ALLEGRO CL® @Work!

Advanced Micro Devices:
Test Generator Software for Microprocessor Design Verification

Advanced Micro Devices (AMD), a leading global supplier of integrated circuits (ICs) for the personal and networked computer and communications markets, developed a sophisticated test generator tool using Allegro CL. AMD deploys the test generator, Luther, internally to find bugs in the company's complex microprocessor designs. AMD produces processors for Microsoft® Windows™ compatible PCs, flash memories, communications products, networking applications and programmable logic devices.

"There are a lot of things that go into designing a processor," says David Reed, a senior member of the technical staff managing one of the design verification groups. "Once you have a design, there needs to be a process of testing to see if all of the features behave in the intended way. If the chip's features behave as intended, then the ultimate performance (speed) will also behave as intended."

"We're talking about a complex design that's really easy to get bugs in it," continues Reed. "It's impossible to manually write enough tests to figure out if a design is good enough. This is where Allegro CL came in. We needed to find the quickest way to develop a very sophisticated test generator." AMD was looking for a fast tool (one that generates sophisticated tests at a high rate) enabling the company to develop the tool faster and get the product to market more quickly.

Allegro CL was a perfect fit for AMD's needs.

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>
> *David Reed*
> *Senior Member, Technical Staff*

"We wanted an object-oriented tool with an optimizing compiler that runs code fast," says Reed. "Allegro CL has a very good compiler technology. On the average, your compiler runs faster code than any other I've used. We also liked the dynamic capabilities that let us stop and start and check things out without having to do a whole re-compile."

"To give you an idea, we can develop in Allegro CL in about 1/3 the time of comparable development problems that were done in C. We got a resulting tool that runs ten times as fast and finds six times as many bugs," continues Reed. "There were other handy developer's tools like the Profiler that helped us improve our code to run faster by letting us see where we needed to speed things up. In addition to a good development environment and an optimizing compiler, the source code is very portable, requiring no changes to run on HP, Sun, and PCs running Linux."

For more information about Advanced Micro Devices, you may visit their web site at www.amd.com.

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