"ITC'99" Benchmark Meeting

5:45 pm - 7:00 pm, Oct. 20 1998

Agenda

- **Why Benchmark?**

- **Status?**

- **Benchmark Needs**

- **ISCAS'85 & '89 High Level Benchmarks - Mark Hansen**

- **Politecnico di Torino Benchmarks - Matteo Sonza Reorda**

- **Open Issues**

- **Next Steps**

Why Benchmark?

- **Current benchmarks outdated - too simple, too small.**

- **Need widely available, modern designs to spur research on DFT for future designs.**

- **Benchmarks foster innovation by:**

  - **Focusing research on most valuable topics.**

  - **Allowing better sharing, comparison of research results.**

  - **Encouraging healthy competition.**

- **We want to help university innovation on DFT and ATPG to catch up to and outpace industry.**

Status

- **Website set up - http://www.cerc.utexas.edu/itc99-benchmarks/bench.html**

- **Effort an official activity of TTTC - Scott Davidson vice Chair of Test Synthesis TAC.**

- **Mailing list set up - 107 members**

- **10 potential users filled out form on web page.**

- **1 donor filled out form on web page.**

- **22 benchmarks received so far (Torino and UT-Austin)**

- **Support from UT-Austin, Delft and Sun Microsystems.**

Number One Need - More Circuits!

Circuit Needs

- **Both RTL and gate level descriptions**

- **Hierarchical Designs**

- **Examples of processors, DSPs and SOCs.**

- **Real Circuit Structures**

  - **Embedded memories**

  - **Tristate busses**

  - **I/Oputs**

  - **TAP controllers**

- **Lists of realistic defects and faults - delay, bridging, stuck-open, etc.**

This should be a continuing effort - we may not get all this for first release.

Open Issues

- **Netlist and RTL formats**

  – **Both Verilog and VHDL okay? Translators?**

- **Libraries.**

- **Embedded DFT**

  – **Should be DFT free except for boundary scan.**

- **Fault Lists**

  – **Will differ after synthesis**

- **Baseline Results**

  – **Mario Konijnenburg and Hans van der Linden have volunteered to do full-scan ATPG for benchmarks.**

Other Issues

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Next Steps

- **Track down and acquire industrial circuits**

  - **Can be old.**

- **Close on format, library requirements**

- **Publicity (press release).**

- **Define presenters at ITC'99 session.**

- **Schedule**

  - **February 1 - First set of benchmarks released**

  - **March 15 - Presenters selected.**

  - **June, July?? - First results ready for ITC proceedings.**

  - **September 28 - 30 - ITC'99**