Closing the Gap between ASIC and Full Custom: A Path to Quality Design

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Although process technology has shrunk down to nanometer features over the last decade, the gap between ASIC design and full-custom IC design has widened. This gap includes significant differences in performance, price, and profit between the two design styles. It is also revealed by huge differences in quality between the two styles in speed, power distribution and consumption, yield, and reliability, in some cases as much as an order of magnitude. To fully utilize the latest process technologies, a full-custom design approach with the productivity of an ASIC flow is necessary.

Michael Reinhardt will start with an analysis of how the gap between ASIC and full-custom design began, and discuss its long-term consequences on the whole industry. He will then show the positive effects on the quality of IC design, and on the chip industry’s economic situation, which can occur if this gap can be closed. He will illustrate possible strategies and solutions for achieving this closure, and how they can be implemented right now in practical ways.

About Michael Reinhardt
Michael Reinhardt’s background is in computer science, electronics, and economics. He holds BS and MS degrees in these disciplines from the University of Dortmund, Germany.
In the mid 1980s, he accepted various assignments in microprocessor design and testing at Siemens and SGS-Thompson, where he first faced the challenges of design rule incompatibility and process translation. This experience, together with his broad knowledge in computer science, sparked his interest in developing efficient IC design methods.
From 1986 until 1992, he led an international research team combining the forces of academia and industry to develop cutting-edge and unique IC layout design and manipulation technology. In 1992, Reinhardt founded RUBICAD Corp., dedicated to advanced IC physical design technology, and has served as its President and CEO/CTO since the company’s inception.