ACTING AS A CATALYSER
VINNOVA has a number of actions in Sweden. It has direct programmes supporting SMEs and especially co-operations with universities and research centres and making them connect. However, Wickman points out: “An important aspect of our work is not just money but to act as a catalyst, arranging meeting places, encouraging networks and providing knowledge about the different possibilities available.”

Sweden has had a lot of large national programmes in the ICT area but the change to a more societal challenge-driven process means thinking about wider perspectives, so it is more difficult to isolate what is specifically ICT. However, Wickman believes strongly in the EUREKA approach as it focuses on industry interests with a clear needs-driven approach to research – and this is particularly true of ITEA.

He also appreciates the EUREKA approach to co-operation: “Unlike the EU Framework Programme, it is not always necessary to form a big consortium. You can do something with just few partners working together – often a much more manageable form and very attractive for smaller companies.”

CO-FINANCING DOUBLES THE IMPACT
VINNOVA has a €9 million annual budget for EUREKA, including the EUREKA Clusters and the Eurostars projects; the split depends on applications. All funding involves co-financing with companies – so the budget is effectively doubled.

“We try to put our money into small companies and universities rather than large enterprises which can support themselves if they are really interested in a project,” says Wickman. “We can help them but they have their own resources.”

Wickman also strongly believes that the most important thing for Europe is to increase the involvement on SMEs in projects. “Eurostars and EUREKA are good models for that,” he points out. “Something has to be done in the next Framework Programme to get more small companies involved.”

MORE INFORMATION: www.vinnova.se/en

Software driving automotive industry

Software plays an important role in modern vehicles and is responsible for almost all new functionalities in terms of safety, environmental performance and multimedia entertainment. Swedish-headquartered Volvo is deeply involved in research to speed software development for its commercial vehicles as Daniel Karlsson, research engineer at Volvo Technology in Gothenburg, explains.

Most of the software being used and developed for modern road vehicles is now based on AUTOSAR-compliant architectures. In order to cope with the ever-increasing software complexity and the accompanying safety issues, the EAST-ADL modelling language and the coming ISO 26262 functional safety standard for vehicles are promoted. The advantage of these standards is the possibility of running a mixture of different software components on the same electronic control unit (ECU).

Volvo Technology is involved in the ITEA 2 TIMMO-2-USE project which has been extending the timing framework for EAST-ADL and AUTOSAR in real-time automotive embedded systems. The objective has been to improve co-operation between development teams, shorten development cycles and increase quality while reducing development risks.

This has involved developing a set of use cases that describe important timing problems together with timing-augmented methodologies to provide the required solutions to those problems. A key element has been the development of a data model exchange format, with a formally defined semantics, including the conversion of timing information between different levels of abstraction, taking tool and process automation to a higher level of productivity.

The result should be a 10 to 20% improvement in time-to-market with proper solutions for the management of timing information through all process steps.

PUBLIC SUPPORT IMPORTANT
Public support for automotive software development is important for both cost and prioritisation reasons, according to Karlsson, who is the project co-ordinator for TIMMO-2-USE. ITEA and the EU Framework Programmes both have a role to play in this area. ITEA is very attractive for us in that they focus on software and encouraging standardisation. Which programme to choose when considering where to submit a project proposal is more about finding the best match to an announced call.

Karlsson finds the Swedish public authorities very friendly and helpful. “Our home market is small, so it is quite natural for us to scout the international arena. Funding helps us to establish strategic partnerships both nationally and internationally,” he says. “Industry is in general doing quite well in Sweden,” he believes. “There was a trend at one time to outsourcing manufacture but now we have more automated work chains and have improved our efficiency.”

The real problem lies more in system complexity: “Due to the increasing amount of functionality in vehicles, and also of the software implementing it, Volvo alone cannot develop all parts” he says. One result is that software development is dispersed with much bought in. “This requires careful co-ordination. We use model-based specifications with very accurate qualification of the interfaces.”

Partnerships built up in EUREKA projects are important, especially with SMEs. “Some SME partners are keen on doing good jobs to show what they can offer to big companies such as Volvo,” Karlsson points out. “They can also be more flexible and align their goals to meet our needs.”

MORE INFORMATION: www.timmo-2-use.org