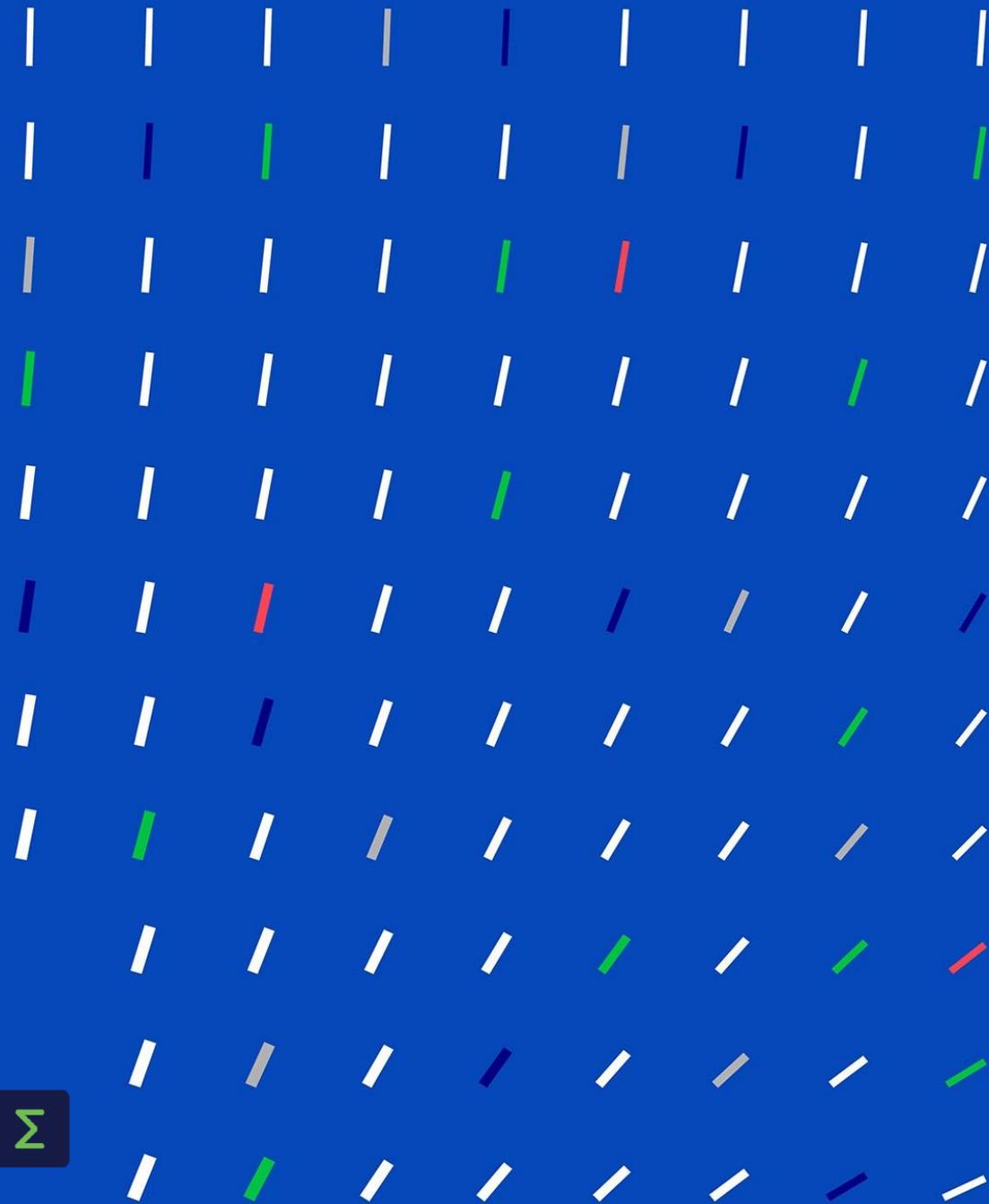


ITEA Award of Excellence winners with Dutch participation



Status December 2023



ITEA 4 is the Eureka Cluster on software innovation



The image features a dark, high-tech background filled with numerous square microchips and circuit traces. A glowing, wireframe brain is positioned in the upper right, emitting a bright light. Below it, a 3D bar chart with vertical cyan bars of varying heights is visible. A large, red, jagged-edged starburst shape is centered in the image, containing the word 'Innovation' in white. At the bottom center, the word 'IVVES' is written in large, white, sans-serif capital letters.

Innovation

IVVES

IVVES

Methods for verification and validation of AI in strictly regulated domains

The use of AI is rapidly increasing, and we experience the strong benefits of AI, including reduction in human error, 24/7 availability, unbiased decisions and faster decision-making. On the other side, more and more questions are raised concerning the use of AI on how to make sure it is safe and correct. This is especially the case for strictly regulated domains as a mistake can have huge consequences. IVVES has developed new verification and validation methods, ensuring the trustworthiness and reliability of AI and ML in these environments.

Start date – End date

Oct 2019 – June 2023

Website

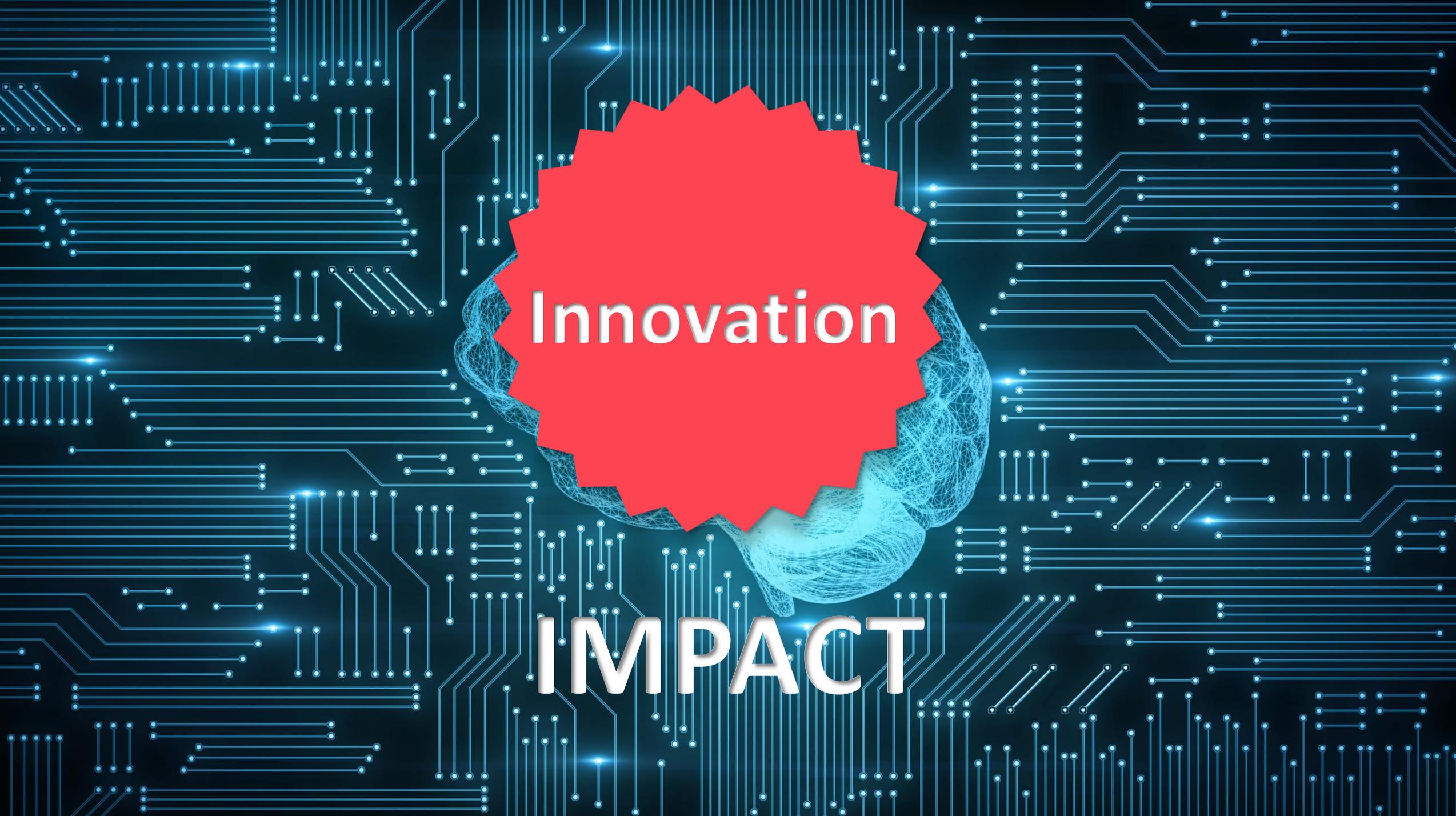
<https://itea4.org/project/ivves.html>



IVVES

Examples of impact highlights

- Thanks to IVVES, Philips can now use a new AI method in its SmartSpeed MR software, speeding up the MRI examination; FDA approval was provided end of 2022. Philips expects this method to be used in 97% of future clinical examinations.
- For MRI PRACTICE POTSDAM, SmartSpeed is an absolute gamechanger; before SmartSpeed, they examined about 160 to 170 patients a week and now they can manage up to 200 patients a week.
- For cyber security, WithSecure has developed a tool suite to automatically analyse test results and feedback provision to increase confidence in its product releases.
- For Alstom the IVVES results led to improved maintenance of legacy train fleets which do not have data collection infrastructure by design.



Innovation

IMPACT

IMPACT

Healthcare made more efficient, accurate and cost-effective

Winner ITEA
Award of
Excellence
'Innovation'
2022

Healthcare faces many challenges including improving personalised patient treatment and working more cost effectively, while the demand is growing, staff capacity is declining, and new clinical and technological developments succeed each other quickly.

IMPACT centered around data intelligence as a solution to the combination of personalisation and multidisciplinary work. The team focused on the question which automations and improvements can benefit the individual patient and the medical team surrounding them, in clinical uses cases on cardiac treatment, liver oncology and brain oncology.

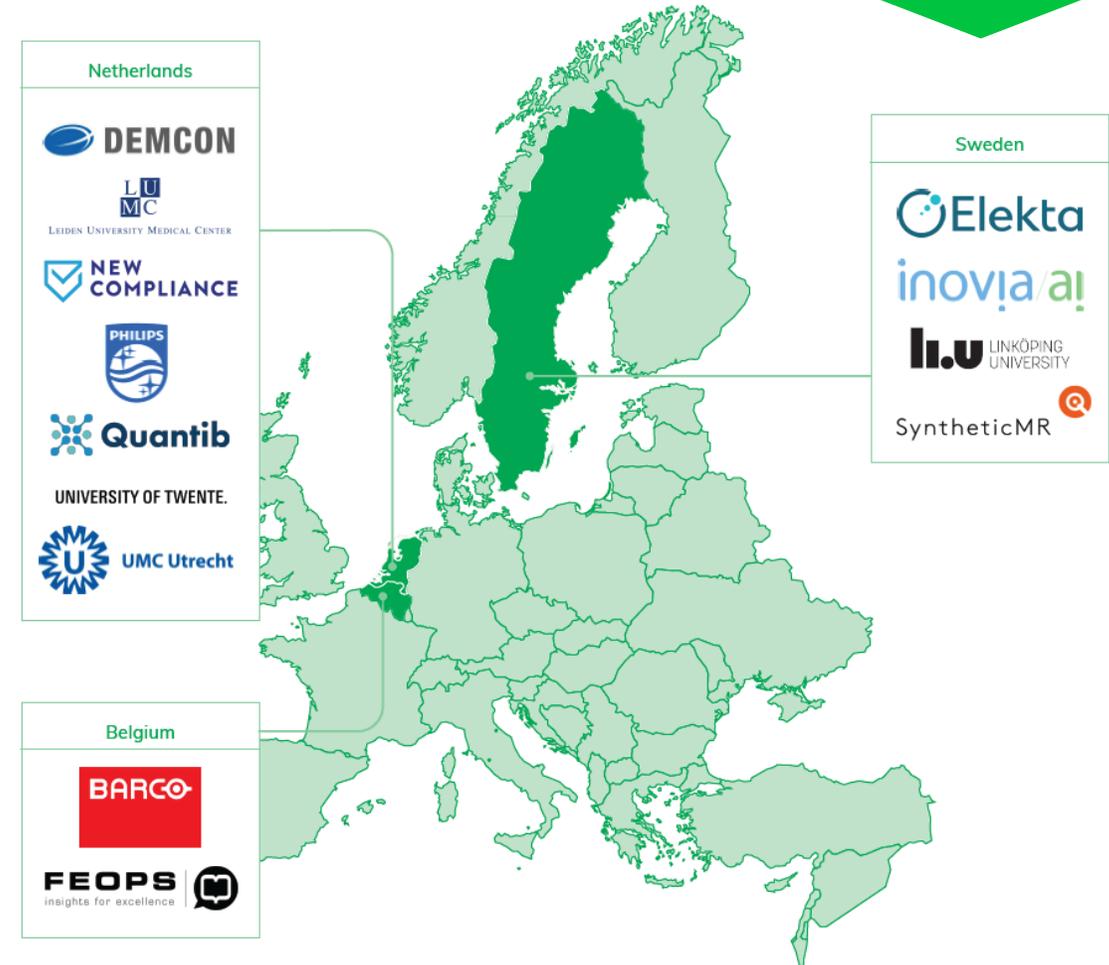
Start date – End date

Oct 2018 - Sep 2021

Website

<https://itea4.org/project/impact.html>

<http://www.impact-itea-project.eu>



IMPACT

Examples of impact highlights

- Data analysis for clinical business intelligence has been accelerated, reducing the time needed for data analysis to less than five minutes, which is a tremendous improvement compared to the days or weeks it previously took to retrieve and manually combine data.
- The outlining of tumour tissue during surgical planning has been improved, allowing the margin for tumour excision to be reduced by 20% so that less healthy tissue is removed.
- HEARTguide has reduced procedure time by 30%, meaning the use of 25% less x-ray contrast agent and 14% less radiation exposure for patients.

A doctor in a white coat is pointing towards a red starburst shape in the center of the image. The starburst contains the word "Exploitation" in white text. The background is a blurred image of a doctor's face and hands. Surrounding the central text is a network of white lines connecting various blue circular icons representing medical and technological concepts.

Exploitation

PARTNER

PARTNER

An innovation engine for integrated BIM and GIS

PARTNER developed a common architecture for health data management and visualisation to support the optimal patient journey for chronic diseases through the health system (including at home) for appropriate personalised care. Thanks to this, data and information collection is continuous, seamless and patient-centric and decision-making is less costly for hospitals and faster for patients.

Start date – End date

Oct 2017 – Dec 2020

Website

<https://itea4.org/project/partner.html>



PARTNER

Examples of impact highlights

- PARTNER demonstrates that a patient-centric approach with an optimised collaborative care team leads to greater efficiency – up to a 10% improvement compared to traditional workflows – and a knock-on effect of lower healthcare costs.
- For patients, the PARTNER approach should result in better health outcomes and, above all, a higher quality of life even when ill.
- The successful collaboration in PARTNER has resulted in clear commercial opportunities for the consortium; every contributor involved has released new products and services, ready to be installed in several hospitals for further trials.
- Barco's Synergi represents a new business case and has allowed Barco to push further into the health domain. Synergi can lead to a significant improvement in the efficiency of the multi-disciplinary team meetings, as well as a significant reduction in the time between the referral of the patient and the commencement of treatment.
- For iClinic in Canada, participation in the PARTNER project led to three additional full-time employees. In 2021, €200,000 of additional revenue was achieved and much more is expected in the future.
- MEDrecord licensed its platform as a service, enabling four additional sales in 2022 based on the developments done within the PARTNER project. MEDrecord has also become a Microsoft partner in order to sell the MEDrecord APIs via the Azure marketplace.
- The PARTNER experiments impacted the nature of SOPHEON's innovation management products: they are being launched to the global market and already have thousands of initial users.
- Barco Healthcare had two startup initiatives, one of which was Synergi. In addition, ETRI also transferred the technology to DATAIZE, a Korean startup.

A person in a dark suit and tie is pointing their right index finger towards a central red starburst. The background is a blue-toned image of a person in a suit, overlaid with a network of white lines and nodes. Various circular icons are scattered around, including a Wi-Fi symbol, a gear, a factory, a robotic arm, a cloud with a Wi-Fi symbol, a clock with a gear, and a cloud with three server racks labeled A, B, and D.

Standardisation

VMAP

VMAP

Enhances interoperability in virtual engineering workflows

VMAP created a vendor-neutral standard for Computer-Aided Engineering data storage and transfer to enhance interoperability in virtual engineering workflows, increasing innovation speed by 50% and reducing setup time for virtual process chains by 40%. To further disseminate the VMAP Standard and its development, the VMAP Standard Community has been established.

Start date – End date

Sept 2017 – Oct 2020

Website

<https://itea4.org/project/vmap.html>



VMAP

Examples of impact highlights

- The VMAP project has created the world's first CAE workflow interface standard for integrating multi-disciplinary and multi-software simulation processes in the manufacturing industry. This standard is vendor-neutral, cost-free and completely open. The first public version of the standard was announced by the VMAP project in January 2020, before the end of the project.
- As a result of VMAP, Philips boosted the innovation speed of highly complex parts by almost 50%.
- The time spent on strength assessments in the moulding of plastic parts by RIKUTEC Richter Kunststofftechnik in Germany has been reduced by 42%.
- The set-up time for virtual process chains for lightweight automotive components with composites within a prominent German car manufacturer fell by 40%.
- The VMAP Standards Community e.V. (VMAP SC) was created in December 2022 by 16 founding members and it currently contains more than 150 entities, including large players such as Bosch and Philips, and has good links with other standardisation groups such as Modelica/FMI, the European Material Modelling Council and the ISO STEP 242 community.



Special
Vice-
chairman
Award

MOS2S

MOS2S

New forms of engagement in entertainment and society

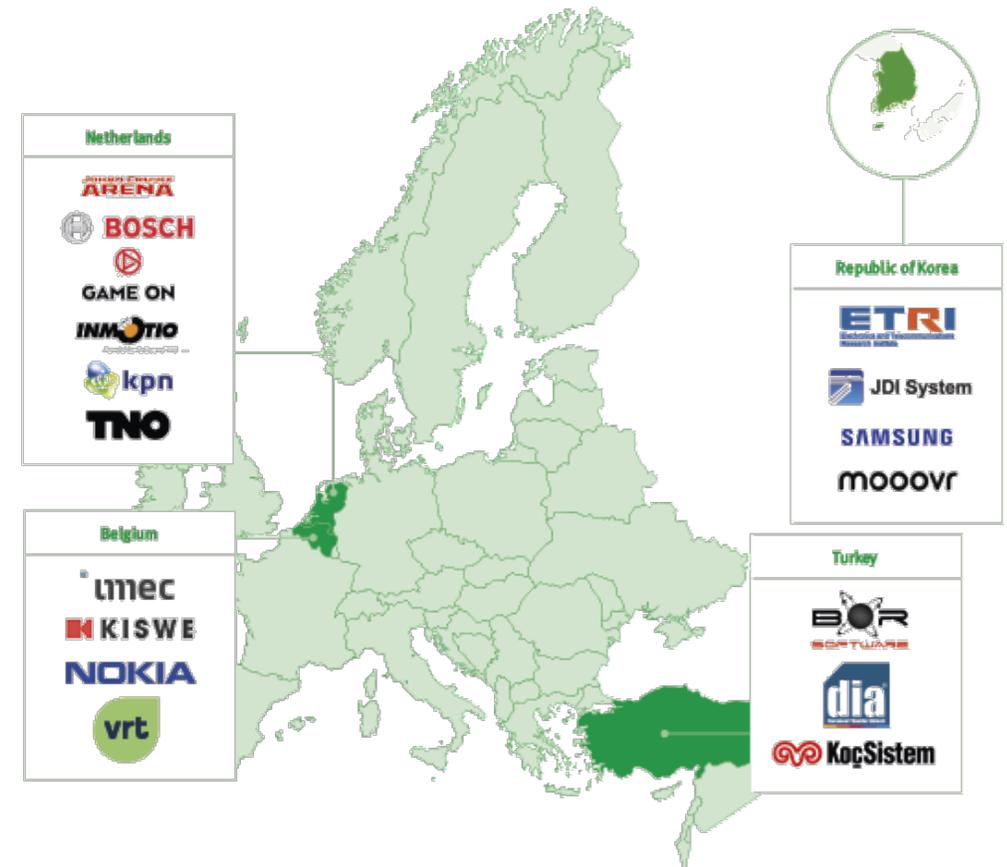
Engagement and personalised experiences are getting increasingly important nowadays. In society, city representatives no longer take decisions by their own and in the entertainment business, everybody can become a producer of content. To bring this engagement MOS2S has created world-first ways to engage citizens and audiences of live events.

Start date – End date

Oct 2016 – Sept 2019

Website

<https://itea4.org/project/mos2s.html>



MOS2S

Examples of impact highlights

- For the first time in the world, a football match in the Johan Cruijff ArenA was broadcasted in real time, with only 0.3 seconds delay from the pitch in Amsterdam to a viewing area in South Korea.
- Since the MOS2S project, Kiswe has been working with multiple sports leagues, entertainment and media companies worldwide like K-POP group BTS, NBA, Universal Music Group and the Tour of Flanders.
- GameOn's video technology has been licensed to 25 European clubs, with a revenue of almost EUR 700 thousand for GameOn in 2019 (versus roughly EUR 80 thousand in 2016).
- The Inmotio Performance Centre is being rolled out for all 18 teams of the Dutch Eredivisie, potentially leading to millions of users following completion.
- MOS2S's technology was selected, out of 209 applications from 39 countries, to be demonstrated during the Eurovision Song contest of 2020.

An aerial night view of a city with a network overlay of glowing blue lines and nodes. A large red starburst graphic is centered in the upper half of the image, containing the text 'Exploitation & unique partnerships'.

Exploitation
& unique
partnerships

PS-CRIMSON

PS-CRIMSON

Ensuring safety in tomorrow's smart cities

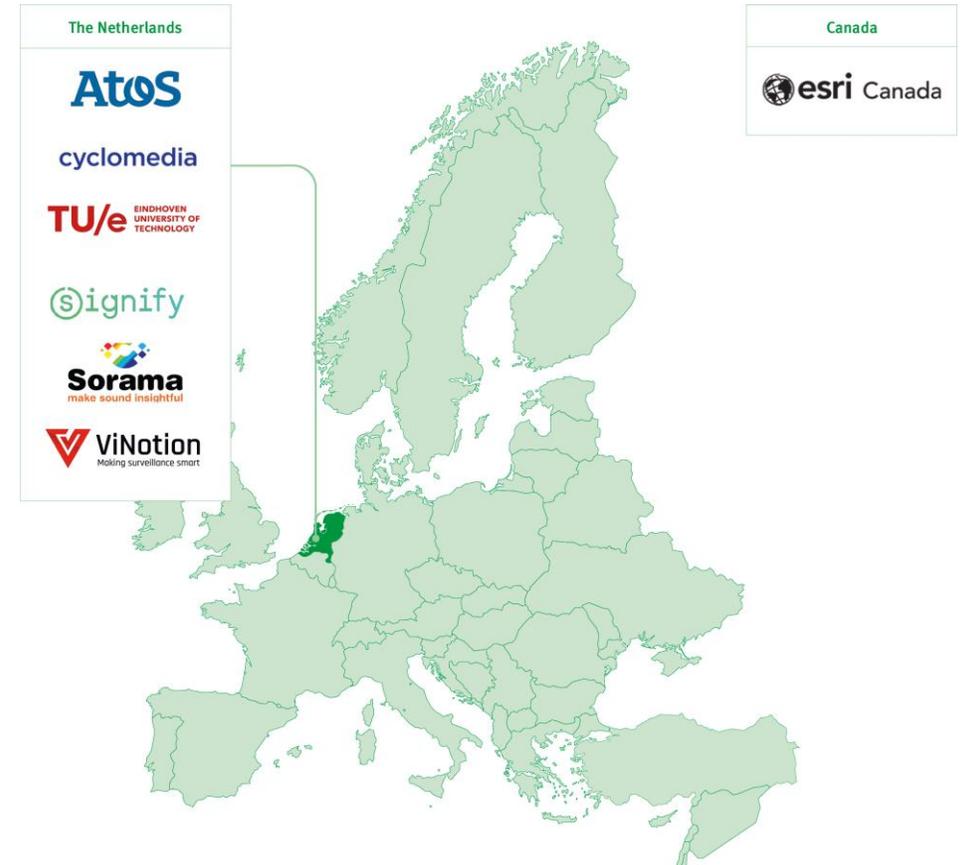
Cities nowadays are digitalising more and more services like data gathering for mobility, safety and communication to citizens. However, authorities still need to tackle information fragmentation caused by a lack of common platforms, toolsets and separated data per department. The ITEA project PS-CRIMSON delivers a platform that serves as a single-entry point for city representatives and a One-look overview of the city. A focus lays on the public safety and disaster management domains.

Start date – End date

Sept 2016 – March 2020

Website

<https://itea4.org/project/ps-crimson.html>



PS-CRIMSON

Examples of impact highlights

- PS-CRIMSON's first commercial project, a tender for Smart City Hilversum won, is now being deployed based on the data-driven platform MyCity from Atos. Atos will cooperate on this project with the project partners ViNotion, Esri Canada and Sorama.
- Similar projects are being tendered by other cities in the Netherlands, Germany, Belgium and Canada, where the partners are offering all or part of the PS-CRIMSON.
- Thanks to the PS-CRIMSON results, a city responsible for video-surveillance can now work with one single screen and virtually walk through a 3D model of the city and see everything that is happening in a single view.
- Thanks to the 3D smart model of Esri Canada, developed within PS-CRIMSON, city representatives can now see the effects of an earthquake down to the level of interior units in the damaged buildings and the different levels of flooding that would follow.
- PS-CRIMSON's offerings enable the platform's users to detect suspicious situations, localise them, follow the subjects involved and intervene before escalation takes place.
- Thanks to the project's world-class technology results that can be extended to many other domains, this can now all be done with a high performance and accuracy which is two to three years ahead of the market, making cities a better and safer place to live in!



**Special
Vice-
chairman
Award**

Reflexion

Reflexion

Nourishing high-tech manufacturing with valuable high-quality data

Reflexion assisted high-tech systems companies in using operational data to improve the development lifecycles, maintenance and troubleshooting of products. Using open-source frameworks, self-learning and data-analysing systems were developed that accumulate useful knowledge during a product's lifetime, resulting in a faster time-to-market, lower costs and greater competitiveness. They created a full digital loop.

Start date – End date

Sept 2015 – Feb 2019

Website

<https://itea4.org/project/reflexion.html>



Reflexion

Examples of impact highlights

- All project partners have improved their data pipelines to the point of returning only useful information: the gathered information can now be used to automatically enhance future product design.
- Océ has improved their mean time to repair (MTTR) for all new machines by 50%, while another saw a 30% reduction in time spent troubleshooting
- For partners Barco and TNO, new business models are expected to already be worth 20 million € in the next 5 years
- 25 data science jobs have been created within the Reflexion project partners Siemens Industry Software developed a potential service model based around simulated failures, which can predict future issues even in the absence of 'real' data
- Philips and Barco can now create medical equipment with a higher uptime, meaning the possibility to diagnose or operate on more patients per day
- SynerScope's visual-analytical tooling enabled their customer Stedin to plan in the end with a 99,5% accuracy first-time-right smart meter installation visits, saving an effective 40 FTE in the smart meter rollout for the Netherlands.



Business
Impact

BENEFIT

BENEFIT

Advancing evidence-based medicine for better patient outcome

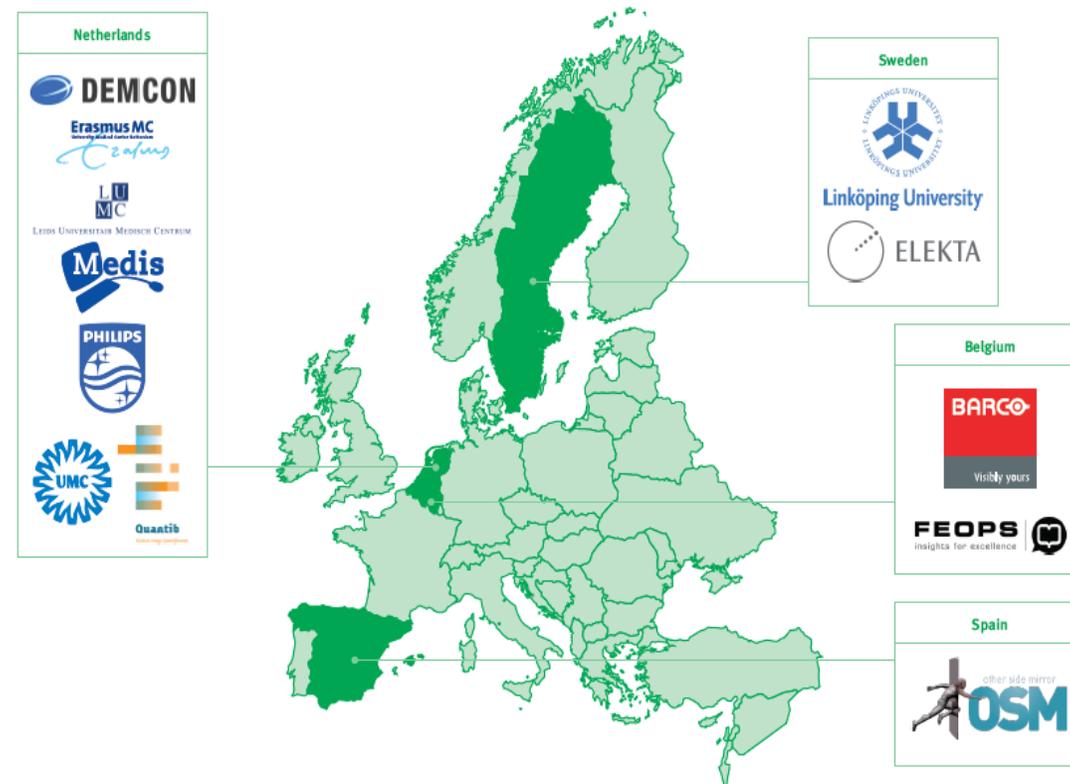
The BENEFIT project tackled three main challenges: the societal aspect of coping with the increasing number of minimally invasive image-guided interventions; the economic dimension of delivering care with quantified targets in terms of quantity, price and quality of care; demonstrating the technical feasibility of an integrated infrastructure that includes all relevant imaging and data sources, the modelling, analysis and presentation of these data and the integration into a Clinical Decision Support System. Current diagnostic and therapeutic solutions do not offer the flexibility, quality and integration to automatically extract all the relevant quantified data and process flows. The ITEA project BENEFIT aimed to support clinicians in selecting the optimal diagnostic and treatment pathway for patients.

Start date – End date

July 2014 - Dec 2017

Website

<https://itea4.org/project/benefit.html>



BENEFIT

Examples of impact highlights

- Elekta gained CE and FDA approval for its Leksell Gamma Knife ICON system with Cone beam CT (CBCT). By September 2019, 107 systems have been installed and are clinically in use while 200 existing systems can be upgraded worldwide. The planning time for test cases is reduced significantly by around half.
- Linköping University (LiU) in Sweden has published a paper for functional MRI in PNAS (Proceedings of the National Academy of Sciences) in 2016, which has been covered by Science, The Economist, The New York Times, has been downloaded over 200,000 times and received over 1800 citations.
- In total, the project partners applied for 7 patents.
- The Belgian SME FEops gained CE approval for its TAVIguide product and secured an investment injection of €6m for the FEops HEARTguide™. FEops has grown from 4 to 15 employees.

BENEFIT

Examples of impact highlights

- The Dutch SME Medis gained CE and FDA approval for its analysis that calculates pressure drop from X-ray images leading to a reduction of the excessive use of stents and the need for a disposable pressure wire of €500-1000, and thus saving costs.
- At the end of 2019, Philips sold over 250 copies of its new commercial tool AneurysmFlow for treating cranial aneurysms. Philips also created an automatic 3D detection of liver tumour feeding vessels, boosting detection accuracy by 26% and resulting in at least 20% less recurrence than with 2D feeder detection.
- The Dutch SME Quantib gained CE and FDA approval for its brain analysis software and secured €4.5m in fresh funding to support the company in its international expansion ambitions. Between July 2014 and end of 2019, Quantib grew from 6 to nearly 30 employees, developed 4 products including certification, has installations in over 20 countries and initiated partnerships with 3 top medical university centres in the Netherlands.

A woman with long brown hair, wearing blue and white striped hospital pajamas, is lying on a hospital bed inside an MRI machine. The bed is covered with a white sheet and a pink blanket. The MRI machine's gantry is visible in the background. A red starburst graphic is overlaid on the image, containing the text "Innovation & Business Impact".

Innovation
&
Business
Impact

SoRTS

SoRTS

A system of real-time systems for more effective healthcare

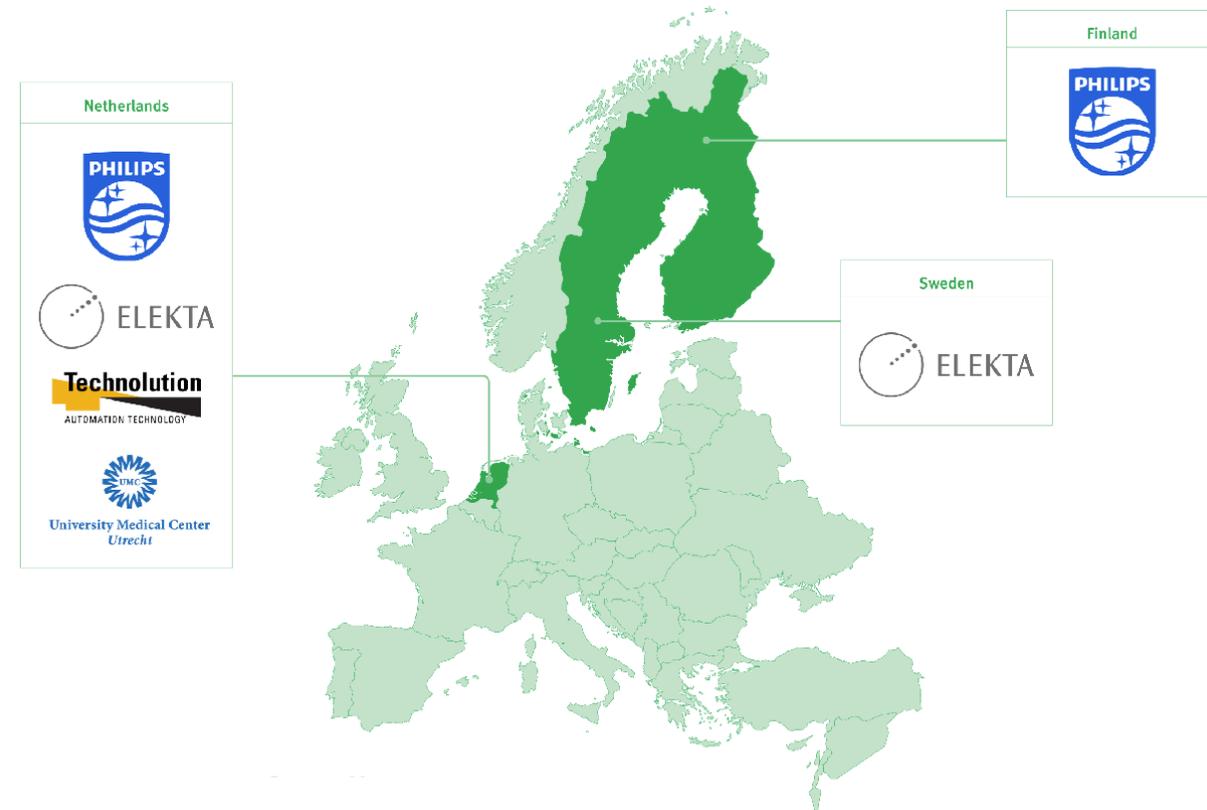
While there have been considerable advances in recent years in the oncological and radiotherapy treatment of cancer, a major challenge still faced by image-guided intervention and treatment is the availability of coupled real-time feedback of the imaging and therapy systems during interventions. The goal of the SoRTS project was to develop a System of Real-Time Systems to support healthcare professionals in the transition from invasive, open surgery to minimally invasive, image-guided intervention and treatment (IGIT). The outcome not only significantly lowers healthcare costs through shorter hospital stays and higher throughput, but it also boosts the productivity and effectiveness of cancer treatment and reduces patient risk.

Start date – End date

Jan 2014 - Dec 2016

Website

<https://itea4.org/project/sorts.html>



SoRTS

Examples of impact highlights

- 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.
- 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
- 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 it is building.