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Endurica Selected as Technology Partner in Department of Energy Grant to Explore Simulation of Advanced Tire Tread Patterns

Innovative tire tread computer simulation processes aimed at accelerating the use of simulation in the tire industry is the mission of an exploratory grant awarded to Coreform by the United States Department of Energy (DOE). The firm will apply Coreform's isogeometric analysis (IGA) technology – which replaces difficult and time-consuming portions of computer simulation work while providing greater design clarity and detail – to the simulation of the advanced tire tread patterns required by emerging vehicles. To fully implement the grant's scope, Endurica has been selected as a technology partner to provide key tire industry endurance evaluations including rolling resistance, heat build-up and wear behavior.

“Coreform’s technology promises to revolutionize simulations involving complex geometry,” explains William V. Mars, Ph.D., P.E. founder and President of Endurica. “and tire tread patterns are an extremely important example of complex geometry. We are honored to be included in this important research for both the DOE and the tire industry.”

Traditional finite element analysis (FEA) first requires geometry to be defeatured and meshed which can be both time consuming and relationally inaccurate. IGA was introduced in 2005 to run simulation directly on the design model, leveraging the power of splines. Thousands of scientific papers have been written on this approach and Coreform’s novel “Flex IGA” technology unlocks these benefits in a commercial setting. Coreform IGA provides a full spectrum of input options and flexible modeling, allowing engineers to minimize manual effort for a desired solution solve time.

“Greater use of predictive simulation analysis for advanced tire tread designs will reduce the cost of product development and accelerate the adoption of both electric and self-driving cars,” explains Coreform Chief Strategy Officer Matthew Sederberg. “We anticipate this project will help the tire industry develop innovative tread patterns to reduce noise and improve energy efficiency.”

Greg Vernon, Director of Engineering at Coreform, adds that Coreform’s approach will use isogeometric analysis to allow tire manufacturers to test new designs much more quickly. “Down the road, that will mean fewer particulate emissions, longer life, and better energy efficiency for all of us.”

More information about Coreform’s simulation technology and the Coreform IGA solver can be found at their website, www.coreform.com.

About Coreform LLC

[Coreform](http://www.coreform.com) develops next-generation computer-aided engineering software. Among Coreform’s founders are authorities in isogeometric analysis and widely cited researchers in the computer science field. The Coreform IGA solver is based on smooth CAD spline geometry, offering greater accuracy than the

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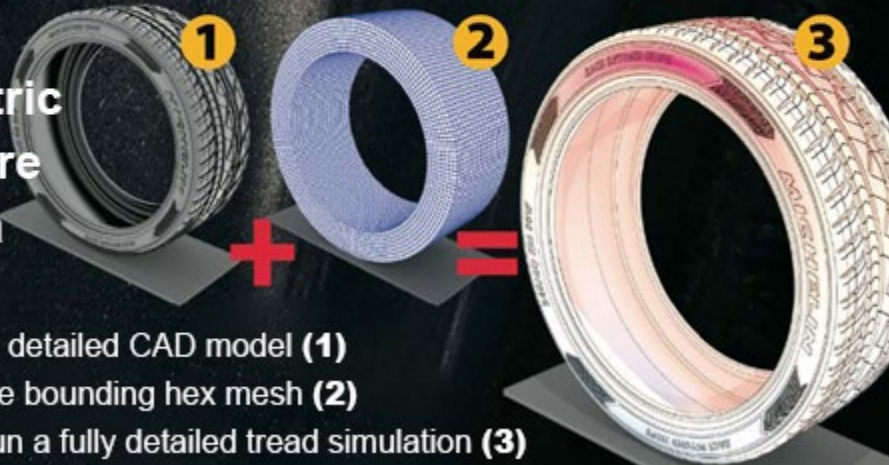
faceted meshes used in legacy CAE software. Coreform is also the exclusive commercial distributor of the Cubit meshing software. Coreform was founded in 2014 and is headquartered in Utah, USA.

About Endurica LLC

[Endurica](http://www.endurica.com) provides the world's most comprehensive tools and workflows for fatigue analysis of elastomers. Endurica solutions include simulation software, material characterization services, testing instruments, and training to answer your key question: "How Long Will It Last?" The company was founded in 2008 and received the 2020 Tibbetts Award for cutting-edge technology from the U.S. Small Business Administration.

Simulate fully detailed CAD tread models without time-consuming tread meshing

Isogeometric analysis tire simulation



Immerse a fully detailed CAD model **(1)**
in a simple bounding hex mesh **(2)**
to run a fully detailed tread simulation **(3)**

END