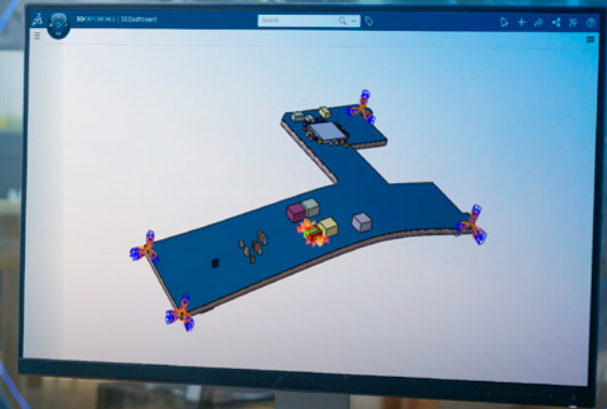


ELECTROMECHANICAL DESIGN FOR ELECTRONIC COMPONENTS

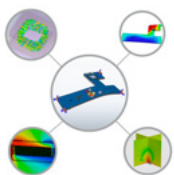
Connected Physics Analysis for
Optimal Performance



Electromechanical components depend on tightly coupled physical behaviors. Yet many engineering teams still work in silos—electromagnetics, structural mechanics, acoustics—each optimized locally, but disconnected globally. The result: late-stage surprises, costly rework, schedule risks and constrained innovation. This challenge is particularly acute in the High-Tech sector, where information sensitivity enforces separation by design.

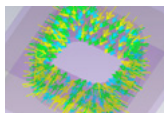
SIMULIA on the 3DEXPERIENCE® platform integrates Multiphysics simulation in a secure, collaborative environment. By breaking down traditional silos, engineers can co-simulate electromagnetic, structural and vibro-acoustic behavior, explore cause-and-effect through a virtual twin and convert ECAD layouts into MCAD-ready models in minutes.

The result: faster, more accurate and collaborative first-time-right designs, with full data governance and compliance.



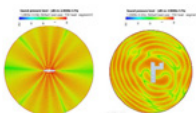
High-fidelity, connected physics simulations

Powerful coupled simulation of electromagnetic (EM), structural Finite Element Analysis (FEA) & acoustics for Micro-Electro-Mechanical Systems (MEMS) design and capturing true system behavior, quantifying Printed circuit board (PCB) resonances and predicting vibro-acoustic radiation and sensor interference.



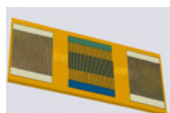
PCB and component behavior analysis

Analyze piezoelectric effects, magnetostriction and Lorentz-forces that can reduce sensor performance, within one workflow, improving KPI confidence and compliance readiness.



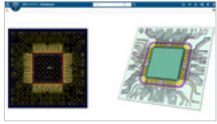
Early detection of vibration-induced noise

Identify buzzing capacitors, resonance amplification and microphonics early. Evaluate mitigation options (component placement, fasteners, dampers, board geometry) virtually.



MEMS design and optimization

Connected physics for seamless MEMS design for filters and sensors.



Frictionless ECAD-to-MCAD

Import native EDA layout and auto-generate simulation-ready MCAD geometries for structural simulation—reducing meshing time from hours to minutes.



Single-pane-of-glass for IP compliance, traceability and collaboration

3DEXPERIENCE platform offers DoE and AI/ML, plus collaboration, test management and process optimization.

When EM, structural and acoustic analyses run in isolation, issues surface late. SIMULIA removes those silos with connected physics. Analysts gain accuracy, speed and control—so teams can ensure devices meet their requirements.

Why Choose SIMULIA?

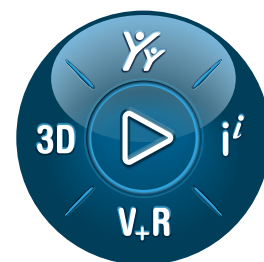
- Achieve first-time-right delivery with reusable, governed workflows that accelerate iteration and review
- Improve accuracy with high-fidelity, coupled EM–structural–acoustic simulation and validated workflows
- Reduce setup and meshing time from hours to minutes with ECAD-to-MCAD adaptive modeling and homogenization
- Comprehensive solver portfolio with GPU support
- Robust conformal meshing
- Integrated multiphysics capabilities
- Advanced optimization and Design of Experiments (DoE) and AI/ML
- Guided workflows
- Seamless integration of CAD models
- **3DEXPERIENCE** platform for collaboration, test management and process optimization

See the full multiphysics workflow in action. Request a technical demo or schedule a workshop with a SIMULIA specialist to evaluate your PCB vibration issues or MEMS designs and quantify the time and accuracy gains for your team.

Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens.

With Dassault Systèmes' **3DEXPERIENCE** platform, 370,000 customers of all sizes, in all industries, can collaborate, imagine and create sustainable innovations that drive meaningful impact.

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