

BigItaly focus

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Supercomputers: Siena leads the European project "Teraflux"

THE PROJECT

June 10 - Five years of work, 150 scholars, and 90 publications are behind the international research project "Teraflux," which explored the maximum computing power of supercomputers and embedded systems. The project - which has just successfully concluded - received European funding for more than €6 million and involved European and American researchers. Italy was at the head of the scientific coordination, which was assigned to Professor Roberto Giorgi of the Department of Information Technology and Mathematical Sciences at the University of Siena. "Teraflux is changing the way we build computer software and hardware - said Professor Giorgi - one of the major scientific results we got was the demonstration of new architectural techniques that allow us to continue to run programs even in the presence of faults in processors or interconnections, thus overcoming one of the major limitations to build high energy efficient computers."

THE SCIENTIFIC WORK

A statement from the Tuscan university on scientific work reveals that funding came from the FET program (Future Emerging Technologies) of the European Union. Overall, the project led to over 90 publications, with the participation of researchers from 11 different research centers. The goal of the project was to devise means to make future chips (which contain from 1,000 to 10,000 processors) more easily programmable, more reliable and easier to produce. "The results are applicable to any type of computer, from the smallest to the largest, as well as in smartphones," says Giorgi. Teraflux is based on the principles of "dataflow", which allow to dramatically improve energy consumption.