# ITEA Magazine 37

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Focus on Canada

ITEA Success stories
C³PO & ACOSAR

Viewpoint on
Entrepreneurship

# Contents







# Editorial

## "Together we stand, divided we fall"

The world is facing challenging and very uncertain times. We haven't seen such uncertainty for a long time. When will we get back to normal, how will the world economy recover from the COVID-19 crisis? For ITEA the challenges are also huge, and we are doing all we can to keep our activities and projects running on a high level of quality.

Chapeau to the ITEA Office team for their devotion and hard work. And, of course, a very big chapeau for Philippe Letellier, who said goodbye to ITEA in September. Philippe leaves us with a rich legacy of impactful projects, to which he dedicated himself with great passion and "panache" during the last 12 years. On behalf of the ITEA Community: Thank you Philippe! And of course also welcome to his successor Jean-François Lavignon, who has been involved in ITEA from the first hour. Jean-François started his first preparations as Vice-chairman last summer, contributing to the Customer Workshop on Cybersecurity, and was already in full swing in his new role at the kick-off of our Call 7 PO Preparations Days.

The Online ITEA PO Days 2020 were a real challenge to organise due to the COVID-19 pandemic. How to organise a network event in which direct, trusted contacts and exchange of delicate ideas and knowledge are crucial ingredients? The ITEA Office and Community proved its agility and creativity in making maximum use of and creating new available online tools to facilitate our partners and project ideas. You can read that the figures, such as a record of 338 participants, were impressive. They prove that the strong commitment and support of bottom-up Calls by industry is not affected by the current times. As ITEA Chairwoman Zeynep Sarılar describes, the Eureka landscape is going through a profound change. The new Eureka Clusters Platform (ECP) has been approved in June 2020. Preparations are now taking place by ITEA and the other EUREKA Clusters CELTIC-NEXT, Euripides, Eurogia, PENTA and SMART. We very much look forward to cooperating with them in the future, e.g. by organising joint Calls on specific topics.

Several countries have shown their interest and support for the new ECP. We are happy to see Canada is one of them. In this magazine the strength, innovation and commitment of Canada to ITEA is put in the spotlight. Jiang Chen explains the crucial role of ICT for the Canadian economy and the way that NRC IRAP is supporting and facilitating the innovative strength of this sector. One of the highlights of Canadian involvement is the recent Board membership of Esri Canada, one of the pearls of the thriving Canadian ICT Community. The conversation of Zeynep Sarılar with Esri CEO Alex Miller gives an exciting view on entrepreneurship and the positive influence of a strong and stable relationship.

Esri Canada is an excellent player within ITEA's Smart City Challenge. In this magazine we see some beautiful examples of Success stories and SMEs in ITEA. Among them ITEA Award winner ACOSAR and C³PO, another project for Smart Cities. The project supports cities in scenario planning, and involving citizens in decision making. This offers great value for cities that also face very challenging and uncertain times. It is through international cooperation that we cope with the challenges. As Pink Floyd already sang in 1982: "Together we stand, divided we fall".

Jan Jonker

# Focus on Canada

# Connecting companies to enable access to new markets and global value chains

**Jiang Chen, the Canadian ITEA Public Authority representative modestly refers to himself as one of over 255 Industrial Technology Advisors at the National Research Council of Canada Industrial Research Assistance Program (NRC IRAP). It is from here that Canadian companies, chiefly SMEs, can gain access to both advice and funding to develop innovative, technology-driven new or improved products, services or processes in Canada and beyond. It also houses and manages Canada's Eureka National Office and provides companies with a first contact point in Canada for Eureka's global network, including ITEA. Back in 2017, when the ITEA Magazine also had a focus on Canada, the article referred to SMEs in Canada as "the backbone of the economy, so there's a great emphasis on SME support."**

"ITEA's industry-driven, bottom-up approach with trusted and engaged innovation actors coupled with effective processes generates valuable networks and projects with commercial and social impacts."

**Diverse, innovative and growing**

And this comment then is equally applicable today, if not more. "SMEs contribute over 50% to the GDP in Canada and are responsible for over 80% of the workforce. They are prominent in the ICT sector which, according to Statistics Canada, had a GDP of 94.1 billion Canadian dollars and accounted for 4.8% of the national GDP. In fact, since 2013 onward, the ICT sector has consistently outperformed the overall economy and, in 2019, grew at over triple the rate of the total Canadian economy." These impressive figures are led by the software and computer services sub-sector in which 39,000 of the more than 43,200 companies operate in the Canadian ICT sector. Jiang calls Canada's ICT sector "diverse, innovative and a growing segment of the overall economy where the latest innovative technologies, such as Artificial Intelligence (AI), Big Data, 5G and Blockchain, are fuelling growth in the sector itself and in the overall economy. If we talk about R&D," Jiang continues, "you will see that ICT industries are the fastest growing in the Canadian private sector. In 2019, the sector held a 41.2% share of all private sector R&D expenditure in Canada, with the largest increase in R&D spending coming in the area of software and computer services (+11.7%). ICT is also responsible for employing 10.7% of the total workforce in Canada – that's 1.7 million people. The ICT sector is characterised by a knowledge-intensive workforce, with over half of its workers holding a university degree, compared to 30.5% within Canadian industries as a whole. So it's evident that ICT and software-intensive services play a critical role in the economy and society of Canada today."

**Innovation – ready for the future**

As a world leader in science, technology and innovation, Canada is recognised as one of the most innovative and competitive economies in the world. "Canadian companies are very competitive and have a leading edge in many areas, especially when it comes to our national priorities in respect of software innovation, such as Artificial Intelligence, Internet of Things, Cybersecurity, Automation, SaaS and Cloud computing, and Mobile Usage and 5G. In the Government of Canada's Budget for 2017, the role of innovation in the future of and for its citizens was underlined as the document stated that 'innovation is what allows Canadians to adapt to change and prepare for the future'." One of the mechanisms for translating this innovation into tangible results and impact is a multi-year Innovation and Skills Plan rooted in four interconnected and mutually reinforcing pillars (see red box next page).

**Top tech talent hubs**

Large industries, SMEs, academic institutions and research and technology organisations are integral parts of Canada's innovation ecosystem. There are numerous governmental and private programmes that support innovation in Canada. And these efforts are clearly paying off. The Annual Developer Survey revealed that Canada accounted for 2.98% of the developers in 2019, making Canada the sixth most represented in terms of developer talent globally. Canada also holds a similar ranking as one of the largest cybersecurity innovation hubs in the world according to venture capital deals (2016-2019). Through its National Cyber Security Strategy, Canada is committed to investing 507 million Canadian dollars over a five-year period. Toronto (#3), Vancouver (#12), Montreal (#13) and Ottawa (#19) are ranked in the CBRE's top 20 tech talent markets in North America.

"To take one software development industry example," Jiang says, "every gamer knows or plays FIFA 19, Assassin's Creed Odyssey or Shadow of the Tomb Raider. Well, these best-selling games were all developed in Canada." In 2017, video game production contributed 4.5 billion dollars to Canada's GDP and accounted for over 48,000 jobs. The growth rate for the video games industry was 20% between 2017 and 2019. There were 692 gaming studios and 71 investment announcements, between 2015 and 2019. Canada has the third largest video game development and production hub in the world.

**Access to global value chains**

"As Canada's leading innovation assistance programme for small and medium-sized businesses, NRC IRAP provides direct support to Canadian SMEs with international interests, creating opportunities for them to grow beyond Canada's borders," Jiang explains. "Our international programmes connect companies with the funding, advisory, export, and innovation services they need to access new markets and global value chains. We aim to enable our highly innovative companies – who are actually among the most innovative in the world – to develop and grow into impactful world-leading players. So, NRC IRAP plays a vital role in the R&D&I ecosystem in Canada and in encouraging companies to turn their innovations into marketable products and services."

While the United States is Canada's main trading partner and export market, Canada recognises how important the wider global market is. "It offers significant opportunities for Canadian companies," Jiang says, "so we do all we can to help them get onto and benefit from the international stage. The importance of being able to operate beyond the North American

## Innovation and Skills Plan

1. **People and Skills** – Ensuring businesses have the right pipeline of talent to succeed and equipping Canadians with the tools, skills, and experience they need to succeed throughout their lifetimes.
2. **Building Ecosystems** – Science, Technology and Superclusters – Building innovation ecosystems through new partnerships, bridging the gap from idea, to commercialisation, to growing globally-minded firms.
3. **Investment, Scale-up, and Growing Companies** – Attracting investment, supporting the growth of leading Canadian companies and start-ups, and exporting
4. **Programme Simplification and Reorganisation** – Offering a timely, client-centric single window in the delivery of business innovation programmes in every region.

continent has become very clear to Canadian companies, in Europe as well as in Asia. The programmes we have in Canada help our companies to do just that. And Eureka is a very big and important part of this initiative."

**Gateway to world of opportunities**

As the main point of contact for Canadian companies and the Eureka network, which aligns very well with NRC IRAP's mandate and goals, and which Canada joined in 2012, NRC IRAP acts as a kind of gateway into this other world of opportunities. "It was through Eureka," Jiang says, "that we became familiar with ITEA and joined this platform in 2014. ITEA has been a particular focus for Canada due to its industry-driven, bottom-up approach with trusted and engaged innovation actors coupled with effective processes. This generates valuable networks and projects with commercial and social impacts. ITEA has become one of the preferred channels we leverage to help Canadian companies to access global value chains. Of course, Canadian companies are quite capable of achieving a lot on their own, they've been working that way for many years but it is also true to say that they are enriched by the cooperation and collaboration that typify the ITEA projects. Their enthusiasm says enough." Jiang continues, "The opportunities and benefits resulting from the Eureka collaboration are mutual. Canada's participation in Eureka Cluster programmes like ITEA not only gives the European partners access to the world-class software talents, but also provides an entry point to potential large North American markets."

Over the last six years, Canadian companies and researchers have achieved great successes through ITEA projects. A few examples include Esri Canada in PS-CRIMSON, QA Consultants, mobileLive and Ontario Tech University in XIVT, Modus Medical Devices in STARLIT, PureWeb, Dapasoft, iClinic Systems and Xco Tech in PARTNER, and Convergent Manufacturing Technologies in VMAP. Recently, Canada cemented its commitment in the shape of Esri Canada that joined the ITEA Board as an industrial board member.

**Ingredients for success**

Jiang is fulsome in his praise for the "great services we receive from the ITEA Office. Not only Zeynep Sarılar, ITEA Chairwoman, and Philippe Letellier, outgoing ITEA Vice-chairman, but the whole ITEA Office staff who have provided tremendous support and services to NRC IRAP and Canadian participants. Zeynep and Philippe have spoken at multiple Canadian ITEA-related events. In the summer of 2019, Zeynep flew to Canada and toured four cities, visiting Canadian participants and stakeholders, and doing a fantastic job in promoting ITEA in Canada. The services provided by ITEA Office staff are top-notch, always prompt, professional and client-oriented. We (NRC IRAP and Canadian participants) really appreciate their services and consider them as one of ingredients for Canadian ITEA successes."

**More information**

https://nrc.canada.ca/en/support-technology-innovation/eureka

# QA Consultants: Future-proofing our company

QA Consultants is a Canadian technology success story and a case study of how to disrupt a static industry. Initially, the company provided testing resources for companies looking to outsource their testing requirements. By prioritising innovation strategies focused on dramatically improving client value and internal efficiencies, and spending millions on R&D to develop new testing methodologies, automation and internal processes, QA Consultants has today become a dynamic and rapidly growing IT services organisation, and North America's largest dedicated software quality assurance and testing company. Peter Watkins, Chief Operating Officer, explains some of the key factors that have led to this company's success and the role played in its development by the National Research Council of Canada Industrial Research Assistance Program (NRC IRAP) and ITEA, among others.


**Going local**

Founded by Alex Rodov in 1994, QA Consultants has been in business for some 26 years, beginning as a subcontractor to the major players like Accenture and Deloitte before deciding to go directly to the industry, initially through staff augmentation. "When I came on board, about eight years ago," Peter recalls, "we looked at the offshore market and made some fundamental strategic choices, one of which was to be local. This meant our clients would have direct access to our resources, whether in Canada or beyond. To be able to compete with Asian price points, we had to create a different model. And NRC IRAP helped us many years ago to find a way of improving the efficiency of our testing methodologies such that we could compete with offshore prices. This resulted in something called the TestFactory™ . In essence, our TestFactory™

enabled us to bridge the 30% inefficiency gap between development and testing. Not only were we able to get our price below that of offshore competition but we were also able to generate the benefits of being local. That was a great differentiator in building our business. In fact, NRC IRAP has always been enormously supportive of our research right through to the present and has been a key contributor to our success.

**Criticality of software innovation**

"As we applied more science, innovation and technology, the testing industry began to change

quite dramatically. We've gone from manual testing to automation testing – we're using the latest science of advanced model-driven based testing. Our engineers are Masters and PhDs. We're building digital twins of factory robots and vehicles to do testing in a fully simulated environment. In short, the science of testing has helped us transform our business." He goes on. "It stands to reason, therefore, that software innovation is critical to our business. We build systems to test systems and that requires systems engineers we hire, train and deploy. The industry is advancing rapidly and so we are grateful for our involvement in ITEA, and to NRC IRAP which was instrumental in bringing us together." As Canada's National Office for Eureka, NRC IRAP not only facilitated the connection to ITEA but also provided valuable support early on through various partnering development activities that introduced QA Consultants to potential collaboration opportunities beyond Canada's borders. They also provided specialised advisory services through the NRC IRAP Industrial Technology Advisor, who supported them throughout their international collaboration journey, from co-innovation partner selection to project proposal development and execution.

**The ITEA business boost**

"What we have found is that North America is behind the curve relative to the advanced testing science being applied in Europe. As part of the ITEA initiative, we were introduced to Dr Holger Schlingloff, who is Chief Scientist of the System Quality Center (SQC) at the Fraunhofer Institute FOKUS and professor for software engineering at the Humboldt University of Berlin. In addition to working with us on the XIVT project, he came over to train our automation team on advanced model-based design and testing methods. This training enabled us to create huge efficiencies and has become transformational for our business. I'd go so far as to say that our involvement in ITEA has created a kind of future-proofing for our company in many ways. In the XIVT project, we are taking a methodological approach with a focus on the automotive sector. Ecosystems involving the Internet of Things have created an exponential number of configurations to be tested often in the millions. This testing complexity has a major negative impact on industry's ability to adequately test and release products in a timely manner. Apart from leading the Canadian consortium, one of the methodologies for variant testing we have already produced is called BeVAR, not to be confused with Bieber," Peter jokes, "and this is helping to give an efficiency boost that pays off in terms of real economic value that we are applying to our 'other' client projects such as testing Guidewire or SAP implementations, or testing complex digital transformation initiatives in retail and financial services."

**XIVT**

The XIVT project runs from 2018 to 2022 and aims to define a method and toolchain for testing highly configurable, variant-rich embedded systems in the automotive, rail, telecommunication and industrial production domains. The method is founded on a knowledge-based analysis of requirements formulated in natural language, and a model-based test generation at product-line level. By generating a highly effective, cost-efficient quality assurance, the shift to autonomous, flexible and adaptive applications is enhanced and results in higher test coverage, more flexible processes of higher quality and better products.

**A diverse and collaborative network**

"Much of the communication during the project has been virtual so COVID-19 has not dramatically impacted our effectiveness. We do miss the face-to-face contact. When we actually come together, we do get a lot done. The after-work comradery also helps with building trust," Peter says with a smile. "But the project is nevertheless progressing extremely well. And what is an enormous plus for our involvement is the array of cross-cultural differences. People approach and deal with situations differently. We learn so much from our XIVT colleagues who are, quite literally, the smartest in the world at what they do. ITEA enables an enormously important network. By the way, QA Consultants was set to sponsor a World Productivity Congress on Advanced Manufacturing on Industry 4.0 in Bangalore in May this year. Through our ITEA network connections we were able to invite prominent leaders such as Zeynep Sarılar, Chairwoman of ITEA, and Holger Schlingloff, Chief Scientist at Fraunhofer FOKUS, to be keynote speakers. They accepted but due to COVID-19, the event had to be rescheduled to 2022. Their willingness really shows the spirit of collaboration and support there is in the ITEA Network."

In conclusion, Peter notes that with the United States not being an ITEA participant, "the knowledge and lessons we're getting and the new technologies that we're building, several of which we're looking to patent, as a result of our participation, give us a competitive edge and enhances the trust our clients have in our capabilities knowing we have earned the endorsement of ITEA and NRC IRAP in approaching the North American marketplace."

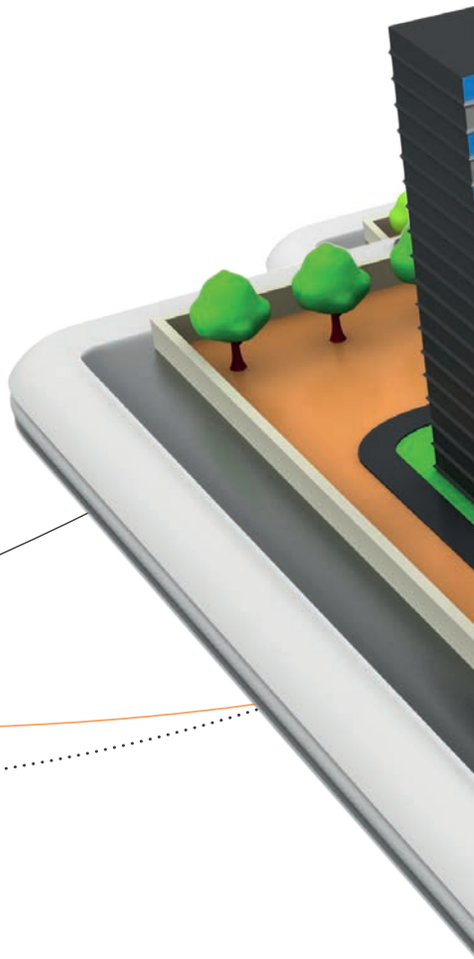
**More information**

https://qaconsultants.com

## ITEA Success story

# C³PO

## C³PO democratises City Planning



**With five billion people likely to be living in cities by 2020, the urbanisation and immigration challenges posed to cities are becoming immense. City design is complex, and everything impacts everything else. IT can provide opportunities at affordable cost for cities with the promise of opportunity for smart support of urban development and the mitigation of risk through better planning and prediction. The enhancement of city planning by co-design requires simple access to different sources of information, the visualisation of relevant information for decision-making, the simulation of different scenarios, stakeholder communication support and combining static and dynamic data.**

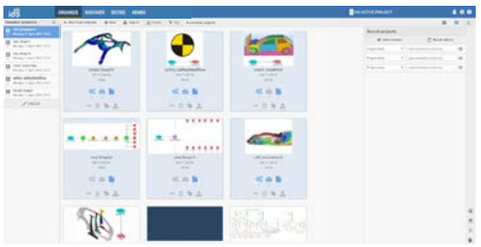
C³PO has found ways for city planners to consult citizens throughout the urban transformation process and thereby give citizens a better say in urban developments.

For centuries, many residents have come to know their cities, towns and villages like the back of their hands. They know the shortcuts, the hot spots and problem zones. However, before the age of social networks, city planners would first hire architects and contractors for new urban developments and improvements and, once the plans had been finalised and a 3D scale model produced, they would consult their voters. Today the ITEA C³PO project has found ways for city planners and designers to consult citizens throughout the urban transformation process and thereby give citizens a better say in urban developments. The aim of the project was to set up a common digital platform that connects all the tools for collaborative urban development. This includes available (open) data sources, 3D models and visualisations as well as opinions and insights from citizens and interest groups.

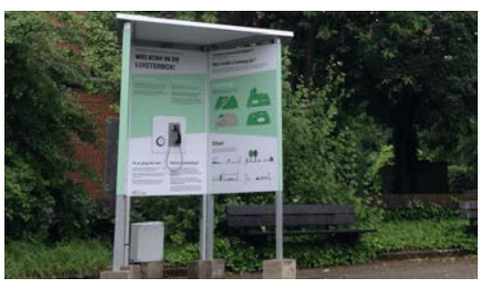
The consortium of 21 partners developed a cloud platform based on existing technologies and applications, as well as new products for the Smart Cities market. The project was strengthened by the participation of the cities of Brussels, Kortrijk, Kouvola, Oulu and the Municipality of Pendik (a district of Istanbul), which provided the perfect opportunity for trials. Trials in Finland and Turkey demonstrated the value of markerless Augmented Reality (AR) for new urbanisation areas and 3D mock-ups for table-top urban planning and visualisation. Virtual Reality (VR) was demonstrated in virtual tours in case studies in Oulu and Kouvola, while the new Pendik Municipality building provided a setting for selecting different options. The trials in the city of Brussels focused on accessibility and were used as proof of concept of the co-design process using data integration, and the different C³PO tools and methods. The cooperation with the city of Oulu and other stakeholders has continued after project completion to further develop AR services in city planning.

In addition to these trials, the different partners benefited in their own way from the C³PO project. For example, Noesis developed the Noesis Process Portal and Semantic Workflows, which are key components that complement every co-design activity from city co-design to aircraft and automotive. The portal and the underlying workflows allow the setup of a true collaborative multidisciplinary design process and optimisation, and have been successfully translated into advanced co-design features that are now embedded in the Noesis id8 collaboration platform, released in October 2020. Thanks to these enhanced collaborative capabilities, aerospace and automotive

engineers from different teams worldwide benefit from the possibility to share engineering workflows, data and knowledge related to common design projects, enabling them to improve product performance by 10% or more and save on average over 30% in engineering time.



The visualisation component also played an important role in the C³PO platform.
The Belgian design agency Studio Dott created a new form of citizen participation that appeals to – and reaches – the various target groups as broadly as possible. Studio Dott is commercialising a physical installation, the 'Participation pavilion' that can be placed anywhere by local authorities that want to collect a citizen-centred view on an urban design proposal. Even less tech-savvy citizens like the elderly can easily use the pavilion, in which responses to questions are recorded using audio. These recordings are anonymously processed using language analysis software. The current prototype has proven to improve citizen inclusion and is currently under further development. Having access to this new market is reflected in a projected revenue growth for Studio Dott of €1.7 m within 5 years.



Belgian technology leader Barco created several demonstrators that enhance the City planning process. For example, the Transportable CAVE (TCAVE) is a professional collaborative VR solution - a mobile setting that offers companies better immersive virtual reality experiences. Citizens step inside the TCAVE wearing 3D glasses to see what a developed space would look like. This unique solution allows two persons inside the cave, each one looking at the 3D model from his or her point of view and negotiating what to modify on an urban design, for example. Previously, only one 'master' could interact with the model from a specific point of view; other participants had to try to follow the point of view of the master, which is a bit misleading. The quality and comfort of the collaboration has drastically increased through this world-first innovation. The TCAVE helps Barco to sell its 'Group VR' solutions to the market. Barco's annual revenue on this type of product is about €20 m. In addition, it will also further help Barco in commercialising other solutions such as PowerWalls and CANVAS, the latter addressing a new market segment, the Architecture, Engineering and Construction (AEC) industry, where Barco expects annual growth of about 10% in the coming three to five years.

Belgian project partner Createlli helps cities, authorities and other organisations to co-create projects with citizens and stakeholders, using effective participation and co-creation. As a result of the C³PO project, they commercialised a participation platform and participation services. It has been used in over 80 projects so far in Belgium, Spain, France, the Netherlands and the UK, in cities like Brussels, Antwerp, Bilbao, Vitoria, Santander, Eindhoven and Edinburgh. The projects range from urban development and urban planning over infrastructure and mobility to climate planning and nature development. Thanks to the credibility of participation in this international collaborative project, they were able to expand internationally and to offer participation for those projects. This growth meant that they could hire three new people. Createlli now has a team of eight FTEs offering participation services.

Turkish company ERARGE developed a semantic framework that relies on the Urban Transformation and Transportation Ontology (UTTO). UTTO is integrated with the city data, including the vehicle and pedestrian flows, road maintenance data and city events which may affect the functionality of urban transportation infrastructure and its actual use. This approach enabled a data-driven and semantic traffic monitoring solution in Pendik to simulate how the city traffic may be affected by the urban transformation processes. ERARGE then collaborated with Bahcesehir University and applied Augmented and Virtual Reality to inform citizens about urban transformation plans for better citizen sensing, voting and personal opinion crawling. In parallel, ERARGE identified the privacy and security needs as the personal opinions and traffic flows are private information and the cities' IT infrastructures can be vulnerable to cyberattacks. As a solution, ERARGE developed a hardware-based end-to-end cybersecurity tool to protect both city and personal data. All these studies have turned into three new H2020 projects, one new ITEA project (BIMy), the recruitment of five new junior engineers, more than 20 papers in top conferences and journals and one new product, namely PRIGM, a Hardware Security Module, which is now in a Common Criteria evaluation process.

Furthermore, the Turkish software company Mantis developed an outdoor screen that allows local authorities to showcase what people are saying on social media and start conversations with them at public places. This social media visualisation tool reflects the insights of campaigns to the public and to the campaign owner. It was used many times on different visualisation sources such as municipal billboards, advertisement screens, and presenters for analysis and tracking. Mantis also developed an ontology platform where the data coming from different sources of a smart city can be managed by a single common platform. Using this infrastructure, different components of the smart cities can be semantically associated, and data gathered can be easily queried and retrieved in a meaningful way. Later on, Mantis used this infrastructure to initiate a common project with municipalities in Turkey for railway systems. These solutions pushed up the annual revenue of Mantis by almost 15%. The know-how has also been used in other projects after C³PO.

Netcad, another software specialist in Turkey, is now commercialising a map and GIS-based platform called Netigma, which helps local authorities and designers to analyse data, e.g.

## Citizens benefit from better liveability and engagement in their city and gain new ways to participate in improving the place where they live and work

the density of urban traffic. Experience gained in C³PO led Netcad to join another international project called ASUA and develop a state-of-the-art smart city platform called Netcad Digital Universe. Both Netigma and Netcad Digital Universe are marketed and sold in Turkey and in the Middle East region yielding in a revenue increase of 30%. Netigma is used extensively by local authorities (1000+ municipalities) especially for GIS-based solutions. Netcad Digital Universe attracts users from local authorities, the government and private sector for IoT, smart lighting and computer vision solutions (Eye-OT™). Both products resulted in a 20% increase in team sizes.

Finally, the Finnish partners also developed strong results. For example, FCG Design and Engineering is a midsize consultancy company specialised in city planning and design & Smart City solutions. It created the MAPGETS platform for interactive urban planning and the RAKSITE solution for interactive construction site management. MAPGETS is a 3D Web Map Application Platform used for a wide range of applications, such as those designed for urban planning, asset management and process management. RAKSITE was developed for construction companies and cities. In 2020 it has been applied in Finland's largest canal project, renovation of the Saimaa canal. C³PO was an important learning process for FCG in visualising information, stakeholder communication and knowledge management. The project also supported FCG's expansion in three channels of its digital business: solution development, platform economy and SDK sharing. Between 2018-2022 this will result in an annual revenue growth of 5%. During C³PO, a computer scientist was hired who finalised his MSc in support of the project.

Playsign turns urban plans into immersive environments for better communication and co-design. It is an efficient tool for drafting, testing, communicating and creating future plans with citizens and other stakeholders. It is an environment that can be visited, played and experienced before any actual building takes place. Playsign Experience was used to integrate both BIM-based 3D models from Assar Architects and Createlli using their own web-based platform. They also enabled True Co-Design in area planning in Oulu. Playsign entered the market during C³PO and is today in use on the market as a platform for engaging people with the built environment. After C³PO it has been extended for real-time building applications, for example for air quality and energy use visualisations. The web technologies piloted in C³PO are used for both the phases of planning and building use, as in building life-cycle management. Thanks to the project, Playsign learned many key lessons about the businesses around city planning and built environment development and much about data models and interoperability. These remain key topics in the company's ongoing development work today.

As shown, the value of the C³PO project for stakeholders is manifold. Data providers gain a data asset that is made available to ICT companies plus new business opportunities and increased data value through data integration, analysis and further visualisation. In turn, new business opportunities are generated for ICT companies by vertical integration with other applications, new markets and new space for the promotion of apps as well as enhanced application value to current customers able to access a wider set of data. Citizens benefit from better liveability and engagement in their city, gain new ways to participate in improving the place where they live and work, and have continuous access to up-to-date city development plans that they can influence. Cities, supported by enhanced data analysis procedures, profit from improved decision-making processes, mitigated urban development risk through better planning and prediction, and can actively involve their citizens.

**More information**
https://itea3.org/project/c3po.html

VIEWPOINT ON ENTREPRENEURSHIP

# Innovare

## to make new again

*ITEA Chairwoman Zeynep Sarılar in conversation with President of Esri Canada Alex Miller*

**The news of the day and the crucial phase in which civilisation finds itself provide the inevitable backdrop to this conversation about entrepreneurship – after all, business is carried out in a context. And that context is the COVID-19 pandemic, geopolitics and the wider implications of data and privacy. Indeed, Alex points out how the efforts in Canada to instigate COVID tracking in the public interest are coming up against privacy concerns and the legal framework.**

"It's a very interesting time for software and software innovation," Zeynep remarks. "I understand the dilemma, and it's not an easy one to resolve. It's an issue we see reflected in some ITEA projects, too. How far can you take the tracking of individuals without impinging on their privacy? Last week, we met for a project review and it was clear that it was not only a question of the technology but also the extent to which the innovation complies with the legal rights in respect of using data. We've gone from gathering data to understanding the data and now the rights of use."

**Necessity is the mother of invention**

"That's true," Alex says, picking up the subject. "We were contacted in the summer by CANON, a Canadian anonymisation network about providing a cloud service whereby the organisations in that network would be able to take, upload and anonymise data suitable for publishing. Two methods for doing this are currently being used: aggregation, a method that is widely used by statistical companies, and data synthesis or synthetic data. I had not heard of this term before but I realise I've been doing this for all my working life. And in fact, it is what we did in PS-CRIMSON. You take all the property assessment data – real sales – and a number of specific characteristics, such as size of the property or proximity to public transport, and apply the set of characteristics to all the properties to derive *en masse* market value assessments for all the properties. However, this is synthetic data – only the properties that are actually sold represent real data. And for COVID-19, you would use the same method, applying comorbidity characteristics, like obesity or high blood pressure, to create a surface of individuals modelled on the basis of synthetic data and thereby identify the vulnerable groups and individuals. The third method that I am developing is an adaptive algorithm whereby clusters are created for a minimum number of people but are geographically aligned and use population characteristics to make the data meaningful. It's early days yet but we are getting some funding to help us along the way."

**See what others can't**

"And there you are, the entrepreneur in action! It's great to have you and Canada quite literally on board at ITEA. I'm really fascinated to find out how you look at entrepreneurship. And I think it would be nice to share some of your views with the wider ITEA Community," Zeynep says invitingly.

"I have to start with a true story," Alex begins, anecdotally. "Of course, we all know who George W. Bush is. In the wake of 9/11, he felt let down by his French allies who had refused to join the coalition forces in Iraq, complaining about their work ethic and even rebuking them for not even having a word for 'entrepreneur'. Perhaps he didn't have French at school. But in all seriousness, we have been using a tagline at Esri in our marketing campaign. It's 'see what others can't'. An entrepreneur is, first and foremost, one who sees what others can't. Such as using geographic information systems to see what others can't. Entrepreneurs and visionaries share this characteristic. And when Steve Jobs came up with the tagline 'think different', this was an appeal to not follow conventional thinking. Of course, conventional thinking is a must when stability is key. After all, the lights have to stay on when it comes to utility companies and we want our governments to be solid. I should add, taking the 'see what others can't' a step further, that entrepreneurs also see the business opportunities, and build an organisation to make them happen."

**Making the dream come true**

"I agree," Zeynep says. "Along with that vision it is, of course, important to have one foot firmly on the ground. There are plenty of people who have a dream but to make it come true, there has to be some benefit – financial or otherwise – a tangible and realistic target."

"Sure," Alex replies. "I think one of the traits you need to be successful as an entrepreneur is to hire people who are smarter than you are. Like a CFO and a COO who know much more than you do about their areas of expertise and can do the job much more effectively. Often, the entrepreneur who dreams doesn't have the discipline to spend the night with a spreadsheet determining who has to do what. One of the mistakes some entrepreneurs make is to try to be and do everything. And that goes through to sales – hire someone who can sell the belief, trust that the organisation will deliver on its promises."

Zeynep interjects. "I understand this argument, and I think it makes a lot of sense. But I would like to ask what's the role of innovation in this? How is innovation connected with entrepreneurship, from your perspective?"

**Make new again**

"Let me put it like this," Alex replies. "Typically, an entrepreneur sees the opportunity amid a kind of chaos – something is not working. The root of the word innovation can actually be found in the Latin *innovare*, to make new (again). I think what we will see in the healthcare system in its response to the chaos of COVID is an explosion of entrepreneurs and innovation looking at how we can think differently the next time such a situation comes around. There's technology innovation and business innovation – the latter uses the former to create a new kind of business. Dell is a good example of this. Michael Dell took the technology and used it in a different way, buying components from manufacturers and assembling them in his college dorm, undercutting the competition and building an empire on the basis of online supply. Bill Gates' great innovation was to separate the operating system from the hardware. Nobody before Gates had ever thought of buying an OS without a computer. I think the world is full of opportunities to make new again."

Alex Miller
*President Esri Canada Limited*

Zeynep Sarılar
*ITEA Chairwoman*

**A perfect partnership**

For me as an entrepreneur, my problem is to apply discipline. That's where my wife, Mary-Charlotte, comes in. She keeps me from going off into too many different directions. She helps me focus. She has an economic and business degree but then decided to do an education degree and become a math teacher. But that was before she took on the role here at Esri Canada in which we have an inside-outside split. I look out at the customers and she makes sure that everything ticks along as it should on the inside – do we have the right people, do they have the right resources and so on. So, she innovates internally, working with my CFO and COO. The four of us together form our executive management committee. Essentially, then, my wife ensures that we operate from a very stable base, and that gives everyone the assurance they need – after all, employees require stability. I would also mention that she also took another degree in computer science since she said she needed to be able to communicate with me. That's what I call commitment. And because we do communicate well both in business and in private, I guess you could call us a perfect partnership."

**Ocean of opportunities**

"That's great to see the balance that a woman can bring," Zeynep says with a smile. "Coming back to what you said about a world full of opportunities. With software we have such an 'ocean of opportunities' to create a better life for people across a vast spectrum – healthcare, housing, nutrition, transportation – the list is endless. But, of course, as an entrepreneur you need a certain discipline to get across the finishing line and create an outcome that benefits the customer, and this in turn can create a business stability for the organisation."

Alex agrees. "Exactly, many entrepreneurs create chaos within the organisation, thinking it's a good idea to keep people on their toes. That's not my experience or philosophy. Discomfort is never a good environment for work. And once again, I would like to emphasise here the need for good coaches and good teamwork. Like an ice hockey team, the players don't need to think about skating but focus on the game. The famous Canadian ice-hockey player Wayne Gretzky was asked how he scored so many goals. He answered that you need to skate to where the puck is going to be, not where it is at that moment."

"I am motivated by change and seeing the world become a better place"

Anticipation? "Yes, and reading. You'd be amazed how many entrepreneurs get ideas from reading. I heard that the founder of Shopify, an online supplier of software licences to businesses that want to run their own stores online and extend their reach by doing so, reads two to three hours a day. I do, too. I get new ideas all the time from this. For instance, I read a book – or rather the free version part that's available on the internet – called 'The Innovator's Prescription', which prescribes how to be an innovator using the US healthcare system as an example. I'm going to read the whole book because the first chapter has already given me a brand new idea. Not specifically related to healthcare but it provides a networking model that can be applied to all kinds of domains."

**Networking**

"So, you talk about networking," Zeynep says. "Collaboration will be important to you. Among your business entities and with your customers?"

Alex: "My view, and I think this is why we as an organisation are heading increasingly in the direction of the networking business model, is that all successful people, companies and countries are built on a foundation of collaboration. It's how we became a success as humans. Here we've had an initiative that has been running over the past ten years called 'One Esri'. We're 84 organisations worldwide, all with the same goal of building a GIS and dealing with environmental sustainability in the respective countries. So, as far as I'm concerned, collaboration is critical. Especially with customers. We put our customers and employees first, and I think if you do that, then your shareholders won't have to worry about their dividends. I spend the vast majority of my time with customers, although this tends now to be phone or video conversations. They may learn something from me, but I learn far more from them."

**Motivation**

"I want to make clear that my motivation is not money," Alex stresses. "I am motivated by change and seeing the world become a better place for the generations that follow us. Also, the wildlife that I see flying past my window at this very moment. We're also working for that bird. For the environment and the resources that sustain us. We cannot think of money as anything more than a mechanism to help us grow our business and get the things done that need doing. Unfortunately, there are too many billionaires whose sole aim is to climb the ladder of Forbes magazine."

**At a crossroads**

Zeynep concludes with a final question: "You're a seasoned world traveller, Alex, so do you view this 'global' experience as a valuable asset to an entrepreneur?"

"Let me come back to Steve Jobs again here. He always said that you constantly have to force yourself to do different things. Like go live in a third-world country for a while. When I was 23, I was recruited by an engineering company to go to northern Nigeria to map an unchartered region. I found myself in this magical faraway world of the missionaries I had only heard of as a child at Sunday School. I've been to some 45 countries or so, and I have seen how very different the world can be. It's a very large and complicated place. So, I'm very conscious of the global perspective and of the need to have one. I have learned that solutions in the US, for instance, don't work in Iraq. So, it's clear to me that we have to think more about how to organise ourselves as a network, a bottom-up organisation. I think the big innovation is to use information as the principal organiser of society as opposed to power or geographical boundaries. I think we're at a crossroads in world history. And I believe that information will play a key role in getting right the decisions that have to be made. Bringing this back to ITEA, ITEA is a bottom-up organisation and everyone brings in something of great value that enables the right decisions to be made at the top. This is the way forward."

# Community Talk with:

# Philippe Letellier

**Panache** – *noun: a stylish, original and very confident way of doing things that makes people admire you (Cambridge Dictionary definition).*

**After 12 years, Philippe Letellier has decided to hand over the reins of his Vice-chairmanship of ITEA. "Change is important, and no-one is indispensable. This is the right moment for ITEA and for me to find a new impetus." So how can you best describe Philippe, for many the constant factor for the past 12 years, in the field, on the stage and among friends and colleagues? As many have witnessed throughout the years, Philippe has always seemed to be a natural on the stage. I think a fitting word to describe him would be to say he has always done things with 'panache'. But before finally relinquishing his duties, how does he look back on his time at ITEA, an organisation that has become almost synonymous with his name?**

**Destiny**

"In some ways, I think I was destined for my role within ITEA. At a very early age I was keen to learn about advanced physics and when I was 14 or so I read Einstein's theories of relativity as others might read the bible. I have always been interested in the impact that technology can have on the world and so I decided to take an MBA degree to complement my computer science degree and PhD. This decision was a game-changer in my career. I have worked in start-ups, large companies and academia, so I have gained a good sense of where priorities lie and how these three worlds operate. This has been very useful for me in my ITEA role. I remember being asked by Gérard Roucairol 12 years ago to replace him as Vice-chairman," Philippe recalls, "and to this day I am still grateful to him for giving me such a wonderful opportunity to serve in this role, which is geared towards ensuring that the projects deliver real impact."

**Operational guy**

In addition, Philippe has also been a member of the ITEA Presidium, which is responsible for defining the ITEA strategy in collaboration with the ITEA Board, and he praises the level of creativity that constantly generates renewal and new ideas. When asked whether he ever wanted to become Chairman, Philippe replies, “For me, the Chairmanship is not a better job. It’s a different role. Ego and hierarchy do not come into it. Our strength is as a team. And our team reflects our strengths. As Vice-chairman, my role is more oriented towards the projects. The Chair is more oriented towards the programme. The two roles are complementary. I am an operational guy and Vice-chairman suited my qualities.” Even though this meant being away from home on a regular basis? “Indeed, this is a role in which travel is an integral aspect. I spent more time on the road that at home, that is true. Despite this ‘burden’, I had a unique opportunity to get to know new people, discover new technologies, businesses and markets.”

**Multicultural**

Philippe cites another unique aspect of being part of the ITEA Community when he says that he has never worked in a more trusted zone. “I have realised that you never need to fight your corner but that you achieve a lot by cooperating. And by doing this, you learn new things week in, week out. I have to challenge myself to stay ahead of the game and challenge others to achieve even more. In this way we enrich our knowledge and our intellect. I have gained so much more understanding of how to manage R&D projects so that they deliver impact in the market. The methodologies that I set up within ITEA will certainly pay dividends in my consulting work. Furthermore, I must mention the multicultural dimension. For a Frenchman, it is not always easy to work with the Dutch, Germans, British or Turkish, for example. Big differences exist in the way we engage in relationships. Sometimes you can feel offended but you exercise control over your emotions and, bit by bit, you begin to understand that others have different ways of doing things. It has been a real challenge for me but I have had a good learning environment within ITEA. I am much more aware now about the nature of these cultural differences and understand how you can use them in a positive way. This is what happens in ITEA on a daily basis. And you can see it in some fantastic projects where consortium partners from different countries and cultures come together to produce impactful results.”

**Beautiful projects**

Philippe is reluctant to single out specific projects, saying that to do so would be an injustice to all the projects that have had so much impact. However, when pushed, he does cite two: SembySem to provide a software system dedicated to the monitoring and management of systems of all sizes using semantic representations of their constituent components. The project results provide dynamic representations of ’systems’ as a set of semantically-described synchronised views, and MODELISAR, which introduced functional mock-up (FMU), a next generation of methods, standards and tools to support collaborative design, simulation and test of systems and embedded software. “I thought SembySem was very clever, very abstract, developing an ontology to describe the security rules and


solutions. A very beautiful solution because you solve the complex problem of interoperability and go a step further. Many subsequent projects employed the same approach in different domains. And now the SotA for interoperability is to use ontology. Another very impressive example is MODELISAR. Not only did Daimler ensure that the doors of its cars shut with a noise that was very distinctive – you could hear that it was not a little Fiat, for example – through the interoperability of different simulators but the project became the germ for the generation of a full set of success stories in the automotive sector worldwide. Even more beautiful! I can tell such stories all day long but for that I would need a whole magazine to myself! But, in any case, these two projects simply highlight the amazing achievements that the ITEA Community produces year in, year out."

**Magic formula?**

Is there any kind of magic formula? "It may seem like magic sometimes, but it's not really. First of all, we are technology lovers. Secondly, there is a clear target: to impact the market. That's key. Give people a strong ambition. In the risky environment of innovation. Then align this with an ITEA Office that is interested in the content, and the people realise that they, and what they are doing, are important. They matter. And this is a powerful driver for happiness. This notion of happiness, pushed so hard by Rudolf (Hagenmüller) some years ago, is a value that the Community shares and which binds us together. It helps create the trusted zone I spoke of earlier. If you want, you could say that the ITEA formula has something magical about it since we do seem to pull technology rabbits out of the hat on a regular basis."

**Freedom to innovate**

And, as Vice-chairman, have there been any specific developments over the past few years that are likely to shape the landscape for your successor? "Customer focus is certainly a significant shift. It's always been a part of the make-up. After all, ITEA operates a bottom-up approach, led by industry needs. But more recently we have made customer focus more explicit and customer workshops are proving to be real eye-openers. Innovation, as I said, is a risky business and companies can be hesitant about entering this zone. But the digital transition has made it imperative to innovate. So we need clever people with brilliant ideas who can dream beautiful solutions to problems before they even exist. Strategists don't think this way. They create frameworks and, by doing that, put a straightjacket on innovation. I am convinced that we have to allow the innovators full freedom. A successful innovation for me is a good balance between innovative technologies, clear market vision and value chain evolution. By understanding the latter, you can propose innovative solutions. This is fundamental to our approach in ITEA, and we must not lose sight of this."

**New game**

But the time has now arrived for Philippe to focus on his own future, consulting for companies and making good use of everything that has helped shape him over the past decade or so. "It's an exciting time ahead. It's a new game. I'll also have to plan my time differently." Indeed, Philippe has spent the past half year in Rennes, like most of us, working from home – a far cry from 12 years of 'roaming' Europe and beyond in the service of ITEA. "I am grateful that my wife and family have accepted me back into the home from which I have been so absent for so long," he says, tongue-in-cheek. "Corona has coincided with my shift of direction. It's a time of change and reflection, a new adventure. Time to look forward to new challenges, and maybe a little bit of time for me to indulge more in my love of theatre and acting." With panache, of course!

# ITEA project results enhancing people's lives

## Tumour in sight during radio treatment

The ITEA projects SoRTS and STARLIT addressed image-guided radiotherapy, by improving the real-time connections between a Philips MRI scanner for imaging and an ELEKTA LINAC system for radio treatment.

The availability of MR images, with low latency, during radio treatment, allows a more precise treatment, leading to several benefits for the patient. Most importantly, this enables a precise treatment as the tumour is constantly 'in sight' during the radio treatment. Consequently, less healthy tissue is damaged, supporting a reduction of necessary radiation sessions. The predecessor of STARLIT, the ITEA SoRTS project, already provided the connection, to ensure more precision but this supports only gating. This means that the radiation is shut off when the tumour moves out of the beam. This version of the MR-LINAC is available at more than 60 places in the world for patient treatment, and the order intake is increasing. STARLIT improves the results of SoRTS by reducing the latencies even more, allowing the tumour movement to be followed with the beam. In addition, during treatments, the delivered dose is measured. These improvements will become available as upgrades for the installed base in the coming years.

Unfortunately, the project leader himself needed radio treatment, during the last year of the project. The traditional treatment would have involved 20 treatments in four weeks. However, the MR-LINAC treatment, based on the SoRTS project results, offered a treatment of five sessions in 20 days. This reduced the burden of travelling to the hospital substantially, and also the side-effects, like fatigue, were much less. As less tissue is damaged, the recovery time in general is also much shorter. In fact, he was even able to work about half of the time in these 20 days, instead of being out of work for four weeks. Also possible discomfort, like being partially out of action for a few months, did not occur with the MR-LINAC treatment. As a result of the STARLIT project, the number of treatments will even reduce more and consequently also further reduce the side-effects and burden for patients in the future.

In addition to the clear benefits that the MR-LINEAC treatment offers patients, there is also a strong benefit for hospitals. As fewer treatments are needed per patient, they can treat much more patients in the same time.

**ITEA projects**
**SoRTS & STARLIT**


**End user happiness** SoRTS and STARLIT

# Jean-François Lavignon

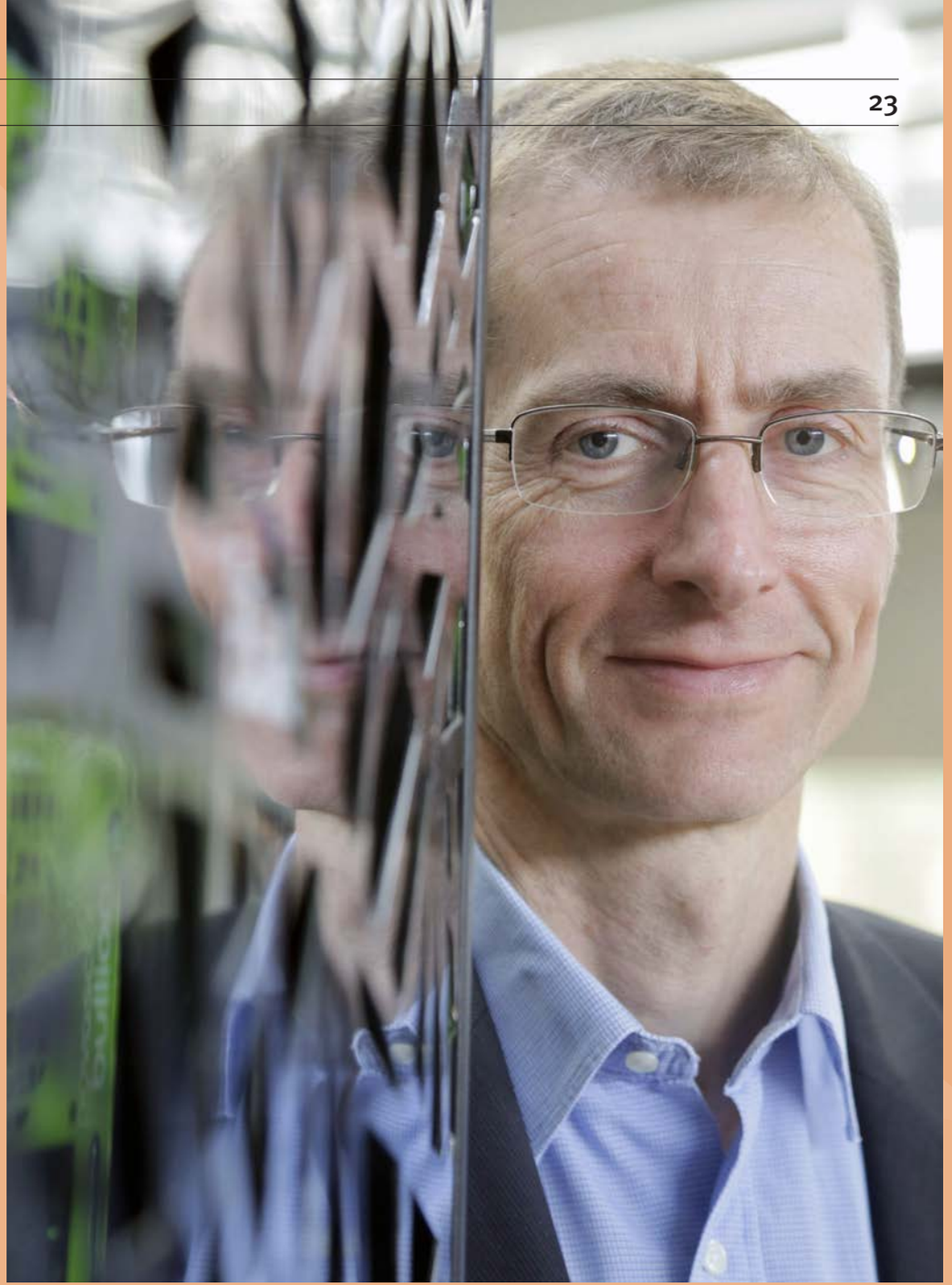
## The new helmsman at the wheel

**On 1 September 2020, Jean-François Lavignon became the new ITEA Vice-chairman, succeeding Philippe Letellier, who held the position since 2008. So who is the new right hand in the ITEA Community, what are his views and what does he bring?**

**From Bull to HPC ETP**

Having studied at engineering schools in France, Jean-François kicked off his career working for a Ministry of Defence agency, which actually gave him the opportunity to do a year exchange in the US. “Shortly after, in 1998, I decided to enter the world of industry and joined Bull. This was an excellent environment in which I was able to take my interest in computer science further. I ended up spending 18 years there, initially engaged in the organisation’s research strategy and then becoming the business unit leader for the cybersecurity product line. That’s also when I came into contact with ITEA since at Bull we were involved in the creation of the Cluster and in several ITEA projects.”

So, not really a newcomer to the organisation? “No. In fact, I was also involved in setting up the first ITEA roadmap around the turn of the millennium. When I became head of the cybersecurity group, I withdrew from the ITEA Steering Group but still stayed in touch. In 2002 at Bull the garden was not all that rosy so we decided to invest in high-performance computing and I was tasked with leading this initiative. Soon after, Bull became a leading international player in this niche market. ATOS (the Bull successor) has continued this activity and is now competing very well on the world stage. Also, we realised a European Technology Platform (ETP) for this technology through a joint effort between industry and the European



Commission. This resulted in a PPP (public-private partnership) and a commitment of €700 million to develop high-performance computing (HPC) within the Horizon 2020 programme. I was the chairman of this HPC ETP. With that, I then had a dual role – steering the ETP and steering research at Bull."

**Technology and Strategy**

In 2016, Jean-Francois decided to make a career shift and begin his own company. "I did not have any ambitions to grow but rather wanted to bring my knowledge and expertise to companies in the field, focusing on two main domains: helping to boost the European HPC ecosystem, establishing European coordination and support action with other players, and working with SMEs that have very good technical ideas and innovations but often find it difficult to find the path to market – what is the right business model for their innovation and who could be the right partners to gain access to the market? So the name of my company is Technology Strategy – it reflects the interdependence of strategy on technology and vice versa as ingredients for success. With a focus on the market and end user."

**Spirit of collaboration**

The ITEA credo? "Yes, indeed. ITEA really is an industry-driven programme with a bottom-up approach that targets real needs. Our role is to support the project participants to get the most out of their potential, not to give a project 'marks'. We want to appreciate the effort, give positive feedback. All this will be a very important aspect especially for the highly complex problems that we will have to solve in the future. We can't work alone. We have to collaborate. To generate the innovations that will be needed. With our spirit of collaboration we will be able to achieve that impact."

**All about sharing**

From a personal perspective, Jean-François says that ITEA will also help broaden his scope, especially with regard to the technology range. "In fact, it was one of the main reasons for me to apply for this role. Another motivation for me comes from my involvement in support action, in coaching projects and helping them to achieve even more. I see this very much as the role of Vice-chairman. And thirdly, I have been on the Board of ITEA since 2007 and I've always seen the Community as one that focuses on impact and results. ITEA is an organisation that is all about sharing. To work in such an environment is a real motivating factor for me. It's the spirit that really makes the difference. Even within Eureka, I have found that the ITEA sharing spirit is very distinctive."

**In the flesh**

Jean-François' introduction to ITEA anno 2020 began back in May this year when he attended the Online ITEA Cyber Security Customer Workshop as well as working with the team on the Inter-Cluster Call on Artificial Intelligence during the summer. His first official task, as it were, began with the Online ITEA Project Outline Preparation Days. "There has not even been a single physical meeting!" Sitting in his apartment in the Saint-Cloud suburb of Paris ("I can see the Tour Eiffel from my balcony"), he notes that there is very little prospect of such a meeting taking place in the near future. "France is now seen as a 'red' country. Nonetheless, while the different digital vehicles we have at our disposal mean that we can still maintain contact and relationships, many of us are still missing the physical social contact. I really hope we can meet soon, in the flesh."

New ITEA Vice-chairman Jean-François Lavignon

## ITEA Success story

# ACOSAR

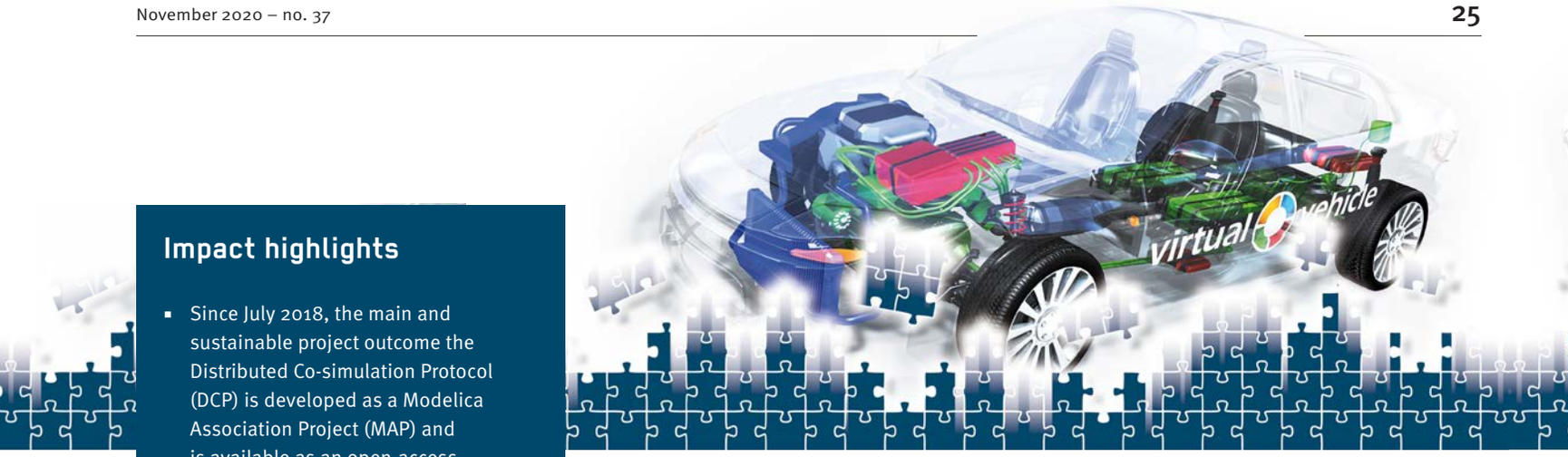
## An innovative simulation that saves time and money

**The development of vehicles has become increasingly complex, involving over 50 different suppliers who need to ensure that all components, parts and devices work together. Modelling and simulation represent key methods for a successful development. To facilitate this, the introduction of co-simulation methodologies and the interoperability of simulation tools and infrastructure had already taken root. But there was no standardised way of integrating distributed simulation and test environments back in 2015. So there was still room to enhance the process.**

dcp Distributed Co-Simulation Protocol

In the ACOSAR project, 16 partners came together under the lead of VIRTUAL VEHICLE in order to accelerate development steps with new simulation technologies. With a strong focus on the automotive domain, the consortium's members operated on all levels of the automotive supply chain and included original equipment manufacturers (OEMs), suppliers, software tool and real-time system vendors, as well as research and academic partners.

Early predictions and correspondingly early design decisions are key success factors in modern development processes. With the aid of co-simulation, diverse simulation models can be linked together to enable overall system analysis at a very early stage of development ('front loading'). Within the virtual system development, front loading is getting more and more important in a plenitude of industrial domains to reduce development times, stranded costs and time-to-market. Co-simulation is a particularly promising approach for interoperable modular development. However, the coupling and integration of real-time systems into simulation environments (especially of systems of distributed Hardware-in-the-Loop (HiL) systems and simulations)




## Impact highlights

- Since July 2018, the main and sustainable project outcome the Distributed Co-simulation Protocol (DCP) is developed as a Modelica Association Project (MAP) and is available as an open-access international standard.
- International technology leaders such as AVL, Volkswagen and Boeing are already applying this solution.
- A prominent German sports car manufacturer reports over 13,000 developer days which could be saved in the next five years thanks to this developed protocol – which corresponds to a value of around five to seven million euros.
- In the final year of the ACOSAR project the DCP was adopted by the Modelica Association.
- The international partner network of VIRTUAL VEHICLE now consists of 30 national and 50 international industrial partners (OEMs, Tier 1 and Tier 2 suppliers as well as software providers) as well as 18 national and 30 international scientific institutions.

still require enormous effort. ACOSAR developed both a non-proprietary 'Distributed Co-simulation Protocol' (DCP) for Real-Time (RT) System integration and a corresponding integration methodology, which is a substantial contribution to the international standardisation (Modelica Association Project DCP - MAP DCP).

**Standardised Distributed Co-simulation Protocol**

The DCP is an application level communication protocol. It is designed to integrate models and real-time systems into simulation environments. It enables the exchange of simulation-related configuration information and data by use of an underlying transport protocol (such as User Datagram Protocol (UDP), Transmission Control Protocol (TCP), or CAN). At the same time, the DCP supports the integration of tools and real-time systems from different vendors.

DCP has the potential to simplify and accelerate integration aspects for system development by blurring the boundaries between purely virtual and real tests. International technology leaders such as AVL, Volkswagen and Boeing are already applying this solution. A prominent German sports car manufacturer reports over 13,000 developer days which could be saved in the next five years thanks to this developed protocol – which corresponds to a value of around five to seven million euros.

Transfer of results into standardisation was one of the key goals of ACOSAR. In the final year of the project, the consortium members therefore decided to pursue standardisation of the DCP with the Modelica Association. Since July 2018 the DCP has been developed as a Modelica Association Project (MAP), also with VIRTUAL VEHICLE in the lead. The DCP specification document 1.0 was released in March 2019, as an open-access Modelica Association standard. The DCP complements an existing set of standards for system simulation, including the Modelica Language, the Functional Mock-Up Interface (FMI), and the System Structure and Parameterisation (SSP) standard.

All these efforts have received broad international recognition. During the ITEA Project Outline Preparation Days 2019, ACOSAR received an Award of Excellence for its outstanding project results, especially on standardisation and communication. On top of this distinction, ACOSAR was presented with an additional Eureka Award during the subsequent Eureka Stakeholder Conference.

For project coordinator VIRTUAL VEHICLE, the success of the project was another milestone in its 15 years of experience in the field of simulation technologies. This focus on industry-related research makes VIRTUAL VEHICLE the innovation catalyst for future vehicle technologies. The international partner network of VIRTUAL VEHICLE now consists of 30 national and 50 international industrial partners (OEMs, Tier 1 and Tier 2 suppliers as well as software providers) in addition to 18 national and 30 international scientific institutions.

For instance, ESI Group implements DCP for its system simulation solutions. ESI expects to significantly increase the interoperability of its tools and a reduction of development and maintenance costs due to the replacement of several tool specific co-simulation modules by the standardised and tool-independent DCP.

**Impact beyond the project**

The range of applications is wide and can, for example, reduce the setup and configuration time. A typical example can be found in the field of automated driving where new sensor technologies are becoming available and must be tested before real prototypes are used for selected test scenarios. Further applications gaining benefit from the DCP are typically found in the fields of distributed simulation, co-simulation, hardware-, software-, or model-in-the-loop testing, and process automation.

The results of ACOSAR will lead to a modular, considerably more flexible and shorter system development process for numerous industrial domains as well as enable the establishment of new business models.

**More information**

http://www.acosar.eu/

SME IN THE SPOTLIGHT

# GΩHM

## Embedded intelligence to improve quality of life

**GΩHM Electronics is a Turkish R&D company that develops customised embedded systems, software and electronic hardware design. Established in 2014 by a team of passionate engineers and friends, this SME has already built up a wide network of scientific and business partners in Turkey, Europe, America and beyond. GΩHM's high-tech products have caught the attention of the Public Authorities both at home and abroad, and the company has been awarded R&D grants from both the European Union, Turkish government agencies and corporate industry leaders. Based in the vibrant and bustling Technohub at Bosphorus University in Istanbul, this interview finds Cem Ayyildiz, partner and CEO, working from home – as is the new normal these days. Here he provides insight into this dynamic SME and contributor to the ITEA Community and two specific projects.**

**The 'Ω'in GΩHM**

"Perhaps I should explain the name of our company first. You will notice that it is spelled GΩHM and not GOHM. The Ω [ōm] is the SI unit of electrical resistance, named after Georg Simon Ohm. I hope that clears up the 'O', or Ω. Before I founded this company," Cem explains, "I was working at Turkcell, where I also served as a representative on the Technical Steering Group (STG) of ITEA. While I was there, I was in charge of M2M communication projects and international R&D projects. Due to this representation on the STG of ITEA, I had a chance to review many other R&D projects. There was always one big question in my mind, to create an automated system of systems each device should be connected to the network, which creates a huge amount of data to be analysed in real-time or transferred to somewhere in the cloud. But the problem is: how can we analyse such huge amounts of data in real time? The latency is one of the biggest problems in technology and the data should be processed where it was created. The other problem is to create self-sufficient systems that are intelligent enough to complete their


tasks and able to adapt themselves over time. GΩHM has chosen to focus on these problems by taking care of data where it was produced, namely embedded intelligence."

**Novel embedded systems**

At Turkcell Cem did not really have the opportunity to explore his idea, so he decided to start up a company to tackle these issues. "In fact, I co-founded GΩHM with a former colleague from Turkcell. However, he has decided to move to the United States so we reconstituted our company shareholder structure." As for the focus of GΩHM, Cem states that this "lies on embedded intelligence systems to solve the highly complex problems of the future like autonomous systems and Industry 4.0. We are currently designing and manufacturing novel embedded systems, particularly concentrated on sensors, wireless communications and localisation systems. In Turkey we are competing in a tough environment – it's not easy to be a success. But I think we have a competitive edge in the fact that we combine the software and hardware while most other companies tend to be one or the other."

**Saving lives**

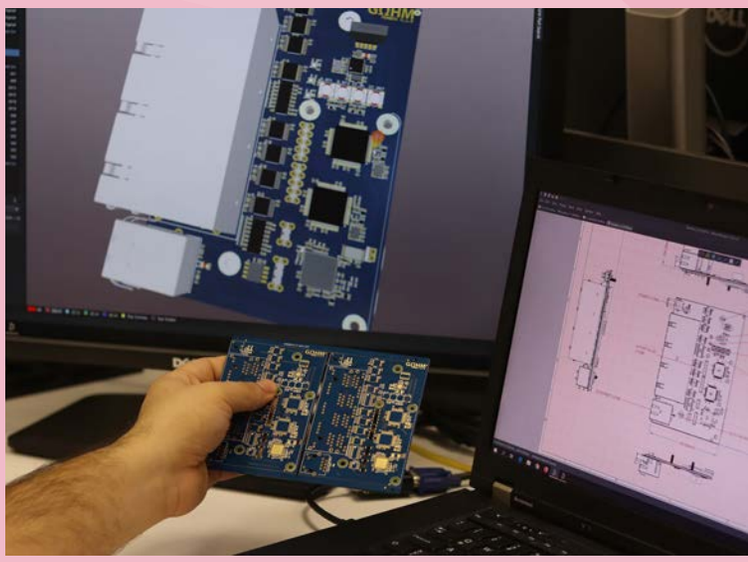
Another key component of GΩHM's business is R&D. "Innovation is very important for us. And that comes through R&D. When we innovate, we create opportunities for new business. For example, look at our first project with ITEA. It's related to wireless communication and needs to solve localisation issues for first responders." Cem is referring to the Safe Rescue project, which will finish in March next year and in which GΩHM is a partner. This has the potential not only to improve the quality of life but actually to save lives of victims and first responders during emergency events. The software being created will increase the emergency dispatcher's situational awareness of an accident by providing a dashboard view of the incident location, superimposed with the status and locations of the first responders, the workers and the victims. In this way emergency dispatchers can track, locate and direct teams to rescue personnel that are at risk.

**Business leads …**

"We have been working on innovating something new, the 'infrastructure-less indoor positioning system'. This is currently unique and it brings us new opportunities, for example to work with major industry players. We know what problems exist and can provide solutions. In turn, this generates new business opportunities for us. That's important. If you invest in R&D and target the problems faced by partners in the project, you can create another lead for your business. And the opportunity to collaborate with partners all around Europe is a big plus for us. We gain a good understanding of where the technology is right now and where it's going. Our main benefit is not the funding – you can get this through various national funding schemes or from industry. What is unique is the collaboration with the partners in the project. We get a knowledge boost as well as grow our business network, which leads to new business opportunities."

**… and opportunities to grow**

The experience of Safe Rescue whetted the appetite of GΩHM for more. "Our business has evolved into industrial IoT and we have gained several experiences on industrial manufacturing sites in recent years. We also became involved in another ITEA project, CyberFactory#1 last year." This project, now halfway through its 4-year course, features 28 partners from 7 countries, its goal being to design, develop, integrate and demonstrate a set of key enabling capabilities to foster optimisation and resilience of the Factories of the Future (FoF). "Our role," Cem explains, "is to create a resilient communication system inside a factory, one that can resolve privacy and security issues that cryptographic methods cannot solve. So this project also opens new doors for us. Embedded intelligence has a key role to play in factories of the future as the prevalence of connected devices and autonomy increases. It is a technology that is shifting from cloud to edge, and that is also where we are heading with our solutions. We still regard Turkey as our business base – I think it's important to have a strong home base – but I do see business becoming more international. It will take time. We are still predominantly a company of engineers. But perhaps with a dedicated marketing manager, we will have more chance of expanding our business, also internationally. And, of course, involvement in ITEA projects can give us plenty of support in this respect."



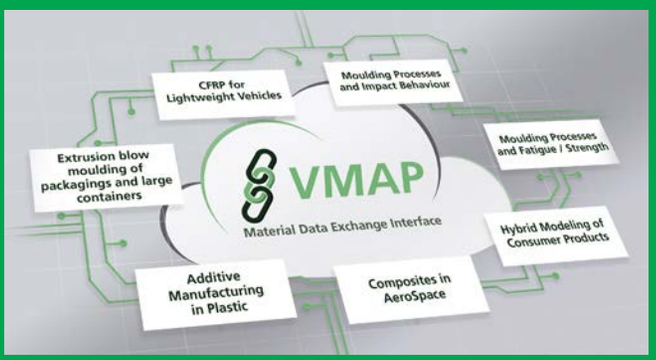
**More information**

www.gohm.com.tr

# VMAP Standard Community to become a legal association

The ITEA project VMAP, officially ended in September 2020, will continue the excellent work done on the much-needed VMAP standard via a legal international association registered in Germany, called the VMAP Standard Community (VMAP SC). Future guidance, collaboration, development and maintenance can be effectively managed and encouraged by this open and vendor-neutral association. The process of legalising the VMAP SC continues currently with the initial founder group of entities; membership is open to all interested parties including independent software vendors, developers, academia, consultancies, manufacturers and other entities.

VMAP is an open and free standard for the transfer of material and engineering information between simulations within a Computer Aided Engineering (CAE) process chain. This provides simulation and design engineers with a fast solution to pass information from one calculation to another without needing to create one-off time consuming interfaces. Initially work on the VMAP standards has focussed on the manufacturing industry but the standard is general enough to enable its use in many other sectors, for example work has started on Machine Learning, Artificial Intelligence and Digital Twins applications.




In May 2020 the first version of the VMAP standard was distributed externally to the project and currently many market leaders in the CAE sector work with VMAP. The VMAP SC organised the 1st International Conference of CAE Interoperability held online on 19-20 October 2020, and generated much excitement with about 330 registrations and 25 presentations from different industrial sectors all focussing on interoperability within engineering simulation.

**More information**
https://www.vmap.eu.com

# The Smart City Business Event: The Road to Smart City Live

On 2, 9 and 16 November the Smart City Business Event was organised. This event was the road to Smart City Live, which was organised as an online edition of the Smart City Expo World Congress.

ITEA was very pleased to team up again with the Nordics and the Netherlands to organise this business event that focussed on developing the innovation system within Europe and connecting people and organisations in an early stage of developing solutions for city challenges.

With over 800 registrations coming from 65+ countries and over 40 workshops, this online event proved to be a good substitute for the physical event this year.

During this event, which was spread over three Mondays, ITEA and its partners organised five workshops focussed on Safety and Security in the city, ITEA as a Smart City R&D&I platform, the integration of IT developments in a Smart City and the City of the Future. Furthermore, project leaders that are preparing a Smart City-related Project Outline for ITEA 3 Call 7 had the chance to present their project to further strengthen their consortia. Next to workshops, participants had ample of opportunity for online B2B matchmaking.

We thank all project partners, representatives of the cities and Public Authorities for their valuable contributions. Next year, we hope to be able to join the Dutch and the Nordics again in the organisation of a physical Smart City Business Event in Barcelona.

**More information**
https://smart-city-2020.b2match.io/

# Calendar

*24-25 November 2020*
**KOREA EUREKA DAY 2020**
Online event
www.eurekaday2020.kr

*25-26 November 2020*
**CYBER SECURITY & CLOUD EXPO 2020**
Online event
https://cybersecuritycloudexpo.com/europe/

*25-26 November 2020*
**EFECS 2020**
Online event
https://efecs.eu/

*7-11 December 2020*
**SINGAPORE WEEK OF INNOVATION AND TECHNOLOGY (SWITCH)**
Singapore
www.switchsg.org

*7-11 December 2020*
**12TH EUROPEAN INNOVATION SUMMIT**
Brussels, Belgium
www.knowledge4innovation.eu

*14 December 2020*
**DEADLINE PO SUBMISSION SMART CALL 4**
www.smarteureka.com

*7 December 2020*
**ITEA SMART CITY DAY**
Online event
https://itea3.org

*15 January 2021*
**ITEA CYBER SECURITY DAY**
Online event
https://itea3.org

*2 February 2021*
**13TH OPENMODELICA ANNUAL WORKSHOP**
Online event
https://www.openmodelica.org/events/openmodelica-workshop/openmodelica-program-2021

*3-4 February 2021*
**15TH MODPROD WORKSHOP ON MODEL-BASED CYBER-PHYSICAL PRODUCT DEVELOPMENT**
Online event
https://modprodblog.wordpress.com

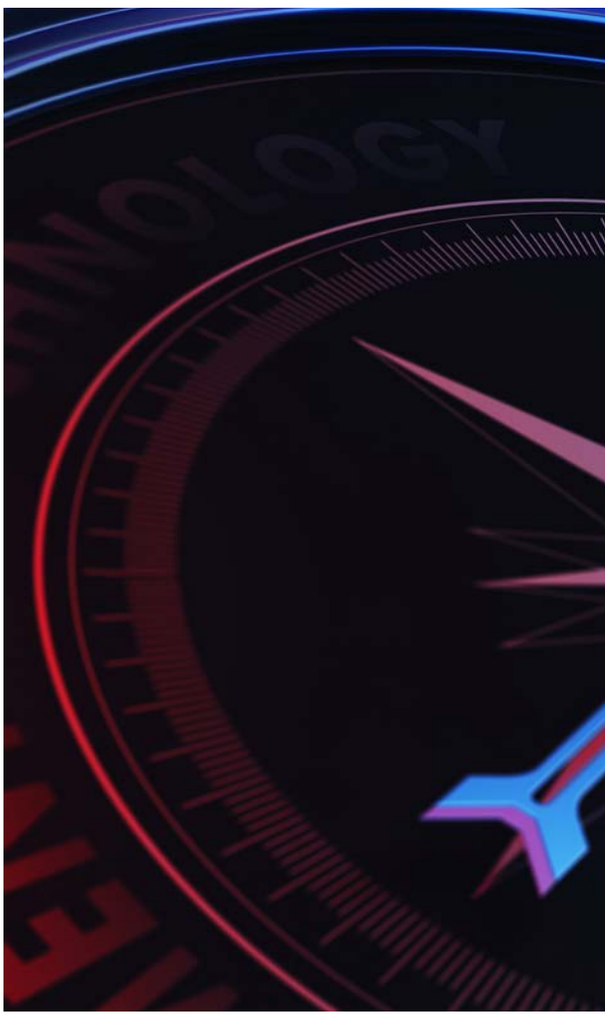
*15 February 2021*
**DEADLINE FPP SUBMISSION ITEA 3 CALL 7**
https://itea3.org

*26 February 2021*
**SUBMISSION DEADLINE SYNCHRONISED CALL EURIPIDES²-PENTA 2021**
http://euripides-eureka.eu
http://www.penta-eureka.eu

# State of the Art

## A compass for your project

**Through its projects ITEA is pushing clear innovations that are defined in comparison to the State of the Art (SotA). To help the ITEA Community to position its innovation ideas, ITEA has gathered the latest, interesting SotAs from ITEA projects on various technologies. Writing the State of the Art (SotA) should not be considered as a formal exercise that is mandatory for your Project Outline (PO) and Full Project Proposal (FPP). It will help your project to sharpen its focus and to start on a good basis. First, we present some reasons for investing in a SotA analysis and then propose some advice on how to prepare it.**



**Why define a SotA?**

First of all, the SotA will give the status of the technologies that are important for your project. The knowledge of what has been achieved so far in the field is mandatory to know from where you start and to have a reference to define the progress you want to make. Taking into account recent research results, commercially available products and/or services and key players is crucial to position the activities of the project and to see what your project will bring as additional elements to make it a success. It can also help to select relevant KPIs that will guide the execution of the project.

Furthermore, the SotA can help you to identify interesting work that could be reused in your project. Nowadays, complexity we must deal with is very high and so any element that is already developed is welcome to enable to focus the effort on new developments: we do not want to reinvent the wheel.

Next to that, at the PO phase, the SotA can serve to identify relevant additional partners. If you find a very strong actor in the field belonging to a Eureka country, you can invite them to join your project.

Fourth, the SotA is a way for you to convince the reviewers and the Public Authorities that you master the domain of your project. A PO or FPP that clearly documents that you are aware of the current SotA has a strong impact on the positive assessment of the quality of your PO or FPP.

To continue with a last reason (of course this list is not exhaustive), the SotA of your project is used to provide the Living Roadmap for ITEA 3. Thanks to this effort we have a continuous technology intelligence that helps our Community to follow innovations arising every day.

**How to prepare a good SotA?**

It is important in the SotA to describe the current technological situation in the project's domains in terms of both industry and academia. So, it is essential to look at the research activity of the field. This leads to a search of the latest developments in conferences or journals of the domains. This activity can also help to identify key research players of which a further investigation of their works can be interesting. Another source of information is current or past research projects. The main project funding instruments provide lists of projects (ITEA website, Cordis database, national programmes…) that are relevant to find information on the recent research results. It is important to comment potential collaboration with these other projects in the same field. The analysis of the state of the industry is also very important to position your project. To find knowledge about the current products/services some browsing of the public information is most of the time interesting. You can also look at analysts' sources that often position the different players of the domain and provide their view on the current trends.

To perform an analysis of the standards of your domains is also very valuable. It can give indications on elements that you can build on or, conversely, information on what you must disrupt.

For these different elements of the SotA, it is important to describe them with the right level of detail and the right focus. The enumeration of too many different works or presenting only one element will not be very effective. The selection of the research papers, the existing projects and the industrial solutions must be made according to their connection with the technologies central for your project. Presenting the information in a precise and concise way with a reference to the source of information is of course of great value for the readers of the SotA. The quality of the SotA will definitely depend more on its connection with the objectives of the project than on its exhaustivity.

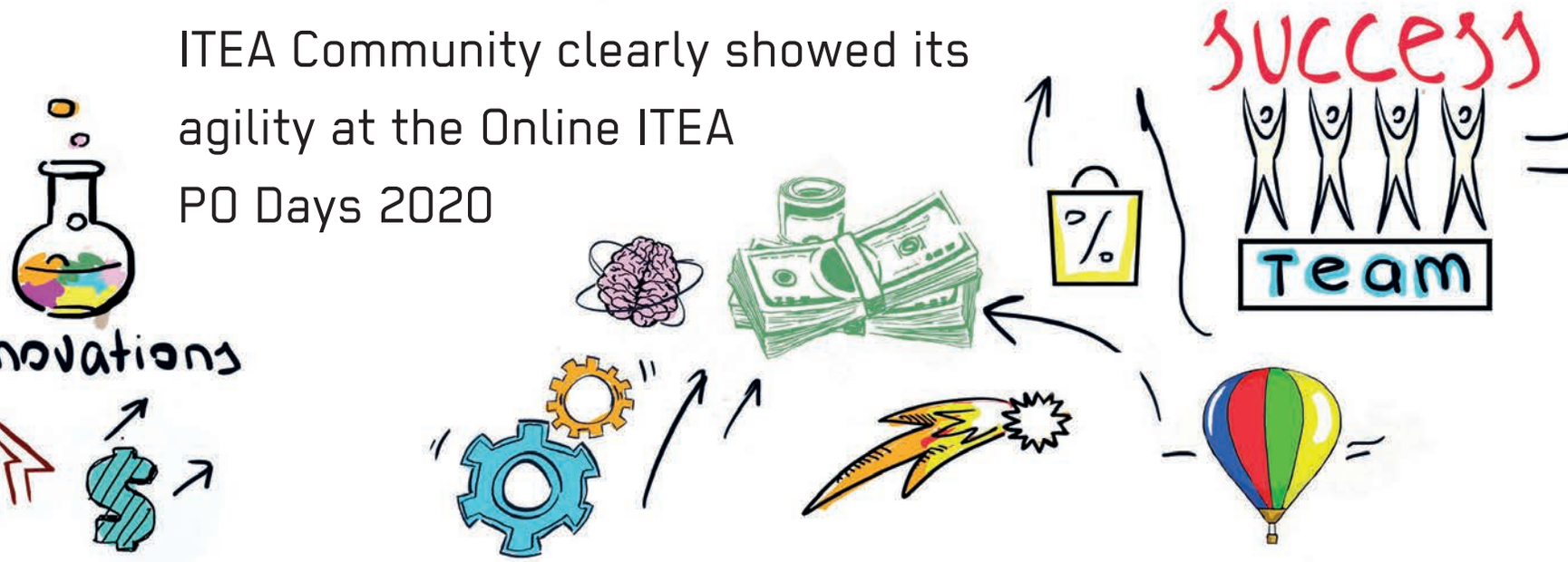
Finally, it is useful to update your SotA during the project. It is important to check that no actor has moved quicker than the project and to keep an eye open to detect potentially disruptive new results.


**Conclusion**

In summary, the SotA is a central element, a guiding compass, to start a successful project. In addition, the SotA delivered by the projects is also at the heart of the Living Roadmap of ITEA and so has a very special role in the life of our Cluster. All good reasons to write your next SotA carefully!


# Online ITEA PO Days

## ITEA Community clearly showed its agility at the Online ITEA PO Days 2020

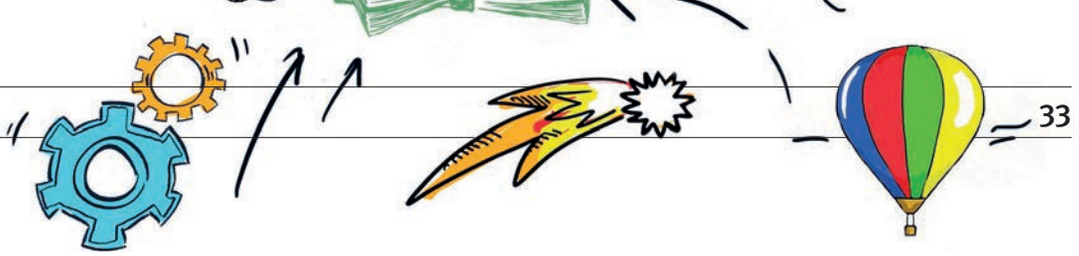



**On 7 September, ITEA 3 Call 7 opened with the Online ITEA PO Days 2020, which was held from 7-11 September 2020. As it was not possible to get together with the ITEA Community, this year the ITEA PO Days were organised online. Over five days, participants were able to learn more about ITEA, its upcoming Call, the submission process and, most important of all, new project ideas. Despite the change in format, the ITEA Community clearly showed its agility and made a big step towards a set of high-quality project proposals for the ITEA 3 Call 7!**

**A changed format, continued high interest**

ITEA rose to the challenge to put the PO Days into an online five-day event, enabling the participants to join different sessions of interest. Over the days, four live webinars were organised covering the established programme elements of the annual PO Days, including the introduction to the Online ITEA PO Days, instructions and Q&A, the ITEA Awards of Excellence ceremony and the closing final results and conclusions. National priorities and eligibility criteria were presented by Public Authorities in dedicated online information sessions and during each of the five days there was room to discuss project ideas in online workgroup sessions and shape them into initial project proposals.

A total of 77 project ideas were presented via the ITEA Project idea tool, online posters and video pitches. The high number of online workgroup sessions gave our Community members the chance to meet online and start shaping a consortium and further develop the ideas towards successful Project Outlines. A record number of 338 participants from over 20 countries joined the online event, with the highest participation coming from Turkey, the Netherlands, Germany and Canada, but countries like Korea showed a strong increase in participation as well this year. In addition to established participants from previous years, the Online ITEA PO Days have been able to attract 51% newcomers which shows the openness of the Community once again. We



were very pleased to welcome Singapore for the first time.

**Encouraging figures**
For the Online ITEA PO Days 2020, extra features were created to facilitate the online event and project creation, like online poster and pitch areas, online working group session overviews and country information sessions. The 79 online workgroup sessions that were held over the five days resulted in 18 final-results presentations in the closing webinar on Friday.

The project ideas were clustered by 7 societal challenges, i.e. Safety and Security, Smart cities, Smart communities, Smart engineering, Smart industry, Smart health and Smart mobility. Although each challenge was well covered, the number of Safety and Security project ideas was remarkably high (24), showing the impact again of this year's ITEA International Customer Workshop on this topic. As in previous years, Smart health (15), Smart engineering (13) and Smart industry (10) remain important topics for the ITEA Community as well. Although a Eureka Clusters AI Call had already been organised in June earlier this year, AI remains a big topic in ITEA 3 Call 7, covered by 27 out of 77 ideas.

**A new ITEA Vice-chairman**
The Online ITEA PO Days offered the perfect opportunity to welcome and introduce the new ITEA Vice-chairman, Jean-François Lavignon. He succeeded Philippe Letellier, who was the ITEA Vice-chair since 2008. Jean-François Lavignon took the opportunity during his debut to say how very excited he is to work with the ITEA Community and to add new chapters to the ITEA research and business success story. He will apply his previous experience, from industry as well as from coaching SMEs, to the benefit of the ITEA Community.

**ITEA Awards of Excellence**
On the third day, resigning ITEA Vice-chairman Philippe Letellier hosted a special webinar dedicated to the ITEA Awards of Excellence. This year's award winners are:

- **ENTOC** - The next stage in virtual engineering and commissioning
  *Philippe Letellier: "ENTOC has developed a seamless engineering tool chain for manufacturing equipment in complex production plants to increase efficiency, maturity and innovation. They deserve an ITEA award for this project because they impress us on the level of innovation they deployed in this project."*

- **Flex4Apps** - Deep customer understanding, backed by data
  *Philippe Letellier: "Flex4Apps is another ITEA success story on the important topic of the full digital loop offering monitoring and analytics of modern systems made available to companies of any size (SME to large enterprise). I have appreciated a lot their hyperscale and microcare abstraction. They are awarded for the unique level of impact and exploitation."*

- **MOS2S** - New forms of engagement in entertainment and society
  *Philippe Letellier: "MOS2S is a multimedia project which developed new ways of engaging audiences for new entertainment experiences but also to enhance our E-Democracy. MOS2S deserves an award for its societal innovation and exploitation."*

- **PS-CRIMSON** - A one-look overview of the city in 5 seconds
  *Philippe Letellier: "PS-CRIMSON delivers full-scale solutions to merge dynamic 2D and static 3D data in a smart-city platform for situational awareness. PS-CRIMSON is awarded for its worldwide level of exploitation and unique business partnerships."*

ITEA congratulates the ITEA Award of Excellence winners for contributing to a better society!

**Looking back at the Online ITEA PO Days**
Turning a physical event into an online event is a challenge, with expectations aligned to a 'normal' physical event. We asked all participants to share their evaluation and suggestions for improvements and with a 3.5-score on a 5-point scale (where 3 is good and 4 is very good), the online event was well appreciated.

The Online ITEA PO Days created new opportunities in a way that attendees did not need travel and be away from the office for multiple days. This resulted in a higher number of participants from both Korea and Canada and a higher number of participating countries in general. Nevertheless, the general tendency expressed by the participants is that the online event was successful, but the spontaneous encounters and interactions were sorely missed. Face-to-face meetings contribute stronger to shaping a consortium and developing ideas towards a successful project proposal.

Greet Bilsen, Katholieke Univerisiteit Leuven: *"Both formulas have their advantage; the online formula makes it easier to prepare and jump into the relevant sessions (losing less time), whilst the physical event allows for 'unexpected' contacts and discussions*."

We highly value the feedback received, and we take comments and suggestions into account to further improve the ITEA PO Days, online or physical. Of course, we can't foresee the long-term, but we will surely move back to a physical PO Days event when it is safe to do so.

**ITEA 3 Call 7**
Already during the Online ITEA PO Days event, the 7 first Project Outlines for ITEA 3 Call 7 were initiated in the Community website! At the deadline of 10 November, 35 Project Outlines had been submitted, with a total effort of 3967 person years. Currently, all these POs are being reviewed. On 11 December the consortia will be informed whether they will be invited to submit a Full Project Proposal.

**More information**
https://itea3.org/onlinepodays2020/index.html

## Online ITEA PO Days 2020 in numbers:

- 338 participants from 20 different countries
- 77 project ideas were presented via the ITEA Project idea tool, online posters and video pitches
- 79 online workgroup sessions held
- 18 final project ideas presented

# Kick-off of the Eureka Clusters Programme

**On 15 October the Clusters Committee (CC) and Public Authorities Committee (PAC) had their very first meeting to kick-off the Eureka Clusters Programme (ECP), the new Eureka instrument that was approved last June. The kick-off meeting was received with clear enthusiasm from its stakeholders from both Industry and Public Authorities.**

All Eureka countries are invited to join the PAC and this will increase the interest from various countries within the network. Already in ITEA 3 Call 7 there is interest from Singapore for the first time and Italy is back in one of the ITEA proposals after a long time.

In the CC, each Cluster is represented by three Board members and the main purpose of this new committee is to create a common understanding of urgent challenges arising from the Communities of the Clusters.

In addition to the CC and PAC, the CC Support Group (CC-SG) and the PAC Support Group (PAC-SG) have been established. The CC SG is a combination of representatives of Cluster Committee companies and Cluster Offices. The main purpose of these groups is to prepare the content for the Multi Annual Plan (MAP) and the Annual Operating Plan (AOP). The first version of these documents will include the Rules and Regulations for the Joint Calls of the ECP, for which potential subjects were discussed in the kick-off meeting. Additionally, each Cluster will present its plans for the next four years in terms of vision, technology and finance as well as announce the plan for its annual bottom-up Calls for this period.

With the approval of these documents, Clusters that provide the necessary documentation will be authorised to operate for four years with an evaluation every two years. And this will be the beginning of ITEA 4 too. Meanwhile, the PAC-SG will gather national priorities and potential interest to finance ECP Joint Calls and annual bottom-up Cluster Calls for the next four years to be declared in the MAP and AOP.

This very first Multi Annual Plan and Annual Operating Plan will enlighten the way forward for the Eureka Clusters. We are looking forward to that with a great enthusiasm!

## Eureka Cluster Call dates

| | | | |
|---|---|---|---|
| ITEA 3 | 15 Feb 2021 | Deadline Full Project Proposal ITEA 3 Call 7 | https://itea3.org/ |
| EURIPIDES² | 26 Feb 2021 | Deadline Project Outline Synchronised Penta-Euripides Call 2021 | https://euripides-eureka.eu/ |
| Penta | 26 Feb 2021 | Deadline Project Outline Synchronised Penta-Euripides Call 2021 | https://penta-eureka.eu/ |
| SMART advanced manufacturing program | 14 Dec 2020 | Deadline Project Outline SMART Call 4 | https://www.smarteureka.com |

# Colophon


An online version is available at https://itea3.org/magazine.html

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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 innovation and Digital Transition domain.
Please submit your information to communications@itea3.org.

**Subscription:**
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