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*The Quality Management System
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About ITEA

ITEA is a transnational and industry-driven Research, Development and Innovation (R&D&I) programme in the domain of software innovation. ITEA is a Cluster programme of Eureka, an intergovernmental network for R&D&I cooperation, involving over 40 countries globally. ITEA is the home of software innovation, enabling a large international Community to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society.

Our vision

In a rapidly changing society where societal challenges are omnipresent, digitisation is no longer an option but should be regarded as the opportunity to create innovative solutions. Digital technology will be applied in all aspects of society, touching every element of people's lives. Software innovation is a core component for mastering this Digital Transition and this is the main focus of ITEA.

Digital Transition is not a one-step process. It has many dimensions whereby development must be continuous. The more that digitisation is enabled, the more penetrative the transition becomes and the need for more solutions increases. To achieve this continuous process in a smooth way, a fertile and collaborative environment is needed in which there are innovative ideas and knowledgeable people that are eager to share, to inspire and be inspired by each other.

Our mission

It is ITEA's mission to enable businesses, with the involvement of their customers, to create innovative solutions that master the Digital Transition and tackle the major challenges in a way that helps to bring society forward. ITEA encourages its global Community to create impact and value through R&D&I projects in the area of software innovation with the knowledge of industry and the support of national financing.

ITEA is:

- **Global and trusted cooperation in an industrial Community:** ITEA stimulates innovation projects in a global Community of large industry, small and medium-sized enterprises (SMEs), start-ups, academia and customer organisations. ITEA's bottom-up project creation ensures that the project ideas are industry-driven and based on actual customer needs. ITEA provides a trusted framework for cooperation in which standard project collaboration agreements are available, including the complex domains of confidentiality and intellectual property. ITEA is managed by and for industry in close cooperation with the national Public Authorities.
- **Project financing through national public and private funding:** The ITEA programme is publicly funded on a national level. Each ITEA project partner can apply for funding from their own national Public Authority. An early dialogue between project teams and Public Authorities supports alignment with national priorities and the best possible opportunities for funding that lead to high success rates.
- **Commercialisation of research results:** ITEA enables organisations to create actual commercial results from research projects. Impact is one of the core values in ITEA; impact on business, economy and society. Impact is central during the project lifecycle: in proposal evaluation, monitoring, closure and in communication of the results.
- **Focus on high-quality process and support:** ITEA follows a flexible and supportive approach towards its project consortia in order for them to maximise the results of their efforts and the project's impact. Each year, ITEA issues one Call for projects starting with a two-day brokerage event. Each Call follows a two-step procedure, in which industrial experts evaluate the quality of the project proposal in terms of innovation, impact and consortium. During the project lifetime, ITEA provides full-cycle project monitoring in a peer-to-peer mode with digital reports and physical review meetings to improve quality and value creation of projects. ITEA has an ISO 9001 certified Quality Management System (by DEKRA).

Message from our Chairwoman



At ITEA, innovation and collaboration work hand in hand, meaning that out-of-the-box activities with outstanding results have become part of the culture of the ITEA Community.

For the last five years, a unique activity has been organised by ITEA: the International Customer Workshop for a specific ITEA challenge. This year, it was on Smart Mobility. In these events, a group of 50 invitees come together to discuss the urgent needs of customers such as municipalities, automotive companies and OEMs. As a result of this event, a set of new project ideas is created within the ITEA Community. This involves the total market value chain: customers sharing their needs, large industry and SMEs collaborating with research institutes and academics providing the most efficient technological solutions through software innovation.

These types of activities create extensive collaborations within the Community but also lead to the addition of new actors within ITEA. An analysis of the ITEA Community was achieved in 2019, with very positive results such as:

- Half of the companies (54%) in each Call are new, creating continuous rejuvenation of the ITEA Community.
- More than half of the project leaders in ITEA are first-time project leaders. A set of top-level project leaders flourish in ITEA, with the experience in international collaboration needed to create market impact with high-tech solutions. This is another of ITEA's impactful result on human capital.

In 2019, the ITEA Community got even closer to its customers by visiting the Barcelona Smart City Exhibition alongside 12 ITEA projects. This was more than just having an exhibition stand for project leaders. In an activity called Innovation Discovery Tours, a set of customer visits – mostly municipalities - were organised for each ITEA project on the basis of the needs and interests of customers. This was almost a matchmaking business activity for research outcomes and end users.

These types of activities can create impact through continuous out-of-the-box thinking (innovation) and great community support (collaboration). Additionally, I shall mention the dedication of the ITEA Office and the continuous interactions between the ITEA Community and the ITEA Office.

One of the building blocks of the ITEA Community is its culture of continuity. This year, there are three new Impact stories in addition to the 20 from last year and the seven new Success stories. Through one Impact story of the ITEA project BENEFIT, it is possible to understand:

- how SMEs from various countries benefit from the increase of HR and revenue;
- how large industry benefits from collaboration, even between competitors; and
- how universities benefit from and support industry.

In 2020, ITEA will continue to improve itself and its existing activities such as the International Customer Workshop. ITEA will also extend itself by starting a new process with defining an advisory board for a number of ITEA

Challenges. A Smart City Advisory Board was initiated in 2019 and this activity will be blueprinted in 2020 to be used for other Challenges. To be closer to its customers, ITEA will participate in another Customer event, the CyberSecurity & Cloud Expo 2020 together with a set of projects. We will also return to the Smart City Expo in 2020.

Having a set of improvement priorities and defining a set of new challenges keeps ITEA grounded and allows it to innovate itself every year. Over the next year, 2020, ITEA will continue to innovate and improve its activities with a set of new and existing activities:

- Finalising the labelling of 'ITEA 4': during the past two years, ITEA has prepared for a new programme that will continue to create a direct impact on the economies of countries and industry.
- Participating in Eureka activities to revitalise the Clusters: a set of new activities (like thematic Calls) and closer collaboration with Public Authorities are at the design phase within Eureka.
- A synchronised Call on AI: Cross-Cluster Call on the topic of AI is being prepared within Eureka. This will serve as a pilot case for a new tool for the Eureka Clusters.
- Increasing our participation in customer fairs: new events will be visited by ITEA in 2020, together with a related set of projects.
- Continuing efforts for existing KPIs on well-known challenges, such as reducing the time between project idea and project start.

As usual, a challenging year is still to come. But with the full support of the ITEA Industrial Community and Public Authorities, I have confidence that we will have another impactful year at ITEA in 2020.

Have a good read!

Sincerely,



Zeynep Sarılar
ITEA Chairwoman

1 Achievements and improvement priorities

1.1 ITEA project impact

Impact, on business, economy and society, is one of the main ambitions of ITEA. Again in 2019 impressive impact on economy, society and every-day life was created by the ITEA project partners, with the support of the national Public Authorities. Since 2017, we have made it one of our priorities to gather remarkable project Impact stories and a total of 23 stories have already been created. Discover below the highlights of three projects to inspire you. The other Impact stories can be found online via <https://itea3.org/impact-stream.html>. Online you can also create your own personal ITEA Impact stream by choosing the challenges, countries and topics of your interest.

In addition, we have covered seven project successes in our ITEA Magazines in 2019. A short summary of this can be found in section **4.1 ITEA success stories** of this Annual Report.



BENEFIT Impact story

Current diagnostic and therapeutic solutions do not offer the flexibility, quality and integration to automatically extract all the relevant quantified data and process flows. The ITEA project BENEFIT aimed to support clinicians in selecting the optimal diagnostic and treatment pathway for patients.

Impact highlights:

- The Dutch SME Medis gained CE and FDA approval for its analysis that calculates pressure drop from X-ray images leading to a reduction of the excessive use of stents and the need for a disposable pressure wire of €500-1000, and thus saving costs.
- The Belgian SME FEops gained CE approval for its TAVIguide product and secured an investment injection of €6m for the FEops HEARTguideTM. FEops has grown from 4 to 15 employees.

- At the end of 2019, Philips sold over 250 copies of its new commercial tool AneurysmFlow for treating cranial aneurysms. Philips also created an automatic 3D detection of liver tumour feeding vessels, boosting detection accuracy by 26% and resulting in at least 20% less recurrence than with 2D feeder detection.
- Elekta gained CE and FDA approval for its Leksell Gamma Knife ICON system with Cone beam CT (CBCT). By September 2019, 107 systems have been installed and are clinically in use while 200 existing systems can be upgraded worldwide. The planning time for test cases is reduced significantly by around half.
- Linköping University (LiU) in Sweden has published a paper for functional MRI in PNAS (Proceedings of the National Academy of Sciences) in 2016, which has been covered by Science, The Economist, The New York Times, has been downloaded over 200,000 times and received over 1800 citations.
- The Dutch SME Quantib gained CE and FDA approval for its brain tumour analysis software and secured €4.5m in fresh funding to support the company in its international expansion ambitions. Between July 2014 and the end of 2019, Quantib grew from 6 to nearly 30 employees, developed 4 products including certification, has installations in over 20 countries and initiated partnerships with 3 top medical university centres in the Netherlands.
- In total, the project partners applied for 7 patents.



MODRIO Impact story

Cyber-physical systems (CPS) are very large systems that not only involve a large number of stakeholders but are safety critical and have significant impact on the economy and the environment as well. This makes tools for the safe and efficient design and operation of such systems imperative. The ITEA project MODRIO, which ran from 2012 to 2016, was set up to extend modelling and simulation tools based on open standards (Modelica and FMI) from system design to system operation.

Impact highlights:

- OpenModelica has been used in ABB's Optimax Powerfit product to generate optimising control code that controls and coordinates about 5000 MW (approx. 7.5%) of German electricity production within seconds. This has subsequently been expanded to about 6000 MW.
- Vattenfall used the project results to optimise the start-up of conventional power plants, with an estimated yearly gain of €850k per plant.
- Knorr-Bremse developed a new braking system that allows a 30% reduction in the hardware tests, which are generally very resource-consuming. In addition, this braking system can reduce the safety margins between trains and thus enable more efficient use of the track. In turn, the flow of trains and passengers can be improved – by between 5 and 14%, depending on the type of traffic.
- EDF uses the results regarding the modelling of requirements to automate the FMEA (Failure Modes, Effects and Criticality Analysis) of safety critical systems. Its expected gains are estimated to be around 30% of the cost of large projects.
- For Dassault-Aviation, MODRIO has enabled many very useful breakthroughs for the design of next-generation aircraft, in particular the results regarding the modelling of requirements and system architecture, associated with fast multi-core simulations, multi-mode modelling of system failures and safety analysis. Output from ITEA projects like MODRIO has brought Dassault-Aviation capabilities that allow different working methods to handle complex systems, thereby contributing to the global (digital) transformation of the company.



ACCELERATE Impact story

Innovation is about much more than creating technology; it must 'go to market'. Many companies need new ways to rapidly validate the match between the market and their innovative ICT-intensive technology. The ITEA project ACCELERATE took up the challenge of enabling European technology companies to adopt acceleration know-how by focusing on two goals: the transfer of knowledge on a massive scale and the introduction of a new type of product development, the so-called validated learning process that systematically searches for the technology-market match by validating the mechanics of a business model.

Impact highlights:

- The ACCELERATE platform created by all the partners is now the meeting point for 15 investors and 105 users registered as start-ups. The platform is currently hosting over 60 project ideas.
- During 2015-2018, Bittium grew significantly and evolved to a more product and innovation-driven company, which is also shown in the revenue share; the product-based net sales rose from 37% in 2H.2017 to 56% in 1H.2019 and the net sales increased by about 16% between 1H.2018 and 1H.2019.
- Based on the ACCELERATE results, the level of automation for the Finnish industry partner, AAC Global, has increased significantly; in a typical process, the estimated increase of automated steps is 15%. The turnaround times and go-to-market of new services and updates to existing services are 20% shorter than before participation in the project. AAC Global most likely would not have reached this level of automation and systematic approach without ACCELERATE.
- The start-up BEIA Telemetry has witnessed huge growth; from the end of the project until now the hiring rate has gone up by 10% and, in terms of partnerships, three more manufacturers have been contracted. BEIA now offers more precise solutions for indoor and outdoor measurements, like air and water quality, weather forecasts, using on-site sensors and satellite scans.
- The e-books created by SIRRIS have been used in coaching programmes and so far about 80 companies have been coached.
- For Mondragon University, company requests for projects have increased yearly. Often those projects are adopted by these companies as solutions to their needs and about 15-20% of the students end up working there.

1.2. ITEA improvement priorities and results 2019

As part of our annual quality process, several important improvement priorities were defined in collaboration with the ITEA Board to keep the ITEA programme strong and aligned with its goals and the innovation landscape. The 2019 improvement priorities are shown below along with their current status.

1.2.1. Preparations for “ITEA 4”

One of the main priorities was to prepare labelling of “ITEA 4” by Eureka before the summer of 2020, together with ITEA Bodies and PAs. The planning has been slightly adapted due to the discussions about the new concept for Eureka Clusters. The plan for “Eureka Clusters new style” (including Eureka labelling) is expected to be published mid-2020. Meanwhile, the preparations are still in full swing in order to guarantee a smooth transition to “ITEA 4”.

1.2.2. Further increase in customer orientation through ITEA events

From 2019, ITEA changed its event approach based on the request from the Community to have more visitors and potential customers from outside the known Community. Instead of organising an exhibition event, ITEA has been exploring the possibilities to take part in thematic customer fairs. From 19 to 21 November 2019, ITEA successfully took part in the Smart City Expo World Congress (SCEWC) 2019 in Barcelona with a large stand including 12 Smart City-related ITEA project booths. ITEA organised several tailored guided tours (innovation discoveries) for interested participants, including representatives from municipalities, as well as a side event with presentations by several ITEA projects. A survey afterwards with the ITEA project participants generated very positive feedback; 89% of the participants that attended a Co-summit (like) event before, felt that the SCEWC event was better. The other 11% thought it was similar. If offered the opportunity, 65% would participate again next year, while 35% don't know yet, as some of the projects are now finished. For 2020, ITEA will take part in the Cyber Security & Cloud Expo on 1-2 July in Amsterdam and will again participate in SCEWC in 2020. More details on the 2019 ITEA events can be found in section **4.2 ITEA events**.

1.2.3. Improve ITEA visibility in the general press

ITEA has continued its efforts to collaborate with (the Comms departments of) ITEA partners to increase its visibility in the press. ITEA and Eureka Awards for ACOSAR, OpenCPS and Reflexion were well promoted together with TNO, Saab and Virtual Vehicle Research Center. In addition, Public Authorities from several countries also actively promoted the strong results of the projects they supported. Although no coverage in a national newspaper has been found yet, the total coverage of the ITEA project results on the web is increasing and the results from the DANGUN project were even featured in the KBS and JTBC News in Korea.

1.2.4. Increase the lobbying power of ITEA and share the in-kind contribution over more companies

In addition to Software AG, who joined the ITEA Board in December

2018, Saab (Sweden) and Empower (Finland) joined the ITEA Board, in March and May 2019 respectively. All new Board companies participate fully in all ITEA Bodies.

1.2.5. Create new Impact stories

Three new Impact stories were created, covering the successes of MODRIO (engineering), BENEFIT (health) and ACCELERATE (communities), bringing the total number of Impact stories to 23. Several stories are already being prepared for publication in 2020.

1.2.6. Get the overall ITEA programme size back towards at least €130 m.

Based on concrete successes, we will continue to work with our industry partners and with the Public Authorities to improve the funding possibilities, both in the usual ITEA countries and in new countries. Unfortunately, due to an unforeseen decision regarding ITEA 3 Call 5 in Germany, and the current funding situation in France, where the funding programme shifted from the Ministry to the regional funding programmes, our estimation for ITEA 3 Call 5 is now reduced to €80-85 m. We are positive that the funding situation in Germany for ITEA 3 Call 6 will be restored again.

1.2.7. Reduce the time between idea and project start

From 2018, in ITEA 3 Call 3 we reduced the duration of the ITEA label validity to 10 months in order to speed up the start of ITEA projects. The result is that Call 3 was already concluded in May 2018, in the sense that all projects were either started or cancelled. In ITEA 3 Calls 4 and 5 delays in funding decisions in several countries were identified. For ITEA 3 Call 4, a targeted time from project idea to project start (50% of the projects) of 14-15 months is more realistic. Due to the funding situation mentioned in **paragraph 1.2.6**, we can even expect a time from project idea to project start of 18 months for ITEA 3 Call 5. For ITEA 3 Call 6, further improvement can be expected.

1.2.8. High-level KPIs

ITEA Office has a Quality Management System (QMS) in place; since April 2014, this QMS has been ISO9001:2008 certified and since April 2017, the QMS of ITEA Office meets the requirements of the new standard ISO 9001:2015. As part of this QMS, several high-level KPIs have been defined for ITEA. In 2019, ITEA achieved the following scores for these high-level KPIs:

Strategic Leadership	Target 2019	Realised 2019
Forecast for funded Call size ITEA 3 Call 5	> €130 m	€80-85 m
Time from project idea to project start in ITEA 3 Call 5	12 months	18 months (estimated)
Hit rate for ITEA 3 Call 4	> 80%	84%
Average quality of events (SCEWC, PO Days, Customer workshop)	> 3.6	3.8

Table 1: Results ITEA high-level KPIs 2019.

In this Annual Report, the sections **3.1 ITEA programme size**, **3.2 ITEA Calls progress** and **4.2 ITEA events** give an explanation and more details on these KPIs and their values in 2019.

1.3 ITEA improvement priorities 2020

To keep ITEA at the forefront of innovation, the following improvement priorities have been defined for the upcoming year:

1.3.1. Finalise preparations for “ITEA 4”

The ITEA 3 label is valid until the end of 2021. In order to ensure a fluent continuation into a follow-up programme (“ITEA 4”, name to be decided), the first Call for the new programme should open in the second half of 2021. To achieve this, first preparations started in 2018 and 2019, but finalising preparations need to be done in 2020. The developments concerning the future of the Eureka Clusters and the labelling preparations of other Clusters will be taken into account in the next labelling steps.

1.3.2. Participate in InterCluster and Eureka groups in shaping the future of the Eureka Clusters

The Dutch Eureka Chair will proceed in its activities towards the development of a new Eureka Cluster concept in 2020. By the end of its Chairmanship period an agreed model is expected to be ready. This model will subsequently be elaborated on by the Austrian Chair, which commences on 1 July 2020. During the first half of 2020 all stakeholders will collaborate to further define ideas of shaping the future of the Clusters. The Dutch Chair initiated a Taskforce ‘Future Cluster Instrument’ to transform these ideas into a concrete concept that will be feasible and match the needs of industry, the Public Authorities and Cluster organisations.

1.3.3. Prepare and execute a Synchronised Call on AI

One of the first new cooperation activities that will take place between the Clusters in 2020 will be the Synchronised Call on Artificial Intelligence (AI), for which the first preparation steps were taken mid-2019. At this moment a Taskforce Synchronised Call, consisting of Public Authorities and Cluster Offices, is working out the ins and outs of this Call.

1.3.4. Increase customer orientation through ITEA events

As indicated in **section 1.2.2**, we started to link our project exhibition to larger and customer-oriented events in 2019 to further increase customer orientation and (business) impact through ITEA events. This new approach was chosen based on the feedback provided by ITEA projects on previous ITEA events to have more visitors and potential customers from outside the known Community. The first evaluation of the SCEWC 2019 participation indicates that the project partners are positive about the results and consider future participation at this event. Therefore, ITEA will also participate at the SCEWC in 2020. In addition, ITEA will also participate in the Cyber Security & Cloud

Expo 2020 on 1 and 2 July 2020 in Amsterdam. Currently we have contracted several projects to participate at the ITEA stand during this event. The goal is to present at least 8 ITEA projects at this event. On top of that ITEA will offer other Eureka Clusters and/or Eurostars the opportunity to present one or two projects.

The target is to have at least 30% of the active ITEA projects present at a customer-oriented event in 2020. Furthermore, we will investigate which future events can additionally be interesting for ITEA to present its projects, e.g. in the field of Smart engineering and Smart industry.

1.3.5. Continued efforts (including KPIs) on:

- *Impact stream:* we aim to produce at least five new Impact stories in 2020; and in addition, create six new ITEA Success stories.
- *Press approach in cooperation with partners:* in 2019 we developed press releases in cooperation with the communication departments of three ITEA Board companies; we intend to expand such co-operations towards a stronger visibility in the general press; as in 2019 we aim for two stories in national quality newspapers.
- *Expand the ITEA Board, BSG and STG:* we aim to extend the ITEA Board with two more companies in 2020.
- *Get the overall ITEA programme size back towards €130 m:* based on concrete successes, we will continue to work with our industry partners and with the Public Authorities to improve the funding possibilities, both in the usual ITEA countries and in new countries.
- *Reducing the time between project idea and project start:* at the start of ITEA 3, our process has been defined to allow a time-to-project of 10 months between Call opening (mid-September) via labelling (mid-March) to finalised funding decisions (June-July). Based on last year’s outcomes, we now set the target for the time-to-project at a still adequate and more realistic 12 months.

2 Strategic activities on a European level

2.1. Positioning of ITEA in Europe

Eureka is a publicly funded, intergovernmental network, involving over 40 countries. Eureka's aim is to enhance European competitiveness by fostering innovation-driven entrepreneurship in Europe, between small and large industry, research institutes and universities. As a Eureka Cluster programme, ITEA was initiated between major industrial companies and a number of Eureka countries to support business-driven innovation in software innovation. Clusters are truly industrially driven with Cluster projects defined bottom-up by industry, large companies as well as SMEs, and financially supported by the national governments. Clusters use industry resources to evaluate and support collaborative projects with the full involvement of

the national Public Authorities. The Clusters form a dominant component in the Eureka portfolio, representing half of the innovation supported by Eureka instruments.

Complementarity in the European R&D&I Funding Landscape

In many countries, there are national programmes, helping to establish critical mass and differentiation for developing organisations, and supporting national champions that meet the strategic plan of the country in the global economy. At European level, there are strategic programmes based on agreed priorities that provide support for early collaborative activities, as in H2020, and for large technology initiatives, as in the ECSEL-JU. In addition



Complementarity in the European R&D&I Funding Landscape.

to these initiatives, the Eureka Clusters have a unique position as they are an indispensable and agile tool in European industrial development thanks to the high flexibility in participation beyond EU countries and in the integration of new partners, amongst others. Another strong asset of the Clusters is the market relevance through the evaluation of projects by industry experts. The individual advice and constructive exchange during the project set-up and evaluation lead to high efficiency, good-quality

project applications, less effort and cost investment for all players involved and higher funding prospects. Thanks to the bottom-up approach, Clusters facilitate the realisation of national priorities by direct dialogue with national Public Authorities and companies can realise long-term and continuous work on the topics that are important to them. These observations were confirmed many times at several EC and Eureka events in 2019.

2.2. Eureka activities

ITEA is the Eureka Cluster on software innovation. In total there are seven Eureka Clusters: apart from ITEA there are Celtic-Next (telecommunications), EURIPIDES² (smart systems), EUROGIA2020 (energy), Metallurgy Europe (advanced materials and manufacturing), PENTA (nano-electronics) and SMART (advanced manufacturing).

Representation at the Eureka level and cooperation between the Clusters are essential, therefore InterCluster meetings are organised every two months. In the Eureka Chairmanship year 2018-2019 (UK), PENTA acted as InterCluster spokesperson. Since June 2019, Celtic-Next has taken over this role during the 2019-2020 Chairmanship of the Netherlands.

During the UK Chairmanship, the UK Chair installed three 'task & finish' groups: one on the European innovation landscape, one on the Eureka instruments and one on the Eureka Strategic Roadmap. The first steps to shape a new future model for the Eureka Cluster instruments have been taken by the Dutch Eureka Chairmanship. This model, including the design of a transition plan, will be further defined in 2020 together with all stakeholders.

To strengthen their position and promote their results, the Clusters participated in several events together:

- **Eureka Global Innovation Summit 2019 - Manchester (14-16 May)**

The Eureka UK Chair (2018-2019) organised the Eureka Global Innovation Summit (EGIS) on 14-16 May in Manchester, with over 2000 registrations. The Eureka Global Innovation Summit was full of features, stages and showcases. In addition to the conference programme, a diversity of side events took place at the venue.



The Clusters were again well represented at this year's Eureka flagship event. Together they organised several sessions and provided numerous speakers for the EGIS programme. On Wednesday 15 May, InterCluster spokesperson Peter Connock, moderated an information session during which attendees could learn more about the Clusters. On Thursday 16 May, the session "Business Impact of Eureka Clusters" demonstrated the positive impact of the Eureka Cluster programmes in addressing societal and industry challenges and needs. Representatives from large companies, SMEs and research institutes shared their insights on the substantial (business) benefits they gained from working in Cluster projects. ITEA partner Martin Benedikt, Head of Co-Simulation & Software at the Virtual Vehicle Research Center in Austria, showed how the Distributed Co-simulation Protocol (DCP), developed in the award-winning ITEA project ACOSAR, can save a huge amount of time and money, and increase safety. Competitors and non-funded partners collaborated in this project because of its importance. Representatives from all Clusters and other Eureka Instruments were present at the Global Expert Bar to exchange ideas on how organisations could best benefit from participating in Eureka. And last, but certainly not least, we are very proud of the ITEA project AVANTI, that was one of the 5 finalists for the Eureka Innovation Award 2019, presented by the Eureka UK Chair Tim Bestwick on 16 May.

- **Eureka Stakeholder Conference - Amsterdam (5 September)**

This year, the Dutch Eureka Chairmanship team decided not to organise a big Innovation Summit; instead the Eureka Stakeholder Conference was organised in the DeLamar theatre in Amsterdam on 5 September. During this event, the Eureka Community had the opportunity to make its voice heard on how to organise Eureka innovation instruments in the future. The following main conclusions/recommendations were then presented in the closing wrap-up session:

- Technology innovation is outpacing the decision timelines
- Clusters need to become highly visible
- The Eureka programme should make room for flexible, bottom-up, multi-technology, InterCluster or outside-Cluster, industry-driven projects
- SMEs should remain in the lead of Eurostars projects

- Eurostars should also facilitate support to SMEs to take the next steps to the market, including through coaching and mentoring, the link with large companies and funding for commercialisation

The feedback gathered during the conference was presented to Eureka policymakers. The results will be used to create a set of innovation tools that will contribute to the creation of innovative ecosystems for the future. A Taskforce Future Cluster Instrument is initiated to transform the ideas about the future model into a concrete concept that will be feasible and match the needs of industry, the Public Authorities and Cluster organisations. Next steps to take are still under negotiation.

During the Stakeholder event, ITEA projects ACOSAR and Reflexion both received a Eureka Innovation Award for their outstanding project results. ITEA was present at the InterCluster booth to inform attendees about the opportunities for R&D&I within the domain of software innovation.

At the end of the event there was room for matchmaking with innovative SMEs and industry representatives from Europe and beyond.

- **EF ECS - Helsinki (19-21 November)**

On 19-21 November, the European Forum for Electronic Components and Systems (EF ECS) 2019 took place in Helsinki, jointly organised by AENEAS, ARTEMIS-IA, EPoSS, ECSEL Joint Undertaking, the European Commission and the Eureka Network. The programme entailed a conference programme, breakout sessions and an exhibition. ITEA Programme coordinator Päivi Jaring attended the event and manned the Eureka ICT Clusters booth at the exhibition.



3 Calls overview

3.1. ITEA programme size

At the moment ITEA 3 has 5 Calls running and the FPPs for Call 6 are recently submitted. Currently, 17 projects of the ITEA 3 programme have been (recently) completed, 42 projects are running, and 11 projects are still waiting for final funding decisions. As for the funded Call sizes, ITEA 3 Call 2 has developed well towards €118 m, a real improvement compared to Call 1, which achieved a size of €103 m. ITEA 3 Call 3 was again a small Call with €104 m but for ITEA 3 Call 4 the size is expected to be back at €117 m. Taken everything that is now known into consideration, the Call size for ITEA 3 Call 5 is forecasted to be between €80 and €85 m.

Since ITEA 3 Call 3, the funded Call size is based on the Funding Contracts. These figures exclude the costs of partners that participate in the Call without any funding. For ITEA 3 Call 5 the figures are not clear yet. Therefore a good estimation, taking several considerations into account, is given. More details about Call statistics per country and per year can be found in **Appendix A**.

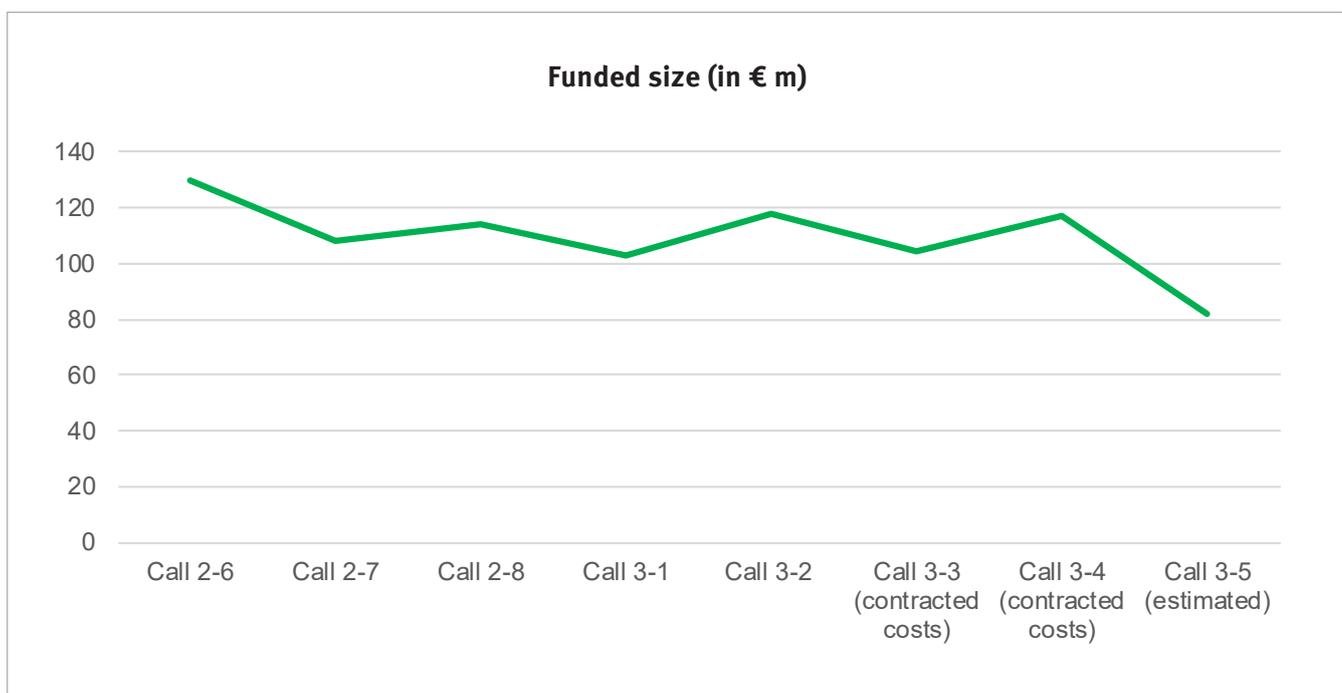


Figure 1: ITEA (estimated) funded Call size in million euros.

3.2. ITEA Calls progress

In the following graph, the progress of the ITEA Calls is represented by several hit rates that show respectively the percentage of number of projects, effort and costs actually accomplished or actually running in the ITEA programme compared to the number of projects, effort and costs initially labelled. These hit rates can be influenced by e.g. national funding decisions, changed company policies or strategies and market evolutions.

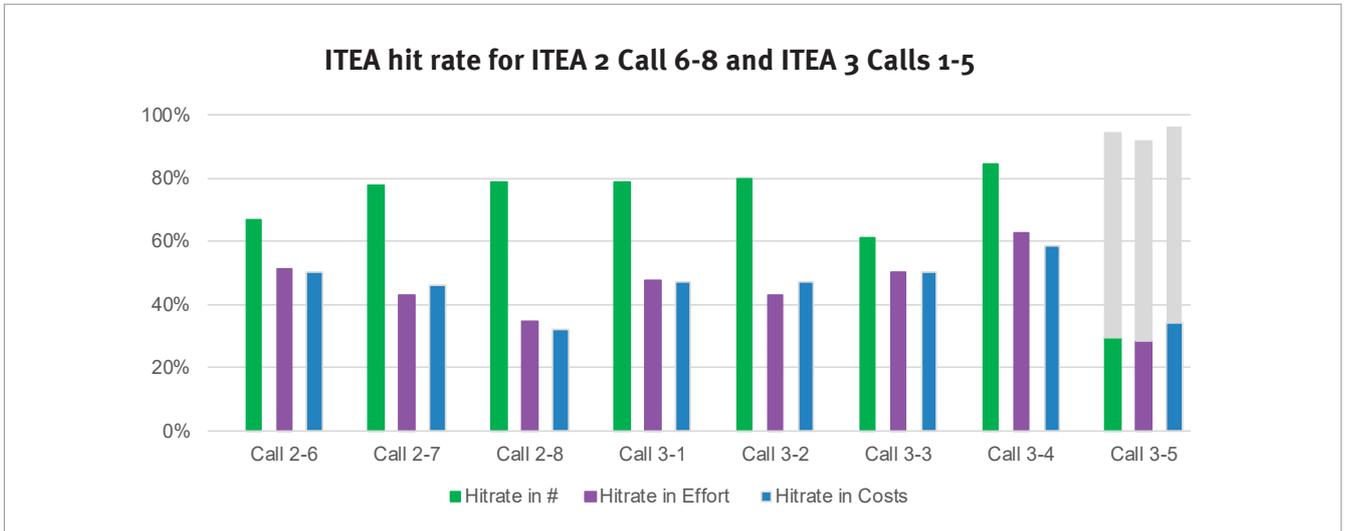


Figure 2: ITEA hit rates for ITEA 2 Call 1-8 and ITEA 3 Calls 1-5 as of 31 December 2019. Figures based on latest FPP.

The grey areas represent the projects that are still waiting and therefore can still influence the hit rates. The ITEA 3 Calls are also still subject to some (minor) changes, as change requests are also possible for ongoing projects. However, ITEA 3 Calls 1-3 are rather stable now.

A quick start of a project can have a positive impact on maintaining its original size as partners remain involved and the topic remains relevant, as also visible in Figure 2. Therefore, the time from project idea to project start has been a high-level KPI in ITEA for years now. As the time from project idea to project start had not improved over the first two ITEA 3 Calls, the ITEA label validity has been implemented since ITEA 3 Call 3.

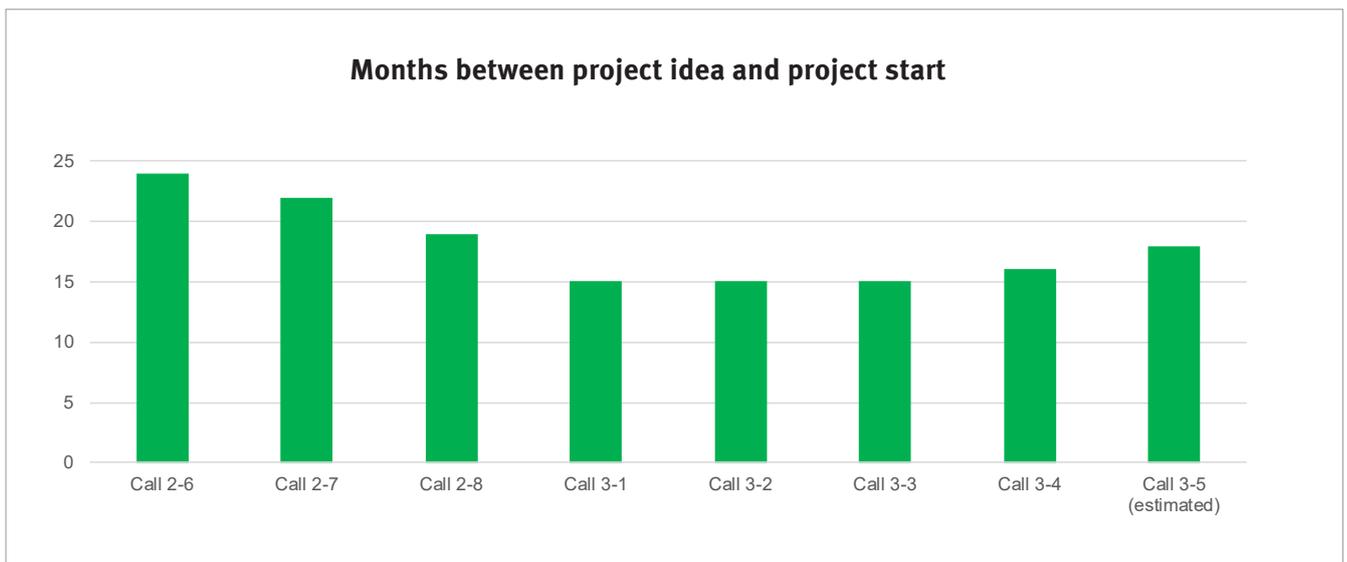


Figure 3: Time from project idea to project start (when >50% of the projects of the Call have started) from ITEA 2 Call 6 to ITEA 3 Call 5.

Due to several circumstances, the label validity deadline has not however yet resulted in a reduction of the time-to-project and regarding ITEA 3 Call 5, the time-to-project for this Call is expected to be even more than the previous Calls due to funding decisions in Germany and the changed situation in France. At the end of 2019, less than 50% of the Call 5 projects had started, so it is only possible to give a good estimation of the months between project idea and project start.

The current status of the ITEA projects is as follows:

	2019			2018		
	#	Effort in PY	Cost in € 100k	#	Effort in PY	Cost in € 100k
Labelled during the year	17	3046	2978	19	2942	2830
Running at end of the year	43	4683	4463	48	5395	5134
Waiting at end of the year	11	1939	1721	6	803	625
Completed during the year	13	1177	1213	10	1001	1002
Cancelled during the year	5	458	343	6	599	566

Table 2: Status ITEA projects in 2019 and 2018 as of 31 December 2019 and 31 December 2018 respectively. Figures are based on labelled and latest FPPs.

3.3. ITEA project landscape

To create innovation-driven growth, ITEA needs to focus on future markets and challenges posed by a fast-changing world in which ‘smart’ is the key concept. At present, there are seven main societal challenges that the ITEA Community addresses. The figure below shows per Call the distribution of the ITEA projects over these challenges.

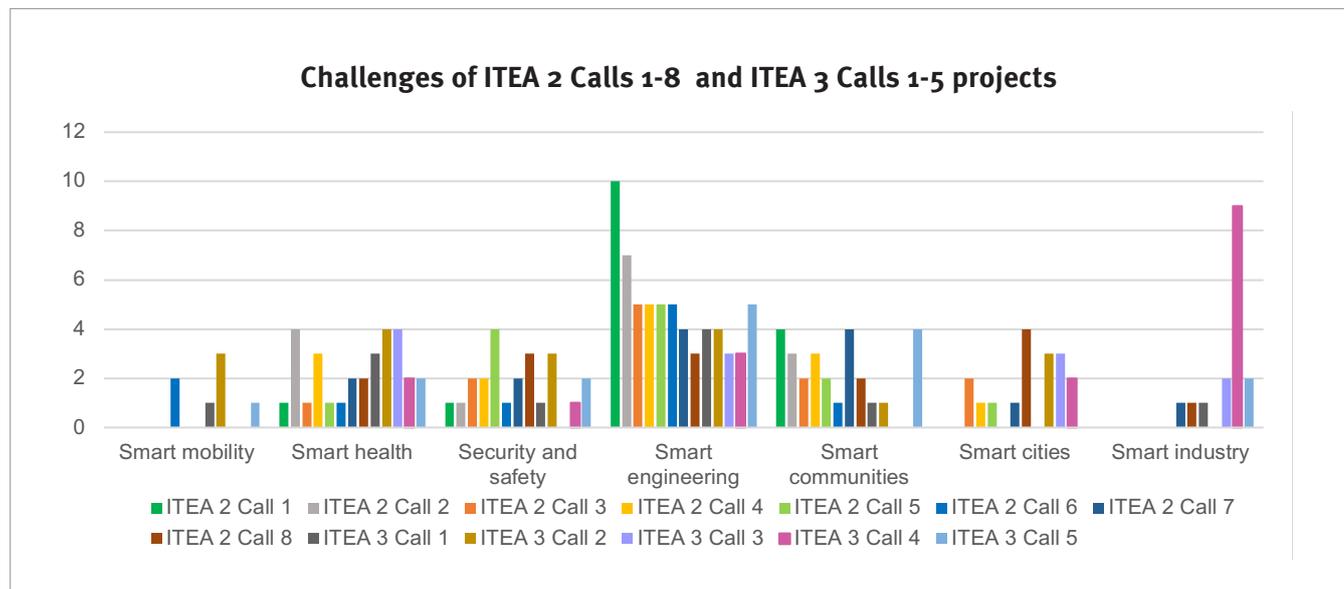


Figure 4: Number of ITEA 2 and ITEA 3 projects per ITEA Challenge

The impact of the ITEA thematic customer workshops is visible in figure 4, also for ITEA 3 Call 5 where Smart Communities was the theme of the customer workshop and four ITEA projects emerged, while there were no projects submitted in this challenge in the two previous Calls.

3.4. New projects - ITEA 3 Call 5

The 5th Call of ITEA 3 delivered 19 submitted FPPs, finally resulting in 17 labelled ITEA projects, involving 3065 PY and 16 countries. This Call illustrates again how innovative SMEs and start-ups are involved in our programme with more than 1600 Person Years (PY) compared to the 1000 PY for the large industrials. Nevertheless, the presence of these large industrials is key in the ITEA success recipe to help innovative SMEs to impact the market at global level and to scale up.

As mentioned above, due to the funding decision in Germany and changes in France, it is expected that the size of several Call 5 projects will be reduced. These factors also have an influence on the (slower) start of the projects in Call 5, as the project partners had to adjust their activities to reflect the current situation while applying for national funding applications. The labelled projects CASCAdE+ and ExA were cancelled during the year due to lack of funding in (one of) the main countries.

Theme	ITEA 3 Call 5 projects
Smart communities	ADiMa, I-DELTA, OWE4SC, TloCPS
Smart engineering	BUMBLE, EMBrACE, IVVES, OXILATE
Smart health	Food Friend, Mad@Work
Smart industry	HU-Twin, MACHINAIDE
Smart mobility	SMART
Safety & Security	APE, DEFRAUDify

A short description of each project can be found below:

APE - 18003

Automatic Privacy Explorer

Project leader: Softeam (France)

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

ADiMa - 18005

Analytical Digital Marketing system for high performance user impact

Project leader: JOT INTERNET Media (Spain)

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

BUMBLE - 18006

Blended Modelling for Enhanced Software and Systems Engineering

Project leader: Alten (Sweden)

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

DEFRAUDify - 18007

Detecting Fraudulent activities on the internet

Project leader: TNO (Netherlands)

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

TIoCPS - 18008

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

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

HU-Twin – 18014

Intelligent IoT-based Port Artefacts Communication, Administration & Maintenance

Project leader: Ezeris Networks Global Services SL (Spain)

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

I-DELTA - 18021

Interoperable Distributed Ledger Technologies

Project leader: ERSTE Software Limited (Turkey)

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

IVVES - 18022

Industrial-Grade Verification and Validation of Evolving Systems

Project leader: Philips Medical Systems Nederland B.V. (The Netherlands)

The use of AI and complex, evolving systems (ES), i.e. systems that rapidly change, either due to fast iteration cycles in development or due to their capability to self-adapt and learn, will grow significantly in automation, computation and novel digital

services. Targeting the challenges in verification and validation of AI and evolving systems, IVVES will systematically develop Artificial Intelligence approaches for robust and comprehensive, industrial-grade V&V of “embedded AI”, i.e. machine-learning for control of complex, mission-critical evolving systems and services covering the major industrial domains in Europe.

OXILATE - 18023

Operational eXcellence by Integrating Learned information into AcTionable Expertise

Project leader: SII CONCADEL S.L. (Spain)

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

OWE4SC - 18024

Open Wise Edge for Smart Communities

Project leader: VTT Technical Research Centre of Finland (Finland)

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

MACHINAIDE - 18030

Knowledge-based services for and optimisation of machines

Project leader: Konecranes Global Corporation (Finland)

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

Food Friend - 18032

Autonomous and easy-to-use tool for monitoring of personal food intake and personalised feedback

Project leader: Maastricht Instruments (The Netherlands)

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

Mad@Work - 18033

Boosting Mental Health and Productivity in the Workplace

Project leader: VTT Technical Research Centre of Finland Ltd (Finland)

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

SMART - 18036

Spatial Modelling Analytics and Real-time Tracking

Project leader: Esri Canada Limited (Canada)

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

EMBrACE - 18039

Environment for model-based rigorous adaptive co-design and operation of CPS

Project leader: Linköping University (Sweden)

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

4 Operations

To enable the ITEA stakeholders to get the most out of the ITEA programme and to promote the ITEA programme in the best way, there are several operational actions carried out by ITEA. In this section the details about the main operations achieved in 2019 are reported.

4.1. ITEA success stories



MODRIO



Cyber-physical systems (CPS) are very large systems that not only involve a large number of

stakeholders but are safety critical and have significant impact on the economy and the environment as well. This makes tools for the safe and efficient design and operation of such systems imperative. MODRIO successfully extended modelling and simulation tools based on open standards (Modelica and FMI) from system design to system operation, enabling increased safety, efficiency and cost-savings.



SoRTS



Radiotherapy affects not only cancer cells but also healthy cells in the area that is being

treated, so it is important that as little healthy tissue as possible is affected. The problem is that the movement of a tumour under the effect of respiration, for example, risks damaging surrounding tissue, whereas MRI, the only imaging modality that can visualise the tumour well, traditionally takes minutes to create the image. Thanks to the strong results from the SoRTS project, physicians can now precisely target a tumour, even when tumour tissue changes shape, location, size or composition during treatment. Patients benefit from less intrusive treatment enabling them to continue their daily lives.



OPEES



OPEES stood at the inception of two important trends: open collaboration with open

source in industry and open source tools for model-based systems engineering (MBSE). Neither of these trends were well developed in 2009, but almost 10 years later, and with acceleration through the OPEES project, we benefit from both good open source MBSE tools and many open collaboration initiatives in industry. OPEES was both a pioneer and a catalyst in this evolution.



Metaverse1



Ten years ago, virtual worlds were already found in serious computer games and

simulation models. However, they were mostly standalone and independent of each other with little or no connection to the real world. The Metaverse1 project set out to overcome this isolation – defining a standard to enable connectivity and interoperability between virtual worlds and with the real world, to exchange information between worlds. Even more important was the development of a standard interface between the real physical world and the virtual – simulation / serious games – world.



MoSHCA



The number of people experiencing chronic disease is increasing dramatically

worldwide. The impact of chronic diseases is evident: it has been estimated that the cost of five of the major chronic illnesses could reach USD 47 trillion over the next 20 years and could claim almost 400 million lives within 10 years. MoSHCA improved patient-doctor interactions, controlling chronic diseases, developing technological set-ups that significantly improve the self-management of chronic illnesses, promoting communication between the patient and the health provider and supporting health staff in providing better clinical follow-up.



UsiXML



The international landscape is quite diverse in terms of interactive software systems

as they should be used in a wide spectrum of contexts of use. Each context of use covers various types of users along with their interactive tasks, using potentially several computing platforms or devices in multiple physical, organisational and psychological environments and locations. In addition, practices for developing user interfaces of these interactive software systems are even more heterogeneous. Evolving in so many diverse contexts of use is particularly challenging when the same system should be deployed for several targets. In theory, a single version of the software should be produced so that it is adapted to each context of use. In practice, this is simply impossible to do due to lack of resources and knowledge.



AMALTHEA and AMALTHEA4public



AMALTHEA and AMALTHEA4public are part

of a 'string of pearls' in the automotive domain; successes that have pushed this domain into the next phase of its development. AUTOSAR, a result from the former ITEA project EAST-EEA, defined a methodology for component-based development of automotive software and a standardised software architecture for automotive electronic control units. However, AUTOSAR offered only limited support for detailed behaviour descriptions, which are indispensable for developing much more complex multi-core systems of high quality. Those require an increased exchange between tools. Multi-core optimisation especially relies on additional information like detailed timing behaviour. AMALTHEA set about adapting existing development methods and tools and creating a common model that offers the required description capabilities on different abstraction levels. The follow-up project AMALTHEA4public was set up to foster the transfer into application and to create a sustainable open ("public") platform and a vibrant community of users and contributors.

The full ITEA Success stories can be found online via <https://itea3.org/success-stories.html>. The impact of these successful ITEA projects is quantified in Impact stories which can be found online via <https://itea3.org/impact-stream.html>.

4.2. ITEA events

One of the other main operations was the organisation of and attendance at events. In 2019, we (co)organised the following events:

4.2.1. Project Outline Preparation Days – ITEA 3 Call 6



On 3 September, the ITEA 3 Call 6 opened with the ITEA PO Days 2019 in Amsterdam.

This event was already fully booked weeks before and gathered a record number of 310 participants from 15 countries. With 50% returning participants and 50% newcomers, this event clearly showed the strength of the ITEA Community, which values its existing members and is open for new members at the same time.

PO Days 2019 in numbers

- A record number of 310 participants from 14 countries
- 70 project ideas uploaded in the Project Idea Tool before the event
- 57 project ideas presented during the poster session
- 44 pitches during the parallel sessions
- 23 final project idea presentations

The project ideas were clustered by seven 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 Smart mobility project ideas was remarkably high (14), showing the impact of this year's ITEA Customer workshop on this topic. Another notable topic this year was Artificial Intelligence (AI),

covered by 27 of the 58 ideas. ITEA’s ambition is to transform AI into impact on industry, and not just do advanced research. In addition, simulation is everywhere, leading to digital twinning; it is the heart of the Digital Transition and a tool for many purposes like design & optimisation, training, command & control and preventive maintenance.



ITEA PO Days 2019 impression.

As in the past few years, there was again a strong presence from the Public Authorities (Austria, Belgium, Canada, Finland, Germany, the Netherlands, Spain, Sweden and Turkey) who

again had the opportunity to present their national priorities and eligibility criteria, which was highly appreciated by the PO Days participants.

As of 1 September, Jan Jonker succeeded Fopke Klok as the new ITEA Office Director. Fopke Klok had led the ITEA Office since 2007. These PO Days were also an excellent opportunity to introduce Jan to the ITEA Community.

During the PO Days, best practices were shown by the three ITEA projects that received the 2019 ITEA Award of Excellence. They presented their impressive outcomes and impact during an interactive panel session moderated by ITEA Vice-chairman Philippe Letellier. This year’s awards winners were ACOSAR, OpenCPS and Reflexion.

This year 27% of all attendees shared their evaluation and their suggestions with us. With a 3.9-score on 5-point scale, the event was again highly appreciated. Among the highlights were the Project idea tool, the set-up of the programme, the poster session, the location (Amsterdam) and venue (Okura).

Overall, there was again a very positive and constructive atmosphere during the event. Patrick Mandic from Mavennet, Canada, called the PO Days “a mix between speed dating and a hackathon at the same time, to come up with an idea that we wouldn’t be able to come up with ourselves.”

On 31 October 2019, 36 POs were submitted with a total of 4,095 Person-Years. Of the 18 different countries, Turkey had the highest participation, followed by Germany, the Netherlands, Spain and Finland. On 5 December, 26 projects with a total of 3,281 PY, were invited to submit a Full Project Proposal (FPP).

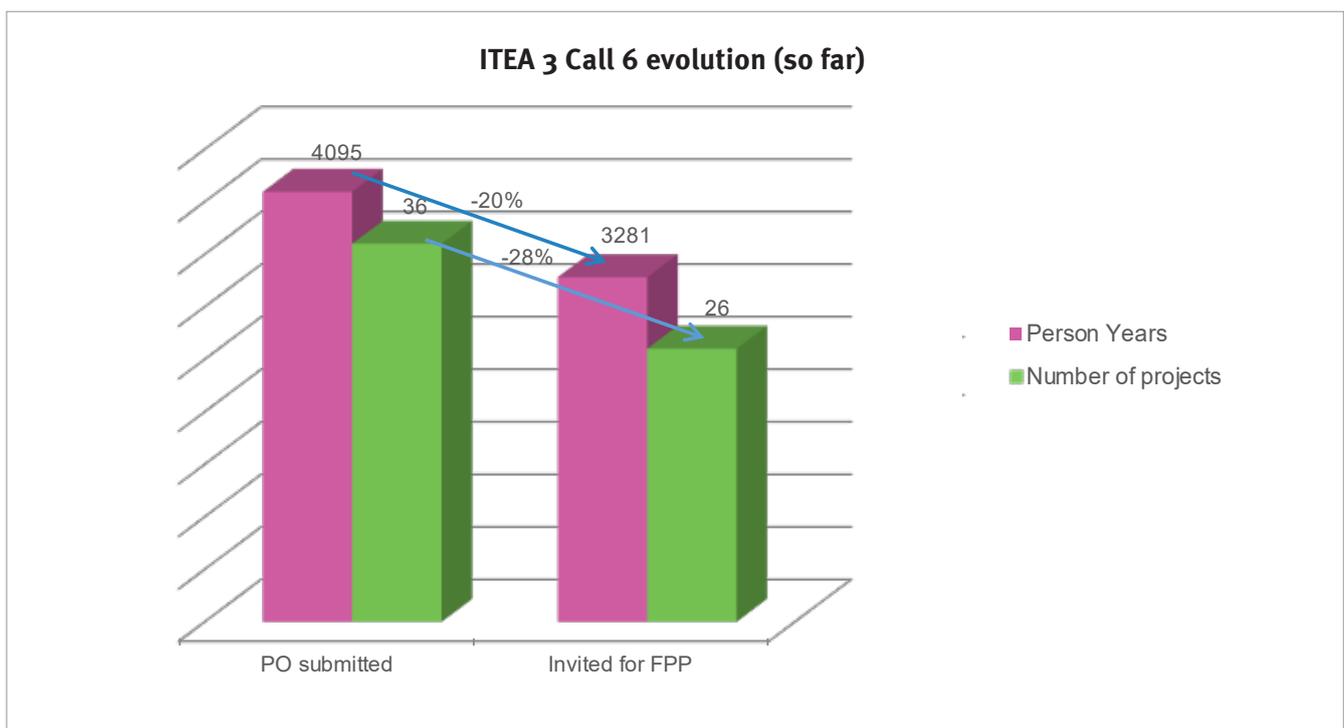
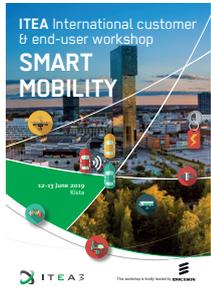


Figure 5: ITEA 3 Call 6 evolution (so far).

A detailed description of the ITEA Call progress and figures can be found in **section 3.2 ITEA Calls progress** of this report.

4.2.2. ITEA International customer and end-user workshop - Smart mobility



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

For this customer workshop on Smart mobility, we gathered representatives from:

Customers:	Airbus / EIP-SCC, Bosch Corporate Mobility Management, Drive Sweden, Ford Otosan, Nordhessen region, Stockholm city, Tampere city, Trafikverket, Transdev Group, Turku city, UAV-Dach, Urban ICT Arena – Kista, Vovlo Cars
Contributors:	Eyüpsultan Municipality – Istanbul, Göteborg, Transport for London
Industry:	Airbus, Bombardier, Bosch, Ericsson, Thales Digital Factory, Tofa, Turkcell Technology, Volvo Group Connected Solutions
SMEs:	Applanix Corporation, Bumble Labs, Carmenta, ESI ITI, Esri Canada, Eteration, Fortran Traffic Systems Limited, Geotab, Honk Mobile Inc, International Road Dynamics Inc, Navya, Solace Corporation, Technolution, Thorsis, TMOB, ViNotion, Visy

The challenges discussed in-depth during the workshop were:

- Systems of Systems
 - Open Mobility as a Service (MaaS) platform
 - Autonomous vessels
 - Traffic control & safety
 - Logistical efficiency
 - Drones
 - Energy optimisation
- Rules, Legal Aspects and Business Models
 - Control towers
 - Urban logistics
- Different Vehicles and USPs
 - (Augmented) walking
 - Autonomous water transport & shuttles

A full report of the customer workshop is available at:

<https://itea3.org/publication/download/final-report-itea-smart-mobility-customer-workshop-2019.pdf>.

At the PO Days in September 2019, 15 project ideas related to Smart mobility were presented. Finally, three Smart mobility Project Outlines (POs) and one Smart engineering PO related to the customer workshop were submitted, out of 36 in total. Three out of these four were invited to submit a Full Project Proposal (FPP).



ITEA International customer and end-user workshop on Smart mobility 2019 impression.

4.2.3. External events and activities to promote ITEA

During 2019, the Presidium and the ITEA Office representatives also attended various additional external events and meetings to promote ITEA. Highlights include:

- **EEN 'Thematic Group Research' meeting - Düsseldorf (13 February)**
Fopke Klok and ITEA project leader Franz-Josef Stewing from Materna were invited to share their best practices and personal experiences to underline the opportunities for and importance to collaborate with innovative SMEs.
- **B2B Software Days - Vienna (14-15 March)**
ITEA was invited to participate in the B2B Software Days with a booth and a workshop on 'How ITEA can successfully boost your business in software innovation'. During this interactive session, Irina Slosar (Austrian Research Promotion Agency FFG), Fopke Klok (ITEA), Maria Rimini-Döring (Bosch), Martin Benedikt (Virtual Vehicle Research Center), Asli Tanriverdi (Philips) and Anton Strahilov (EKS InTec) shared their best practices and personal experiences and provided insights in how business can benefit from participation in ITEA. The event was a great opportunity to promote ITEA amongst the high number of East-European participants.
- **TNO-ESI Symposium - Eindhoven (9 April)**
Loes van den Borne represented ITEA at the Innovation market of the TNO-ESI Symposium. Several success stories of ITEA projects involving TNO were presented, which attracted a good number of high-quality attendees to the stand. It was also an excellent opportunity to promote the project idea tool for ITEA 3 Call 6, that opened a couple of weeks later.
- **Canada visit - Canada (24-28 June)**
From 24 to 28 June 2019, ITEA Chairwoman Zeynep Sarilar met several representatives of companies, representatives of three Canadian SuperClusters and government officials in Vancouver, Toronto, Montréal and Ottawa. The aim of this visit was to promote the ITEA programme and strengthen and explore new opportunities of collaboration. With great examples of shared successes and some exciting new initiatives in the pipeline, this could be an efficient beginning of a mutual

beneficiary cooperation between the Canadian Superclusters and ITEA. The full report can be found at: <https://itea3.org/news/enhancing-collaboration-with-canada.html>.

- **Canadian Pre-PO Days Event - Amsterdam (2 September)**

On 2 September, Zeynep Sarilar introduced ITEA, the setup of ITEA projects, its success stories and some strong results of AI in ITEA to the Canadian delegation, that also joined the PO Days the days after. This meeting helped the Canadian participants to prepare for the PO Days and to get most out of the event.

- **Visit by Korean delegation from ETRI and Neighbor System - Eindhoven (26 September)**

On 26 September, a Korean delegation from ETRI and Neighbor Systems visited the ITEA Office to learn more about ITEA and to look at possibilities for future cooperation. It was agreed that we would cooperate to increase the participation of Korean partners in ITEA Projects. As a follow-up to the ETRI visit, it was confirmed that KIAT could provide time and space during next year's Korea Eureka Days 26-27 May 2020 in Seoul for ITEA promotion.

- **Triz Future Conference 2019 - Marrakesh (9-11 October)**

On 9-11 October, Fopke Klok was one of the keynote speakers of the TRIZ Future Conference 2019 in Marrakesh. This year's theme was 'New opportunities for innovation breakthroughs for developing countries and emerging economies' and Fopke highlighted the ITEA open innovation process and its relevance for emerging countries. Mr. Yassine Ouadirhi from the Directorate Generale Economie, head of the Division for Development of Innovation and R&D, was interested in learning how Morocco could join ITEA.

- **Webinar IPR protection in China and South-East Asia for the Software Industry (17 December)**

ITEA was invited to offer a free Webinar on IPR protection in China and South-East Asia for the Software Industry to the SME partners participating in ITEA 3 Call 6. This webinar provided up-to-date information and practical advice on the strategy and how to deploy in these markets as well as room for questions. ITEA Programme Coordinator Erik Rodenbach was one of the panellists, briefly explaining ITEA to the (other) participants of the webinar.

4.3. ITEA stakeholder satisfaction surveys

The different stakeholders of ITEA together create the strong ITEA Community that forms the central axis of the ITEA programme. As quality is of paramount importance to ITEA, the opinions, ideas and experiences of the ITEA Community are highly valued as they allow ITEA to keep improving. To collect all this information, ITEA conducts several surveys each year:

- **Project leader satisfaction survey**, sent to the project leader after completion of the project, covering all the different processes of a project and the different elements of the ITEA programme. The results per topic are shown in the figure here below.

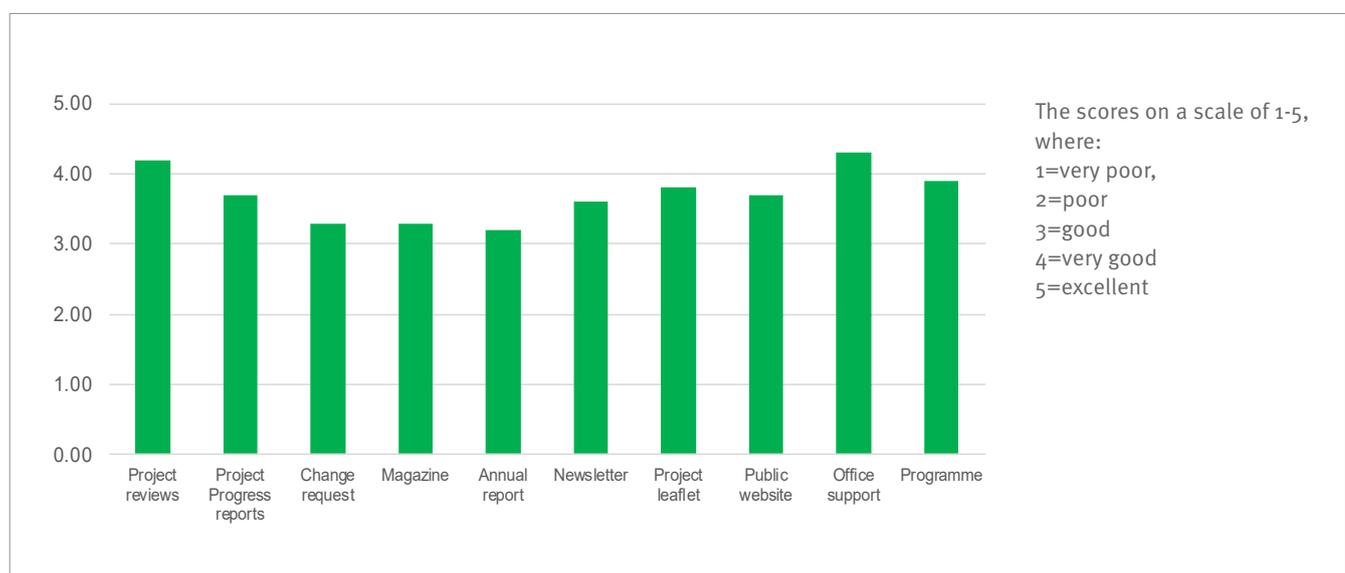


Figure 6: Results Project leader satisfaction survey 2019.

From the processes, the Change request process received a relatively low score (3.2 out of 5, where 3=good and 4=very good). Based on the feedback received, the process has been analysed and improvements have been implemented in January 2020.

- **PO Submission survey** (ITEA 3 Call 6), sent to all Project Outline (PO) leaders, technical contacts, work package leaders and country coordinators, covering all topics of the PO stage. Overall, the PO submission process is well appreciated. PO leaders gave a score of 4.11 (compared to 3.54 in 2018), technical contacts and others a score of 3.72 (equal to last year). This higher satisfaction level was partly based on the improvements made following the evaluation outcomes of the PO Submission of 2018:
 - Creation of a revised and shorter version of the PO Annex template
 - Improvement of the ITEA Living Roadmap
 - Creation of a proxy Project Leader role
 - Creation of a checklist at partner level
 - The evaluation of 2019 already gave directions to further improve the process e.g. by further simplifying the PO stage and adding more proxy roles to better divide the workload.
- **FPP Submission survey** (ITEA 3 Call 5), sent to all Full Project Proposal (FPP) leaders, technical contacts, work package leaders and country coordinators, covering all topics of the FPP stage. Overall, the FPP submission process is well appreciated (3.70-3.80 out of 5).
- **ITEA Event surveys**, sent to all checked-in participants of an event:
 - *ITEA International customer workshop on Smart Mobility 2019*: the event was well appreciated with a score of 3.72

out of 5. While we had the highest number of participants ever, we noticed a decline in satisfaction, providing a learning point about the optimal number of participants, to keep the workshop as interactive and efficient as possible.

- *ITEA PO Preparation Days 2019*: the appreciation was also high again for this event with a record score of 3.90 out of 5. For the first time, the ITEA Award ceremony was organised during this event, for which several useful improvement suggestions were made to make it more interactive. In addition, we learned that a balance in country participants is necessary to improve the networking opportunities.
- *ITEA at Smart City Expo World Congress*: for the first time, ITEA participated with 12 ITEA project at the SCEWC in Barcelona, where 25,000 visitors were present over three days. ITEA based this new event approach on the feedback received over the years from the ITEA Community. Although it was an experiment, the attending project partners were very satisfied and gave an evaluation score of 3.84. We received some very useful improvement suggestions, but nevertheless 89% of the respondents who attended one of the previous ITEA Events (e.g. Co-summit / DIF) estimated that this new event approach is better for the project.

The results of each survey are discussed within the ITEA Office and issues are solved or further investigated. We are proud of having received a 100% recommendation score from all respondents over different surveys in 2019, but we also highly appreciate the constructive feedback from the ITEA Community. We want to take this opportunity to thank everyone for their valuable contribution and for helping to improve ITEA's response to the needs of the users over the past few years. We will keep listening to you in the future!

4.4. ITEA press coverage

In 2019, ITEA and its projects were mentioned several times on external websites and in press publications. Thanks to the collaboration with ITEA project partners Saab, TNO and Virtual Vehicle Research Centre and thanks to the strong results of ITEA project MOS2S in the '2020 Dutch Eurovision Song Contest Innovation Challenge', the press coverage was again strong this year with a total of 52 publications - 40 directly mentioning (an) ITEA (project) - written by 44 different bureaus, from 10 different countries. Multiple articles were disseminated by several bureaus as the press releases were picked up well.

We have excluded event announcements of the Eureka events, the ITEA customer workshop and the PO Days from this overview. The same goes for news messages about these events on our partner websites.

A full press coverage overview can be found on: <https://itea3.org/press-coverage.html>

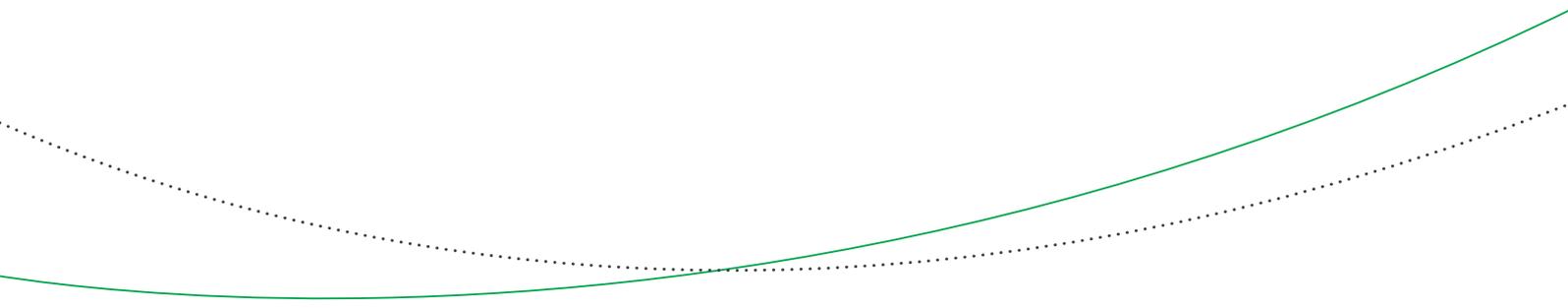
Appendix A

Call statistics per country and per year

Call	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
ITEA 2 Call 1	366	743	645	164	-	-	-	-	-	-	-	-	1918
ITEA 2 Call 2	-	345	632	541	201	-	-	-	-	-	-	-	1720
ITEA 2 Call 3	-	-	305	657	624	339	40	-	-	-	-	-	1964
ITEA 2 Call 4	-	-	-	162	661	678	412	153	1	-	-	-	2067
ITEA 2 Call 5	-	-	-	-	66	366	463	269	70	-	-	-	1234
ITEA 2 Call 6	-	-	-	-	-	145	415	452	245	25	-	-	1281
ITEA 2 Call 7	-	-	-	-	-	-	70	390	406	242	7	-	1115
ITEA 2 Call 8	-	-	-	-	-	-	-	87	393	474	299	21	1274
Total ITEA 2	366	1088	1582	1524	1552	1527	1400	1350	1116	740	306	21	12573

Call	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
ITEA 3 Call 1	-	-	-	-	-	47	257	353	327	132	23	-	1073
ITEA 3 Call 2	-	-	-	-	-	-	82	370	459	327	44	1	1283
ITEA 3 Call 3	-	-	-	-	-	-	-	106	373	419	270	6	1176
ITEA 3 Call 4	-	-	-	-	-	-	-	-	117	575	667	463	1839
ITEA 3 Call 5	-	-	-	-	-	-	-	-	281	895	933	705	2814
Total ITEA 3	0	0	0	0	0	47	339	817	1262	1707	1887	1403	8185

Table 3. Participation in terms of Person-Years per Call per year as of 31 December 2019. Effort based on latest FPP.



Call	AUT	BEL	CAN	DEU	ESP	FIN	FRA	ISR	KOR	NLD	NOR	SWE	TUR	OTH	Total
ITEA 2 Call 1	20	63	-	166	567	395	448	14	-	55	66	48	6	69	1918
ITEA 2 Call 2	38	90	-	182	576	147	441	13	6	150	-	18	35	24	1720
ITEA 2 Call 3	-	104	-	100	552	246	460	-	-	270	17	41	61	114	1964
ITEA 2 Call 4	4	65	-	119	394	204	785	-	22	213	8	17	163	74	2067
ITEA 2 Call 5	14	32	4	89	215	111	403	5	61	87	-	32	109	71	1234
ITEA 2 Call 6	-	92	-	97	166	188	404	20	8	108	-	36	85	77	1281
ITEA 2 Call 7	-	40	-	118	108	151	191	-	78	100	-	48	187	95	1115
ITEA 2 Call 8	-	136	-	82	97	108	222	35	13	159	5	26	322	70	1274
Total ITEA 2	77	621	4	952	2676	1549	3354	87	188	1143	96	265	968	593	12573

Call	AUT	BEL	CAN	DEU	ESP	FIN	FRA	ISR	KOR	NLD	NOR	SWE	TUR	OTH	Total
ITEA 3 Call 1	20	53	12	146	67	3	177	-	85	222	-	40	138	108	1073
ITEA 3 Call 2	-	92	75	200	106	52	127	14	71	181	-	57	205	101	1283
ITEA 3 Call 3	28	72	103	206	130	69	49	-	27	171	-	83	135	100	1176
ITEA 3 Call 4	15	102	103	229	401	169	74	-	-	165	-	139	269	174	1839
ITEA 3 Call 5	1	55	103	159	425	523	344	-	55	316	13	144	498	179	2814
Total ITEA 3	65	374	396	941	1129	817	771	14	238	1055	13	464	1245	663	8185

Table 4. Participation in terms of Person-Years per Call per country as of 31 December 2019. Effort based on latest FPP.

OTH (others) = China, Czech Republic, Denmark, Egypt, Estonia, Great Britain, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Portugal, Romania, Slovenia, Switzerland, Taiwan and Ukraine. NB: countries differ per Call.

Appendix B

How to access the online data

The ITEA Community website (<https://itea3.org/community>) gives access to restricted information for the ITEA Community.

How to login

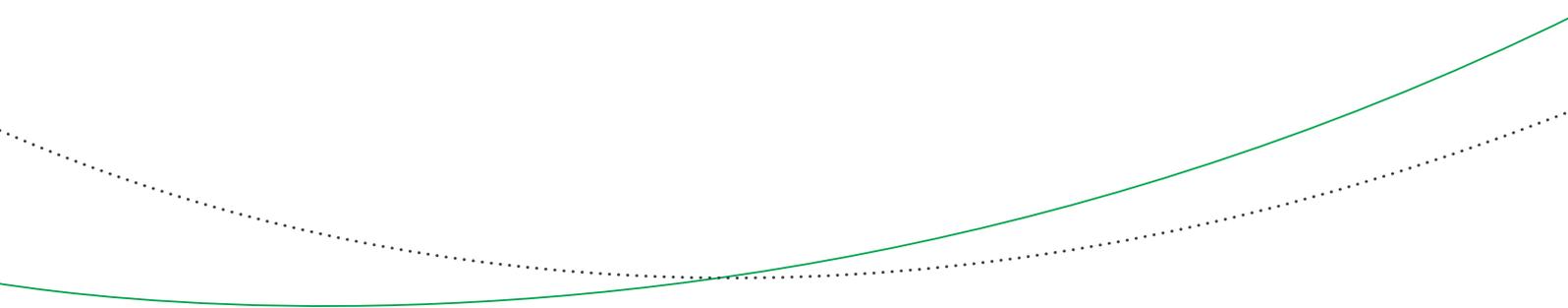
The restricted ITEA Community website can be accessed on <https://itea3.org/community>. Your credentials for the MyITEA account for the ITEA website – event registration, etc. – can also be used to access this restricted part of the website. A MyITEA account can be created by clicking on ‘Log in’ and ‘Create new account’ in the top navigation bar. Your company e-mail address is used as a unique identification.

Specific access rights determine what is visible on these Community pages for each person. Depending on these rights the following data can be accessed:

- project management and project documents – e.g. PO, FPP, progress reports and change requests;
- evaluation and reviewing and all necessary documents – e.g. evaluation forms and review presentations;
- meetings and binders;
- ITEA calendar;
- general ITEA information – e.g. guidelines, templates and corporate identity; and
- contacts.

Appendix C

Glossary of terms



3D	Three-dimensional
4D	Four-dimensional
AG	Aktiengesellschaft
AI	Artificial Intelligence
AUTOSAR	Automotive Open Systems Architecture
B2B	Business to Business
BSG	(ITEA) Board Support Group
CE	Conformité Européenne
CPS	Cyber-Physical Systems
DCP	Distributed Co-simulation Protocol
DIF	Digital Innovation Forum
DLT	Distributed Ledger Technologies
DT	Digital Twin
e.g.	exempli gratia (for example)
EC	European Commission
EEN	European Enterprise Network
EF ECS	European Forum for Electronic Components and Systems
EGIS	EUREKA Global Innovation Summit
EPoSS	European Platform on Smart Systems Integration
ERP	Enterprise Resource Planning
ES	Evolving Systems
EU	European Union
FDA	U.S. Food and Drug Administration
FMEA	Failure Modes, Effects and Criticality Analysis
FMI	Functional Mock-Up Interface
FPP	Full Project Proposal
H2020	Horizon 2020
IA	Industry Association
ICT	Information and Communication Technology
IoT	Internet of Things
IPR	Intellectual Property Rights
ISO	International Organisation for Standardisation
IT	Information Technology
JTCB	Joongang Tongyang Broadcasting Company
KBS	Korean Broadcasting System
KPI	Key Performance Indicator

MaaS	Mobility as a Service
MBSE	Model-Based Systems Engineering
MRI	Magnetic Resonance Imaging
MW	Megawatt
OTH	Others
OWE	Open Wise Edge
PNAS	Proceedings of the National Academy of Sciences
PO	Project Outline
PY	Person Years
QMS	Quality Management System
R&D	Research and Development
R&D&I	Research, Development and Innovation
SCEWC	Smart City Expo World Congress
SME	Small and Medium-sized Enterprise
STG	(ITEA) Steering Group
TRIZ	Teoriya Resheniya Izobreatatelskikh Zadatch, (Theory of Inventive Problem Solving)
UK	United Kingdom
USP	Unique Selling Point/Proposition
V&V	Verification and Validation

ISO country codes

AUT	Austria
BEL	Belgium
CAN	Canada
DEU	Germany
ESP	Spain
FIN	Finland
FRA	France
ISR	Israel
KOR	Republic of Korea
NLD	Netherlands
NOR	Norway
SWE	Sweden
TUR	Turkey



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