

# Serving a growing community: How *D&T* began

Roy L. Russo, IBM (retired)

■ **TOWARD THE END OF 1982**, at a meeting of the Computer Society Executive Committee, then-President Oscar Garcia asked me whether the time was right for a publication on design automation. I suppose he posed the question to me in particular because design automation was my field at IBM. I replied that it might be timely and that I would think about it.

The more I thought about it, the more convinced I became that a new publication was warranted. It was obvious that IC densities would constantly increase and that circuit (gate) counts for computers and other electronic products would grow immensely (the million-circuit chip was looming on the horizon). There were indications that design time might grow almost as the square of the number of circuits, and some projections estimated tens of years to design even relatively small microprocessor-like products.

It was also apparent that the testing of chips (and higher-level assemblies) to separate the good from the bad had to become an integral part of the design, verification, and manufacturing processes. The complexity and cost of performing manufacturing tests were growing steadily along with chip density. DFT techniques were already in use at companies such as IBM. One such technique was level-sensitive scan design, an IBM design strategy invented by Ed Eichelberger, which made more manageable the complicated process of developing test patterns for use in manufacturing.

More and more CAD software would be necessary to make it possible to design and test dense VLSI chips and high-circuit-count products in reasonable time and at reasonable cost. Large outfits such as IBM and Bell Labs had their own design automation groups. Entrepreneurs sought to satisfy the needs of the many smaller companies; so, new startups (such as California Automated Design, which later merged into another company) were emerging to develop such software. In fact, an industry based on design automation, CAD, and test was emerging and growing rapidly.

Both the IEEE International Test Conference and the Design Automation Conference were experiencing sig-

nificant growth and increased vitality with each passing year. These highly regarded meetings were beginning to attract thousands of attendees and upwards of a hundred exhibitors.

Vigorous and sustained projects were underway in the commercial, university, and government sectors, seeking novel and practical solutions to design and test issues.

All of these trends were indicative of a field that would continue to grow in importance, perhaps eventually becoming a large subscriber base for a new publication that would address the entire body of methods for designing and testing electronic hardware. The IEEE already published the *Transactions on Computer-Aided Design*, but there was room for a new magazine that would focus on the needs of design and test practitioners. So the title *Design & Test* just popped out; *D&T* would emphasize current industrial practice and experience together with promising research ideas.

In early 1983, while on assignment as IBM's representative to the Stanford University Center for Integrated Systems, I wrote a draft proposal for *Design & Test* magazine. With the help of many Computer Society colleagues—including Dennis Allison, Harold Carter, Michael Elliott, Ron Hoelzeman, Hillel Ofek, True Seaborn, Merlin Smith, Ed Thomas, Akihiko Yamada, and others—the draft moved forward. As the proposal worked its way through the review process, the title became *IEEE Design & Test of Computers*, as it remains today. After IEEE approved the magazine, President Garcia appointed me to serve as its first editor in chief, and I was fortunate to convince key people from academia, government, and industry to serve on its first editorial board. The premier issue appeared in February 1984.

**Roy L. Russo** held various positions in design automation during his 30-year career at IBM. He retired in 1994. Contact him at [r.russo@computer.org](mailto:r.russo@computer.org).

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