



LUCAS

Center for Applied Software Research

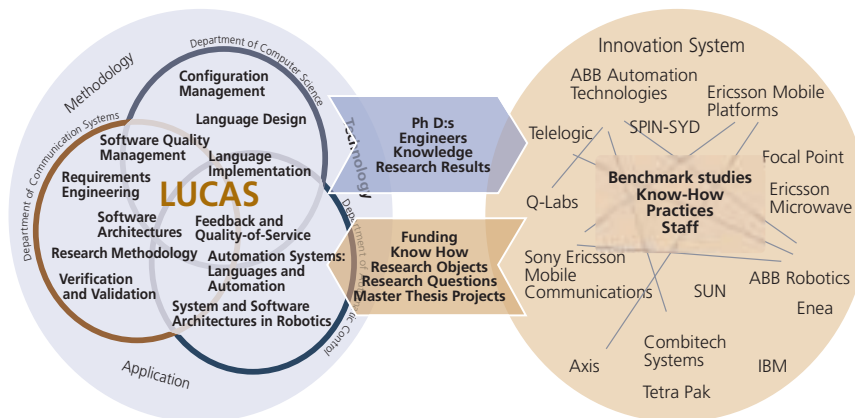


LUND INSTITUTE OF TECHNOLOGY
Lund University

Center for Applied Software Research

LUCAS was established in 1999 as a research center at Lund Institute of Technology, Lund University, Sweden. The center is aimed at gathering the competence on applied software research at Lund Institute of Technology into a network, which comprises about 40 researchers of which half are faculty members and half are Ph. D. students.

Industry relevance is a key issue for the LUCAS research and much of the research is conducted in joint projects with primarily Swedish, but also international industry, were a wide spectrum of involved groups offer a variety of application domains, which gives LUCAS unique possibilities to perform software research. Examples of joint efforts are co-funding of Ph. D. students and using industrial projects as research objects. Courses in Software Engineering for industry participants and our academies within the areas of Software testing and Architecture are other examples of industry-academia interaction where both parties win knowledge and experiences.



LUCAS works with companies in all stages of development; large, mature companies which are successful on the international scene, smaller but already established companies that are maturing and small startups that are working on their first product. The level and the content of the interaction often evolves with the maturing of the companies.

CONTACT

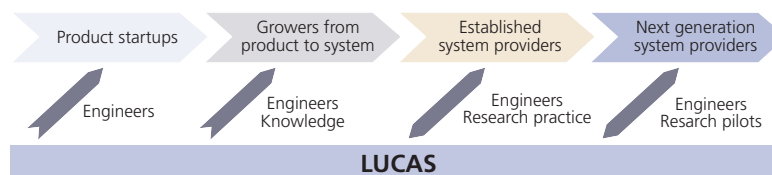
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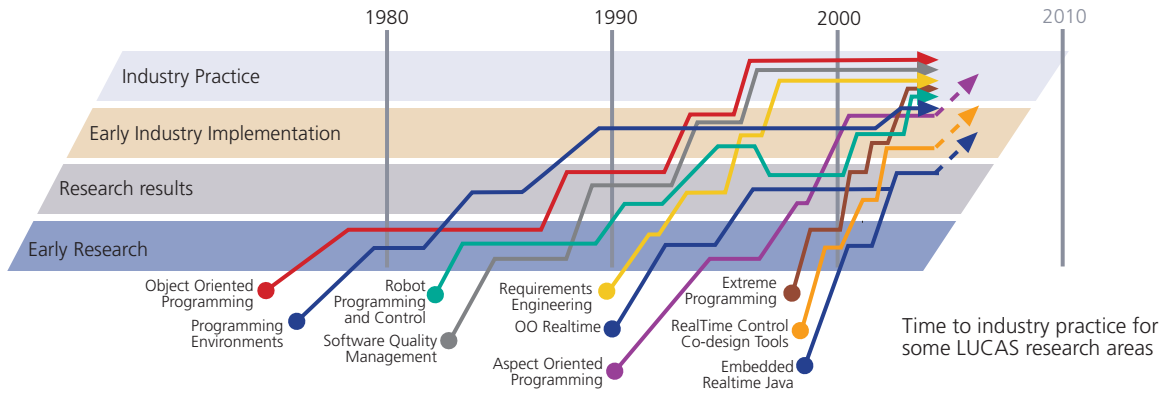
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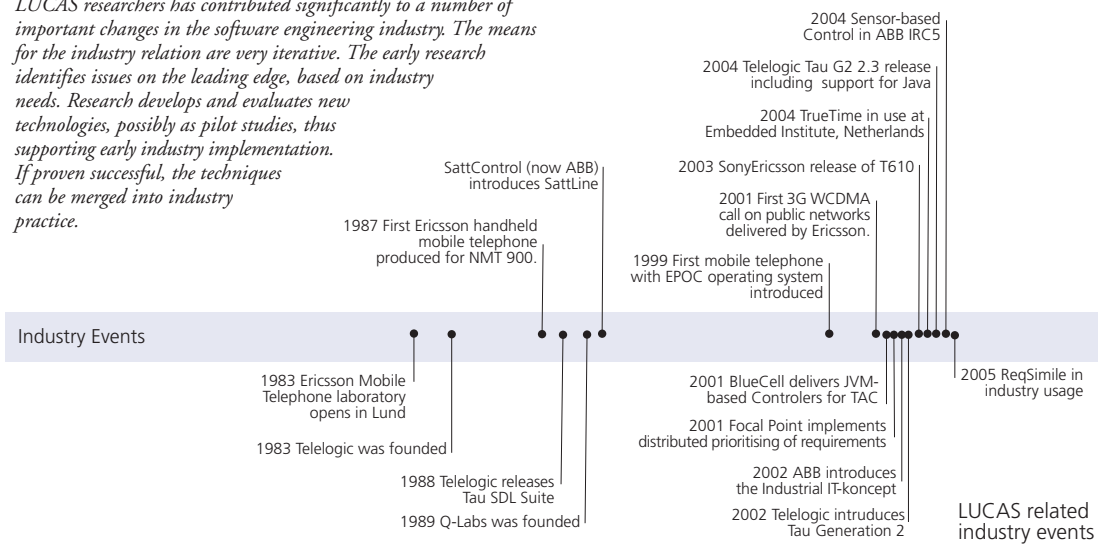
LUCAS ambition is:

- to stay on the competitive edge on applied software research
- to offer results to industry for future software development projects
- to provide education and training to fulfill industry needs

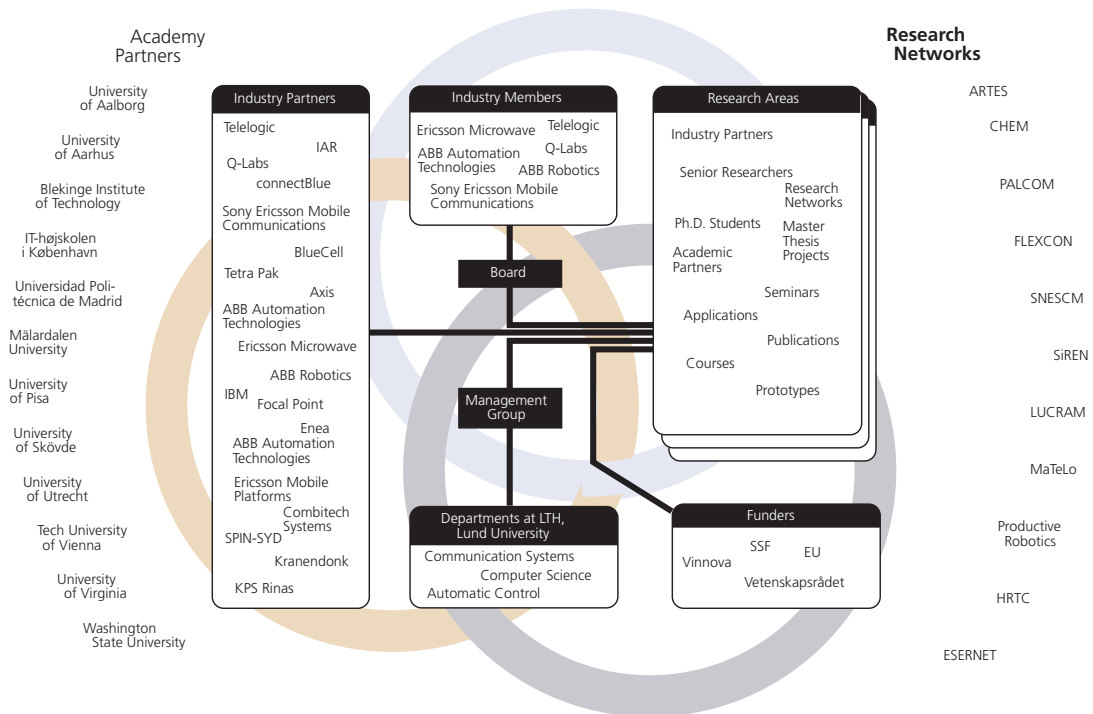
Research impact



LUCAS researchers has contributed significantly to a number of important changes in the software engineering industry. The means for the industry relation are very iterative. The early research identifies issues on the leading edge, based on industry needs. Research develops and evaluates new technologies, possibly as pilot studies, thus supporting early industry implementation. If proven successful, the techniques can be merged into industry practice.



Organisation in a global context



LUCAS is a network organization, bridging academia and industry partners together. The research is performed in the context of a variety of research networks and communities.



Real-time computing is an enabling technology for all applications of automatic control.

Application areas include industrial automation systems for the process, manufacturing and power industry and embedded mechatronic systems. All of these are of vital interest to Swedish industry.

Prof. Karl-Erik Årzén, Member of the LUCAS steering group.



From having been a speciality for a few industry sectors 20 years ago, the situation is now that computers and software are critical in most industrial sectors. The result is that more and more of the

complexity of the product, its characteristics, added value and the competitive advantage of the product, lies in software.

LUCAS researchers produce original research results, take home new development from the international scene, update the education at to keep it ahead, and turn to the companies for staying tuned on where the currently relevant problems are.

Prof. Boris Magnusson, Director of LUCAS.



Software engineering covers many aspects in a broad range of topics - technical, organizational and behavioural. With our focus

on empirical software engineering, industry environments are crucial to enable research. LUCAS and its active company network is an excellent environment for conducting empirical research, which is on the leading international research frontier.

Prof. Per Runeson, Member of the LUCAS steering group.



Developing software on time, in a number of variants to different customers and markets, with innovative features and high quality is necessary to be able to launch successful mobile phones on the world market.

LUCAS is an opportunity for us to stay competitive and develop world-class software. LUCAS applied research in real-time software technologies and software engineering methods and environments is highly relevant for Sony Ericsson. LUCAS has brought the latest research to the table and Sony Ericsson has contributed with industrial experience.

Long term, by educating competent engineers, by being a green house for start-up software companies, and by vitalizing existing software companies, LUCAS is an important contribution to the growth of software-intensive business in the Öresund region.

Dr. Sten Minör, General Manager Sony Ericsson, Member of the LUCAS Board



The industry associated to LUCAS creates products using advanced computerised real time systems, and many of them are world leaders in their respective areas. This leads to a demand on the researchers to be both specialists and generalists in order to be interesting to the industrial partners.

LUCAS environment has given opportunities to the companies to meet, discuss and "benchmark" their methods and strategies for product development, which in its turn has helped research in software engineering methodologies to evolve.

The industry needs an academic partner, who has a long-term vision created by basic research and international research co-operation, coupled with an ability to collaborate on applied research with results that could be brought into industrialised products. It is also important that the academic partner is able to introduce novel ideas from the research community into industry - results that soon will become state of the art. lucas has during its existence been able to operate in all these ways with great success.

Jerker Willander, Chairman of the LUCAS board



"Development centers in global companies have to have world class competence. This needs contacts with universities and highschools and other centers

with similar technical competences. For practical purposes regional access gives clear advantages. LUCAS provides these advantages. The competence profiles of the departments make a good match to the development work at ABB in Malmö."

Göran Arinder, ABB Automation



The focus of the research within LUCAS is of very great importance for our society and for the development of software engineering, computer engineering, and automatic control. The involvement of industrial partners is crucial for the research

performed. Firstly it is important that the university departments are highly familiar with the daily problems of industry, secondly the industry must be aware of the latest development in the research, and thirdly the transfer of graduate students and methods from academia to industry is a necessity for the growth of our industry.

Björn Wittenmark, Vice Rector Lund University, Professor in Automatic Control, Member of the LUCAS Board



LUCAS provides a source of information and knowledge; from the actual reports, presentations and discussions emanating from ongoing projects,

from the network of employees of the companies that are active in , and in the minds of graduated engineers able to work in the sometimes very hectic environment of a software product development company for shorter or longer periods of time.

Anders Ek, Telelogic, Member of the LUCAS board

