1219 West Main Cross St., Suite 201
Findlay, Ohio 45840 USA
(419) 957 0543
www.endurica.com

FOR IMMEDIATE RELEASE

Contact: Joe Suter
Phone: 419 957 0543
Email: jasuter@endurica.com

Endurica targets elastomer-based Digital Twin applications with new software release

CAE software adds remaining life simulation feature, support for MSC/Marc

Endurica LLC announced the release of version 2.6 of its fatigue life analysis software, Endurica CL. Endurica CL is a computer simulation that models the development of damage in an elastomeric part operating under realistic service conditions. The release includes new features for:

1. Computing damage from a schedule or histogram with multiple load cases.
2. Stopping and restarting an analysis with incremental load history updates to obtain residual life and virtual damage state for Digital Twin applications.
3. Pre- and post-processing of fatigue analyses from the MSC/Marc Finite Element solver.

The new features are provided at no additional cost under the existing license and maintenance agreements.

With this update, computing damage from a set of scheduled load cases now enables tire developers to simulate the FMVSS 119 / 139 tire durability and high speed regulatory standards. Residual life following various tire abuse scenarios (overload, pothole, cleat impact, curbing, etc.) can now be easily computed. Applications in the automotive component sector include enabling developers concerned with checking part durability against block cycle testing specifications to simulate such tests through version 2.6 of Endurica CL.

The capability to stop and restart an analysis is aimed at Digital Twin applications involving elastomer components where loading history is recorded on a periodic basis, and is used to generate diagnostics and analytics for continuous monitoring of structural health. According to the Internet of Things Institute, Digital Twin applications are expected to grow at 40% CAGR (compound annual growth rate) over the next 5 years.

With the addition of support for the MSC/Marc finite element solver, Endurica CL now provides user-friendly workflows for three of the finite element codes that are most popular for elastomers: Abaqus, ANSYS, and MSC/Marc. The Endurica CL solver is also embedded with Dassault Systemes / Simulia's popular metal fatigue solver fe-safe, as fe-safe/Rubber.

The new features enhance the software's already extensive library of elastomer-specialized analysis capabilities. Starting from results computed in a standard Finite Element Analysis of the part in operation, Endurica CL computes the number of repeats of the simulated operation that can be endured before cracks develop. The calculation uses Critical Plane Analysis for accurately computing the effects of simultaneous load inputs, Rainflow Counting to account for variable amplitude loading, and nonlinear material laws that realistically capture elastomer behaviors (hyperelasticity, cyclic stress softening, strain crystallization, temperature dependence, ozone attack, etc.). Endurica CL accounts for finite straining and crack closure due to compression. The material properties for the analysis are obtained from simple-to-use crack growth rate experiments.

"Our fatigue analysis software provides powerful options to companies that develop elastomer components with a durability requirement," explains Dr. William V. Mars, Endurica LLC founder. "Now you can quickly and inexpensively understand how your part's durability in service is going to be impacted by your team's design decisions. The new features in version 2.6 strengthen the value our solutions bring to these problems by providing added usability and diagnostic power. The new features also open the door to further applications, most notably in tires and Digital Twin applications."

Endurica will hold two training events featuring live, hands-on demos the week of October 23-27, 2017. The first event runs October 23-25 and covers the experimental measurements needed to support fatigue life simulation workflows, and the event on October 26-27 focuses on using the software to simulate and solve durability issues. The registration deadline for the training events is October 15, 2017.

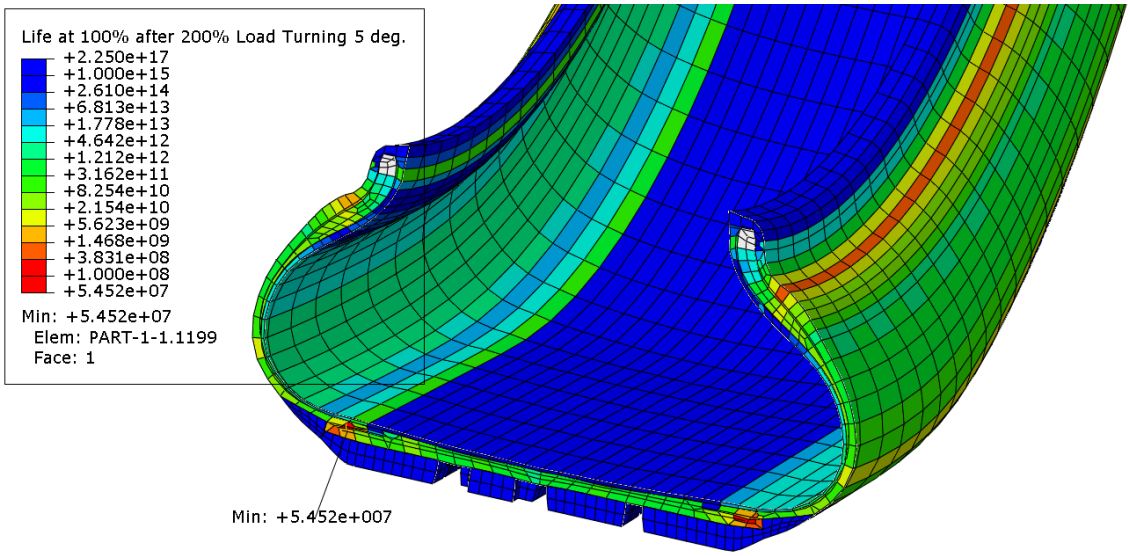
Endurica LLC provides pre-prototype solutions for developers seeking durability in elastomer applications and has developed the world's first numerical fatigue life solver for elastomers. Endurica's solutions include software, characterization services and testing instruments, as well as training for engineers and analysts. The company was founded in 2008.

– MORE –

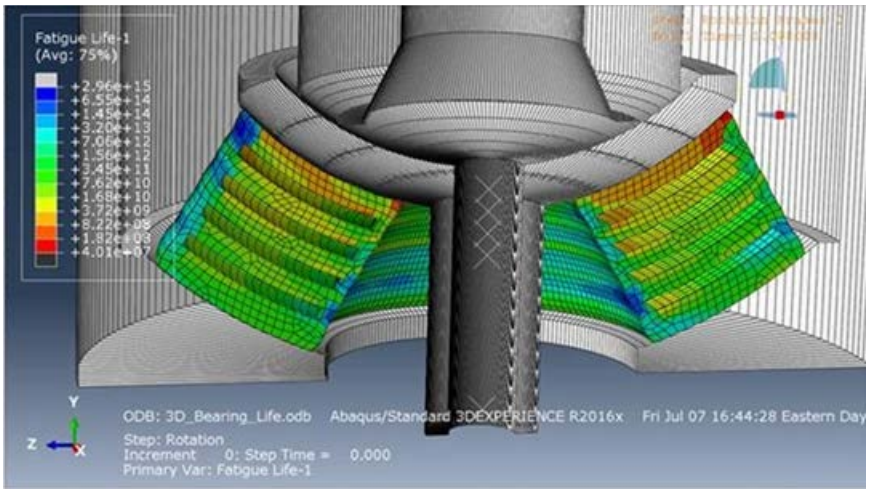
1219 West Main Cross St., Suite 201
Findlay, Ohio 45840 USA
(419) 957 0543
www.endurica.com

Endurica targets elastomer-based Digital Twin applications with new software release,

Continued



Created through the use of Endurica CL 2.6: Colored contours showing cycles remaining for operation at 100% load, following an abuse condition (100 miles at 200% load with a 5 degree slip angle).



An offshore flexjoint Digital Twin could now provide near-real-time structural integrity monitoring based on actual loading history using Endurica CL 2.6 damage simulation features.

–END–