Sigmetrix
Global Experts in GD&T and Mechanical Variation

An efficient IT pathway is the pathway to achieve operational benefits. For companies in a budget-constraint sector like Defense. “There is not a lot of time to build prototypes, test them on the field, find out what’s wrong, rebuild the prototypes, and test them again,” notes Chris Wilkes, President and CEO of Sigmetrix. “A lot of defense contractors build components for final products that are assembled with other components at remote locations or even sometimes in the field. The objective is to have multi-vendor solutions assemble the first time,” adds Dr. Andreas Vlahinos, Principal at Advanced Engineering Solutions. Based in McKinney, Texas, Sigmetrix prides itself to be the only tolerance analysis company that began inside a defense contractor. “We originated from Texas Instruments Defense Systems Electronics Group,” remarks Wilkes. “25 years later customers are using Sigmetrix technologies in various industries ranging from giant windmills, to high performance watches, or submarines.”

“The Sigmetrix tools—CETOL 6 Sigma tolerance analysis, Tolerance Analysis Extension (TAE), GD&T Advisor—are perfectly apt at the development stage,” adds Wilkes. CETOL 6 Sigma toler- ance analysis software provides product development teams with the insight required to confidently release designs to manufacturing. Utilizing advanced mathematical solutions, this tolerance analysis software accelerates optimization to achieve robust designs ready for manufacturing. GD&T Advisor intelligently guides the user through the definition of accurate and complete geometric tolerances, thus empowering designers to communicate permissible levels of imperfection in real-world manufactured parts, all from within the CAD environ-

ment. TAE makes it simple for design engineers to perform 1D tolerance analysis without leaving their Creo ElementsPro applications. Any change in the model is automatically reflected in the analysis parameters and the software automatically validates dimensions and dimen-
sion loops. It uses easily understandable graphs to help design engineers compare design variations, and supports Sigmetrix design methodologies, so design engineers can build models optimized for manufacturing.

“Firstly, tolerance analysis, which was very complex, has been automated with CETOL and TAE. This automation reduces the complexity for the user. Sec-
ondly, the software is integrated within the CAD system; after you access it once, it acts as a spell checker to give the user immediate feedback in the design. And thirdly, implementing the software helps users to design and produce low cost products, by understanding the impact of tolerance adjustments will have on the assembly quality,” summarizes Dr. Vlahinos. One of the largest privately held, full-service designers and distribu-
tors of custom injection molded compo-

des and finished devices used custom-
ized Excel spreadsheets for doing their 1D tolerance stacks for years. However, as their customers’ designs became more and more complex, they were increas-
ingly asked to perform a higher level of analysis than they could continue to offer with a spreadsheet-based approach. “Af-
ter implementation of CETOL 6 Sigma, they were able to verify the results in CE-
TOL much easier and faster with read-
able outcomes,” explains Wilkes. “They found that using CETOL in the design stage has given them the ability to zero in on a particular quality level with much more accuracy and helped to limit the amount of rework and second round proto-
type tooling.”

Looking ahead, Wilkes emphasized the need to improve the usability and ex-
pressed that ease-of-use is currently the focus and aim of Sigmetrix. Prominence is on the need to bridge the gap between designing, manufacturing and assembly. “Sigmetrix will continue to make pow-
erful technology available to more and more people by making it more intui-
tive,” concludes Wilkes.

Get more information about Sigmetrix, CETOL 6 Sigma or GD&T Advisor

Company: Sigmetrix
Description: Sigmetrix is a global leader in providing precise, easy-to-use mechanical variation analysis and tolerance optimization software for mechanical engineers with its CETOL 6 Sigma Technologies
Key Person: Chris WilkesPresident & CEO
Website: www.sigmetrix.com

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