HIGH-TECH INDUSTRY KNOWLEDGE • PROCESS • VALUE

Realistic Product Simulation Solution

ACCELERATING INNOVATION IN ELECTRONIC PRODUCT DEVELOPMENT

This solution enables:

- Virtual testing early in the design cycle
 - Reduce dependence on expensive and time consuming physical tests
 - Explore more design alternatives to produce better, more innovative products
- Leverage of simulation throughout the enterprise to drive design performance and business-related decisions
- Unified Finite Element Analysis to reduce the number of different simulation tools used



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ACCURATE RESULTS TO REALISTIC ANALYSES

Smaller devices with more memory and features, environmental constraints, global sourcing, increased speed, and decreased cost—these demands pose significant challenges for the electronics manufacturers who, arguably, have the shortest product lifecycle of any industry. Delivering the latest, greatest, smallest and next "must have" tech toy requires design and engineering solutions that help the industry evaluate and improve product performance on the fly.

Realistic Product Simulation Solution Overview

Dassault Systèmes' solution for Realistic Product Simulation, based on SIMULIA solutions enables users to standardize simulations for drop testing, electronics packaging, and other workflows, while advancing state-of-the-art lifecycle prediction. Whether you manufacture electronic products for consumer, industrial, or automotive markets, you will benefit from the solution's full range of simulation capabilities.

Simulation methods for multiple load types

SIMULIA's Abaqus Unified FEA product suite allows robust coupledfield analysis of thermal, electrical, mechanical (both static and dynamic), acoustic, and moisture-sensitivity load regimes. These solutions use a single model with multiple load types and efficient techniques are available to handle the challenge of different size scales typically found in the electronic assemblies.

Simulation automation and optimization

SIMULIA provides engineers with Isight, a suite of interactive tools, for creating simulation process flows to automate exploration of design alternatives and identify optimal performance parameters. Simulation process flows can be automated and users can leverage advanced techniques such as Design of Experiments, Optimization, Approximations, and Design for Six Sigma to thoroughly explore the design space.

The Realistic Product Simulation solution includes:

- Thermal Flow/Cooling
- Drop Test
- Solder fatigue
- Heat Transfer
- Moisture Sensitivity
- Noise/Acoustic
- Thermo-Mechanical
- Vibration
- Structural Analysis

Managing simulation IP

Electronic product development companies continue to expand their use of coupled models for multi-field, multiphysics, and multi-scale applications resulting in data being transferred from one model to the next. Companies are also performing more simulations due to faster computing resources and the need to reduce physical testing. This activity is driving the need for solutions that allow engineers to capture and share simulation workflows while managing applications, computing resources, and simulation results. SIMULIA has responded to this industry demand by developing a product suite for Simulation Lifecycle Management (SLM). SLM accelerates product development by providing timely access to the right information through secure storage, search, and results visualization.

Process automation capabilities

Process automation capabilities are available that can capture expert-generated workflows for deployment to non FEA-expert users and expand knowledge reuse across the organization. In addition, organizations are available to leverage SIMULIA technology to manage and share the simulation data, processes, and valuable IP that is created during the design simulation process.

