

GoldTime™ Sign-off Timing Analysis New ThreadWave™ Technology Delivers Speed and Capacity Breakthrough

GoldTime is a new-generation timing analyzer for sign-off of SoCs implemented in the most advanced nanometer process nodes. Built from the ground-up with a new architecture, GoldTime delivers a breakthrough in speed and capacity. No longer do you have to wait overnight for accurate timing results, GoldTime delivers in just hours.

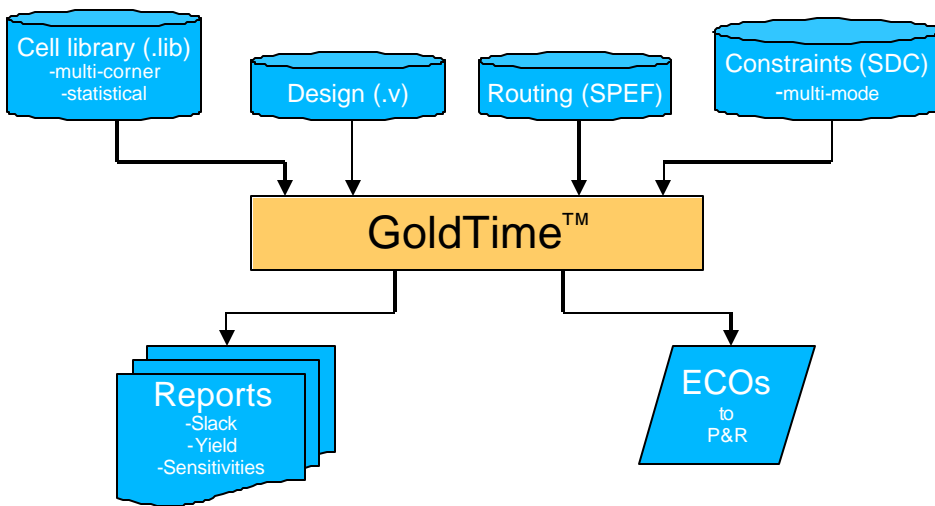


Figure 1. Extreme DA GoldTime fits into existing timing sign-off environments.

HIGHLIGHTS

- > Single timing solution for all nanometer process nodes
- > Multi-mode/ multi- corner, SI & statistical timing analysis
- > Patent-pending ThreadWave technology for speed and capacity breakthrough
- > Optimize circuit performance
- > PT-compatible with easy adoption
- > Improve yield with Gold Sign-off Platform

ThreadWave Technology

The ThreadWave technology in GoldTime delivers breakthroughs in speed and capacity for the most complex of IC designs, and makes traditional multi-corner analysis run dramatically faster.

In GoldTime, analysis proceeds along a virtual wavefront through the design, and capacity requirements grow sub-linearly with an increase in design size. As only the wavefront consumes system memory, GoldTime with ThreadWave technology can analyze the largest flat designs.

Through fine-grain multi-threading, a single timing analysis runs in parallel on multiprocessor and multicore workstations, such as the Intel Xeon and AMD Opteron, to dramatically reduce the time for analysis.

Current timing analysis point tools offer only simple distributions of processes and require substantially more workstation memory to handle concurrent analyses.

Speed and Capacity Breakthrough

On a single CPU workstation, GoldTime demonstrates 5X better speed and capacity than current timing analyzers. On multi-processor workstations, the speed improvement scales with the number of processors.

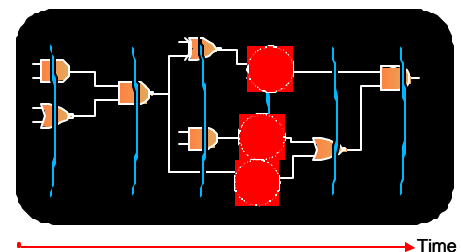


Figure 2. ThreadWave technology decomposes timing analysis wavefront into multiple threads, for a breakthrough in speed and capacity.

In just a few hours, post-route analysis of designs exceeding 100 million gates in size can be completed. This enables quick design improvement and optimization.

Signal-integrity analysis of flat designs that considers interconnect coupling effects—which would overwhelm other analyzers—is now practical with GoldTime. No longer do you need to do hierarchical runs that sacrifice accuracy for speed.

Expensive 64-bit workstations loaded with gigabytes of memory are not required to run analysis with GoldTime.

Compatibility

GoldTime is a full-featured, PT-compatible timing analysis solution that delivers sign-off level accuracy. Engineered for easy adoption within existing design tool flows, GoldTime accepts all standard data files and produces reports in their standard formats.

Statistical Timing Analysis

GoldTime performs variation-aware timing analysis when combined with the statistical characterization and extraction features of the Extreme DA Gold Sign-off platform. Yield of designs before tape-out can be determined, eliminating unnecessary pessimism or guardbanding. This, plus the fast design optimization and early fixes to variability problems, are the major benefits of GoldTime statistical analysis. And, designers can move at his or her own pace from traditional timing analysis to statistical and parametric analysis using GoldTime. Multiple patents are behind GoldTime technology statistical analysis and makes it the world leader.

Supported Workstations

GoldTime is supported on 32-bit and 64-bit Linux workstations running RedHat Enterprise 3 or later, as well as LSF and SGE.

Pricing and Availability

For pricing and availability, please contact Extreme DA. Your local sales representative will respond to your inquiry.

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“Coherent’s low-power DSP design uses an array of processors with scores of different clock domains. Implemented in a 90-nm process from TSMC, the DSP features more than 10 million placed instances. In just four hours, Extreme DA GoldTime, running on a four-processor, 64-bit Intel workstation, loaded all library and netlist data and performed timing analysis on the entire design. The speed-up provided by GoldTime’s multi-threaded analysis has been critical for our success.

“The potential for setup-and-hold violations in our design was huge, so we needed accuracy, too. GoldTime correlated to within a few percent of our reference SPICE simulations. GoldTime is our only sign-off tool for timing analysis before tape-out.

“The response times by the Extreme DA engineering team have been among the fastest I have experienced in my design career. As we requested them, new features were added overnight, and bugs were fixed the same day.”

-Mark McDermott, V.P. of Engineering, Coherent Logix

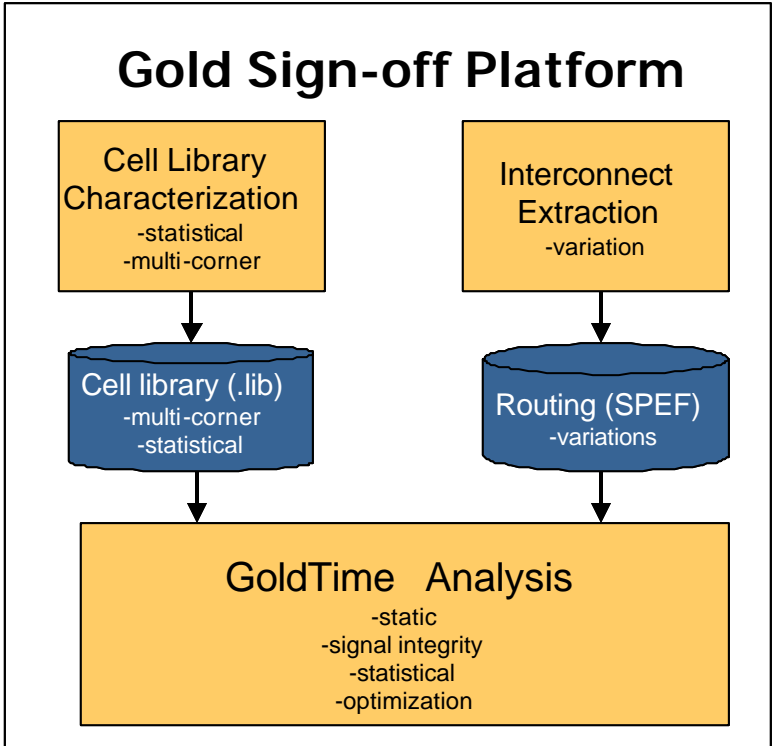


Figure 3. GoldTime performs variation-aware timing analysis when combined with the statistical characterization and extraction features of the Extreme DA Gold Sign-off platform.