

**As the Premier Tolerance Analysis Technology in the World, Sigmetrix's
CETOL 6o is allowing Manufacturers to better Analyze their Designs
And Produce Products that are Built to a Higher Level of Quality**

**Technology
Analysis Software**

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**Chris Wilkes
CEO**

About Sigmetrix:

Sigmatrrix continues to develop CETOL 6s as the premier tolerance analysis technology in the world. Through the company's unique research relationship with the top corporations and universities and our strategic software development and distribution relationships, Sigmetrix is uniquely positioned to accelerate the implementation of assembly analysis and tolerance optimization into companies using Creo Elements/Pro, CATIA, and SolidWorks around the globe.

**Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine**

CEOCFO: Mr. Wilkes, what is Sigmetrix?

Mr. Wilkes: Sigmetrix is a software company. We provide mechanical engineering software that helps designs be better and more robust so that when you go into manufacturing, the products are built to a high level of quality.

CEOCFO: Could you give us a concrete example of how someone would use your software and what they

could derive from that they might not be available by other methods?

Mr. Wilkes: We could take an example of a car. Somebody designs a more fuel-efficient engine, and when they design that engine there are many moving parts and other parts they might have sourced from other people all over the world. When they give specifications for what those different parts should look like, they allow a little bit of variation in the manufacturing. The question is, when each part varies a little bit, does the entire engine still work? You have to manage the design to make sure that all of these variations can still come together in a product work, and when we talk about quality, we are talking about working 99.99% of the time. We analyze all of the different variations, and we tell companies they might not want to vary a certain part too much or make it tighter, while they might be okay letting another part vary even more because it does not impact the overall ability of the engine to perform.

CEOCFO: How do you design software that will understand what will work?

Mr. Wilkes: We go into the design and interact with the other software packages through which the company does their design. We interact with that design and start pulling some information from the design. We then start running some fairly complex mathematics against the different design components, and then we start doing some analysis with that, and that is how we spit out some answers regarding their expected quality level and where they might want to make some adjustments.

CEOCFO: Are there particular types of manufacturers or geographic areas that are a focus for you?

Mr. Wilkes: For us, it is certainly about durable goods and in general, our software is used more in helping companies make products that move. This would be some kind of mechanism, which is a group of parts that actually has movement inside of it such as a door lock, a watch, an engine, or medical devices.

CEOCFO: Are most manufacturers using some form of software to try and accommodate the problem, or are many of them still unaware that the problem even exists?

Mr. Wilkes: Many companies use this more advanced software. A lot of companies try to address the problem doing calculations by hand or using Microsoft Excel and try to do manual calculations to derive answers. They all do some type of analysis on these variations, but the sophistication of this analysis varies between different manufacturers and how advanced they are in their own quality of programs.

CEOCFO: How do you reach your potential customers?

Mr. Wilkes: We have a couple of different ways. Our website is quite active and we get about 12,000 hits a month. People are often looking for a better solution, so they come to us. We also partner quite closely with the companies that manufacture the software which does the designing-companies such as PTC and Dassault Systems. Those are the companies whose main software is design software, so we partner with them and

that is how we are able to access the designs that done with those software. That partnership also allows us to reach their customer base with our solutions.

CEO CFO: When you speak with a company, when is the moment they understand that what you provide makes everything easier?

Mr. Wilkes: We actually have two main pieces of software, and we have spoken primarily about the one that is a variation analysis type software. The other piece of software that we provide drives communication. If you go make a physical device or durable good, there are ways that you describe where a hole goes, and what the shape is of something that is round. There is a whole language written for that, which is a standards-based language called GD&T. Our software helps people speak that GD&T language correctly. When we do a demonstration and a customer sees how accurate we can put the proper use of that language inside of their manufacturing process, that is the moment when they realize they can correctly communicate between their design team and their manufacturing team. When they do that and they are talking the same language, they then begin to ask if they are correctly managing all of the variations, and that is when our other piece of software comes into play.

CEO CFO: You recently released a .3 version of the CETOL 6s. What have you changed in this latest version?

Mr. Wilkes: We actually released a couple of products. We released one, which is called GD&T Advisor, and it is a communication software that helps people correctly create the language of GD&T. GD&T stands for Geometric Dimensioning and Tolerancing and it is used all over with many symbols, and it can be complicated. There is an entire language out there for GD&T, and we help them speak that language correctly. We created a software a year ago that does that, and the new version of it adds in a few more capabilities as well as the entire international standard. The first version was the US standard, and we now

have both the US and international standards. Those products were released, and our new version of CETOL reads that information from those design systems. When designing a product, if you create GD&T with our GD&T Advisor then it is accurate, and when you do an analysis of that design with our CETOL, it is an incredibly fast, easier experience for doing a tolerance analysis. That is what the new version of CETOL does- it is about a better exchange of information with our other software product.

CEO CFO: Are most of your customers working with both pieces of software?

Mr. Wilkes: CETOL has been around for about 20 years, and the GD&T Advisor has only been out for the last year. While many companies are implementing a dual solution, I could not say that most of our companies are using both pieces of the software today.

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- Chris Wilkes

CEO CFO: Are your current customers excited about the advance?

Mr. Wilkes: They have been. We had a large presence just this month at PTC’s worldwide conference, which was in California. We had an increase of over 20% in people that came to visit us over last year, which is a huge increase. We had a great increase in the interest for our particular solutions.

CEO CFO: What is the competitive landscape for Sigmetrix?

Mr. Wilkes: Manufacturers know that they have to manage these variations. Say you are dealing with getting 1,000 parts from a supplier in Brazil and trying to match that up with 1,000 parts that you got from a supplier in Canada to put together 1,000 assemblies that work. You told the Brazil suppliers they could vary a little bit, and you told the Canadian suppliers they could vary a little bit,

but when you put it all together does it actually work? This is a typical problem for manufacturing companies all around the world, so they do have ways of trying to fix that. Some of the ways are very manual, and some of the ways are more software-based. We have competing products against our product, but ours is based on very advanced mathematics that nobody else has. Companies can do it by hand, or they can simply ignore it, so it just depends. Our company started out as a division of Texas Instruments here in the Dallas area when they had a group which was the Advanced Weapons Systems Group, which was later sold off to Raytheon. If you have ever seen the technology similar to night vision scopes called forward looking infrared radar that is used underneath airplanes and helicopters for military, our software was developed to help manufacture that type of device. The variations become very sensitive- you cannot have much variation if you are actually going to be able to correctly use the forward-looking radar. That is why they created our software. They partnered with some Universities such as BYU and came up with some very advanced mathematics that understand how all of these parts touch. If I put a pencil on a desk, that essentially is a line touching a plane. At the very point, a long line touches a flat surface. There is a mathematical representation of that, and if I do that 50 different surfaces types, I have many different mathematical formulas. Some of our formulas themselves are over ten pages long, so we created very advanced mathematics that understand how these components touch, and therefore how you need to adjust in the manufacturing variations so that you can have something that works.

CEO CFO: Why do manufacturers allow variations rather than saying exactly what they want and doing it?

Mr. Wilkes: It is impossible. No manufacturing can be precise. Say you are pouring plastic in a bowl. You have a certain amount that if you get down to a detailed measurement, if it is supposed to be 5 mm wide, how close

is close enough? 5.001 mm? 5.5 mm? How much variation do we allow before we reject those parts? There is always some allowable variation because you cannot ever manufacture something exactly, and there is some decimal point that you allow. Our software helps to identify how much is allowable with it still working. The closer you manage and build something to perfect, the far more expensive it is. If you can allow greater variation, maybe you can use a material that is cheaper or a manufacturing process that is cheaper.

You want to always allow as loose as you possibly can of this variation, and our software helps you identify where you can make it a little more relaxed and still have a product that works to your desired quality level.

CEO CFO: Why should people in the business and investment community pay attention to Sigmetrix?

Mr. Wilkes: We have a very unique position in the market. If you think about where we got our beginnings, we are bringing what was essentially military-grade technology to the

commercial market. Texas Instruments sold our division to Raytheon, and then we spun out of Raytheon. This became a solution of software that is available to the commercial market. It does create far more precise answers, so that a company can save a lot of money, and that is why so many companies around the world are using our software to make their manufacturing have high quality at the lowest possible cost.



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