SIEMENS
Ingenuity for life

HEEDS MDO

Discover better designs, faster, with Siemens Digital Industries Software!

Design Space Exploration is the next evolution in innovation. Instead of limiting performance to the confines of traditional approaches to optimization, Design Space Exploration unleashes the power of technology to develop revolutionary products. Typically, the traditional optimization process has required simplified approaches to complex problems making them easier to solve. With Design Space Exploration, all variables that impact product development can be included to tear down the barriers limiting performance – allowing you to embrace complexity.

HEEDS Empowers Design Space Exploration

HEEDS, included in the Simcenter portfolio from Siemens Digital Industries Software, is a powerful Design Space Exploration software package that interfaces with all CAD and commercial CAE tools to drive product innovation across all industries. HEEDS accelerates the engineering design process by automating analysis workflows (Process Automation), maximizing utilization of existing investments in computational hardware and software resources (Distributed Execution), efficiently exploring solutions (Efficient Search), and then assessing the performance to ensure real-world goals are met (Insight & Discovery).

Benefits

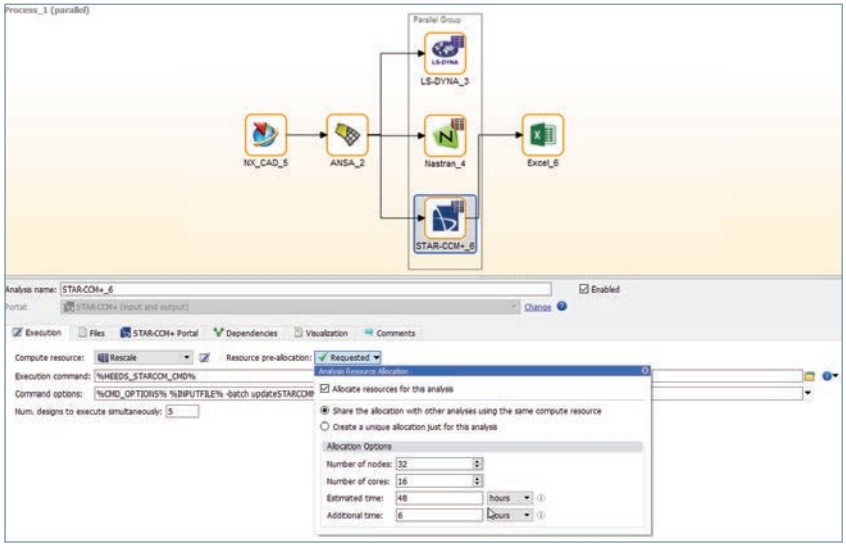
- Easily interfaces with commercial CAD and CAE tools as well as internal software.
- Efficiently integrates with existing hardware investments.
- Thoroughly searches for more design options in less time, yielding many more innovative solutions.
- Automates users' simulation testing to ensure that the product is designed as intended with reduced errors and in less time.
- Usable by ALL in product development to Discover Better Designs, Faster.
- Helps customers to deliver market-leading products in record time.
- The Global HEEDS Team is readily accessible and responsive.

Drive innovation with HEEDS

Process Automation
HEEDS enables automated workflows for the ease of driving product development processes. With an extensive list of developed interfaces to commercial CAD and CAE tools, HEEDS quickly and easily integrates many technologies without the need for custom scripting or manual manipulation. The data is automatically shared between different modeling and simulation products to evaluate performance trade-offs and design robustness.

Distributed Execution
HEEDS leverages existing hardware investments which allows for the efficient use of all available hardware resources. These include Windows and Linux based workstations or clusters either on-site or abroad, as well as cloud computing resources to accelerate innovative product development. For example, geometry modifications can be automated on a laptop with Windows® operating system, a structural deformation simulation can be performed on a Linux workstation, and a computational fluid dynamics (CFD) simulation can be performed on multiple cores of a Linux cluster or on the cloud.

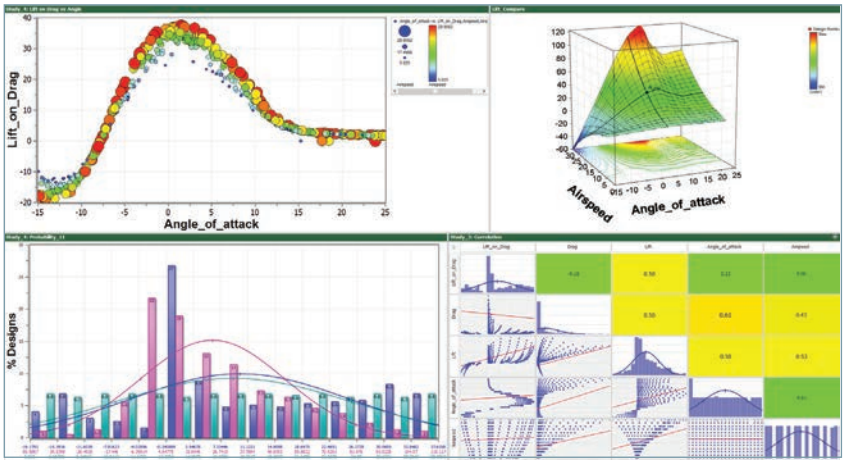
Efficient Search
As opposed to most traditional optimization tools that require highly specialized technical expertise and simplification of models to allow for efficient search, all designers and engineers can use HEEDS to unlock innovation. HEEDS includes proprietary Design Space Exploration functionality to efficiently find design concepts that meet or exceed performance requirements. HEEDS automatically adapts its search strategy as it learns more about the design space to find the best possible solution within the allotted timeframe. It is easy to use, designed to meet deadlines, and capable of providing significant value!



A view of a workflow being automated using cloud computing resources to accelerate innovative product development.

Insight and Discovery
HEEDS provides the ability to easily compare performance over a wide spectrum of designs that exhibit desirable characteristics and robustness. The software helps users visualize design performance tradeoffs between competing objectives and constraints, with various plots, tables, graphs and images, organized on one screen to gain insight and discover innovative solutions. This facilitates the development of designs that are production-ready; enabling a truly digital twin!

HEEDS puts Design Space Exploration in the hands of all decision makers – from designers to engineers. With Design Space Exploration at the forefront of an organization's innovative drive, entire product lines can see a transformative and dramatic change in performance.



Visualize design performance tradeoffs between competing objectives and constraints, with various plots, tables, graphs and images, organized on one screen.

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