APanel

ARE PARAMETERIZED CORES A SERIOUS BUSINESS?

Moderator: Daniel D. Gajski - Univ. of California, Irvine, CA

With 20M transistors/chip available to EVERY system designer in the year 2000, how will they be used? How will complex systems be designed? Microprocessors and a limited number of high volume ICs will still be designed with the same blood, sweat and tears as always. The open question is how we will design the application-specific system?

Some have proposed Application-Specific Integrated Processors (ASIP) as a replacement for ASICs. ASIPs are specialized processors which are customized to each application, including changes to the instruction set, memory interface, etc. to achieve maximum performance. ASIP proponents believe that ASIPs and other parameterizable cores will constitute the basic building blocks of future systems and that the tools industry will supply new system level tools and development environments, including retargetable compilers and run-time systems, to support the design of embedded systems using these programmable cores.

The proponents of an alternate school of thought believe that system tools and environments are difficult to develop and that future systems will be built strictly from standard parts (processors and memories) for which software tools such as standard compilers are readily available on the market.

If either prediction is true, the future looks bleak for the bulk of the EDA industry which lives on the large amount of application specific integrated circuit design for each new system. In the first case, the EDA industry will face the challenge of developing a new set of system design tools, which may be impossible. On the other hand, if the only standard parts (or fixed cores) are used in every application specific system then the EDA industry is selling into a rapidly shrinking market.

This panel will discuss the pros and cons of programmable cores, the core based methodology and its impact on the future of the EDA industry.

Panel Members:

Tadatoshi Ishii - Toshiba Corp., Japan
Bill Lin - IMEC, Belgium
Peter Marwedel - Univ. of Dortmund, Germany
Vijay Nagasamy - LSI Logic, Inc., USA
Pierre Paulin - SGS-Thomson Microelectronics, France