

# MSC Software Ground Vehicle Initiatives

## SOLUTION BRIEF

### Increasing the Performance of Automotive Systems with Virtual Prototype Testing

#### Noise & Vibration

MSC has best in class technology to perform analytical prediction of noise and vibrations. You can analyze both interior and exterior acoustics of parts, assemblies or full vehicles. Actran also allows you to account for visco and poro-elastic materials such as cabin trim. Common issues already addressed by MSC include interior cabin noise, wind noise on mirrors, exhaust noise, fan noise, pass-by noise, and tire noise.

#### Durability

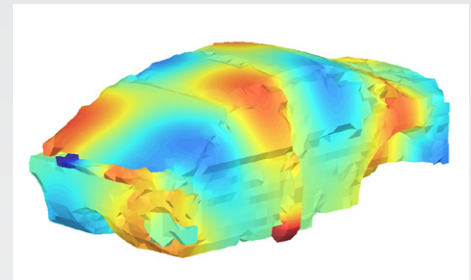
MSC's Nastran Embedded Fatigue (NEF) solution creates a unified open-technology platform for fatigue life optimization. Process results in 30-60% reduction in fatigue analysis timing and 90x reduction in file count while eliminating the need to move large files from one tool to another. NEF also allows fatigue to be used as an optimization parameter.

#### Lightweighting

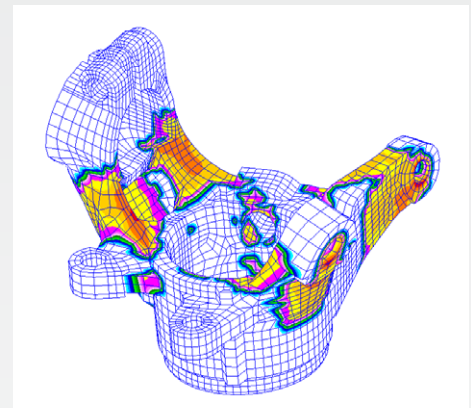
We have best in class technology to improve analytical predictions and help select an optimal composite or multi-phase material. MSC allows you to conduct meaningful Finite Element Analysis by taking into account the anisotropic behaviors of unidirectional or woven composites or discontinuous fibers. This allows you to lightweight your structure to improve overall fuel economy while reducing your testing costs and providing a quality product.

### Software & Services Offerings

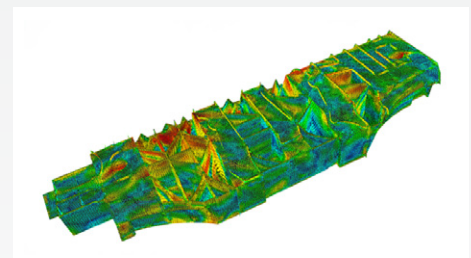
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Acoustic Simulation



Fatigue Life within a single tool



Fiber orientations of an injection molded part