European group seeks progress in software R&D

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PARIS — Halfway through an eight-year R&D plan for embedded-software platforms, Europe is struggling to take a controlling role in software development, regarded as the linchpin of competitiveness in the automotive, consumer electronics, aerospace and mobile-communications industries.

The Information Technology for European Advancement (ITEA) program, launched in 1999, will hold a symposium later this week in Leuven, Belgium, to assess its progress.

It's not clear if ITEA, a union of private companies, universities and national research institutes, has established an adequate European strategy to compete against such global players as Microsoft and IBM. Originally budgeted at roughly 2.4 billion euros ($2.79 billion) and 20,000 work years, ITEA has received only 744 million euros ($866 million) thus far due to budget cuts by many participating nations.

ITEA was launched as a sister program to Medea+, the pan-European microelectronics R&D program, out of fear that Europe was trailing Japan and the United States in software R&D. Europe has traditionally been strong in embedded software, and the
embedded software, and the development of software platforms is a "major concern for the future of our industry," said Jean-Pierre Lacotte, vice chairman of ITEA. "We cannot stay behind our competitors."

ITEA is now under pressure to define a European strategy against "the global giants, such as Microsoft's .Net initiative and IBM's 'on-demand computing' initiative," according to the organization's latest report. To that end, the report says ITEA might consider open-source software.

"Linux efforts may reshape the application domains for key embedded systems, and completely change the philosophy of software development," Lacotte said. Many people "no longer accept" the paradigm wherein Microsoft controls the software platform and allows no access to its source code. ITEA believes European industry can gain a measure of freedom by developing value-added software on top of software developed by the open-source community.

Many have asked that Europe's e-government initiative, which intends to make all public documents and services available online by 2005, be based on open-source software.

Funding continues to be problematic, however. Of 52 original projects, five have died from lack of funds, Lacotte said. ITEA is "in great danger of losing momentum" due to budget cuts, according to the latest ITEA report. It called software-intensive systems "the crucial fabric on which . . . European competitiveness [is] being built."

This week's symposium includes about 20 live demonstrations exhibits covering 33 ITEA projects. Lacotte said the software projects focus on four key application domains: nomadic (mobile and transportation applications); cyber enterprise; intermediation services and infrastructures; and services and software creation.

Progress has been made in the development of a real-time Universal Model Language (UML) for real-time software design as well as development of open security software architecture called Trusted Security Infrastructure (TESI). TESI development has produced a complete set of "reliable middleware security components" designed and
produced a complete set of "reliable middleware security components" designed and managed by European companies, Lacotte said.

Another ITEA project called HomeNet2Run has linked different wired and wireless networks and middleware clusters, enabling room-to-room and home-to-home connectivity of PCs and consumer devices.

**Auto architecture**

An automotive project that could have have far-reaching impact is focused on the development of an embedded electronic architecture for the European automotive industry. Twenty European vehicle manufacturers joined by eight equipment suppliers are developing a middleware platform that allows automotive manufacturers to integrate different electronic systems, subsystems, modules and components delivered by different suppliers into a complete vehicle network.

To extend the European automotive industry's competitive edge and influence international manufacturing standards, ITEA officials said development of an embedded electronic architecture is critical. "You can't imagine the growing complexity of managing electronically-controlled functions in vehicles," Lacotte stressed.