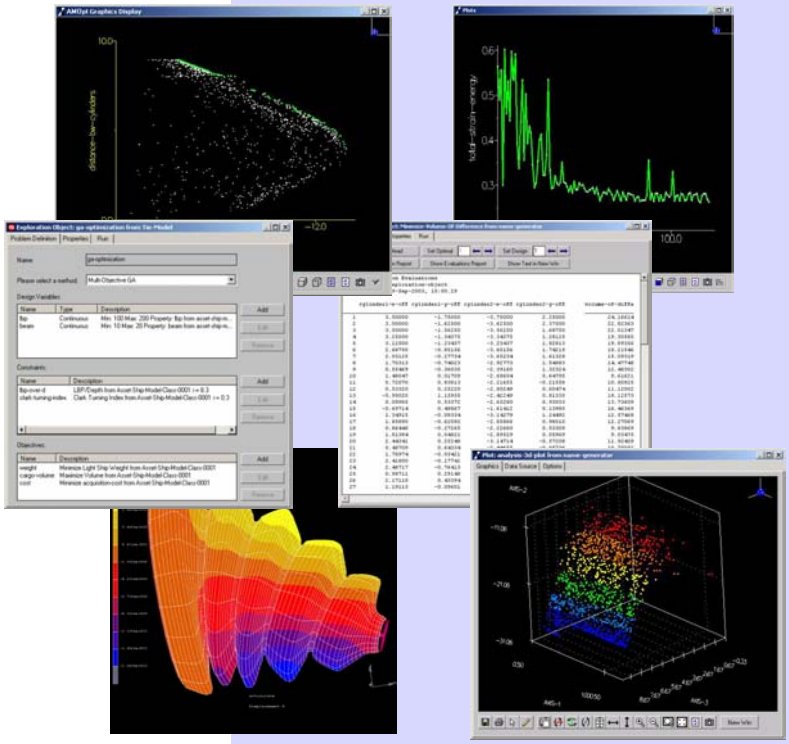
TECHNOSOFT
ADAPTIVE MODELING

AMOpt

AMOpt is a suite of tools for performing optimization and probabilistic design studies within AML applications and TIE models. Using AMOpt, engineers can easily quantify interactions among disciplines and intelligently search the design space. In conjunction with AML or TIE, AMOpt enables multidisciplinary system-level trade studies such as cost versus performance.

The AMOpt suite includes:

- Multi-Objective Genetic Algorithm
- Design of Experiments (DOE)
- Powell Gradient-Based Optimization
- Nelder-Mead Simplex Method
- Monte Carlo Simulation
- Response Surface Methodology (RSM)



In addition to these built-in methods, user-defined or third-party algorithms can easily be plugged in via linked libraries or integrated through stand alone executables. For example, interfaces to the Design Optimization Tools (DOT) library from Vanderplaats R&D, Inc. and to Stanford's NPSOL algorithm are both provided with AMOpt.

To help engineers visualize the results of trade studies and optimizations, a complete suite of plotting classes including surface, contour, bar, pie, and scatter plots is provided.
AMOpt is built on AML, and therefore it is seamlessly interoperable with all AML applications and TIE models.

Some additional benefits of using AMOpt within AML or TIE include the following:

- Automatic dependency-tracking and demand-driven computation
- Distributed trade studies and optimization across networks of heterogeneous workstations
- Fully integrated solid/surface/wire-frame geometry modeling, as well as parametric links to CAD systems
- Integrated rule-based design and run-time decision making capabilities
- Post processing functionality such as text reports, graphs, bar/pie/scatter plots, vector plots, and contour plots

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