EnginSoft is a premier consulting firm in the field of Simulation Based Engineering Science (SBES) with a global presence. It was founded in 1984, but its founder and initial employees had been working in SBES since the mid '70s. Throughout its long history it has been at the forefront of technological innovation and remains a catalyst for change in the way SBES and CAE technologies in general are applied to solve even the most complex industrial problems with a high degree of reliability.

Today, EnginSoft is comprised of groups of highly qualified engineers, with expertise in a variety of engineering simulation technologies including FEM Analysis and CFD, working in synergic companies across the globe. We are present in Italy, France, Germany, the UK, Turkey and the U.S.A. and have a close partnership with synergetic companies located in Greece, Spain, Israel, Portugal, Brazil, Japan and the U.S.A.

EnginSoft works across a broad range of industries that include the automotive, aerospace, defense, energy, civil engineering, consumer goods and biomechanics industries to help them get the most out of existing engineering simulation technologies.

**ITALY**
info@enginsoft.com

**FRANCE**
info.fr@enginsoft. com

**GERMANY**
info.de@enginsoft.com

**UNITED KINGDOM**
info.uk@enginsoft.com

**TURKEY**
info.tr@enginsoft.com

**USA**
info@enginsoftusa.com

**ENGINSOFT**

DATA SHEET

*GENESIS*

Structural Design
Optimization Software

GENESIS® is a fully integrated structural finite element analysis and design optimization software package. Analysis capabilities include: static, normal modes, direct and modal frequency analysis, random response analysis, heat transfer, system buckling calculations, and accoustic analysis.

Design optimization is based on the advanced approximation concepts approach to find an optimum design efficiently and reliably. Actual optimization is performed by the well established DOT and BIGDOT optimizers, also from VR&D. Design capabilities include: topology, shape, sizing, topography, topometry and freeform optimization.
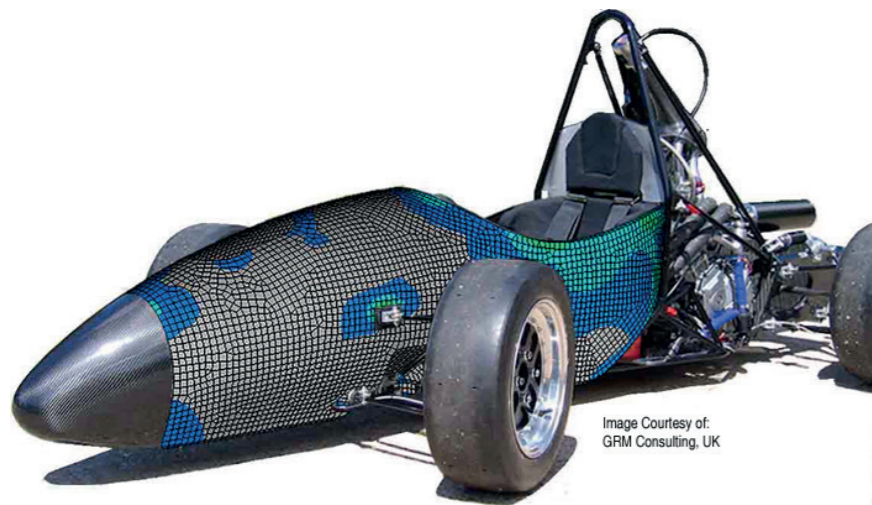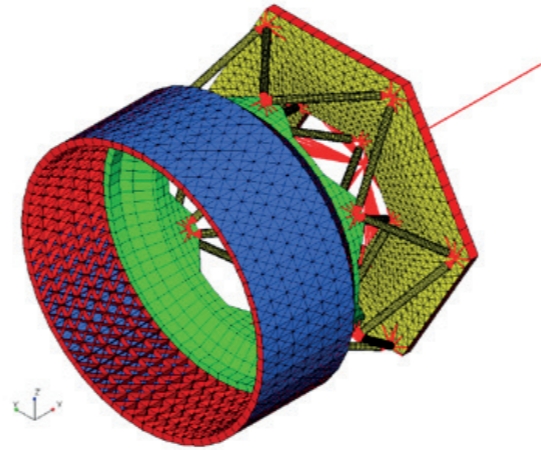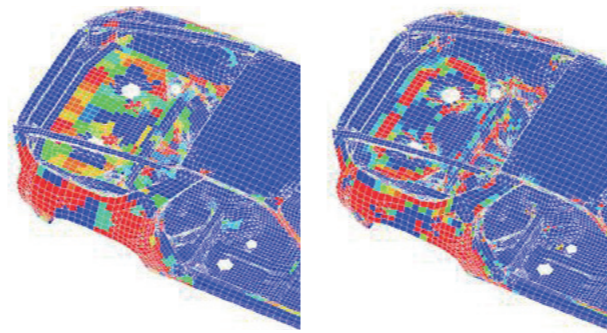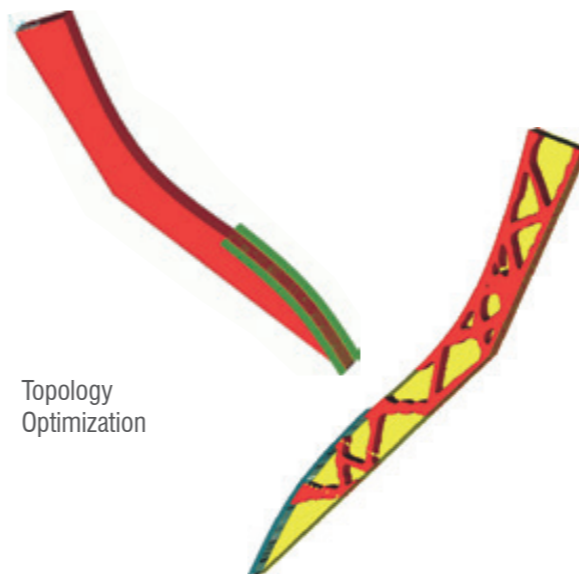
Image Courtesy of:
GRM Consulting, UK

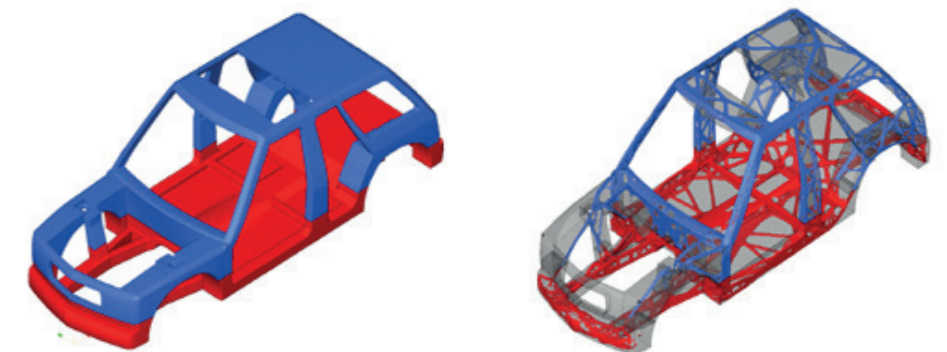Genesis is a product



# Structural Design Optimization Software

✔ Fast, reliable and accurate finite element analysis.
✔ GENESIS provides improved designs at reduced cycle times.
✔ Topology optimization at early stage of design.
✔ SMS Eigensolver runs eigensolutions 2 to 10 times faster than the conventional Lanczos method. SMS can solve problems with over 20 million degrees of freedom.
✔ BIGDOT optimizer solves problems in excess of 3 million design variables. For example, topology optimization problems are currently being solved in excess of 3 million design variables and are getting bigger everyday.

## Analysis

✔ Linear static
✔ Nonlinear Contact (Gap elements)
✔ Inertial relief
✔ Dynamic normal modes
✔ Buckling
✔ Frequency response
✔ Random response
✔ Heat transfer
✔ Sensitivity

## Design optimization

✔ Multi-objective and hybrid optimization capabilities
✔ Topology, shape, sizing, topometry, topography, and freeform optimization



Payload Interface Composite Strut Frequency Tuning



Coarse Topometry
(4,090 Variables)

Standard Topometry
(34,560 Variables)



Topology
Optimization



Full Body Topology Optimization