EuroSoC: Towards a Joint University/Industry Research Infrastructure for System on Chip and System in Package

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Abstract - A strategy for research and development, as well as for product definition and marketing for electronic systems in view of the incoming nano era requires expertise and even excellence in so many diverse areas that even the largest semiconductor industry in the world, INTEL, cannot conceive it in isolation. The worldwide trend is to develop joint program between industry and academia with public and industrial funding sustained over a rather long time horizon to develop methods and technologies to master the difficult art of Integrated System Design.

To realize the potential of ever-denser process technologies, chip designers will have to construct Integrated Systems consisting of multiple heterogeneous cores, massive memory, communication networks, electro-mechanical sub-systems, and smart devices. New design methods and tools are needed to support new architectural platforms that facilitate reuse of Intellectual Property blocks. This must be achieved without compromising reliability, as nano-scale physical effects come into play.

We argue that the disruptive technology brought about by nano scale integration cannot be taken lightly. The central problem to be overcome is that traditional approaches to design and tools will not scale. Moreover, existing designers will not scale too because they do not have the required pluridisciplinary scale to deal with SoC. The strategic direction of EuroSoC is to address these issues by lining up the research community and by providing a framework where its collective knowledge can be fostered and fully leveraged by industry and society in general.

A network of 500 researchers from more than 150 organizations will participate in EuroSoC. A group of world-class researchers, representing both academia and industry, will manage EuroSoC. Some of these researchers are specialists in particular thematic areas and are expected to galvanize their respective research communities.

EuroSoC will be funded by European industry in a first phase. In a second phase, it will seek for funding from international sources.