



STMicroelectronics Speeds Up its Testing Process

Global maker of high-speed router components discovers CDRouter software from QA Cafe

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STMicroelectronics

Brussels, Belgium— They are small, unassuming devices that often reside in the corner of an in-home office, a bedroom, or even a closet. Apart from a few indicator lights, you might not notice them at all. Yet in a very short span of time, they have become as widespread as television sets and telephones. High speed cable/DSL routers have become a lifeline that keeps millions of home users and small businesses all around the world connected to the Internet 24 hours a day, 7 days a week.

“Always On” Technology Accentuates Need for Robust Product Testing

This “always on” Internet technology is not only in high demand, but also has high expectations associated with it. People and businesses want to install the router once and forget about it. That’s why companies such as STMicroelectronics — headquartered in Geneva, Switzerland, and with a division in Brussels, Belgium specializing in the development of DSL routers — are so busy these days. They are at the forefront of this Internet technology, designing the chipsets and firmware that keep routers running smoothly 24 by 7.

“Our chipset fits into a space measuring just one centimeter long by one centimeter wide,” begins Software Design Engineer Jan Vermeir of

STMicroelectronics, “yet it contains 1.2 million gates. So we’re talking about some extraordinarily complex technology.” Conceiving, designing, and miniaturizing this circuitry, however, was only half the battle for ST. The company then had to ensure that its on-board router software, called firmware, worked flawlessly over long periods of time. That meant putting the router software through its paces using a battery of quality assurance tests.

“We tried emulating the behavior of a home or small business user on our own, but we simply couldn’t collect enough meaningful data,” reports Vermeir. “There are a variety of router protocols that we support, and we need to be able to test every single one of them, which isn’t easy.” Vermeir adds that the company also



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needed to test all of the protocols interacting with one another, a task that the company simply could not yet do.

Finds Testing Software — on the Other Side of the Atlantic

“I started searching the Internet for a solution,” continues Vermeir, “and what I found at first were a number of testing products that were not only very costly, but also didn’t provide us with any means to optimize or automate them, which was something that we absolutely had to be able to do. Then I came across a product called CDRouter from QA Cafe, and that got my attention. I was intrigued by it.”

The product that was seemingly the answer to Vermeir’s dreams was developed across the Atlantic Ocean in Cambridge, Massachusetts. But in this global economy, distance wasn’t an issue at all. After having several email and phone discussions, a copy of CDRouter was purchased from QA Cafe in May of 2003 and put into immediate production use at ST – and the company has never looked back. In fact, the company recently went back to QA Cafe and purchased additional copies of the software.

All-Software Testing Solution Runs 200 Different Simulations

“One thing I liked about this product from the start,” comments Vermeir, “is that it is an all-software solution. Some of the other products we looked at involved hardware, and we felt that this was a cleaner solution that was much easier to implement.”

“CDRouter,” he continues, “is capable of running more than 200 different test cases. The tests that we run fall into three distinct categories: functional testing, where we ensure that the chip set does what it’s supposed to do... stress testing, where we verify that the chip set works with 100% reliability over the course of several days without incident... and performance testing. CDRouter is ideally suited for the first two stages of testing — functional and stress testing.”

Testing Time Slashed from Five Days – to Five Hours

So what kind of an impact has CDRouter had on ST’s product development process, after just five months on the job? “You could say that this product has had a profound impact on our product development process. I will tell you that the testing of ten different router protocols used to take us a full week to accomplish. Now, it’s being done in a single night. That is an amazing improvement, one that will in time enable us to get new, thoroughly reliable products to market faster.”

Customization Enables CDRouter to Fit Seamlessly into STMicroelectronics Work Environment

Vermeir also appreciates the ease with which he was able to customize CDRouter to fit into his work environment. “I found it very easy for me to integrate CDRouter into our existing test environment.”

Responsive Technical Support Makes CDRouter an Easy Choice

Does it make a difference that the vendor, QA Cafe, is based in another country and another time zone? “Not really,” concludes Vermeir. “The vast majority of our technical issues are handled via email. I’ve sent them an email at two o’clock in the afternoon and gotten a response back in as little as half an hour. They are remarkably responsive, considering the time difference.”

“Well Worth the Investment”

We live in a time when software products come and go. But in this instance, it appears that STMicroelectronics will be holding onto its copies of CDRouter software — and buying more. “We were especially impressed by the breadth and depth of the tests that CDRouter can perform,” concludes Vermeir. “Compared to the other products that we looked at, it’s a bargain. It was well worth the investment. We already have plans to deliver CDRouter to other people here in Brussels, and possibly to other STMicroelectronics sites.”