A microprocessor by any other name...

I once asked my friends what they thought was the role of microprocessors in digital systems. Some said the microprocessor was the brain. Others thought software should be the brain and the microprocessor was the heart. Since both brain and heart surgeons are usually rather well-compensated, I guess we engineers can’t go wrong working with microprocessors.

But regardless of what part we think microprocessors occupy in digital systems, they have always provided the motivation and the challenge for VLSI design. New CAD tools are required for each new design, and old CAD tools must be sharpened. Even if microprocessors do not grow more complex, combining interface circuitry or building multiprocessor systems on a single chip will keep the VLSI challenge alive in the foreseeable future.

We are fortunate to have Steve Kang, himself a physical designer of a 32-bit microprocessor, as the guest editor of this issue. Through his contacts, persuasion, and perspiration, Steve was able to obtain four excellent contributions representing the state of the art. A good place to start in this issue is with his guest editorial on page 10. Thank you, Steve, for all your efforts.

With this issue, we welcome three new editors. Miron Abramovich is taking over Test Generation/Evaluation, Giovanni De Micheli is our new editor for Synthesis and Verification, and Robert Powers brings his Harvard Business School expertise to our New Products—Test department. I thank the outgoing editors, Edward McCluskey, Donald Thomas, and Conrad Zagwyn, respectively, for their past work.

And last but certainly not least, as the dolphin on our cover shows, is our coverage of the 1987 Design Automation Conference. Turn to page 13 to review the DAC program, exhibitors, and best paper award nominees. We are excited about this event because I feel that D&T and DAC have a lot in common—namely, you the readers. So see you in Miami Beach.

Vishwani D. Agrawal,
Editor-in-Chief

IEEE standard for logic symbols

Dear Editor:

I have just read Professor Edward McCluskey’s “D&T Forum” letter [Feb. 87, p. 6] and am writing you to support his recommendation that potential authors for Design & Test and other Computer Society publications be encouraged to use the IEEE standard for logic symbols in the schematics they submit for publication. This will become easier and easier to do as schematic capture packages for personal computers support the use of these symbols.

When schematics are commonly drawn for publication using a schematic capture package, authors will be able to use the standard symbols even if they do not understand them. Normally, I would hesitate to recommend using something that users do not understand. In the case of an MSI device symbol, the alternative is to use a “black box” and cryptic labeling of pins.

In either case, readers can always look up the part in a manufacturer’s catalog and obtain a functional description. The IEEE standard symbol has the advantage of permitting people familiar with the standard to understand the device function without looking up the part in this way.

Even without the support of a schematic capture package, a potential author can obtain the symbols for virtually all MSI parts by finding Texas Instruments’ version of the part and seeing how they have represented the device.

Each of the symbols in TI’s catalog has been created by Fred Mann. I worked for several years with Fred on the IEEE Symbol Standard Committee. There is no one in this entire world who understands the standard better. And there is no one who has more experience at creating a representation for a “strange” MSI part than he has. He has written a new book, distributed by TI, which supports use of the standard symbols: *Using Functional Logic Symbols* is available for $9.95 (plus $1.25 for handling) from Texas Instruments, Data Book Marketing, PO Box 117692, Carrollton, TX 75011-7692.

However, as I said, prospective authors do not really need to understand all the nuances of the symbol standard to create schematics.

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