IronCAD’s Multiphysics Analysis Update Introduces Advanced Markup Technology and Refined Automatic Part Contact Analysis

*IronCAD, a pioneer of 3D design software and a leading provider of design productivity solutions, today announced a major update to Multiphysics for IronCAD (MPIC), a seamlessly integrated multiphysics simulation tool for IRONCAD that provides fully coupled multiphysics for stress, thermal, electrostatic and fluid analysis.*

Atlanta, GA (PRWEB) June 30, 2017 -- IronCAD, a pioneer of 3D design software and a leading provider of design productivity solutions, today announced a major update to Multiphysics for IronCAD (MPIC), a seamlessly integrated multiphysics simulation tool for IRONCAD that provides fully coupled multiphysics for stress, thermal, electrostatic and fluid analysis. This major update includes new patented Extended Markup Language Data (XMD) technology, which represents a huge technology leap in encapsulating model data and provides easily expanding analysis features for advanced XMD design analysis tools.

Several other enhancements to MPIC include:
- Updated unit system for flexible customization to accommodate different industries with single-button control.
- The existing moving-least-squares (MLS) FE tying has been further refined to automatically detect the intended/unintended small gaps/overlap of parts in large assembly analysis without requiring laborious geometry modifications.
- Analysis report improvements that include direct links for easy review.

IronCAD customers will also benefit from new automatic parts contact/impact analysis as the default setting has been refined specifically to help CAD users solve general mechanical contact/impact problems. As shown in the pictures below, many complex contact analyses such as deep drawing or stamping springback problems now can be done using the default setting.

**Stamping and springback prediction is a difficult problem even for experienced analysts. The deep-draw model is done with the minimum mesh density while preserving the physics of the stamping process. The first model (Case #1) here demonstrates an unsuccessful case where the sheet metal was not fully constrained and the stamping process produced an unwanted shape. When a sheet is properly constrained, the desired stamped shape is produced (Case #2). In such high nonlinear process, the material parameters, proper metal plasticity, yield information, and robust kinematic hardening control are critical to correctly describing the Bauschinger effect in the springback behavior.**

“Multiphysics for IronCAD continues to address the needs of mechanical CAD users by offering simulation to more users earlier in the design process,” stated Cary O’Connor, Vice President of Marketing at IronCAD. “The latest release of MPIC makes it even easier for assembly analysis to be applied in designs. Our customers will welcome these additional improvements and the other new advances offered by MPIC.”

MPIC capabilities — including stress, thermal, electrostatic and fluids — are included in the IronCAD free 30-day trial, allowing for full evaluation, and then continue to function as a node-limited design validation tool. Even though it is node-limited, MPIC's strain-enriched finite element analysis technology SefeaTM gives users capabilities to test their products at lower mesh levels. SefeaTM is the newest enriched finite element formulation developed specifically for CAD design simulation using automatic four-node tetrahedron elements.
commonly used in CAD simulation. It achieves the same accuracy as second-order elements but is more robust, without mid-side-node noise, and requires a much lower computing cost.

Multiphysics for IronCAD is available immediately for download using this link: http://www.ironcad.com/MPICDownload.

About IronCAD
Based in Atlanta, Ga., IronCAD is a leading provider of 3D design productivity solutions that deliver the highest levels of customer satisfaction and productivity. Individual components of this solution can be used standalone, complementary within an existing design environment, or can be used together to collaborate effectively throughout the enterprise to extend productivity. IronCAD’s flagship product IRONCAD has won many industry awards for its innovative technology and leads the industry in its ease of use and design productivity. Thousands of customers worldwide use IronCAD to support their success. For more information on IronCAD, call 1-800-339-7304 or visit www.ironcad.com.
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