for immediate release

ESTECO Unveils modeFRONTIER® 2014:

The latest version of the multidisciplinary optimization platform reaches new performance levels by streamlining the management of highly complex design scenarios

modeFRONTIER ® 2014 at a glance:

- New **multi-strategy user-oriented optimization algorithm** (pilOPT)
- **Enhanced RSM** training with the Stepwise Regression Method
- Three new **Direct Integration Nodes**
- **DOE Designer Node** for targeted design space exploration

Trieste, (Italy) | October 20th, 2014 – A powerful, **self-adapting optimization algorithm**, enhanced data mining and database handling and **three new direct integration nodes**: the latest release of modeFRONTIER reaches new performance levels by streamlining the management of highly complex design scenarios.

ESTECO SpA, a leading provider of numerical optimization solutions for engineering design, has announced the **release of modeFRONTIER ® 2014 -** the latest version of its multi-disciplinary and multi-objective optimization and integration platform that comes with a range of innovative functionalities and improvements aimed at making life easier for designers.

modeFRONTIER 2014 introduces the powerful **multi-purpose self-adapting algorithm - pilOPT** - created by the ESTECO numerical team to offer a **"one-click" optimization experience**. By combining global and local search and balancing real and RSM-based optimization, pilOPT achieves good coverage of the Pareto front in a very short time. It requires the configuration of only one parameter – the number of design evaluations - and ensures **substantial time savings** through a broad exploration of the optimal design region and the **efficient use of computational resources**.

Powell's method has been included in the optimization portfolio as a valid and efficient **alternative to gradient-based algorithms**, requiring considerably less computational effort due to its derivative-free approach. This single-objective optimization algorithm is particularly useful for calculating the local minimum of continuous complex functions - especially those without an underlying mathematical definition.

The **Stepwise Regression RSM algorithm** provides an **automatic procedure** for selecting the **polynomial regression model** with the optimal number and combination of predictor terms, yielding the lowest approximation error and highest prediction capability. The response surface is iteratively adapted to problem complexity until the best possible value of the selected quality criterion is achieved. The resulting polynomial is accurate, yet simple and requires no effort on behalf of the user when training and testing the fitness of different candidate models.

The new **DOE Designer Node** completes the set of native modeFRONTIER nodes, along with the SubProcess and Scheduling Project nodes, aimed at creating re-usable modular and discipline-specific workflows. The DOE Designer Node generates DOE configurations at runtime, allowing the user to **expand the coverage** of the design space and to focus on precise regions in order to **fine-tune the exploration phase** in accordance with problem characteristics.

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On the integration side, **three new direct nodes - NX CAE by Siemens**, **Solidworks Flow Simulation** and **PowerFLOW suite by EXA** –developed to automate data extraction and simulation execution and fully exploit modeFRONTIER optimization capabilities.

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More about ESTECO

- Learn more at www.esteco.com

About ESTECO SpA

ESTECO is a pioneer in numerical optimization solutions, specialized in the research and development of engineering software for all stages of the simulation-driven design process. Perfecting engineering and reducing complexity in the design process is our vision. Founded in 1999, the company is headquartered in Area Science Park in Trieste (Italy) and currently employs 40 professionals and serves more than 250 international clients, including BMW, Daimler, Ferrari, FIAT, Ford Motor Company, Honda, Mazda, and Toyota. www.esteco.com

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