DASSAULT SYSTEMES

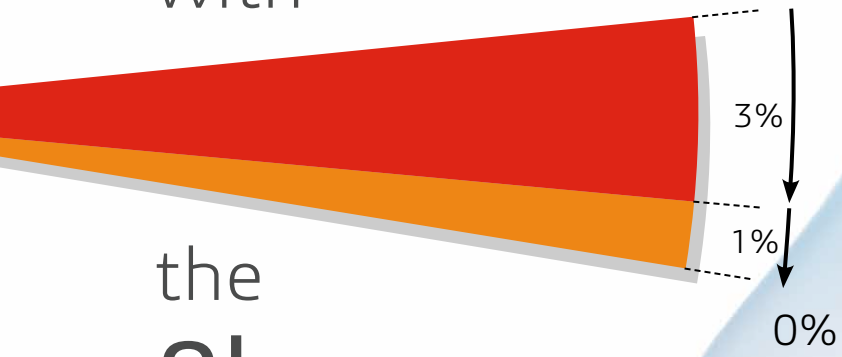
SIMULIA

3DEXPERIENCE®

ABAQUS KNEE SIMULATOR

ACCELERATING THE DESIGN OF KNEE IMPLANTS

GETTING to ZERO (recalls failures) with



the Abaqus Knee Simulator

ABAQUS KNEE SIMULATOR

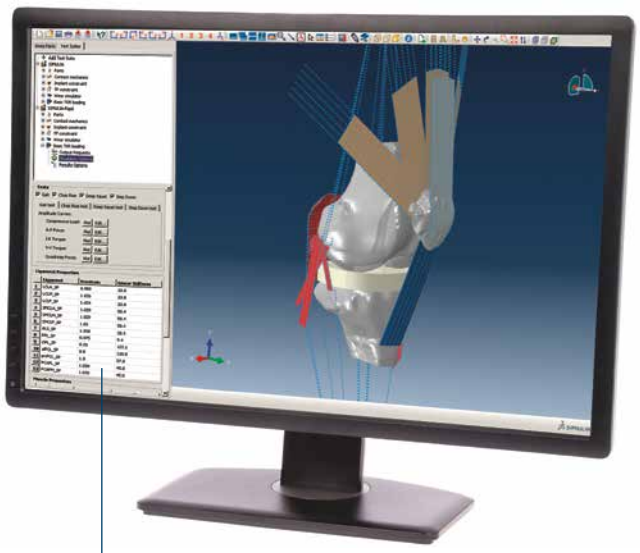
INDUSTRY CHALLENGES

In the race to deliver innovative, safe, and effective implant designs to patients requiring knee arthroplasty, medical device companies face demanding challenges. To gain a competitive advantage, manufacturers are leveraging the robust capabilities of realistic simulation to drive innovation, manage costs, and accelerate patient care.

ABAQUS KNEE SIMULATOR

The Abaqus Knee Simulator is a validated computational modeling tool for performing basic to advanced knee implant analyses and simulations.

This tool offers five fast and easy-to-setup workflows which reduce your reliance on time-consuming trials and expensive lab equipment, while still meeting regulatory requirements.

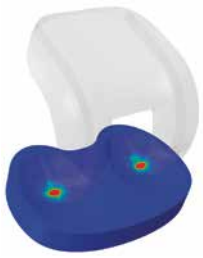


Designer and analyst applications guide users from model creation to results interpolation.

WORKFLOWS OVERVIEW

Regulatory and supplementary testing is time consuming and requires expensive equipment. The Abaqus Knee Simulator provides five workflows which allow manufacturers of orthopedic knee implants and devices to explore a variety of different designs in less time, at a fraction of the cost.

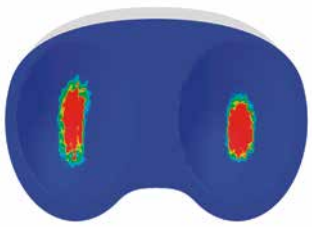
	Contact Mechanics	Implant Constraint
Procedure	Evaluate tibiofemoral contact mechanics at static positions throughout flexion	Measure laxity between femoral and tibial components in the absence of soft tissue structures
Physical Testing	Cost per test $14,000 Time 4 weeks	Cost per test $7,500 Time 4 weeks
Abaqus Knee Simulator	Import & Setup 10 minutes Analysis 5 minutes–2 hrs.	Import & Setup 5 minutes Analysis 10 minutes–2 hrs.



Accelerate
design cycles and processes

Reduce
time and costs

Improve
design confidence and reliability

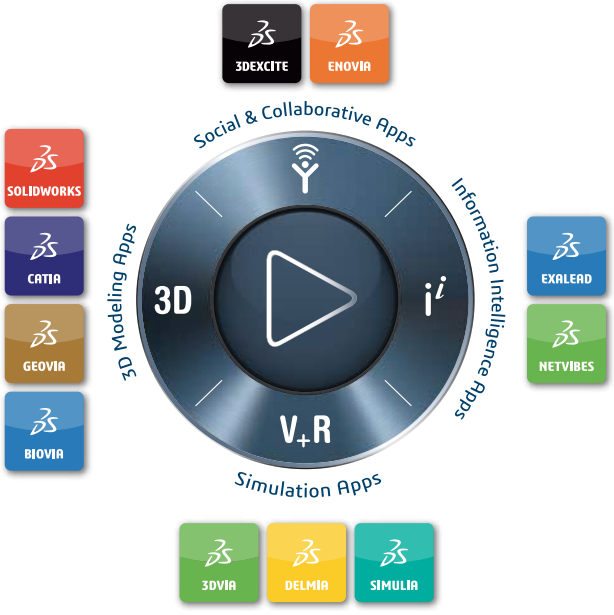
	Tibiofemoral Constraint	Wear Simulator	Basic TKR Loading
Procedure	Measure laxity of the tibiofemoral joint with soft tissue	Predict wear on the tibial insert over a number of gait cycles	Evaluate whole joint mechanics during activities of daily living under basic muscle loaded conditions
Physical Testing	Cost per test No equivalent standardized test available Time Not applicable	Cost per test $100,000 Time 8–12 weeks	Cost per test No equivalent standardized test available Time Not applicable
Abaqus Knee Simulator	Import & Setup 5 minutes Analysis 5 minutes–1 hr.	Import & Setup 10 minutes Analysis 5 minutes–2 hrs.	Import & Setup 15 minutes Analysis 5 minutes–2 hrs.
			

About SIMULIA

Dassault Systèmes SIMULIA applications, including Abaqus, Isight, Tosca, and Simulation Lifecycle Management, enable users to leverage physics-based simulation and high-performance computing to explore real-world behavior of products, nature, and life. As an integral part of Dassault Systèmes' **3D**EXPERIENCE® platform, SIMULIA applications accelerate the process of making highly informed, mission-critical design and engineering decisions before committing to costly and time-consuming physical prototypes. **www.3ds.com/simulia**

Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3D**EXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.



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