

# Influencing Europeans Software Innovations



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*Have you ever heard of ITEA4? No? Then I'll take you with me into the world of software innovations. ITEA4 is a transnational and industry-driven R&D&I (Research & Development & Innovation) program in the domain of software innovation. It enables a global and knowledgeable community to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth, and benefits for society. Software AG is proud to be part of this source of innovation. One of our key players is research colleague Dr. Frank Werner.*

35 Countries, 1995 partners, 287 projects and almost 24 years of software innovations - that is the balance sheet of ITEA so far. It started with leapfrogging the software engineering gap in developing software-intensives systems. And it still jump-starts with a lot of interesting project ideas.

## About ITEA

ITEA is the Eureka RD&I Cluster on software innovation, enabling a large international community of large industry, SMEs, start-ups, academia and customer organisations, to collaborate in funded projects that turn innovative ideas into new businesses, jobs, economic growth and benefits for society. It is industry-driven and covers a wide range of business opportunities facilitated by digitisation like smart mobility, healthcare, smart cities and energy, manufacturing, engineering and safety & security. ITEA pushes important technology fields like artificial intelligence, big data, | simulation and high-performance computing into concrete business applications.

EUREKA labelled ITEA 4 as the successor to ITEA 3. For ITEA 4, there is one purpose agreed by all stakeholders, to create impact to enable Sustainable Growth through Innovation, which is only possible through Collaboration.

For many years now, Software AG has been involved in this success story, in various roles. Together with 15 other European companies, Software AG is a member of the ITEA Board and has delegated Dr. Harald Schöning, Vice President Research, as its representative. As the top executive body in ITEA, the Board is responsible for the strategy and coherence of the whole program. It establishes general rules for program management, communicates with Public Authorities for program strategy and co-funding, and issues ITEA labels.

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program. It makes recommendations on strategic orientation and is responsible for the initiation of projects, their evaluation and monitoring. It recommends projects for selection through labelling, and for priority setting and ranking by the ITEA Board Support Group.

### Coaching research projects

Frank has been submitting proposals for European research projects for many years and has accordingly also managed numerous projects and brought them to a successful conclusion. An expert therefore in the European research world. And so, it is not surprising that he performs his duties in this "technical brain" with great care and pleasure. "I have been able to enhance my own knowledge across a very diverse range of domains. From engineering and automotive to security and healthcare", he says.

Each year, ITEA starts open calls for innovative R&D projects in the domain of software innovation. "We start by evaluating the Project Outlines, a short overview of a project, mainly describing the project goals, innovation, targeted business impact and consortium capabilities", Frank explains how it works in practice. If the Project Outlines meet the ITEA requirements and show a strong consortium (e.g., are at least two partner countries represented? Are the defined KPIs realistic?) with an ambition to develop an originative solution, then the consortium is invited to submit a Full Project Proposal (FPP). The partners will receive an action list with improvements to foster the preparations for a good FPP. ITEA Project Outlines and Full Project Proposals will be evaluated and selected according to different criteria such as exploitation of the solution (market access, achievements), technical progress, realized achievements, and project progress, just to name a few. A reviewed proposal passes through several stages within the ITEA Board and ITEA Steering Group until it is eventually eligible for funding after required criteria are fulfilled. Here, "eligible" means - and this is the special thing about ITEA - that those projects are ITEA labelled and individual national consortia are eligible to ask for a grants at their respective national funding agencies. In this context it is important to understand that the ITEA program is publicly funded on a national level - i.e. in Germany, by the Federal Ministry of Education and Research.

All ITEA research projects must consist of several national consortia, each of which advances the project on its own. But the exchange in the international consortium is of course very important. There are international cooperation meetings on project and on work package level. Joint reports must also be written on these.

By the way, with currently [four research projects](#), Software AG is driving innovation in a very practical way: AIToC, IML4E, InnoSale, and SmartDelta (s. the Infobox below.)

### ITEA Family

But back to Frank's work as reviewer: The computer scientist oversees 12 to 15 projects a year, which are assigned to him for evaluation. FPP reports for each project are usually 80-120 pages. Each single project is reviewed by at least two reviewers. The reviewing process of the reports takes up a large portion of Frank's "ITEA job". Twice a year, reviewers meet in the so-called Steering Group Meetings. They all already know each other very well as some of them are part of the ITEA family for more than 15 years. People from different disciplines, backgrounds, and industry domains are part of the ITEA Steering Group. "I am happy to be part of the ITEA family, contributing to this effort in my role as a reviewer in the Steering Group. The community gives you as mentor and reviewer of sparkling ideas the chance to really influence the quality, innovation, and marketing of these projects. And I really do deduce inspiration and pleasure from my work as a

Openness, flexibility and the family character of ITEA – and the happiness factor as well – these are the key factors for the success of ITEA. Many ITEA projects have achieved incredible results, which are collected in the Impact Stream, a living publication.

**With four research projects, Software AG is currently driving innovation in a very practical way:**

**AIToC** (Artificial Intelligence supported Tool Chain in Manufacturing Engineering) AIToC is to develop an integrated toolchain for manufacturing engineering that supports decision-making in early phases. To achieve this, the toolchain will support the formalization and automated analysis of requirements, the computer-aided generation of process plans, simulation models and instructions and the software supported generation of layouts.

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

**IML4E** (Industrial Machine Learning for Enterprises)

Smart software solutions including AI and machine learning (ML) have shown a great potential to automate processes that were not accessible to automation. Since AI and ML differ from classical software development regarding fundamental activities and processes, it is unclear how AI and ML can be integrated into existing industrial-grade software development processes. Addressing the industrialisation of ML development and operations, the IML4E project will develop the IML4E framework, covering methods, techniques and tools dedicated to deliver and maintain high-quality smart software in efficient, scalable and manageable processes.

[www.iml4e.org](http://www.iml4e.org)

**InnoSale** (Innovating Sales and Planning of Complex Industrial Products Exploiting Artificial Intelligence) aims to innovate today's sales systems and processes for complex and variable industrial equipment. Here, Software AG is the Project leader.

[www.innosale.eu](http://www.innosale.eu)

**SmartDelta** (Automated Quality Assurance and Optimization in Incremental Industrial Software Systems Development) will build automated solutions for the quality assessment of product deltas in a continuous engineering environment by providing smart analytics from development artifacts and system execution, offering insights into quality improvements or the degradation of different product versions and providing recommendations for the next builds.

[www.smartdelta.org](http://www.smartdelta.org)

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