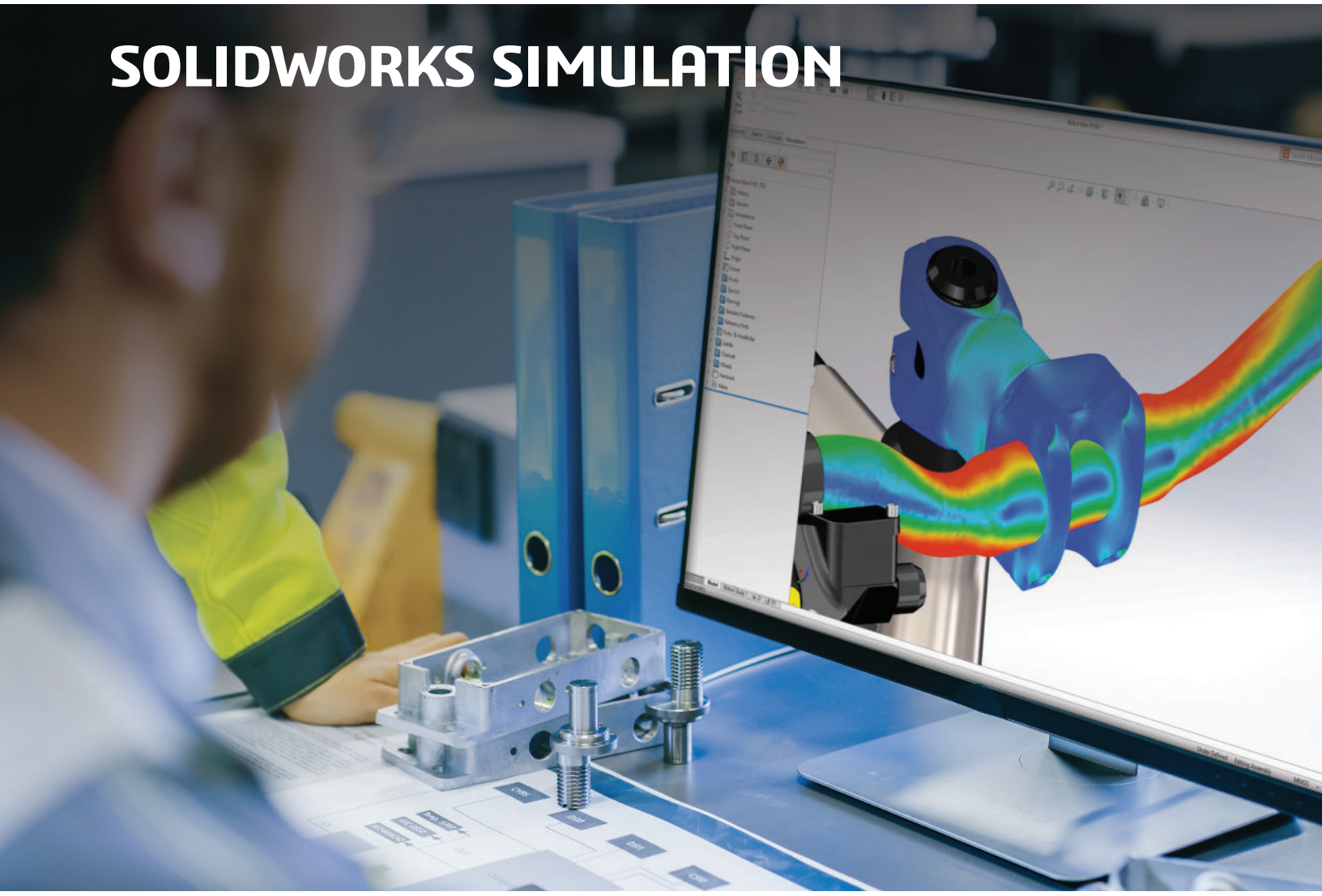
3DEXPERIENCE®

TMS CADCentre
SolidWorks in Scotland

SOLIDWORKS

SOLIDWORKS SIMULATION



BRING YOUR PRODUCTS TO MARKET FASTER AND WITH LESS PROTOTYPING

Accurately predict product performance with easy-to-use simulation tools, fully embedded within SOLIDWORKS®, which allow designers to avoid costly overdesign and focus on innovation.

OVERVIEW

SOLIDWORKS Simulation is an easy-to-use portfolio of structural analysis solutions using Finite Element Analysis (FEA) to predict a product's real-world physical behavior by virtually testing CAD models. The portfolio of simulation solutions offers everything designers need—from entry-level to more advanced capabilities—for linear, nonlinear static, and dynamic analysis.

DASSAULT SYSTEMES

Capabilities



- Is fully embedded in SOLIDWORKS 3D CAD interface
- Supports SOLIDWORKS CAD configurations and materials
- Predicts product performance by calculating component stresses, strains, displacements, and factor of safety (FOS)
- Estimates fatigue life of components subjected to varying loads
- Analyzes complex and nonlinear material behavior (metals, rubbers, and plastics) and accounts for large deflections and sliding contact in nonlinear analysis
- Discovers new minimal material with Topology Study
- Calculates temperature distribution and heat flux with thermal analysis
- Determines natural frequencies and mode shapes
- Calculates the effects of forced vibrations, impact, shock, or any time-varying loads with linear and nonlinear dynamic analysis
- Determines the optimal or most robust design with the parametric ("what if") and optimization analyses
- Simplifies simulation studies by using bolts, pins, springs, bearings, and edge and spot welds
- Simulates product performance of composites
- Offers rigid-body kinematics with time-based motion and event-based motion analysis
- Predicts structural instability with buckling analysis
- Calculates linearized stress with Pressure Vessels
- Exports SOLIDWORKS Simulation results in eDrawings® format

Analysis Types

- Linear Static Analysis
- Nonlinear Static Analysis
- Frequency Analysis
- Thermal Analysis
- Topology Studies
- Modal Time History Analysis
- Harmonic Analysis
- Random Vibration Analysis
- Response Spectrum Analysis
- Nonlinear Dynamic Analysis: impact, shock, time
- Varying Loads
- Design Study (Parametric Optimization)
- Fatigue Analysis
- Linear Buckling Analysis
- Submodeling Analysis
- Drop-Test Analysis
- Pressure Vessel Design Simulation
- Time-Based Motion Analysis
- Event-Based Motion Analysis

With access to the **3D**EXPERIENCE® cloud-based platform, you can easily share your CAD data, collaborate with others, and use a growing suite of connected tools to design, manufacture, and manage your products.

Find out more about SOLIDWORKS Simulation solutions at https://www.solidworks.com.

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Our **3D**EXPERIENCE® platform powers our brand applications, serving 11 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 250,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.

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