital Twins are becoming common in the predictive maintenance of complex systems. These twins are mainly based on sensor information of the real system during its lifetime. The Twin predicts the behaviour of the system and thereby the required maintenance actions during the lifetime. The twin will help to speed up the innovation process, can help the engineering process, and can predict quality and reliability of the produced system. Special cases of Twins are those that try to predict human-device interaction either in the development phase or during the lifetime of the device.

CASCAdE+ – 18017
Compositional Analysis and Synthesis for Critical Embedded Applications
Project leader: Robert Bosch GmbH (Germany)

New services and solutions for future mobility and Industry 4.0 introduce a new level of complexity for software systems. This challenge is addressed within CASCAdE+ by introducing a compositional verification approach for verification support for parallel SW for multicore. It allows individual software components to be analysed separately, and then uses these results to construct an overall system that is verified, safe and secure. This approach will be standardised and designed in such a way that other verification solutions can be integrated easily. CASCAdE+ makes the software more resilient to safety and security issues.

I-DELTA – 18021
Interoperable Distributed Ledger Technologies
Project leader: ERSTE Software Limited (Turkey)

Distributed Ledger Technologies (DLT) undoubtedly are a cutting-edge new breed of technologies with the potential to completely transform the way our society works. DLT will foster switching from the "Internet of Information" era to the "Internet of Value" era, whereby decentralised and immutable contracts define business interactions and secure exchanges of information. I-DELTA aims to create an interoperable DLT based platform enhanced by AI, integrating with existing IT systems such as ERP and IoT applications.

IVVES – 18022
Industrial-Grade Verification and Validation of Evolving Systems
Project leader: Fraunhofer FOKUS (Germany)

The use of AI and complex, evolving systems (ES), i.e. systems that rapidly change, either due to fast iteration cycles in development or due to their capability to self-adapt and learn, will grow significantly in automation, computation and novel digital services. Targeting the challenges in verification and validation of AI and evolving systems, IVVES will systematically develop Artificial Intelligence approaches for robust and comprehensive, industrial-grade V&V of "embedded AI", i.e. machine-learning for control of complex, mission-critical evolving systems and services covering the major industrial domains in Europe.

OXILATE – 18023
Operational eXcellence by Integrating Learned information into AcTionable Expertise
Project leader: TNO (The Netherlands)

OXILATE is the successor of the successful ITEA REFLEXION project which supported a revolutionary change in the way of working of the high-tech systems industry's R&D by introducing and integrating widespread available data analytic solutions from the open source / data science communities. OXILATE focuses on the complementary integration of expert knowledge to develop widely available support and tools for professionals with the objective of empowering them to transform their respective business activities, making them more proactive and effective, and to create direct business value over the whole product lifecycle they serve.

OWE4SC– 18024
Open Wise Edge for Smart Communities
Project leaders: VTT Technical Research Centre of Finland Ltd. (Finland), TNO (Netherlands)

In our daily life digitalisation is everywhere and the digital world is blending with the physical world via the rollout of Internet of Things (IoT) technology. This project will focus on a collaborative R&D of the Open Wise Edge (OWE) technology platform and ecosystem. This unleashes the capabilities of AI, edge computing, edge communication, IoT, open source, open data and open models for holistic optimisation and innovation of new cyber-physical digital services for smart consumer and professional communities.

MACHINAIDE – 18030
Knowledge-based services for and optimisation of machines
Project leader: Demag Cranes & Components GmbH (Germany)

Machine builders have been collecting data related to their products within different formats and tools for several years. The number of related Digital Twins is constantly increasing, with manufacturers including the products of other manufacturers in their own range, for example through the acquisition of other companies. To cope with this development, MACHINAIDE aims to support innovative concepts for accessing, searching, analysing and using the data of multiple Digital Twins for the major purpose of increasing usability and functional upgrading of machines and equipment within the crane and printing machine domains.

Food Friend – 18032
Autonomous and easy-to-use tool for monitoring of personal food intake and personalised feedback
Project leader: Katholieke Universiteit Leuven (Belgium)

The goal of the Food Friend project is to develop a complete toolset, consisting of hardware, software and methodologies, that can automatically measure a person's food intake with a minimum of required user input and turn it into personalised and actionable feedback. The system can be used by care professionals, research institutions, caterers or home users to get a better overview of a person's dietary behaviour.

Mad@Work – 18033
Boosting Mental Health and Productivity in the Workplace
Project leader: VTT Technical Research Centre of Finland Ltd (Finland)

This project focuses on the detection and mitigation of poor mental health conditions, such as work stress and burnout, which have not yet resulted in a diagnosed mental health disorder. The Mad@Work project aims at a major breakthrough in the development of software-intensive applications that combine multiple heterogeneous environmental and/or wearable data sources into actionable information for improving employees' wellbeing, engagement and performance. Mad@Work will develop truly unobtrusive, privacy-safe, appealing solutions, smoothly integrated into the work environment and appropriate for long-term use in diverse real-life settings.

SMART Mobility – 18036
Spatial Modelling Analytics and Real-time Tracking
Project leader: Esri Canada Limited (Canada)

The objective of the proposed Spatial Modelling Analytics & Real-time Tracking (SMART) Mobility Project is to mitigate growing urban traffic congestion challenges and associated issues of environmental degradation, economic inefficiency and negative impacts to the quality of life of citizens. SMART Mobility will revolutionise the efficiency of traffic and commuting in cities by leveraging the capabilities of new 4D spatial technology and analysis platforms using real-time vehicle location and movement data.

EMBrACE – 18039
Environment for model-based rigorous adaptive co-design and operation of CPS
Project leader: Electricité De France (France)

The next industrial revolution is evident in the combination of renewables, electric mobility and connected objects. The proper operation of complex systems requires cooperation between all stakeholders from the start of system design and all along the engineering lifecycle. The EMBrACE project will provide a user-friendly open environment for the co-design of CPS based on a common requirements modelling language, so that requirements can be easily understood, used to verify and optimise the system design, and ensure that the system design is robust in the face of real-life physical and economic constraints and uncertainties.

The Netherlands EUREKA Chairmanship 2019/2020

In June 2019, the UK EUREKA Chairmanship 2018/2019 came to an end. During the year ahead, the Netherlands will be chairing the EUREKA Network and they will focus on two strategic priorities for the year 2019/2020, additional to the drafting of a future proof Strategic Roadmap for EUREKA:

Building Eureka Eurostars-3

The current Eurostars-2 programme will publish its last calls in 2020. Time to discuss the continuation with the 36 Eurostars member countries and the European Commission. Small and medium-sized enterprises (SMEs) are of particular value, playing a crucial role in translating new knowledge and ideas into everyday solutions. However, their potential to innovate often needs support, especially in the early stages of research and development. The Netherlands therefore aims to further strengthen EUREKA's capabilities to connect SMEs with major industries and research institutes. This will benefit our economies, benefit our societies and benefit you.

The Dutch Chair aims to reach an agreement between EUREKA and the European Commission on Eurostars-3. With the ambition to have an enhanced Eurostars-3, with long term public financial commitments and a broader set of accompanying activities aligning Eurostars-3 to other national and international programmes.

Revitalising EUREKA Clusters

EUREKA Clusters were set up to stimulate strategic European industrial, company-driven R&D collaboration. Over the last decades they have developed into a major intergovernmental instrument for collaborative R&D&I extending beyond European borders. Joint projects helped the Netherlands in developing crucial technologies and expertise in fields such as artificial intelligence, advanced manufacturing, digital health, smart mobility and sustainable transport systems. However, the innovation landscape surrounding Clusters has changed dramatically since their inception. The international industrial landscape has undergone a significant transformation, making this the right time to review the Cluster concept and develop a new Cluster model that is fit for the future. However, even as we take this new approach, one thing will remain the same: EUREKA will keep on supporting our major industries, SMEs and knowledge institutions to help find solutions to tomorrow's global challenges.

As a kick-off for the discussions on Eurostars-3 and the revitalisation of the Clusters, the new Chair starts to listen to the experience of companies and institutes at during a stakeholder conference that will be organised on 5 September 2019 in Amsterdam. This conference (organised the day after the ITEA PO Days in Amsterdam) will be the main public event for stakeholders to contribute to the future outlook of EUREKA. Information and registration: www.rvo.nl/eureka-event2019.

Let's connect, innovate and grow together.

Source www.eurekanetwork.org/NL-Chair

EUREKA Cluster events and Call dates

ITEA 3	3-4 Sep	ITEA PO Days 2019	Amsterdam, the Netherlands	https://itea3.org/podays2019/index.html
	31 Oct	Deadline for submission of Project Outlines		https://itea3.org
CELTIC-NEXT	14 Oct	Project submission deadline		https://www.celticnext.eu/
eurogia 2020	30 Aug	Project submission deadline		http://www.eurogia.com/
metallurgy europe	End Aug	Submission deadline for Full Project Proposals		http://metallurgy-europe.eu/

Colophon

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.
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