**CANDE PREDICTIONS – as rated at the 2001 CANDE Workshop**

***Results: 19 came true, 4 partially, 15 did not***

**Key:** Blue – Correct (not necessarily in 5 years) Green – Did occur partially Red – Did not occur

**1996 (4 came true, 1 partially, 5 did not)**

1. Windows NT will be the only OS for commercially viable CAD applications
2. X86 machines will ship as more than 50% of EDA platforms
3. More than 80% of the CAD effort will be directed toward software and "FPGA"-based programmable hardware
4. EDA companies will distribute all their products (tools, libraries, etc,) on the Internet
5. The hardware/software co-design problem will have become the driving system-level problem
6. "Pay per use" EDA tools will be in widespread use
7. Tool suites for mainstream designers will be a significant fraction of total EDA
8. Portable voltage will be 1.8 – 1.2 V, driving significant new circuit design and EDA challenges
9. The IP crisis will be solved by an open IP industry and a mix-and-match standard
10. Software will have become 60 to 80 % of the overall cost of an embedded system

**1991 (5 came true, 1 partially, 4 did not)**

1. Hardware/software co-design will be one of the most important design problems
2. Support will still be the biggest hidden cost for both CAD vendors and customers
3. MCM CAD becomes a reality
4. MCM will enable new CAD and semiconductor businesses
5. Internal CAD will make a come-back
6. There will be tools for validation of specifications
7. Partitioning will emerge as a commercial product
8. The telecommunications industry will provide the most challenging problems in CAD
9. SPICE algorithms still dominate circuit simulation
10. Frameworks will be provided by computer vendors

**1986 (6 came true, 1 partially, 3 did not)**

1. UNIX will be the dominant operating system
2. General Purpose Parallel machines will replace today's computers; they will be designed for high performance on major CAD algorithms (e.g. SPICE, Logic Synthesis, Fault Simulation, Simulated Annealing, Device Simulation)
3. The big problem for CAD will become the validation of specifications
4. The major developments in CAE/CAD will be in the environments for users
5. The test problem will still be considered NP-hard, boring, and unsolved
6. Many CAD tools will finally use hierarchy effectively
7. General silicon compiler not developed yet but targeted silicon compiler for DSP and other specific applications will be in general use
8. SPICE will still be the standard circuit simulator
9. CAD Tools will increasingly take into account statistical fluctuations in the manufacturing process
10. Full hand-crafted custom will still be an important part of design

**1979 (4 came true, 1 partially, 3 did not)**

1. Design System will be a Network Formed With Dedicated Processors For Specific Functions
2. Heavy Emphasis on Testability and Test Generation During the Design Phase
3. Integrated Verification Tools for Checking at Each Step in the Design Cycle
4. Much Greater Use of Canonical Circuit Forms (PLA, ROM) Via Design Aids
5. The Design Station is Highly Interactive for all Phases and Includes Graphics
6. Sets of Compatible Software will be Used for Design and Verification
7. Circuit and Process Simulation Programs are Closely Linked to an Ongoing Process Data Storage System
8. Layout will be Manipulated in Symbolic Form