

# ITEA Annual Report

2018 Full year report

1 January - 31 December 2018



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*The Quality Management System  
of ITEA Office is ISO 9001:2015  
certified.*

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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 an international and knowledgeable Community to collaborate on 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 a choice. It should instead be regarded as an 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 in which development must be continuous. The more that digitisation is enabled, the more penetrative the transition becomes and the need for solutions therefore increases. To achieve this continuous process smoothly, a fertile and collaborative environment is needed, in which there are innovative ideas and knowledgeable people who are eager to share, 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. Early dialogues between project teams and Public Authorities support alignment with national priorities and the best possible opportunities for funding, leading 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 of ITEA; impact on business, economy and society. Impact is central during the project lifecycle: in proposal evaluation, monitoring, closure and communication of the results.
- **Focus on high-quality processes and support:** ITEA takes 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 a 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 the 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 the quality and value creation of projects. ITEA has an ISO 9001-certified Quality Management System (by DEKRA).

# Message from our Chairwoman



The speed of change in our lives has increased year by year and will only get faster from now on. The digital transition has just started to have a direct impact on our daily lives and business processes, either in industrial life cycles or marketing and sales activities. At any given minute, we are using a software product and life without technology is far behind us already.

The time from an innovative idea to a disruptive product needs to be shortened and the results should have impact. This can only be achieved by collaborating and supporting each other through the sharing of vertical knowledge bases.

While celebrating the 20<sup>th</sup> year of ITEA, it has also been a period for analysing the best practices of ITEA and main values of ITEA Community. To create the next innovative product, ITEA has been a bridge:

- between different countries (not only experienced countries like Germany and the Netherlands, but also Canada, the Czech Republic, Romania and South Korea);
- between your potential products and your existing or potential customers;
- between the dreams of companies and the national priorities of Public Authorities;
- between large industry and SMEs, but also research institutes and academics.

When looking back at the history of ITEA, it has been deeply understood that ITEA itself has also innovated continuously during this period.

While the innovation landscape is being changed by many good initiatives, such as Horizon Europe and the revitalisation of EUREKA instruments, some aspects of ITEA never change: the value of positive change to create happiness, the strong urge to create impact and the need to keep high-quality standards. The Impact stream of ITEA, a digital and physical open book, has created a retrospective view of our impact, not only for Public Authorities to experience the results of their funding but also for companies to understand the value of being a part of the ITEA Community.

While getting ready for the next 8 years of the ITEA Community programme, it is important to understand the future needs of countries and companies. During the design of the programme, it is necessary to take into account not only challenges, such as Smart Cities or Smart Mobility, but also new and upcoming trends in software innovation, including AI, Big Data, Machine Learning and many others.

Over the next year, 2019, ITEA will continue to innovate and improve its activities for the benefit of Public Authorities and the ITEA Community, based on the following priorities:

- Preparations for 'ITEA 4'
- Further increasing customer orientation through ITEA events
- Continuation of existing activities:
  - Extension of the ITEA Impact stream
  - Further strengthening of the ITEA press approach, in collaboration with project partners
  - Expansion of the ITEA Board, BSG and STG
  - Improvement of ITEA funding possibilities
  - Reduction of the time between idea and project start

I would like to thank everybody for their support and contributions to the '20 years of ITEA' celebrations and I would like to share my excitement for the coming activities of ITEA in 2019.

Have a good read!

Sincerely,



Zeynep Sarilar, ITEA Chairwoman

# 1 High level achievements and improvement priorities

## 1.1 ITEA project successes and impact

As highlighted in the message from our Chairwoman Zeynep Sarilar, ITEA has been a successful R&D&I programme in the domain of software innovation for 20 years now. ITEA project partners create an impressive impact on the economy, society and every-day life with the support of the national Public Authorities. In 2018, one of our main activities has been to gather 11 amazing project Impact stories for you. Discover here below the highlights of two projects to inspire you. The other Impact stories can be found in section **4.1 Impact stories** of this annual report and online via <https://itea3.org/impact-stream.html>. You can also create your own personal ITEA Impact stream online by choosing challenges, countries and topics of your interest.



### ATAC Impact story

Software systems have become increasingly difficult to develop and verify by traditional development processes and testing methods. The ATAC project aimed to resolve such challenges and rolled out a number of methodologies, associated processes and tools to efficiently and automatically verify complex and configurable software-intensive systems.

#### Impact highlights:

- The ATAC results enabled Barco to test more product variants in a shorter time as the in product-line regression testing has now been largely automated. This has given amongst others a boost to the ClickShare product portfolio, the main contributor to the Corporate segment, which is a growing part of the Enterprise division representing approximately 30% of Barco sales in 2017.

- The production testing platform introduced as a result of the ATAC project has been deployed across Bittium's complete product portfolio cutting the required test development effort by 70% for new products. This results in hundreds of k€ in cost savings for every new product compared to the situation prior to ATAC.
- ATAC has given Maximatecc the opportunity to boost and develop their simulation platform SimTec. They now have more customers using it and many more developers in total directly affecting the number of licences sold. The number of active licences increased by more than 300%, from 30 to over 100.
- The ATAC results helped Bombardier Transportation reduce by 80% the verification effort for software parts with a safety impact, which comprise a large part of the systems to be verified. Overall, the organisation has been able to raise its standards through its involvement in this project.
- Test automation realised in ATAC enabled Ericsson to easily save 80% execution time and to reach a much faster turnaround in projects, cutting delivery times by months.
- The ATAC results led to the creation of a start-up company geared to further exploring the test tooling prototype created in the project. With the help of the Mälardalen University business incubator (IdéLab), Compratio AB was officially launched in December 2015.



### H4H Impact story

The H4H project aimed to provide a highly efficient, hybrid programming environment for heterogeneous computing clusters to enable easier development of HPC applications and optimise application performance. It also aimed to provide a new infrastructure for HPC cloud computing and a new cooling technology to reduce energy needed.

*Impact highlights:*

- The H4H project made important contributions to the Bull Exascale Program as many project outputs were integrated during or after the project end within Bull's commercial offers, such as Bull Sequana X and the Bull SuperComputer Suite. The research and development emanating from such projects have attracted customers along the years and gained new entrants. CEA, CINES, SurfSARA, STFC, ZIH-TUD are among the major customers, accounting for several million euros.

- For Efield, participation in H4H contributed a highly competitive software package for electromagnetic analysis in the wireless communication and defence industry. In the last year of the project, a record contract was closed with a major Asian service provider for defence industry resulting in a 50% increase in revenue.
- The performance improvements achieved for RECOM's 3D combustion simulation software developed in the H4H project have enabled RECOM to make the necessary transition from traditional contracts in the coal-based power generation sector towards other industrial sectors within less than two years, allowing the company to recover more than 50% of lost turnover and stay in business.
- Several H4H improvements were integrated in open source code releases (SLURM, MAQAO, FoREST, UtoPEAK, SCILAB). The MAQAO performance evaluation framework developed by the University of Versailles Saint-Quentin-en-Yvelines, was enhanced with Xeon Phi support and is exploited by Bull, CEA, Dassault Aviation, Intel. Improvements made in FoREST and UtoPeak resulted in an average 20% gain in energy efficiency at less than 5% loss in performance.

## 1.2. ITEA celebration: 20 years of impact in software innovation

In 2018, ITEA celebrated its 20th year of impact in software innovation with a series of festive activities, putting the ITEA Community and ITEA project results in the spotlight:



### Personal interviews with ITEA Community members

Throughout the year, we conducted 10 personal interviews with ITEA's 'veterans' and 'newcomers'. These were published in the ITEA Magazine, ITEA Newsletters and on social media. Some inspiring quotes:

*"I am very proud that ITEA did very well from the beginning and that it is doing still very well today. Cooperation in Europe is a must and ITEA has contributed significantly to that."*

— Jan Lohstroh, Secretary General of the ARTEMIS Industry Association and one of the founders of ITEA

*"I think what we must also acknowledge is that the ITEA Cluster is very well managed. This has given us the confidence to make the investments in the Canadian companies because we know that if we put in the time and effort, the solid management foundation behind ITEA will help make the outcome successful."*

— Randy Zadra, Senior Advisor at the National Research Council (NRC) of Canada at the International Innovation Office

*"Thanks to the ITEA structure, SMEs can meet and expand their visibility outside national boundaries. Big industrial partners have the benefits of internal structure to lead them in the consortium and academics build strong relationships by bringing research activities, transferring IPs or allowing potential students to be hired. All round, it's a worthwhile venture for everyone."*

— Dominique Défossez, Programme Manager for Strategy and Partnership at NXP Semiconductors France

*"Being part of ITEA, there is certainly a feeling of being in a family: Work hard, play hard, and most of all, enjoy the company of the people around you."*

— Ronald Begeer, Senior Project Manager at Embedded Systems Innovation at TNO and former ITEA Steering Group Member

All personal interviews can be found in the [ITEA 2018 Magazines](#) or in the [ITEA News section](#).

### Celebration video made by the ITEA Community

Alongside the personal interviews of a few Community members, the entire Community was invited to share their personal experiences and messages in a short video. The result was a wonderful, amusing and heartwarming compilation. We invite you to take a look and witness the ITEA family spirit:

<https://youtu.be/tPSd41vtTBk>



### ITEA Impact stream extended to 20 impressive Impact stories

As shown in **section 1.1**, impact is one of ITEA's main ambitions and achievements. To promote the impactful results and to increase the visibility of ITEA project partners, ITEA created the ITEA Impact stream in 2017. Starting with 9 Impact stories in the first year, the Impact stream has now been extended to 20 impressive stories in celebration of ITEA's 20<sup>th</sup> anniversary in 2018. The highlights are mentioned in **sections 1.1 and 4.1**. All full stories can be downloaded online:

<https://itea3.org/impact-stream.html>.

### '20 years of ITEA' celebration sessions at ITEA events

During the ITEA Event on 24 May 2018, which was organised as part of the EUREKA Innovation Days in Helsinki, a '20 years of ITEA' celebration session was organised. Several representatives from industry and Public Authorities spoke about the impact of ITEA, its projects and their personal experiences at ITEA. Back among his 'family' and friends, former ITEA Chairman Rudolf Hagenmüller was invited to kick off this retrospective:

*"Fast exploitation has been a major success of ITEA projects. And what I think ITEA has shown over the past 20 years is that ITEA projects are capable of addressing global challenges of the highest ambitions. And we did so not by burning people out but by bringing happiness."*

- Rudolf Hagenmüller, Managing Director at Accelerator ACU GmbH and former ITEA Chairman

During the ITEA PO Days 2018, which took place on 4-5 September in Stockholm, ITEA Chairwoman Zeynep Sarılar kicked off the celebrations by presenting an ITEA timeline of special milestones. This was followed by a showing of the '20 years of ITEA celebration' video that was made by the ITEA Community. The celebratory evening ended in a social gathering with cake and champagne.



## 1.3 ITEA improvement priorities and results 2018

ITEA's project successes and the 20<sup>th</sup> anniversary celebrations were great highlights of 2018. In addition, as part of our annual quality process, several important improvement priorities were defined in collaboration with the ITEA Board. These will keep the ITEA programme strong and aligned with both its goals and the innovation landscape. Below are the improvement priorities, along with their current status:

### 1.3.1. Generate and distribute the ITEA Impact stream

As indicated above, we have increased the visibility and communication of our successes and impact by gathering project Impact stories in the ITEA Impact stream publication. These ITEA Impact stories show how ITEA projects solve key societal challenges and have an impact on business, the market and

society. The target was set for 20 Impact stories by the end of 2018, meaning that 11 additional stories had to be created during the year. This was achieved by the beginning of December. All ITEA Impact stories can be found online:

<https://itea3.org/impact-stream.html>. Project Impact stories will continue to be developed in the future.

### 1.3.2. Strong visibility of ITEA at the EUREKA Innovation Days in Helsinki

A key part of the ITEA process is to organise an annual ITEA Community event. This is to demonstrate results at a project exhibition and to present awards to our most successful projects. This kind of event allows ITEA projects to reveal their results (in progress), network with potential customers and discuss new ideas with possible future project partners. In 2018, the ITEA

Event was organised as part of the EUREKA Innovation Days that took place on 22-24 May in Helsinki and ITEA had a very strong presence at the well-visited exhibition and in the (main) programme. More details on the 2018 ITEA Event can be found in section 4.2 Events.

### 1.3.3. Implementation of the validity deadline of the ITEA label

As the market changes very quickly nowadays, innovations need to be implemented fast to keep up the pace. The time from idea to project's start has therefore been one of our key KPIs for several years. Currently, we feel that the time between defining a project and its actual start should be shorter in order to keep project partners at the cutting edge of software innovation. One of the main difficulties in setting up ITEA projects is still the time it takes to get funding decisions on labelled projects, and also the lack of synchronisation between funding decisions in all participating countries. In 2017, it was decided to address this by setting a deadline of 10 months on the validity of the ITEA label. The decision to withdraw the label for a project or to drop a participant is not automatic; exceptions can be made by the ITEA management bodies on a case-by-case basis. 2018 was the first year in which this new rule was applied, leading to the cancellation of two projects that could not fulfil the conditions that were required. More information on the time from idea to project's start can be found in section 3.2. ITEA Calls progress.

### 1.3.4. Expressing the Unique Selling Proposition of ITEA within the overall European innovation landscape

The overall innovation landscape in Europe is continuously changing. The European Framework programme is being renewed

through the creation of Horizon Europe and we are also seeing evolution and ongoing changes within EUREKA. The position of ITEA in this changing context has to be based on its unique strengths ('Unique Selling Proposition'). ITEA has actively participated within the EUREKA Network, discussing the changes in the innovation landscape and defining further improvements, and will continue to do so in 2019 in order to prepare for its successor ('ITEA 4').

### 1.3.5. High-level KPIs

The 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 ITEA Office's QMS 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 2018, ITEA achieved the following scores on these high-level KPIs:

Strategic Leadership	Target 2018	Realised 2018
Forecast for funded Call size ITEA 3 Call 4	>€125 m	€125 m
Time from idea to project start of ITEA 3 Call 4	12 months	16 months
Hit rate for ITEA 3 Call 3	>80%	67%
Average quality of events (ITEA Event, PO Days, Customer workshop)	>3.6	4.0

Table 1: Results ITEA high-level KPIs 2018

In this Annual report, the sections 3.1 ITEA programme size, 3.2 ITEA Calls progress and 4.2 Events give explanations and more details on these KPIs and their values in 2018.

## 1.4. ITEA improvement priorities 2019

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

### 1.4.1. Preparations for "ITEA 4"

ITEA has been a successful R&D&I programme for software innovation for 20 years, creating big impacts. The ITEA 3 label is valid until the end of 2021. Industry and Public Authorities want to prepare for a successor programme, 'ITEA 4' (name to be decided). In order to provide continuity for the ITEA Community and the Call calendar, with all the required formalities (e.g. IPR arrangements, financials) in place, 'ITEA 4' must be labelled in the summer of 2020. First preparations began in 2018, but most of the preparations will be done during 2019. These will occur together with the ITEA Bodies and in coordination with the Public Authorities in our funding agencies and in the EUREKA Network. The development towards 'ITEA 4' and at the EUREKA level will,

of course, also take into account the ongoing preparations for Horizon Europe. As a unique R&D&I tool for software innovation, managed by European industry with a bottom-up approach based on national priorities, 'ITEA 4' will be clearly defined as complementing other EC and EUREKA initiatives.

### 1.4.2. Further increase in customer orientation through ITEA events

Since 2015, ITEA has organised a customer workshop on a specific topic each year, extracting actual customer needs that ITEA projects can use as input to ensure market and business impacts. Alongside this event, we organise an annual exhibition event to showcase the (intermediate) results of projects and, whenever possible, to attract customers. Until now, we have organised this either on our own, together with ARTEMIS-IA or as part of the annual EUREKA Event. Over the past few years, we have consistently received feedback from our projects asking

to have more external visitors and potential customers at their exhibition booths. In 2019, we therefore intend to link our project exhibition to bigger and more customer-oriented events, starting with projects related to our main challenges of Smart Mobility and Smart Cities. This will increase visibility for ITEA projects and their results, leading to more exploitation opportunities.

### 1.4.3. Continued activities

- *Extension of the ITEA Impact stream:* At least 4 new, compact ITEA Impact stories will be added in 2019. In addition, we aim to produce 6 new ITEA success stories (long reads) that are published in other publications, e.g. the ITEA Magazine and ITEA Newsletter.
- *Further strengthening the ITEA press approach in collaboration with project partners:* In 2018, we developed several press releases in cooperation with the Communication departments of three ITEA Board companies; we intend to expand such cooperation towards stronger ITEA (project) visibility in the general press, aiming for two stories in national, quality newspapers.
- *Expansion of the ITEA Board, BSG and STG:* To increase the strength of ITEA and to share the activities of the ITEA Board companies, we aim to extend the ITEA Board with three more companies in 2019.
- *Improvement of ITEA's funding possibilities:* Based on concrete successes, we will continue to work with our industry partners and with the Public Authorities to improve funding possibilities, both in the usual ITEA countries and in new countries; for 2019, we have set the target for Call 5 at €130 m.
- *Reduction of the time between idea and project start:* In 2018, during 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 was that the Call had already been concluded by May 2018, in the sense that all projects were either started or cancelled. Although the hit rate has fallen from 80% to 67%, we intend to maintain this rule. We expect that this limited validity will not cause reductions in the overall programme size in the longer term, while it will speed up the start of projects. At the start of ITEA 3, our process was defined as allowing a time-to-project period of 10 months between the Call opening (mid-September) and funding decisions being finalised (June-July), with labelling occurring in mid-March. Although far away for now, this year we will set the target for the time-to-project at 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 innovative entrepreneurship between small and large industries, research institutes and universities in Europe. As a EUREKA Cluster programme, ITEA was initiated by major industrial companies and a number of EUREKA countries to support business-oriented innovation in software innovation. Clusters are truly industry-driven, with Cluster projects being defined bottom-up by industry, large companies and SMEs and financially supported by national governments. Clusters use industry resources to evaluate and support collaborative projects with the full involvement of the national Public Authorities.

They remain a dominant component of 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 that help 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 the European level, there are strategic programmes, based on agreed priorities, that provide support for early collaborative activities (as in H2020) and large technology initiatives (as in



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

applications, higher funding prospects and less effort and cost investments for all players involved. Thanks to the bottom-up approach, Clusters facilitate the realisation of national priorities through direct dialogue with national Public Authorities, and companies can realise long-term and continuous work on topics that are important to them. These observations were confirmed many times at several EC and EUREKA events in 2018.

## 2.2. EUREKA activities

ITEA is the EUREKA Cluster on software innovation. In total, there are 7 EUREKA Clusters: apart from ITEA, there are Celtic-Next (telecommunications), EURIPIDES<sup>2</sup> (smart systems), EUROGIA<sup>2020</sup> (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 2017-2018 (Finland), ITEA acted as InterCluster spokesperson. In June 2018, PENTA took over this role during the UK's 2018-2019 Chairmanship.

During the Finnish Chairmanship, a EUREKA Working Group on Clusters was created and co-chaired by Tom Warras (BusinessFinland) and Fopke Klok, with impact assessment as one of its main topics. So far, impact assessment had been approached in an ad hoc manner at the EUREKA level. In May 2017, for example, a EUREKA Network and Cluster projects impact report was published. The study showed, among other things, that one year after the end of projects, project participants had an additional annual turnover growth of 13% for Cluster projects, as compared to non-participating companies (<https://itea3.org/news/the-impact-of-participation-in-eureka-cluster-projects.html>). The Cluster Working Group felt that a more structural and systematic approach was needed across EUREKA. This resulted in a standardised impact form for finalised projects (to be used across all EUREKA instruments) which was presented at the HLG/NPC meeting in Helsinki in June 2018.

Another important result of ITEA's InterCluster role was a EUREKA Cluster presentation. This explains the general concept of a EUREKA Cluster and positions each individual Cluster in a common context. This presentation was very well received by the EUREKA Network.

In July 2018, the UK Chair took over and installed three 'task & finish' groups: one on the European innovation landscape, one on the EUREKA instruments and one on the EUREKA Strategic Roadmap. First meetings have been held as part of this, including some on Clusters. Conclusions are expected at the end of the period in June 2019, at which point the Netherlands will take over the EUREKA Chairmanship.

To strengthen their position and promote their results, the Clusters have participated in several events together. The main event was the EUREKA Innovation Days 2018, organised by the Finnish Chair on 22-24 May in Helsinki. More information about this event can be found in section 4.2 Events. In addition, the Clusters participated in the following activities in 2018:

- **Clusters meeting with the Japan Science and Technology Agency - Brussels (21 February)**  
Several representatives from several EUREKA Clusters (including Vice-chairman Philippe Letellier for ITEA) had a meeting with a representative from the Japan Science and Technology Agency in Brussels on 21 February. There was interest shown from both sides in following this up and extending it with the NEDO agency (New Energy and Industrial Technology Development Organisation), which is closer to Japanese business.
- **Innovation Across Borders Faster-Further-Together" event - Brussels (26 September)**  
On 26 September, EUREKA hosted an event at the Bibliothèque Solvay in Brussels titled 'Innovation Across Borders "Faster-Further-Together"'. Jean-Eric Paquet, European Commission Director-General of Research, and Tim Bestwick, Chair of the EUREKA Network, jointly opened the proceedings. Casper Garos of Philips participated in the panel discussion 'Breaking down borders, the secrets of success'.
- **EUREKA Clusters CDTI meeting - Madrid (14 November)**  
ITEA Chairwoman Zeynep Sarilar, together with SMART Director Joseba Bilbatua, presented the EUREKA Clusters during a meeting with CDTI representatives Luis Gonzales Souto (Deputy EUREKA HLG & Head of Division of Technology Action) and Carlos de la Cruz (Head of Directorate of Technical Evaluation). The main goal of the meeting was to promote ITEA and the EUREKA Clusters and to discuss future funding possibilities through CDTI. An additional goal of this meeting will now be to target a more extended meeting with higher CDTI management at a later stage, together with a larger delegation of Industry and Clusters.

- **EF ECS - Lisbon (20-22 November)**

On 20-22 November, the European Forum for Electronic Components and Systems (EF ECS) 2018 took place in Lisbon, jointly organised by AENEAS, ARTEMIS-IA, EPoSS, ECSEL Joint Undertaking and the European Commission. This year, EUREKA was an associated organiser. The programme consisted of conferences, breakout sessions and an exhibition. Zeynep Sarilar attended the event with Kay van Ham, who manned the EUREKA ICT Clusters booth at the exhibition.

- **European Parliament breakfast session - Brussels (27 November)**

On 27 November, as part of the 10<sup>th</sup> European Innovation Summit organised under the EC, a breakfast session was organised to debate International Innovation Cooperation, with a focus on internationalisation and global strategy objectives. Peter Connock (PENTA Director) represented the Clusters as the EUREKA InterCluster spokesperson.

- **ICT2018 - Vienna (4-6 December)**

EUREKA, together with AENEAS, managed to get a timeslot during the ICT2018 event in Vienna on 4-6 December. This was a panel session called 'Collaborative Innovation for the Digital Age'. The goal was to clearly highlight the importance of EUREKA, including the Clusters. Anton Strahilov of EKS Intec, active in projects like AVANTI, ENTOC and TESTOMAT and heading the SPEAR project, was one of the panellists.

- **Preparations for the EUREKA Global Innovation Summit 2019**

On 14-16 May 2019, EUREKA's UK Chair will organise the EUREKA Global Innovation Summit in Manchester, with the support of the EUREKA Clusters. This year, there will be no physical exhibition of EUREKA projects, but Clusters will be well-represented during this 3-day event in dedicated sessions, with high-level speakers, success stories, project videos and in many B2B meetings, enabling a lot of interaction.



# 3 Calls overview

## 3.1. ITEA programme size

### ITEA 2 programme successfully completed!

The ITEA 2 programme has now come to an end following the completion of 109 projects, of which 6 were completed in 2018. The total size of the ITEA 2 programme was 12,573 PY and €1,303 m. In total, 987 project partners were active in ITEA 2: 42% industry, 33% SMEs, 14% universities and 11% research institutes.

Although some results are lower than the ambitions of ITEA 2, which were set in 2005 as 20,000 PY and €3,000 m, ITEA still managed to mobilise more than the targeted number of 800 project partners. This shows that interest in the programme is high in the R&D Community. As for the other ambitions, the ITEA 2 programme also exceeded its targets by far: 6955 dissemination

actions vs 4000 targeted, 1206 exploitations vs 1000 targeted and 404 standardisation actions vs 250 targeted. We can fairly conclude that ITEA 2 projects delivered impressive results and impacts, and that the ITEA 2 programme has been completed with great success!

ITEA 3 now has 4 Calls running and the 5<sup>th</sup> Call is ongoing. 5 projects have been recently completed, 47 projects are running and 6 projects are still waiting for final funding decisions. As for the funded Call sizes, ITEA 3 Call 2 is well on the way towards €125 m, a real improvement on Call 1's size of €103 m. ITEA 3 Call 3 is heading towards €113 m and, for ITEA 3 Call 4, the Call size is forecasted at €125 m.

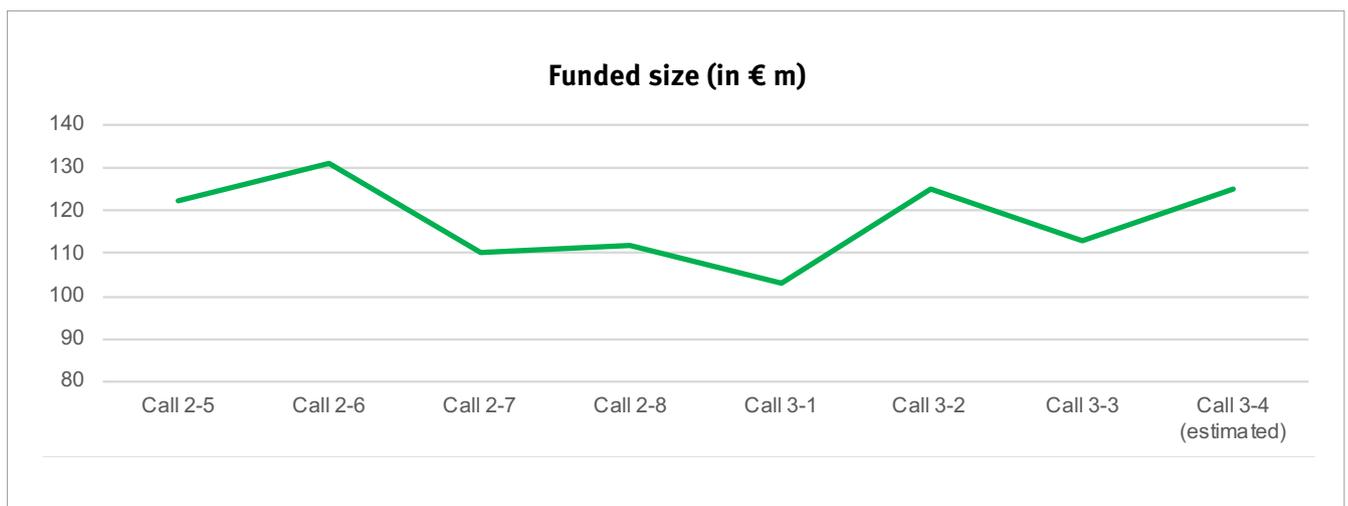


Figure 1: ITEA (estimated) funded Call size in million euros

More details about Call statistics per country and per year can be found in **Annex A**.

## 3.2. ITEA Calls progress

In the following graph, the progress of the ITEA Calls is represented by several hit rates. These hit rates show respectively the percentage of number of projects, effort and costs actually accomplished or actually running in the ITEA programme as compared to the number of projects, effort and costs initially labelled.

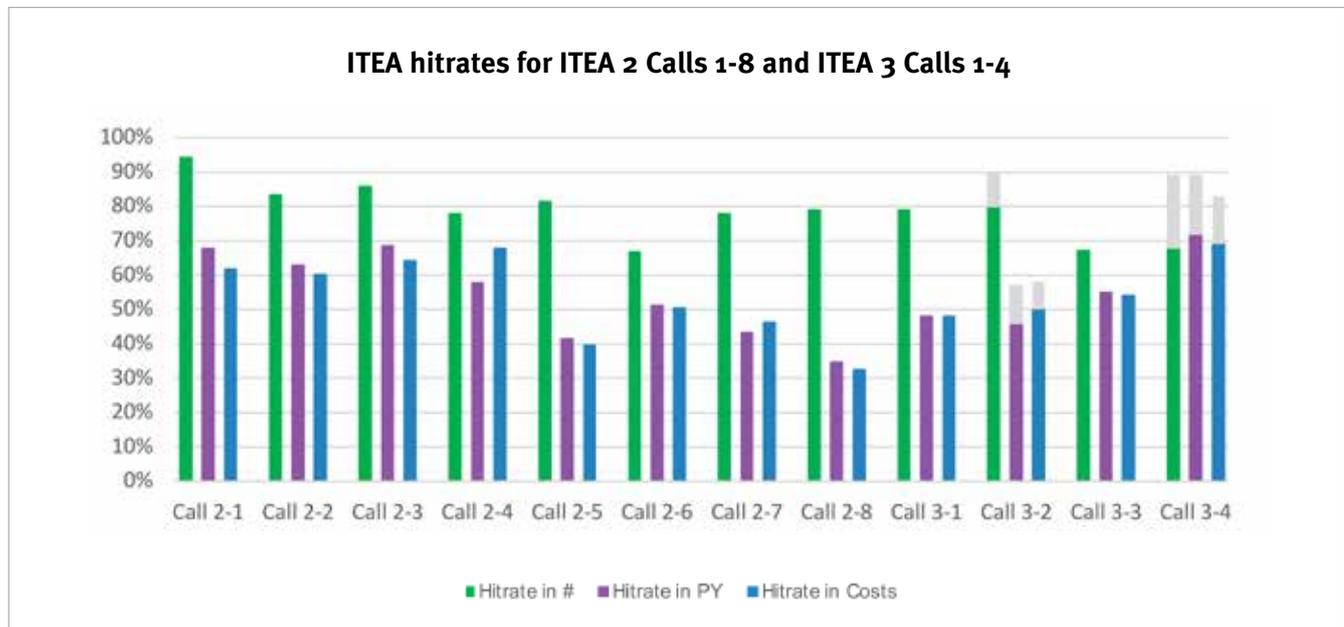


Figure 2: ITEA hit rates for ITEA 2 Calls 1-8 and ITEA 3 Calls 1-4 as of 31 December 2018. Figures based on latest FPP

This figure clearly shows the impact of the label validity from ITEA 3 Call 3, in which the project status is clear from an early stage. Due to the cancellation of 2 projects that did not start in time, the hit rate in terms of the number of projects is a bit low (67%). However, the size in terms of person-years and costs of the running projects has been reduced to a lesser degree than in previous Calls, and these hit rates are therefore higher.

The grey areas represent projects that are still waiting and can therefore still influence the hit rates. Also, the ITEA 3 Calls are 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 because partners remain involved and the topic remains relevant, as is also visible in Figure 2. As a result, the time from project idea to project start has been a high-level KPI of ITEA for a few years now. This KPI has not been improved during the first ITEA 3 Calls, so a deadline on the validity of the ITEA label has been implemented. More information on this can be found in section 1.3.3 **Implementation of the deadline on validity of the ITEA label.**

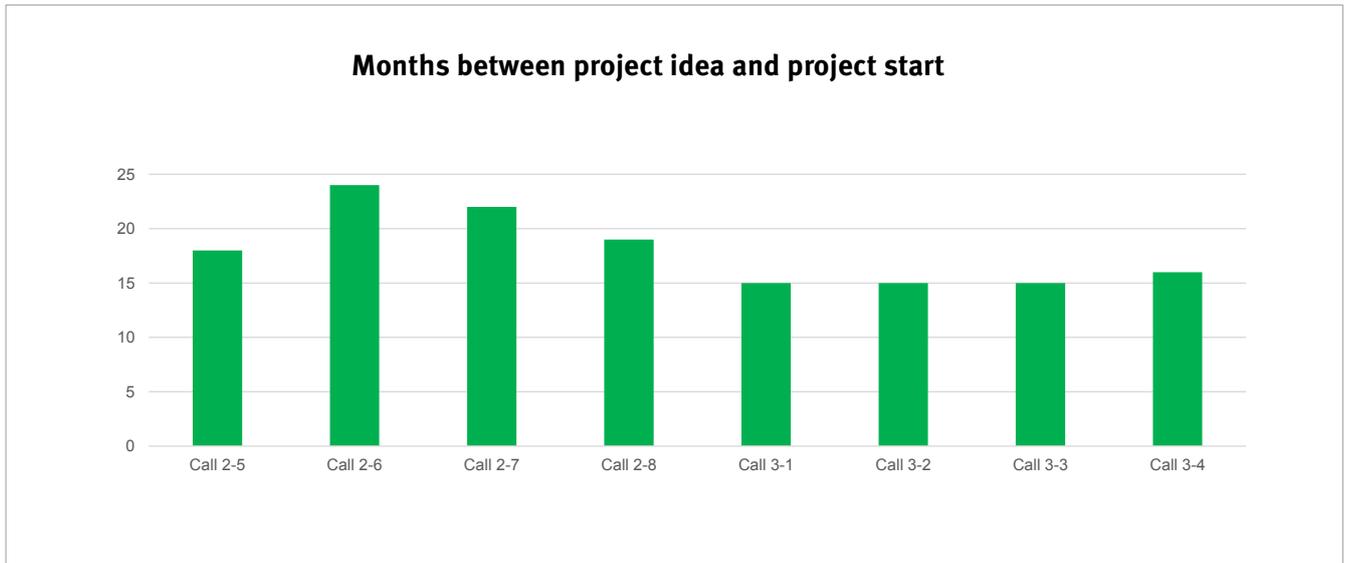


Figure 3: Time from ITEA project idea to project start (when >50% of the projects of the Call have started) from ITEA 2 Call 5 to ITEA 3 Call 4

The new deadline has not yet resulted in a reduction of the time-to-project. In a meeting with ITAC, it was decided to investigate the cause of the remaining delays on a country-by-country basis. This has been discussed in the second half of 2018 with ITAC members from selected countries. Specific observations have been concluded and related improvements have been agreed upon, so we expect that the effect of the deadline will become visible in future Calls. This is clearly a shared priority between industry and Public Authorities.

The current statuses of the ITEA projects are as follows:

	2018			2017		
	#	Effort in PY	Cost in €100 k	#	Effort in PY	Cost in €100 k
Labelled during the year	19	2942	2830	18	2330	2252
Running at end of the year	48	5395	5134	38	4485	4393
Waiting at end of the year	6	803	625	13	1640	1234
Completed during the year	10	1001	1002	12	880	800
Cancelled during the year	6	599	566	4	610	710

Table 2: Status ITEA projects in 2018 and 2017 as of 31 December 2018 and 31 December 2017 respectively. Figures are based on labelled and latest FPPs.

This table shows that the label validity has probably had an impact on:

- The number of waiting projects, which fell by more than 50% in 2018
- The number of running projects, which significantly increased
- The number of cancelled projects, which also increased

### 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 figures below show the distribution, per Call, of the ITEA projects that deal with these challenges.

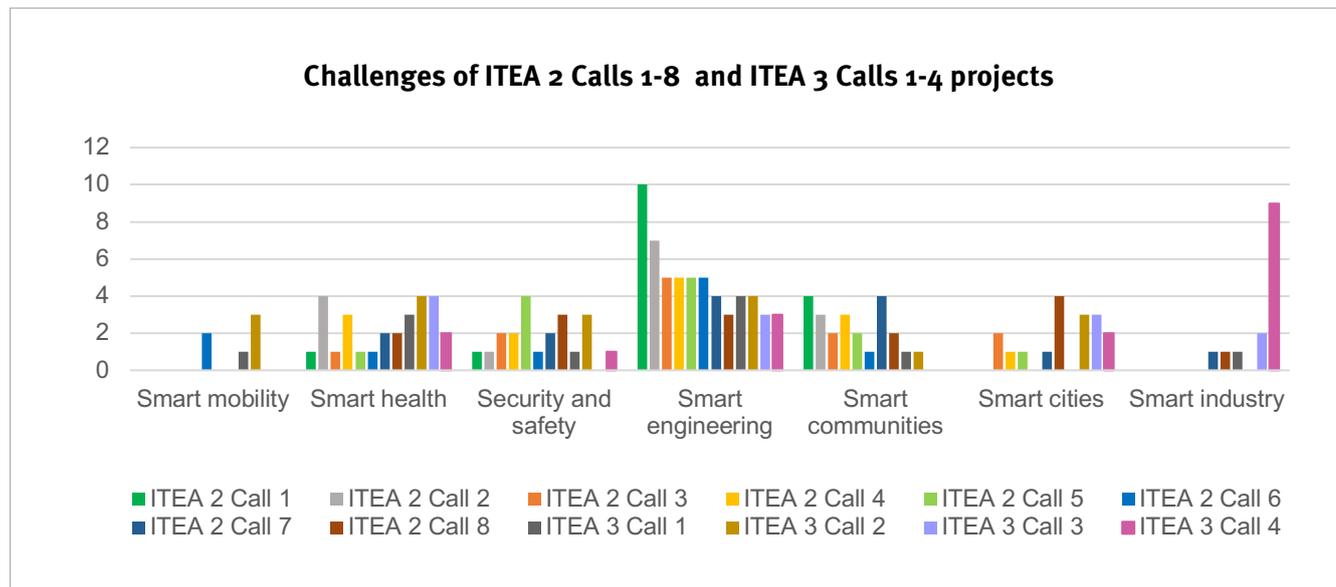


Figure 4: Number of ITEA 2 and ITEA 3 projects per ITEA Challenge

The impact of the ITEA thematic customer workshops is visible in this figure, especially for ITEA 3 Call 4, in which Smart Industry was the theme and 9 ITEA projects came out. This had not been a predominant topic in any prior ITEA Call .

### 3.4. New projects - ITEA 3 Call 4

The 4<sup>th</sup> Call of ITEA 3 delivered 24 submitted FPPs, resulting in 19 labelled ITEA projects that involved 2,942 PY and 15 countries. This year, with 53% of manpower dedicated to SMEs, ITEA again appears to be an excellent tool for SMEs to push innovation, and to transform it into market impact. This is the unique characteristic of our programme. The difficulties in building relationships between large companies and SMEs are common knowledge, but our results show that ITEA has found a recipe with major value for the entire innovation community. During the course of the year, two projects were cancelled, CASCAde and EMBrACE, both of which submitted an updated Project Outline (PO) in ITEA 3 Call 5.

The themes arising from this Call are:

Theme	ITEA 3 Call 4 projects
Smart manufacturing	MOSIM, CyberFactory#1, DayTiMe, PIANISM, SAMUEL, SMART-PDM
Smart engineering	CASCAde, EMBrACE, PANORAMA, SCRATCH, VISDOM, XIvT
Internet of Things	COSIBAS, I2PANEMA, SCRATCH
Security	CyberFactory#1, SCRATCH
Smart cities	I2PANEMA, POLDER
Smart health	IMPACT, VrSurgery
Simulation	EMBrACE
Digital life	AutoDC
Media	CityStory

A short description of each project can be found below:

#### **AutoDC - 17002**

*Autonomous data centres for long term deployment*

*Project leader: Ericsson (Sweden)*

With growth in the data centre market expected to continue, the costs of operating and maintaining the data centre footprint will increase. The aim of AutoDC is to provide an innovative design framework for autonomous data centres, enabling ongoing operation and self-healing independent of contextual interference (such as intermittent power failures or overheating) and without the need for any human intervention. Due to lower maintenance and operation costs, autonomous data centres can become key enablers of markets in developing countries.

#### **CityStory – 17006**

*Citizen Storytelling*

*Project leader: VRT (Belgium)*

CityStory wants to innovate through a creative, intelligent, safe and social storytelling development environment. This is both do-it-yourself and do-it-with-others, based around media and accessible for everyone. The project aims to stimulate collaboration using a co-creation and design platform to share ideas and get opinions heard. Through new modes of interactive storytelling, city touchpoints, interactive screens, innovative media recognition, data analysis, tools that assist while filming and intelligent/deep learning tools, the project will enable ideas to be turned into a story and a valuable media output.

#### **COSIBAS - 17022**

*Cognitive Services for IoT-based Scenarios*

*Project leader: ISEP (Portugal)*

Digital Transformation in the industrial domain is currently limited to the connectivity of devices, machines, tools, workers, etc. The amount of data is rising and requires sophisticated interpretation through analytics, generating business value in terms of faster detection, better forecasts and improved decisions with overall increased flexibility. Current IoT stacks frequently focus on handling data or data streams. The COSIBAS project targets the next step in IoT-based applications and solutions: the integration of semantic and cognitive AI technologies.

#### **CyberFactory#1 - 17032**

*Addressing opportunities and threats for the Factory of the Future (FoF)*

*Project leader: Cassidian Cybersecurity (France)*

CyberFactory#1 aims at designing, developing, integrating and demonstrating a set of key enabling capabilities to foster optimisation and resilience in the Factories of the Future (FoF). It will address the needs of pilots from the Transportation, Automotive, Electronics and Machine manufacturing industries, based around use cases such as statistical process control, real time asset tracking, distributed manufacturing and collaborative robotics. It will also propose preventive and reactive capabilities to address security and safety concerns for FoF, such as blended cyber-physical threats, manufacturing data theft or adversarial machine learning.

#### **DayTiMe - 17030**

*Digital Lifecycle Twins for Predictive Maintenance*

*Project leader: Philips (The Netherlands)*

The concept of a digital twin can provide solutions for the challenges faced in Smart manufacturing, such as for Predictive Maintenance (PdM) techniques. Even though predictive maintenance and digital twins are expected to have a high impact on future smart manufacturing and engineering, there are still very few functioning examples of digital twins being used for predictive maintenance in actual industrial practice. It is this gap that DayTiMe is about to fill, integrating findings and solutions from 14 industrial use cases using a generic value chain model.

#### **IMPACT - 17021**

*Intelligence based iMprovement of Personalised treatment And Clinical workflow support*

*Project leader: Philips (The Netherlands)*

Healthcare faces many challenges, such as improving patient outcome and working more cost-effectively in the face of growing demand, declining staff capacity and the rapid succession of new clinical and technological developments. The IMPACT project will address these challenges, building on preceding ITEA projects like MEDIATE and BENEFIT to add the next logical step: a shift from evidence-based towards intelligence-based healthcare. To achieve intelligence-based healthcare, the IMPACT project will promote automatic data collection and artificial intelligence throughout the complete clinical pathway.

#### **I2PANEMA – 17001**

*Intelligent IoT-based Port Artefacts Communication, Administration & Maintenance*

*Project leader: Materna GmbH (Germany)*

Digitalisation is still in its infancy in ports. I2PANEMA aims to deploy the power of IoT to improve port operations, making them more efficient and sustainable, and to pave the way towards networks of smart ports. Barriers such as data security and the lack of integration of existing, heterogeneous IT systems will be overcome. The requirements of the pilots are important stimuli for developing an IoT port reference architecture. The architectural findings are intended to contribute to standardisation bodies, such as Industry 4.0 RAMI.

#### **MOSIM - 17028**

*End-to-end Digital Integration based on Modular Simulation of Natural Human Motions*

*Project leader: Daimler AG (Germany)*

Within the European economy, digital modelling activities and the simulation of human motion in particular have emerged during the last decades. The ability to realistically predict real-world observations is key to remaining competitive. In order to introduce approaches and software solutions which are capable of automatically simulating a rich repertoire of realistic human motions, MOSIM aims to develop and implement a generic

concept. This is inspired by the FMI standard, transferring the idea of co-simulating models from different simulation environments to the field of human simulation through the introduction of Motion Model Units.

#### **PANORAMA - 17003**

*Boosting Design Efficiency for Heterogeneous Systems*

*Project leader: Bosch (Germany)*

The goal of PANORAMA is to research model-based methods and tools to master the development of heterogeneous embedded hardware/software systems. This occurs in collaboration with diverse and heterogeneous parties by providing best practice, novel analysis approaches and guidance for development. To that end, the main line of action is geared towards extending the scope and interoperability of current system level analysis approaches, particularly through enhancing existing abstract performance meta-models. The enhanced meta-model and the related tool framework will be a common and open platform to support collaborative development.

#### **PIANISM – 17008**

*Predictive and Prescriptive Automation in Smart Manufacturing*

*Project leader: KoçSistem (Turkey)*

PIANISM aims to put together predictive and prescriptive maintenance techniques to achieve an end-to-end automated manufacturing process and to optimise end-to-end manufacturing value chains. The disruption of traditional maintenance processes in manufacturing environments requires a sophisticated system that covers a wide range of domains, such as data science, machine learning, analytics, simulation and real-time processing. PIANISM will provide related, missing analytics techniques and algorithms, introduce a new generation of data identification, integration and modelling processes and try to develop standards to enable more flexible and applicable solutions for manufacturers.

#### **POLDER - 17020**

*Urban Data Policy Lab: POLicy & Data Exploitation & Re-use*

*Project leader: Accuro Technology S.I (Spain)*

Recent advances in technology, from wireless sensor networks to big data processing and analysis, are radically changing our cities. Urban policymaking is a fundamental aspect of such a transformation and can benefit from these emerging technologies with new supporting tools and optimised processes. The POLDER project aims to design, develop and deploy a software tool suite to support governments, city councils and related organisations in the elicitation, design, application and validation of policymaking. POLDER proposes a hybrid policymaking model in which policy becomes Data-driven, Model-driven and Society-driven.

#### **SAMUEL - 17010**

*Smart Additive Manufacturing – an AM Intelligent Platform*

*Project leader: 3DSemantix (Canada)*

Additive manufacturing (AM) for prototyping, tooling and production is becoming more mainstream. However, the industry

has pointed out that there is a clear need to create accessible expertise on which technology is best for which AM process/technology/material application. The major goal of the SAMUEL project is therefore to combine engineering experience, through data-mining and machine-learning methods, with advanced analysis concepts to create an AM knowledge base that can assist an engineer or business developer in all major AM steps.

#### **SCRATCH – 17005**

*SeCuRe and Agile Connected Things*

*Project leader: SIRRIS (Belgium)*

The development and operation of secure, large-scale IoT systems is difficult. Technological platforms exist for providing the necessary building blocks to integrate devices and backbone logic, but do not address the major concerns of today's software-intensive systems: security, agility and a need for continuous deployment. SCRATCH proposes an integrative approach to IoT, security and DevOps practices through an architectural and process platform. This consists of a hardware security foundation for device identity management and security metrics collection, a DevOps IoT platform and a DevSecOps process, promoting continuous secure operation.

#### **SMART-PDM - 17041**

*A Smart Predictive Maintenance Approach based on Cyber Physical Systems*

*Project leader: Enforma Information and Communication Technologies A.S. (Turkey)*

Manufacturing is undergoing an immense, yet gradual, Industry 4.0 transformation with the help of advancements that include predictive maintenance. SMART-PDM's objective is to acquire manufacturing data to provide diagnosis and prognosis information while rendering the underlying technology financially feasible. This will result in lower maintenance costs, less waste and less parts, as well as improvements in quality and throughput. The technological advancements validated by the demonstrators will help enhance the know-how, technologies, solution offerings and toolsets of partners.

#### **VISDOM - 17038**

*Visual diagnosis for DevOps software development*

*Project leader: Vincit Development Oy (Finland)*

Visualisation is a powerful method for communication, especially cross-disciplinary communication with various stakeholders, as occurs in operations. Many software development tools already provide some visualisation, but integrated views that combine data from several sources are still at a research prototype level. The VISDOM project will develop new types of visualisation that utilise and merge data from several data sources in modern DevOps development. The aim is to provide simple 'health check' visualisations about the state of the development process, software and use.

**VrSurgery - 17044***Virtual Reality in Surgical Training**Project leader: KY Health Services Medical Consulting and Research Development Ind. Trade (Turkey)*

The project VrSurgery aims to develop a next-generation, intuitive, portable and affordable simulation kit for brain surgery training. This is based on virtual reality technology, enhancing the training of surgeons by granting broader access to simulation environments and lowering the costs of surgical education in hospitals and medical schools. Increasing the level of skill of brain surgeons will lead to a reduction in national health and insurance costs. Moreover, the simulation approach will be easily extendible to other surgical branches as a part of further applications and business roadmaps.

**XIVT - 17039***eXcellence In Variant Testing**Project leader: Bombardier (Sweden)*

Within the XIVT project, a method and toolchain will be defined for testing highly configurable, variant-rich embedded systems in the automotive, rail, telecommunication and industrial production domains. This will enable a highly effective, cost-efficient quality assurance, allowing a shift towards autonomous, flexible and adaptive applications. The method is founded on a knowledge-based analysis of requirements formulated in natural language and model-based test generation at a product-line level. It is expected that XIVT methods will result in higher test coverage, better products and more flexible, higher quality processes.

# 4 Operations

To enable ITEA stakeholders to get the most out of the ITEA programme and to promote it in the best way, several operational actions are carried out by ITEA. In this section, details of the main operations achieved in 2018 are reported.

## 4.1. ITEA Impact stream

As indicated in section 1.1 **ITEA project successes and impact**, one of our main activities was to promote the incredible results of the ITEA projects. Because of this, the Impact stream, created and extended to 9 Impact stories in 2017, has grown to 20 strong Impact stories in 2018. Two examples, ATAC and H4H, were already shown to inspire you. Here, you can continue your journey with 9 additional ITEA Impact story highlights. The full stories can be read online: <https://itea3.org/impact-stream.html>.



### AMALTHEA & AMALTHEA4public Impact story

AUTOSAR, a result from the 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. 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.

#### Impact highlights:

- Robert Bosch’s internal tooling for embedded multi-core is based on the AMALTHEA model as a central component.

- Some of the well-known automotive OEM and TIER1 customers of Timing-Architects Embedded Systems GmbH (now part of Vector Informatik) have set AMALTHEA as the internal Group standard for modelling the dynamic software architecture of ECUs.
- BMW, Daimler, Volkswagen and PSA use the format and the APP4MC platform in cooperation with their tool vendors and tier suppliers.
- Volkswagen/Audi and Continental published the article “Shared SW development in multi-core automotive context” (ERTS2016, [http://web1.see.asso.fr/erts2016/uploads/pdf/erts\\_2016\\_Proceedings.pdf](http://web1.see.asso.fr/erts2016/uploads/pdf/erts_2016_Proceedings.pdf)) in which AMALTHEA was promoted as a collaboration model between OEM and TIER-1.
- Community building is ongoing via the Eclipse Open Source network. This has led to a healthy community and a three-month release cycle to keep the software and data model up to date. Users worldwide downloaded each release several hundred times.
- Due to its open nature, universities are able to use APP4MC successfully in teaching. E.g. FH Dortmund organised several APP4MC-focused summer schools. Several Master and PhD theses were conducted in the context of APP4MC at FH Dortmund, Fraunhofer IEM, University of Gothenburg and Paderborn University. The project also enabled about 60 students to use their expertise in the industry. Some 8 students involved in the project were directly hired by industry companies to ramp up and enhance their know-how in multi- and many-core performance and work in close cooperation with the Eclipse APP4MC developer team.



### BaaS Impact story

The BaaS (Building as a Service) project set out to create an optimised and secure work and live environment that enables efficient management and maintenance by introducing a novel semantic IoT service framework for

commercial buildings along with a reference architecture and corresponding software platform.

*Impact highlights:*

- In Materna, IoT has recently been elected as one of the company's key innovation areas. The results from the BaaS project can be considered as preparatory activities to this, and the knowledge part gained in BaaS will definitely be a basis for Materna's future activities.
- Materna's Open Source JMEDS platform, which was further developed in BaaS, has been downloaded more than 31,000 times all over the world (87 countries) since its publication.
- BOR Software started the project as the smallest SME participant (2 people) and now has 15 people working in BaaS-based IoT products and services. The income resulting from the project is estimated at around 1.5 million euros for the period 2017-2020. Spin-off companies IOTIQ GmbH and ERSTE Software Ltd were recently founded under the guidance of BOR, inspired by the gained BaaS knowledge and its IoT focus.

- Through the CAP project, VTT has been able to create the world's first public in-cloud icing atlas (WlceAtlas) for identifying icing risks for wind power and potentially other tall man-made structures. WlceAtlas has proven to be highly accurate according to 3rd party assessment: over 80% of all analysed wind farms globally have been correctly identified regarding icing losses with WlceAtlas.
- Innoddep attracted great interest in introducing its interactive CCTV monitoring service, which is based on CAP results, to several exhibitions and local district surveillance centres in Korea and has been implementing the steps for its commercial product.

### CAP Impact story

The CAP (Collaborative Analytic Platform) project created a platform incorporating open Big Data tools and features that all participants can use and enhance, thus enabling access to data, sharing and processing in real-time facilitated by a single platform. New business models, establishing metrics for the value of Big Data, were created.

*Impact highlights:*

- Turkcell Technology and KoçSistem created a partnership with a large industry company and established a real-time IoT data flow from fuse boards. Turkcell Technology developed predictive models by getting electric consumption values from these fuse boards and developed a trendtracking dashboard that will enable near real-time energy-saving actions to be taken. There are plans to integrate this same model for restaurant and market chains, which is a great opportunity for Turkcell Technology to enter new markets, with more than 20,000 market chains and 5,000 restaurant chains as potential users.
- During the CAP project, the French La Poste Group examined fraud on franking marks by targeting the customers and/or the products where the legal manual controls may be the most cost-effective. These same control mechanisms may enable several million euros to be recovered. Furthermore, in 2016 La Poste Group decided to invest in Probayes, a very successful French data science SME, to accelerate the digital transition.

### Digital Cinema Impact story

The ITEA Digital Cinema project developed the key components for the transition of the movie industry from analogue 35mm film to digital technology. Within the project, a system solution was developed, covering all elements of film production, distribution, storage and replay, including alternative uses for digital infrastructure.

*Impact highlights:*

- The results of the Digital Cinema project were integrated in the Barco Digital Projection product line and provided Barco with the basis for taking a leading position in 2012, with close to 30% market share that has continued growing since. Annual capture rates of around 50% have strengthened Barco's number 1 position, and with over 80,000 projectors deployed, Barco now has a global market share of close to 50% with annual revenues in excess of 300m euros.
- Barco achieved a #1 worldwide position with overwhelming market shares in China and Latin America of 60% and higher, a leading position in Europe with around 40% of market shares and a strong position in US and the rest of the world with market shares varying between 25% and 35%.
- In Barco, more than 350 additional people were hired to cope with the demand created by digital cinema. While Barco had previously built up to 100 (other purpose) projectors every month, thanks to the results of digital projection, the production including the digital projectors is now over 660 units per month. With peaks to 1,500 digital projectors per month, more people are required in the plant.
- XDC, a spin-off from project partner EVS, grew from 20 to 70 people between 2005 and 2011. It installed more than 1000 playback servers all over Europe and 200 central control systems in multiplexes, both fully derived from the architecture and technologies designed and developed during the Digital Cinema project.



### EAST-EEA Impact Story

Introducing new electronics in the automotive domain put development costs and cycle times under enormous pressure. The ITEA project EAST-EEA successfully addressed the need for software and hardware interoperability by developing an integrated platform based on open-systems architecture.

#### Impact highlights:

- EAST-EEA paved the way to the automotive industry's standardised platform for automotive applications: the Automotive Open Systems Architecture (AUTOSAR). AUTOSAR is now a global industrial initiative that is bringing together about 250 original equipment manufacturers (OEMs), Tier 1 automotive suppliers, software suppliers, semiconductor manufacturers, tool suppliers and others worldwide. The initial ITEA partners still form the majority of the current core group.
- The AUTOSAR software and therefore the EAST-EEA results are today part of each single embedded ECU throughout the automotive sector worldwide and the component-oriented software development method is now state-of-the-art in the embedded environment.
- To give an impression of the order of magnitude of this widespread success: when production for AUTOSAR ECUs started in around 2008, this concerned an average of more than 50 million passenger cars per year. Nowadays smaller cars have today maybe 50 ECUs and premium vehicles more than 200. As an estimate we multiply 10 years times 50 million cars times 100 ECUs = 50 billion ECUs are based on the EAST-EEA project.
- Based on EAST-EEA, the EAST-ADL language is an established, AUTOSAR-aligned representation for Systems Engineering information of automotive embedded systems. The language acts as a lingua franca between tools and organisations and is currently maintained by the EAST-ADL Association. Its members are employees from among others: Carmeq/VW, FIAT, Hyundai, McLaren, Volvo, Volvo Cars, Bosch, Continental, CEA LIST, Fraunhofer ESK, INRIA and KTH.
- Multiple standardisation documents reflecting the project's case studies have been adopted by the European Telecommunications Standards Institute (ETSI) and have been forwarded to international standardisation bodies.
- The EAST-EEA project acted as an important reference platform for further development in several ITEA projects over the course of many years.



### EPAS Impact story

The ITEA EPAS project aimed to involve the main actors of the card payment industry to deliver global standards that would enable European retailers to rely on common specifications for their card acquiring operations.

#### Impact highlights:

- EPAS has paved the way to a series of universal ISO standardised specifications for European card payments free of royalty and charges. Ultimately, this has been extended worldwide with the endorsement of the EPAS specifications (CAPE) as a global ISO 20022 message standard.
- ISO 20022 is today 'the' reference in standardisation in finance. Instant payment solutions are being developed today based on ISO 20022 credit transfer standards which may, in the future, facilitate the development of hybrid card and credit transfer payment solutions.
- EPAS has been targeted by Groupement des Cartes Bancaires as a unique opportunity for its members to address the need for a unified European market for payments as set out by the European Commission. It also provides an appropriate way to rely on open royalty-free standards ensuring robust independence vis-à-vis some proprietary norms owned by and under the control of other industry stakeholders. Such independence is viewed as the only way to maintain today's domestic scheme autonomy vis-à-vis the influence of some major global networks.
- EPAS provides a major competitive advantage to retailers operating card payments in different countries, such as:
  - Total S.A., operating and managing 8 different electronic payment systems in Europe, selected EPAS to reduce its heavy dependence on terminal manufacturers and payment solution providers.
  - AccorHotels found in EPAS standards the ability to overcome the deployment complexity and the costs related to heterogeneous standards among European countries.



### MoSHCA Impact story

The ITEA 2 MoSHCA project was geared to improving patient-doctor interaction and controlling chronic diseases, developing technological set-ups that significantly improve the self-management of chronic illnesses, promote communication between the patient and the health provider, and support health staff in providing better clinical follow-up.

#### Impact highlights:

- After the MoSHCA project, Evalan has experienced a growth rate of 100% each year, in 2016, 2017 and 2018. This

growth is reflected in all metrics – employees, turn-over, profitability etc. During that period Evalan has added 40 FTEs to its payroll. Evalan expects that growth will continue in 2019. The technology Evalan developed within the context of the MoSHCA project greatly contributes to this growth as the same technologies are now used in other products.

- The Epilepsy App, developed by CLB Research and Sound Intelligence on the basis of MoSHCA technology, is now being used to monitor 2000 patients at the Dutch 's Heeren Loo care group (ten-year contract). Three big care groups – 's Heeren Loo, ASVZ and Baalderborg Groep - are currently using the Sound Intelligence algorithm to detect snoring. In addition, around 30 healthcare institutions – including the mentioned care groups and hospitals like Prinses Maxima, Zuyderland, Elkerliek and Zaans Medical Centre - are using the CLB Messenger's "critical messaging core" to distribute alarms from medical devices to nursing staff.
- The project resulted in two patents in the areas of hypertension and COPD (Chronic obstructive pulmonary disease) care.

Assistant Systems. These two Working Groups gather all the German automotive OEMs and several Tier 1s to collaborate on industry open source platforms.

- At Eclipse, OPEES pioneered the approach that leverages open source for the dissemination and exploitation of research results and encourages the development and sustainability of these technology communities. This approach was then taken up, among others, by APPSTACLE, Eclipse Kuksa and the AMASS project with the open source OpenCert, Amalthea4public and Eclipse APP4MC.

### SoRTS Impact story

The SoRTS project developed a System of Real-Time Systems to support healthcare professionals in the transition from invasive, open surgery to minimally invasive, image-guided intervention and treatment (IGIT), significantly lowering healthcare costs, boosting productivity and effectiveness of cancer treatment and reducing patients risks.

#### Impact highlights:

- With the key innovations from the SoRTS project, Philips MRI will sell 50-100 systems in Europe in a new market, meaning an addition of more than 5% to the present MRI market of €4.5 billion.
- For Elekta, the results from the SoRTS project represent an order opportunity of over USD 700 million until 2019. As of April 2018, Elekta began installing 18 high-field MR-adaptive linear accelerator systems - Elekta Unity - worldwide. The target is to generate orders for 75 systems before the end of 2019.
- On 19 May 2017, less than six months after the end of the SoRTS project, the University Medical Centre (UMC) Utrecht treated the first patient as part of a clinical study with Elekta Unity.

Based on the SoRTS results, Technolution released its SigmaXG product platform for video switching over standard IP infrastructure successfully to the market through its partners/resellers. An exploitation example: the Erasmus MC university hospital in Rotterdam has selected Technolution partner Inter Visual Systems' Sensumed platform for 26 new operating theatres in its building. The operating theatres will be equipped with Advantech displays, with integrated SigmaXG NDcoders.

### OPEES Impact story

The ITEA 2 OPEES project was created to develop an open source platform for software tools to support engineering technologies for embedded systems and to secure the competitiveness and development of the European software industry.

#### Impact highlights:

- 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 was 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.
- Currently, there are not only thousands of users of the MBSE tool Capella on hundreds of projects inside Thales, but also more than a hundred companies worldwide are using it, including European organisations such as the European Space Agency, Ariane Group, Rolls Royce and Siemens, which rely on Capella in their System Modelling Workbench product. It also supports an ecosystem of European SMEs, like Obeo and Artal, that sell packaged products, support and expertise on top of Capella not only in Europe, but also in North America and in China.
- Two initiatives inspired by OPEES are OpenMDM, a platform for the management of diagnostic data in automotive, and OpenPass, a platform for virtual testing of Advanced Driver

## 4.2. ITEA events

Another main operation was the organisation of events and their attendance. In 2018, we (co)organised three events:

### ITEA Event 2018 as part of the EUREKA Innovation Days

ITEA Event 2018  
22-24 May



The EUREKA Finnish Chair (2017-2018) organised the EUREKA Innovation Days 2018 on 22-24 May in Helsinki, attended by over 900 participants. The event provided three days of insights and trends in Smart Mobility, Smart Energy, Smart Health and Smart Industry,

coupled with a focus on the 'Power of collaboration'.

In the afternoon of the first day, 22 May, Zeynep Sarilar was invited to participate in a parallel session on 'A zoom in on the European and other Clusters experience', together with EUREKA Secretariat Clusters Manager Jorge Liz. On that day, South Korea officially became the first non-regional partner country in EUREKA. Over the past decade, South Korea has invested around 88 billion won (USD 81 million) in a total of 111 projects and has held a 'Korea EUREKA day' every year to boost technological cooperation between South Korea and EUREKA member nations. Through these efforts, 227 South Korean companies, colleges and research centres conducted joint research projects with 670 European technical partners. The government said it would double its support for EUREKA from 27 billion won in 2017 to 50 billion won in 2025 (source: [Korean Herald](#)). On the same day, Petri Peltonen, Under-Secretary of State, and Iain Stewart, President of

the National Research Council Canada (NRC), officially renewed Canada's EUREKA Association Agreement for 4 years.

Wednesday 23 May was mostly focused on the 4 smart themes, with parallel sessions throughout the day. Casper Garos, Head of Public-Private Partnerships, Innovation Management at Philips and ITEA Board Member, shared his vision and insights in the Smart Health session, while Maria Rimini-Doering, Senior Expert in Human-Machine Interaction at Robert Bosch and ITEA Steering Group member, participated in the Smart Mobility session.

On Thursday 24 May, the EUREKA Clusters Day started with an opening speech by ITEA Chairwoman Zeynep Sarilar, in the role of InterCluster spokesperson, followed by a panel discussion on the conclusion of Wednesday's parallel sessions between representatives of ITEA, EUROGIA, EURIPIDES and SMART. Afterwards, ITEA Vice-chairman, Philippe Letellier, moderated an interactive session in which several SMEs could pitch their innovations to all Cluster Chairs and the audience and learn how Clusters could support them. The Clusters programme was closed by a speech from Tim Bestwick, the current UK EUREKA Chair.

After the break, the ITEA Event 2018 was held, including a panel session with the project leaders of the four projects that won the 2018 ITEA Awards of Excellence:

- C<sup>3</sup>PO is a project coordinated by Barco that developed a cloud collaborative and semantic platform for city codesign, winning an ITEA Award of Excellence for 'Business Impact'.



ITEA Event 2018 as part of the EUREKA Innovation Days impression

- **FUSE-IT**, an Airbus CyberSecurity-led project, received an award in the category ‘Innovation’ for solving the dilemma between efficiency and security in intelligent buildings, addressing the need for sustainable, reliable, user-friendly, efficient, safe and secure Building Management Systems in the context of Smart Critical Sites.
- **BENEFIT**: this Philips-led project developed software analysis and imaging methods, navigation tools and a structured database that gathers patient and treatment information. It was awarded in the category ‘Business Impact’.
- **IDEA4SWIFT**, led by IDEMIA and winner in both ‘Innovation’ as well as ‘Business impact’, addressed important and current safety and security issues.
- The panel session was followed by a ‘20 years of ITEA’ celebration, in which several representatives from industry and Public Authorities spoke about the impact of ITEA, its projects and their personal experiences with ITEA. Zeynep Sarılar closed the ITEA Event with a speech looking ahead to the next 20 years and the 2018 PO Days.

#### Exhibition

At the full-scale (project) exhibition, ITEA was represented by 37 projects. In addition to the usual guided tours for Public Authorities and ITEA body members, ITEA organised tailored Innovation Discovery tours of the exhibition for the first time. These personalised guided tours, based on actual customer’s pain points, were highly appreciated. Furthermore, some guided tours were specifically geared towards the South Korean delegation that was present in Helsinki.

#### Awards

Next to the ITEA Awards of Excellence, there was also a ceremony for the EUREKA Innovation Awards. For the third year in a row, an ITEA project won one of the three awards. This year, ITEA 2 project **MEDIATE** won the 2018 EUREKA Innovation Award in the category ‘Innovations of Tomorrow’. The award was announced by 2018 Millennium Technology Prize winner Tuomo Suntola, inventor of the Atomic Layer Deposition.

#### Evaluation

The overall appreciation of the participants of the EUREKA Innovation Days in Helsinki 2018 was 3.5 on a scale of 5. The exhibition, in which ITEA project booths had a strong presence, was rated 3.75.

#### Project Outline Preparation Days – ITEA 3 Call 5



On 4 September 2018, ITEA 3 Call 5 opened with the ITEA PO Days 2018, taking place on 4-5 September in Stockholm. During this festive edition of the event, the ITEA Community both celebrated 20 years of impactful innovation and looked to the future with:

- nearly 300 participants from 13 countries



ITEA PO Days 2018 impression

- 61 project ideas uploaded in the Project Idea Tool before the event
- 54 project ideas presented during the poster session
- 44 pitches during the parallel sessions

As in the past few years, there was a strong presence from Public Authorities (Belgium, Canada, Finland, Germany, the Netherlands, Spain and Sweden), who for the first time had the opportunity to present their national priorities and eligibility criteria. This was highly appreciated by the PO Days participants.

As ITEA was officially labelled as a EUREKA Cluster in October 1998, these PO Days were an excellent opportunity for the ITEA Community to celebrate ITEA’s 20 years of impact in software innovation. ITEA Chairwoman Zeynep Sarılar kicked off the celebrations by presenting an ITEA timeline of special milestones. As impact is one of the core values of ITEA, Zeynep also presented the addition of 7 new inspiring stories to the ITEA Impact stream, which will keep on growing over time with impactful ITEA project stories.

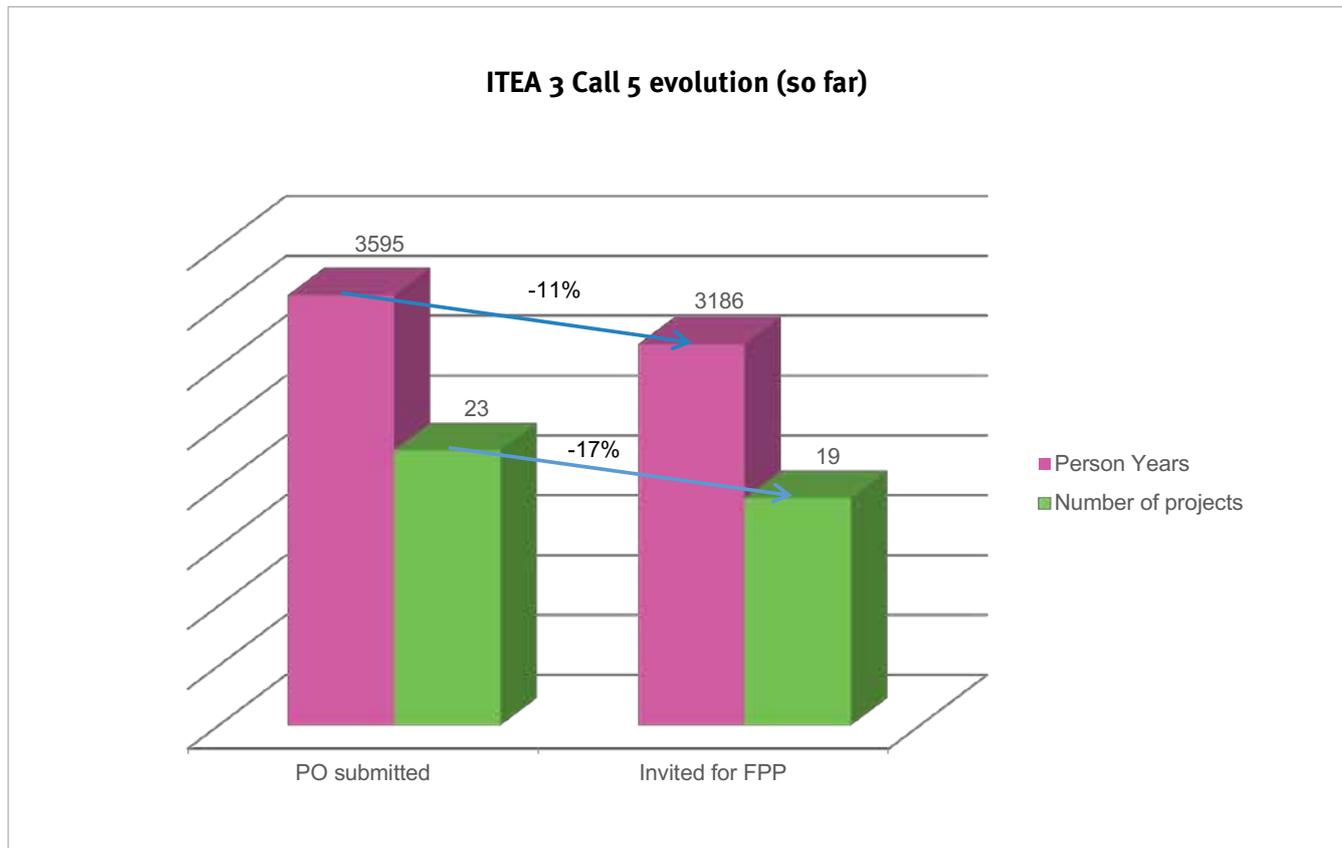


Figure 5: ITEA 3 Call 5 evolution (so far)

For 20 years, ITEA's project impact has been achieved by a growing Community of close to 1600 partners from large industry, SMEs, universities, research institutes and user organisations in 32 countries worldwide. As ITEA would not have existed without its valuable Community and its strong projects, Community members were invited to share their ITEA experiences in a short, personal video message. A collage of these heart-warming messages was shown at the end of Zeynep's speech. Check out the video and be inspired! <https://youtu.be/tPSd41vtTBk>.

Nearly 40% of the attendees took the effort to evaluate the event and share their thoughts and suggestions with the ITEA Office. With a score of 4.12 on a 5-point scale, this year's event was evaluated as the best PO Days ever.

The organisation of these PO Days was strongly supported by Vinnova, the Swedish Governmental Agency for Innovation Systems, for which we are very grateful.

As visible in Figure 5, on 30 October 2018, 23 POs, with a total of 3,595 person-years, were submitted. Of the 18 different countries, Turkey had the highest participation, followed by Finland, Spain and Germany. On 11 December, 19 projects, with a total of 3,186 PY, were invited to submit a Full Project Proposal (FPP).

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

### ITEA International customer and end-user workshop – Smart communities



ITEA organised its fourth International customer workshop on 20-21 June. This year, the Barco premises in Kortrijk was the venue for the workshop that discussed the challenges of Smart communities. This involved a smart set of selected international customers, key technology providers and innovative SMEs gathered from Belgium, Canada, France, Germany, the Netherlands, Sweden and Turkey. The workshop included short presentations of customer challenges, powerful group discussions to determine possible solutions, a plenary synthesis of the discussion results and an inspiring Barco Experience Center Tour. With an evaluation score of 4.23 out of 5, this was the most appreciated ITEA customer workshop.

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

<b>Customers:</b>	Airbus Cybersecurity, Axians, Koç University, Migros Retail, Port of Antwerp, Toulouse Oncology Center, Turkcell Academy, S2E Technologies
<b>Technology providers:</b>	Airbus Cybersecurity, Barco, Turkcell Technology
<b>SMEs:</b>	Appnovation Technologies, Bumble Labs, CityzenData, Esri, Immanens, Inovia, Nurogames

The topics discussed in-depth during the workshop were:

- Heterogeneous communities
- Hospital patient journeys and apparatus management cases
- IoT & Industry monitoring with digital twin cases
- Tracking and tracing
- Cooperative learning
- Embedded learning
- Miscellaneous challenges to be discussed further

A full report is available at: <https://itea3.org/news/smart-communities-challenges-can-you-solve-them.html>. This also includes the first ideas for possible solutions that were generated in the customer workshop.

At the PO Days in September 2018, 6 project ideas related to Smart communities were presented. In the end, 5 customer workshop-related Smart communities Project Outlines (POs) were submitted, out of 23 in total, and they were all approved.



ITEA International customer and end-user workshop on Smart communities 2018 impression

### External events and activities to promote ITEA

During 2018, the Presidium and the ITEA Office representatives also attended various additional external events and meetings to promote ITEA. Highlights included:

- *Visit to ANI - Lisbon (24 January)*

The Portuguese Innovation Agency, ANI, had a number of important changes, including a change of President. A meeting

was therefore organised to introduce ITEA to the new ANI management and to discuss delays on project funding decision-making. Additionally, new funding mechanisms, like co-funding from EC, were discussed with the ANI management team.

- *TAFITIE event - Lisbon (25 January)*

Zeynep Sarılar was invited by the Portuguese Public Authority ANI (Agência Nacional de Inovação) to take part in a panel session during a TAFITIE (The European Network of Innovation Agencies) event in Lisbon. The topic of the event was 'National agencies at the break of a new model for innovation support in the EU: the innovators' views. Zeynep took part in the panel session on 'Support to innovators: scaling-up innovations into market'.

- *EUREKA ICT Clusters and Innoglobal 2018 information day - Madrid (4 April)*

Zeynep Sarılar presented the EUREKA Clusters and ITEA during an information day for EUREKA ICT Clusters (ITEA, Celtic-Plus, EURIPIDES<sup>2</sup> and PENTA) and the Spanish Innoglobal 2018 programme, organised by CDTI, AMETIC, eVIA & eNEM. Other speakers included: Juana Sanchez (CDTI), Peter Herrmann (Celtic-Plus) and Jesus Angel Garcia (INDRA).

- *Meeting with KIAT - Eindhoven (19 April)*

On 19 April, ITEA had a visit from Sean Park, the Brussels representative of KIAT, which is the South Korean funding agency for ITEA. The goal of the visit was to discuss the decreased participation of South Korea in the last ITEA Call and to check for possible actions. It was clear from our communications with contacts in South Korea that they are keen to get South Korean participation back on a growth track. It was agreed to set up a webinar, promoted by KIAT in South Korea, to attract interest for ITEA and for the PO Days in Stockholm. The webinar took place on 5 July with the support of Hyewook Joung of the South Korean KIAT office, in which Fopke and Soo-Kyung gave a presentation on ITEA and hosted a Q&A session for 25 South Korean participants.

- *Visit Dutch delegation - Eindhoven (22 June)*

On 22 June, a delegation of key EUREKA representatives of the Netherlands visited the ITEA Office with Odilia Knap (future EUREKA Chair), Frans Verkaart (HLR) and Wilbert Schaap (ITAC). They were received by Zeynep Sarılar and Fopke Klok. Much attention is currently being paid to the future of EUREKA and its instruments, including the Clusters, with respect to the full European innovation landscape. These discussions will probably not be concluded during the UK Chairmanship. Because the Netherlands will Chair EUREKA in 2019-2020, the future Chair was interested in getting acquainted with ITEA. ITEA is clearly recognised as a successful EUREKA Cluster and the introduction to ITEA was well appreciated.

- Canadian Pre-PO Days Event - Stockholm (3 September)**  
On 3 September, Zeynep Sarılar and Philippe Letellier introduced ITEA, the setup of ITEA projects, its success stories and the results from the international customer workshop on Smart Communities to the Canadian delegation, who subsequently also joined the PO Days. This meeting helped the Canadian participants to prepare for the PO Days and to get the most out of the event.
- ITEA – Korea networking event - Rotterdam (5 October)**  
On Friday 5 October, together with the South Korean Public Authority KIAT, ITEA organised a South Korea-ITEA Networking event at the Hilton Hotel in Rotterdam. The goal of the event was to see if South Korean companies could join some of the ITEA 3 Call 5 ideas that were in the process of submitting a PO. Therefore 5 project ideas were pitched and Gjalt Loots (TNO), project leader of the ITEA project MOS2S, shared his success story and his experiences of collaborating with a South Korean consortium. The South Korea-ITEA Networking event was highly appreciated by the South Korean delegation and by the representatives of KIAT.
- Barco VX Innovation Days - Kortrijk (25 October)**  
ITEA Vice-chairman Philippe Letellier attended the Barco VX Innovation Days. This unique event, to which Barco invites its key customers, demonstrates unprecedented innovation and gathers user requirements to further adapt Barco products. Philippe was excited to see that some Smart Cities innovations arose from previous ITEA projects, like the celebrated C<sup>3</sup>PO and JEDI projects and also the 3D-Testbench project. For his full report, visit: <https://itea3.org/post/barco-at-the-forefront-of-smart-cities.html>.
- FFG event for opening the call 'ICT for the Future' - Vienna (7 November)**  
ITEA Office Director Fopke Klok was invited by the Austrian Public Authority FGG to promote ITEA during the event 'ICT for the future' in Vienna on 7 November. He presented ITEA and its Call process and highlighted a few successful projects with Austrian participation, opening the door for future Austrian participation in ITEA.

### 4.3. ITEA stakeholder satisfaction surveys

Together, ITEA's different stakeholders create the strong ITEA Community, forming the central point of the ITEA programme. As quality is of paramount importance to ITEA, the opinions, ideas and experiences of the ITEA Community are highly valued. They are what allows ITEA to keep improving. To collect all of this information, ITEA conducts several surveys annually:

- 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 graph below.

- PO Submission survey**, 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 3.54, while technical contacts and others gave a score of 3.72.

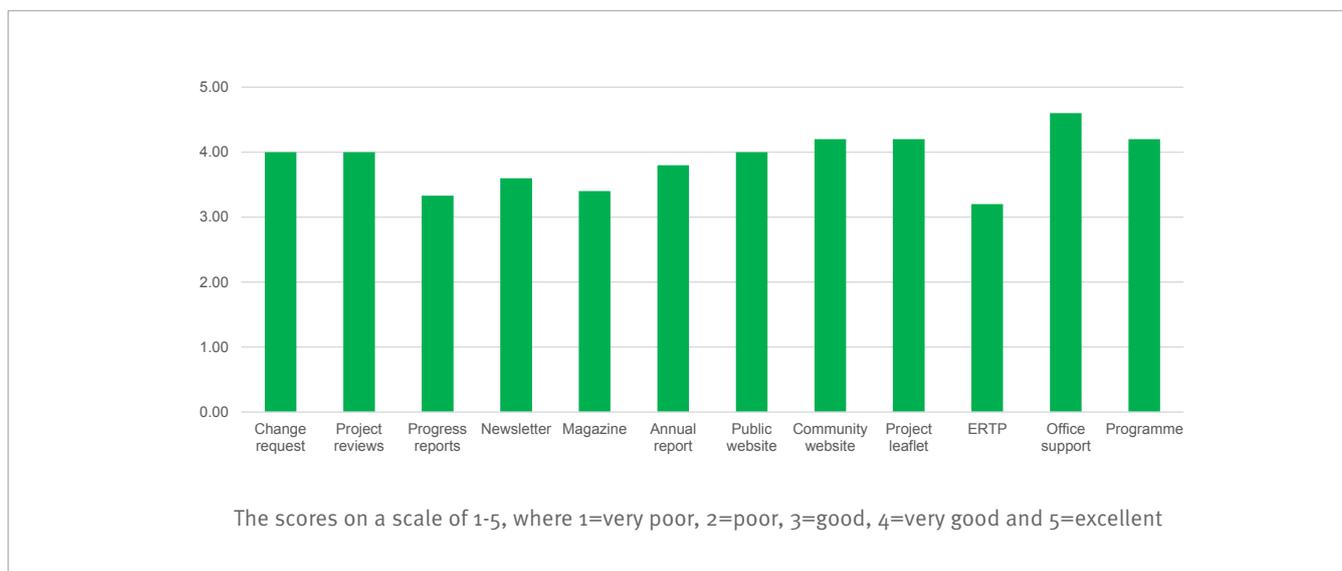


Figure 6: Results Project leader satisfaction survey 2018

- **FPP Submission survey**, also 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 out of 5).
- **ITEA Event surveys**, sent to all checked-in participants of an event:
  - *ITEA Event 2018*: A survey was done by the EUREKA Office. Overall, the event was rated 3.78 out of 5. The overall exhibition was rated as 3.75 and the separate ITEA session was rated 4.13.
  - *ITEA International customer workshop on Smart communities 2018*: the event was very well appreciated, and the online survey showed a score of 4.23 out of 5, the highest score ever.
  - *ITEA PO Preparation Days 2018*: the appreciation was also high again for this event with a record score of 4.12 out of 5.

Results of each survey are discussed within the ITEA Office and issues are solved or further investigated.

In addition to these surveys, which have been conducted annually for several years, we have also started the Funding and Start-up survey for projects that have just started or have just been cancelled. This helps us to better understand how ITEA project partners have experienced this process. As this survey was only recently introduced, only a few responses have been collected and no conclusions can be made yet. Finally, several individual, in-depth interviews are being conducted with ITEA Body members (Board, ITAC, DC) to share ideas and opinions in an open and trusted environment.

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## 4.4. ITEA press coverage

In 2018, ITEA and its projects were mentioned several times on external websites and in press publications. Thanks to the collaboration between ITEA Board members Airbus, Barco and Philips, as well as to the excellent promotion of world-first ITEA project MOS2S, press coverage has strongly improved this year: a total of 52 publications were written by 45 bureaus from 16 different countries. Several articles were issued by multiple bureaus as the press releases were picked up.

We have excluded simple event announcements of the ITEA Event, the EUREKA Innovation Days, 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 at: <https://itea3.org/press-coverage.html>.

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## 4.5. GDPR compliance

The new European regulations on personal data protection (GDPR) have come into force on 25 May 2018. As an international R&D&I programme on software innovation, in which security and safety is one of our key challenges, the safety of the personal data of our R&D Community is essential to us. Therefore we have updated our Privacy Policy in compliance to the new regulations.

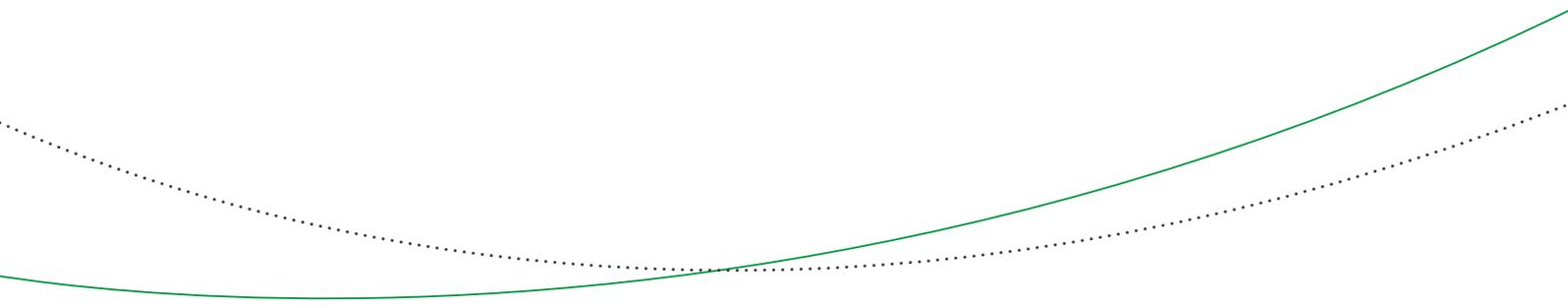
## Appendix A

# Call statistics per country and per year

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

Call	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Call 3-1	-	-	-	-	-	47	257	353	327	132	23	-	1139
Call 3-2	-	-	-	-	-	-	161	573	729	519	71	1	2054
Call 3-3	-	-	-	-	-	-	-	164	599	642	406	13	1824
Call 3-4	-	-	-	-	-	-	-	3	259	865	919	574	2620
<b>Total ITEA 3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>418</b>	<b>1092</b>	<b>1914</b>	<b>2159</b>	<b>1419</b>	<b>587</b>	<b>7637</b>

Table 3. Participation in terms of person-years per Call per year as of 31 December 2018. Effort based on latest FPP



Call	AUT	BEL	CAN	DEU	ESP	FIN	FRA	ISR	KOR	NLD	NOR	SWE	TUR	OTH	Total
Call 2-1	20	63	-	166	567	395	448	14	-	55	66	48	6	69	1918
Call 2-2	38	90	-	182	576	147	441	13	6	150	-	18	35	24	1720
Call 2-3	-	104	-	100	552	246	460	-	-	270	17	41	61	114	1964
Call 2-4	4	65	-	119	394	204	785	-	22	213	8	17	163	74	2067
Call 2-5	14	32	4	89	215	111	403	5	61	87	-	32	109	71	1234
Call 2-6	-	92	-	97	166	188	404	20	8	108	-	36	85	77	1281
Call 2-7	-	40	-	118	108	151	191	-	78	100	-	48	187	95	1115
Call 2-8	-	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
Call 3-1	20	53	11	146	60	4	175	-	89	222	-	40	189	130	1139
Call 3-2	-	94	133	223	199	156	223	14	120	281	-	76	346	190	2054
Call 3-3	34	66	120	274	212	156	105	-	27	300	-	103	274	153	1824
Call 3-4	9	111	190	238	465	257	383	-	-	208	10	136	409	204	2620
Total ITEA 3	63	324	454	881	936	573	886	14	236	1011	10	355	1218	677	7637

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

Table 4. Participation in terms of person-years per Call per country as of 31 December 2018. Effort based on latest FPP

## Appendix B

# How to access the online data

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

### How to login

The restricted ITEA Community website can be accessed at <https://itea3.org/community>. Your credentials for the MyITEA account of 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 email 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;
- evaluations, reviewing and all necessary documents – e.g. evaluation forms and review presentations;
- meetings and binders;
- the ITEA calendar;
- general ITEA information – e.g. guidelines, templates and corporate identity; and
- contacts.

## Appendix C

# Glossary of terms

3D	Three-dimensional
ADAS	Advanced driver assistance systems
ADL	Architecture Description Language
AM	Additive Manufacturing
AMETIC	Asociación de empresas de electrónica, tecnologías de la información, telecomunicaciones y contenidos digitales
AENEAS	Association for European Nano-Electronics Activities
ANI	Agência Nacional de Inovação
ARTEMIS	Advanced Research and Technology for Embedded Intelligence and Systems
AUTOSAR	Automotive Open Systems Architecture
BSG	(ITEA) Board Support Group
CCTV	Closed-circuit television
DevOps	Development operations
CAP	Collaborative Analytic Platform
CDTI	Centre for the Development of Industrial Technology
COPD	Chronic obstructive pulmonary disease
DC	(ITEA) Directors Committee
EC	European Commission
ECSEL	Electronic Components and Systems for European Leadership
EF ECS	European Forum for Electronic Components and Systems
e.g.	exempli gratia / for example
eNEM	Plataforma de Tecnologías Multimedia y Contenidos Digitales
EPoSS	European Technology Platform on Smart Systems Integration
ERTS	Embedded Real Time Software and Systems
ESE	EUREKA Secretariat
ETSI	European Telecommunications Standards Institute
eVIA	Plataforma Tecnológica Española de Tecnologías para la Salud y la Vida Activa e Independiente
FMI	Functional Mock-up Interface
FFG	(Österreichische) Forschungsförderungsgesellschaft
FoF	Factories of the Future
FPP	(ITEA) Full Project Proposal
HLG	High Level Group
IA	Industry Association
ICT	Information and Communication Technology
IFC	ITEA / ITEA 2 / ITEA 3 Founding Company
IGIT	Image-guided intervention and treatment

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IND	Industry
IoT	Internet of Things
ISO	International Organization for Standardization
IT	Information Technology
ITAC	ITEA (Public) Authorities Committee
ITEA	Information Technology for European Advancement
JU	Joint Undertaking
KIAT	Korea Institute for Advancement of Technology
KPI	Key Performance Indicator
MBSE	Model-based systems engineering
NEDO	New Energy and Industrial Technology Development Organisation
NPC	(EUREKA) National project co-ordinator
NRC	National Research Council
OEM	Original equipment manufacturer
OTH	Others
PENTA	Pan European partnership in micro and Nano-Technologies and Applications
PdM	Predictive Maintenance
PhD	Doctor of Philosophy
PO	(ITEA) Project Outline
PPR	(ITEA) Project Progress Reports
PY	Person-years
Q&A	Questions & answers
QMS	Quality Management System
R&D	Research & Development & Innovation
R&D&I	Research & Development & Innovation
RES	Research institutes
SME	Small and Medium-sized Enterprise
STG	(ITEA) Steering Board
TAFTIE	The European Network of Innovation Agencies
TNO	Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek
UMC	University Medical Centre
VR	Virtual Reality

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## ISO country codes

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







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