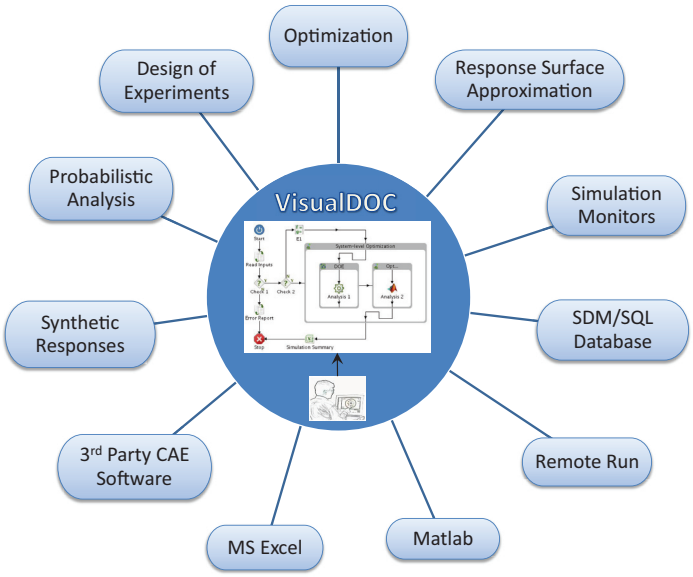
# VR&D Multidisciplinary Optimization

**Academic Software Package**

## VisualDOC • DOT • BIGDOT

VR&D's Multidisciplinary Optimization Package contains the VisualDOC, DOT, and BIGDOT programs.




## VisualDOC

VisualDOC is a multidisciplinary design, optimization, and process integration software. It uses a powerful intuitive graphical interface, along with gradient based and non-gradient based optimization, response surface (RS) approximate optimization, probabilistic analysis, and design of experiments (DOE) methods. VisualDOC interfaces easily to your own code or third-party analysis programs.

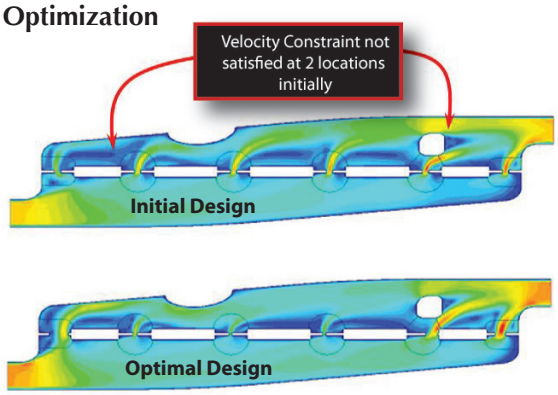
## DOT - Design Optimization Tools

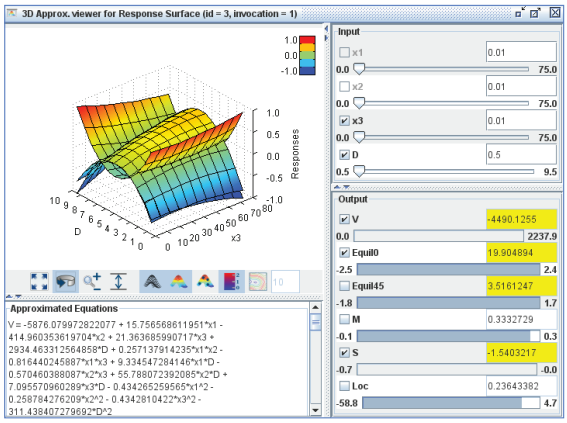
DOT is a general purpose numerical optimization software library which can be used to solve a wide variety of nonlinear optimization problems. If you require only an optimization engine to incorporate into your design software, DOT will serve that purpose.

## BIGDOT

BIGDOT is intended to solve very large, nonlinear, constrained problems where gradient information is available. Problems in excess of three million design variables have been solved by BIGDOT.

**CFD Optimization**

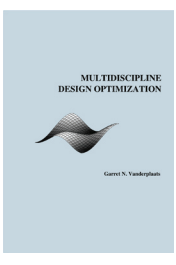



**Turbo Machinery - MDO - Fluid & Structural**

## Multidiscipline Design Optimization - Textbook

VR&D is offering a new optimization textbook written by Dr. Garret Vanderplaats, titled Multidiscipline Design Optimization. This eminently readable book is an updated version of his textbook titled Numerical Optimization Techniques for Engineering Design, which is widely used in both academic and industrial environments. This hard bound volume includes software download instructions or two CDs with demonstration versions of VR&D software. For more information about this text click *here.*

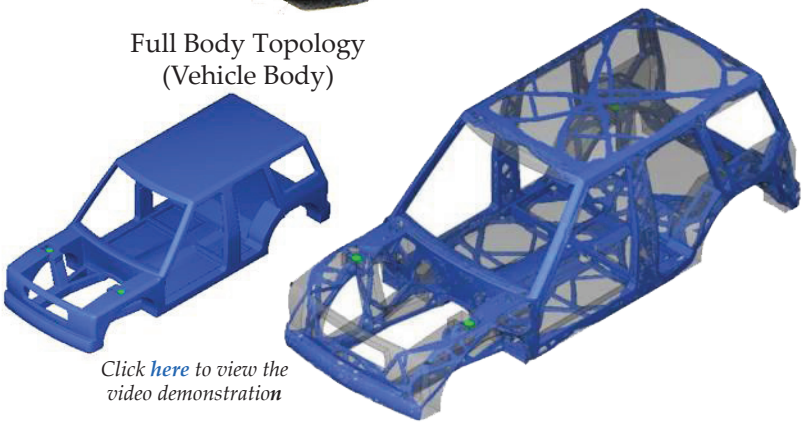


# VR&D Structural Optimization

**Academic Software Package**

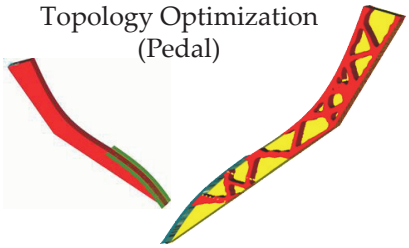
## GENESIS & Design Studio for GENESIS

Brunel University
Formula Student Competition
*Best Engineered Car* - UK 2006
Image Provided Courtesy of:
GRM Consulting, UK

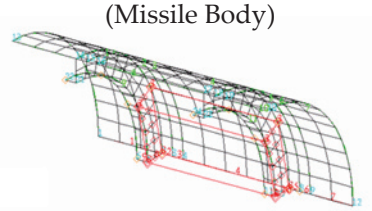


Full Body Topology
(Vehicle Body)

*Click **here** to view the video demonstration*



Topology Optimization
(Pedal)



Shape and Sizing Optimization
(Missile Body)

VR&D's Structural Optimization Package includes our GENESIS and Design Studio for GENESIS programs.

### GENESIS

GENESIS is a fully integrated finite element analysis and design optimization software package. Analyses include static, normal modes, direct and modal frequency analysis, heat transfer and system buckling. Shape, sizing, topography, topometry, freeform and topology optimization are the design options available to the user. Typically the optimization requires less than ten detailed finite element analyses, even for large and complex design tasks.

### Design Studio for GENESIS

Design Studio for GENESIS is a design oriented pre- and post-processor graphical interface for the GENESIS Design Studio allows users to display finite element models and to easily create GENESIS design data. It allows users to display analysis as well as optimization results.

## Education is *important* to us, academic prices are very affordable!

At VR&D we strongly believe in the importance of incorporating modern design optimization concepts into the educational process. VR&D encourages the addition of this topic to engineering curricula. As part of our commitment to education and research in this field, we are pleased to offer our optimization software to universities for exclusive use in teaching and research at a discounted rate. For more information please contact *info@vrand.com* or one of our distributors.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