Simcenter MAGNET

Siemens Simcenter MAGNET is a powerful 2D/3D simulation software for performance prediction of motors, generators, sensors, transformers, actuators, solenoids, or any component with permanent magnets or coils. With our efficient-to-use and accurate software, you can optimize, design, and analyze simple to complex electromagnetic and electromechanical devices.

Simcenter MAGNET virtual prototyping is both cost and time efficient. Parametric and optimization studies allow the exploration of multiple configurations, for performance improvements. The accurate replication of the operating and extreme conditions provides insight into the loss and temperature hotspots, permanent magnet demagnetization, unused material, and failure analysis through fault conditions.

Key Features:
Transient (Time-varying):
- Non-linear analysis
- Second-order time stepping
- Resume Feature: pause at a particular time step for inspection
- Core losses, proximity effects and eddy currents

Motion:
- Supports rotational, linear and general (multiple degrees of freedom) motion
- Velocity & load driven motion problems
- Computes induced currents due to motion
- Supports multiple moving components

AC (Time Harmonic):
- Analysis based on a single frequency in the complex domain
- Eddy currents, displacement currents, skin effects & proximity effects

Magnetostatic:
- Non-linear analysis
- Specified currents may flow through any type of conducting material, including magnetic materials

Common Solver Features:
- Multithreaded for true multicore support

- Symmetry for reducing solution domain
- Parametric Module for "What if?" analysis
- Circuit Coupling
- Coupling with ThermNet 2D/3D
- Optimization with OptiNet