

KEY BENEFITS

Reducing product development time, exploiting any CAD/CAE tools already in use and reliable meta-models from planned experimental campaigns.

Improving product performances; increasing quality and stability of solutions despite uncertainties.

Understanding crucial cost/performance factors, implement rational decision process between trade-off solutions.



modeFRONTIER® helps you to deliver improved product performance and shorter development time with a minimum of learning and no changes to your company structure and procedures.

Its Java technology guarantees platform independency and scalability on complex hardware architectures and makes it ideal for any company and department.

modeFRONTIER® produced by ESTECO EnginSoft Tecnologie per l'Ottimizzazione, with its solid and global customer base, is the leading independent Process Integration and Design Optimization tool.

EnginSoft has been a partner and member of the CAE testbed in the FRONTIER® European Project since 1998
EnginSoft promotes modeFRONTIER® in Europe through a network of subsidiaries, joint ventures and subdistributors
www.enginsoft.com



EnginSoft offices and partners

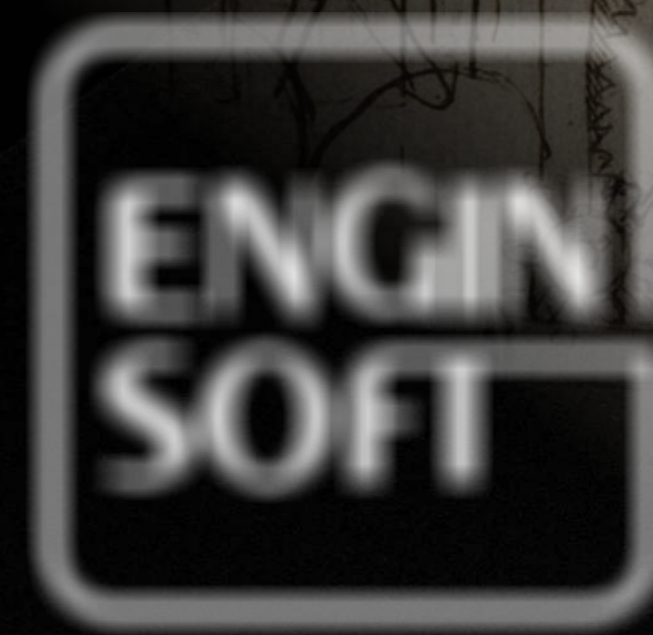


FEATURES & BENEFITS

modeFRONTIER® is a collection of technologies that allows:

- The formalization and management of the workflow to treat in a flexible and dynamic way processes of any complexity.
- Design of experiments and statistical tools to identify the most important parameters for global performance.
- A wizard that guides you to the best set of methods, technologies and strategies for multi-objective and multidisciplinary optimization.
- Meta-modeling and response surface methodologies (RSM) to further decrease computation time and increase knowledge.
- Modern technologies for an easy interpretation of the results.
- Up-to-date techniques for decision support which allow the orientation and the documentation of choices.
- Advanced probability and statistical methods for treating reliability and uncertainty, including Design for Six Sigma.

The first commercial tool to allow the application of Multi-Objective Optimization across all engineering disciplines



modeFRONTIER®
Quick insights
from EnginSoft

VIRTUAL TESTING?
PHYSICAL EXPERIMENTS?
MANAGING A PROCESS?
modeFRONTIER® helps you to be the new Leonardo



VIRTUAL TESTING? Try with modeFRONTIER®!

Many companies today take advantage of virtual prototyping rather than physical testing for the former is usually faster and less expensive. The combination between virtual prototyping and design process makes modeFRONTIER® an emerging tool with the ability to revolutionize product development.

PROCESS INTEGRATION

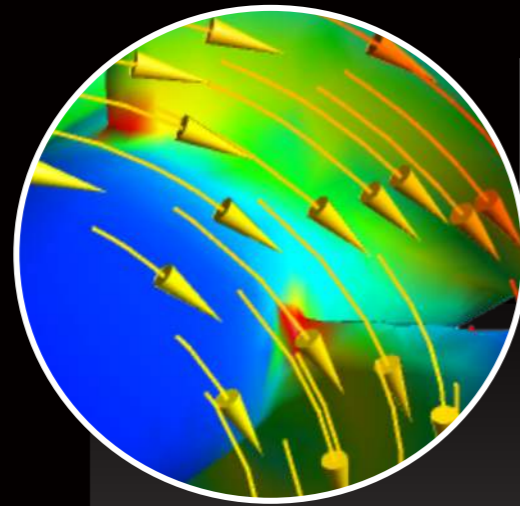
A process integration for design optimization (PIDO) tool is more a collection of technologies rather than a single software. modeFRONTIER® provides all the technologies within an excellent and modern graphical user interface. The formalization and management of the logic is well guaranteed by modeFRONTIER® that allows easy coupling to almost any computer aided engineering (CAE) tool whether commercial or in-house.

Benefits
**TIME REDUCTION
COST REDUCTION**

MULTI-DISCIPLINARY DESIGN OPTIMIZATION

Anything that shortens the time from basic research through product test, process design and production have an important influence on the overall project quality.

Benefits
**DESIGN OPTIMIZATION
PERFORMANCES OPTIMIZATION**



Piaggio & C.:

50000 design configurations verified instead of 50 in the same time thanks to process automation! modeFRONTIER® allows getting best performance while reducing experimental tests.

AVIO.:

15% air mass flow saving in gas turbine blade cooling using modeFRONTIER®.

PHYSICAL EXPERIMENTS? Try with modeFRONTIER®!

DESIGN OF EXPERIMENT

modeFRONTIER® can assist in preparing and executing a given number of experiments in order to maximize knowledge acquisition.

META-MODELING

Constructing useful meta-models starting from a reduced number of experiments is a complex task. Mathematical and physical soundness, computational costs and prediction errors are not the only points to take into account when developing meta-models. Ergonomics of the software have to be considered in a wide sense. Engineers would like to grasp the general trends in the phenomena, especially when the behaviour is nonlinear. Moreover, engineers would like to re-use their experience, in order to spread the possible advantages on different projects. modeFRONTIER® makes the meta-modeling approach easy to be used.

Benefits
**HISTORICAL
DATABASE RE-USED**

DATA MINING

modeFRONTIER® contains methodologies and charts that simplify and reduce linear and non-linear multidimensional data to much more easy to read charts. Among the most modern tools for this purpose are the so-called Self-Organizing Maps (SOMs) which provide a simplified view of the complex high dimensional data set. Furthermore, modeFRONTIER® contains tools for hierarchical and partitive clustering, multi-dimensional scaling, principal component analysis as well as other tools and charts for multivariate analysis.

Benefits
**BETTER AND DEEPER
UNDERSTANDING**



MANAGING A PROCESS? Try with modeFRONTIER®!

It assists engineers in overcoming the common error of giving priority directly to the product, rather than to the entire process.

DESIGN PROCESS

A complete multi-disciplinary design process can be divided into several phases while receiving the contributions of many professional staff and different departments, trying to meet conflicting requirements at the same time. Engineers and other specialists are more inclined to push towards improvements of objectives relating to variables of their own discipline. In doing so, they usually generate unexpected side effects that other departments and disciplines have to take into account. In most cases, a side effect caused by another discipline generates a decrease of the overall performance. An optimal design within a complex engineering system requires analysis that accounts for interactions between several disciplines: modeFRONTIER® may support the design of complex engineering systems and of all subsystems.

DECISION SUPPORT

modeFRONTIER® has the ability to look for a complete set of non-dominated solutions. modeFRONTIER® assists engineers to quickly investigate several design options, to analyze the influence of several reciprocally conflicting goals, and finally, to identify the most robust designs.

Benefits
**ACCELERATES TIME
TO MARKET**



FIAT Group:

Optimizing vehicle setup through the extensive use of modeFRONTIER® from the very start of the design process, simultaneously considering all types of vehicle mission and model.

HPE of Piero Ferrari:

Faster equilibrium in the simulation of Fluid-Structure interaction by using modeFRONTIER® process control whilst developing sodium-cooled titanium valves for racecar exhausts.

