

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- **Current benchmarks outdated - too simple, too small.**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 small benchmarks received so far (Torino and UT-Austin)**
- **Three industrial benchmarks promised - 1 small, 2 full ASICs.**
- **Support from UT-Austin, Delft and Sun Microsystems.**

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.**
 - **Getting help from Synopsys. Will vendor open old library?**
- **Embedded DFT**
 - **Should be DFT free except for boundary scan.**
- **Fault Lists**
 - **Will differ after synthesis**
- **Baseline Results**
 - **Delft Univ. has volunteered to do full-scan ATPG for benchmarks.**

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**