Who will become the next "Yokozuna" in VLSI design?
Cover

A "grand champion" Sumo wrestler is called a "Yokozuna." Japanese IC makers (who inevitably are also large computer or telecommunications makers) hope to achieve Yokozuna status by borrowing some ideas, and perfecting others. Cover illustration by Kazuhioko Sano, San Francisco, California.

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14 A VLSI DESIGN Special Report: Computer-Aided Design and Design Automation for ICs in Japan

Jerry Werner, Editor-in-Chief

Some believe that Japanese IC-makers are "strong in hardware—weak in software." This report, the result of a recent visit to Japan by VLSI DESIGN'S editor-in-chief, should help clarify the matter.

39 A Hierarchical Preview of the 1982 Design Automation Conference

The DAC is getting so overwhelmingly large that it, like the subject of so many of its presentations (VLSI design), can benefit from a hierarchical analysis.

44 A Custom nMOS Chip for Medical Ultrasound

J. Peter Stonestrom, Unimation, Inc.
Weston A. Anderson, Varian Associates, Inc.

Using a technique known as pipelining, the authors designed a Mead-Conway style nMOS IC for a phased-array ultrasonic imaging system. The chip operates at clock speeds greater than 20 MHz.

60 A Constrained Design Methodology for VLSI

Mike Tucker, Hewlett-Packard Company
Lou Scheffer, Valid Logic Systems, Inc.

Believing that the use of overlapping cells in VLSI design reduces the effectiveness of hierarchical CAD tools, the authors propose an alternative approach that allows hierarchical verification yet exacts no penalty in chip area.