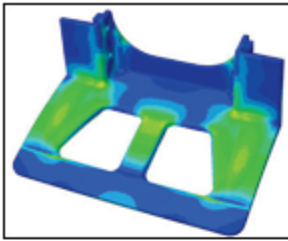


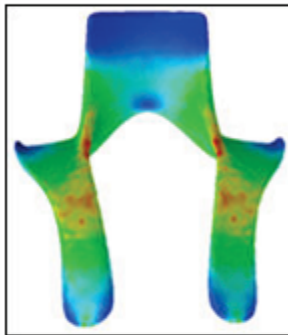
# HEEDS® NP

## Powerful New Software for Non-Parametric Shape Optimization



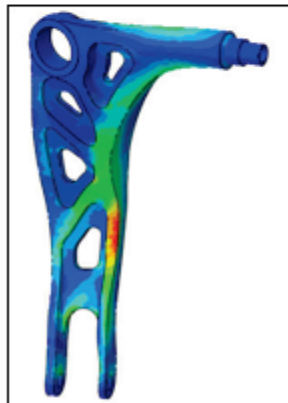
Red Cedar Technology is pleased to announce the release of HEEDS® NP, a new software package for non-parametric shape optimization.

Using the revolutionary search algorithm, SONA, HEEDS NP adjusts the surface shape of a 2D or 3D solid to minimize mass, while satisfying stress or displacement constraints.



It adds mass where needed in regions of high stress, and removes mass where possible in regions of low stress.

This is done on a nodal basis, so there are no pre-defined parametric shapes. HEEDS NP also intelligently maintains smooth surfaces as it morphs a shape.



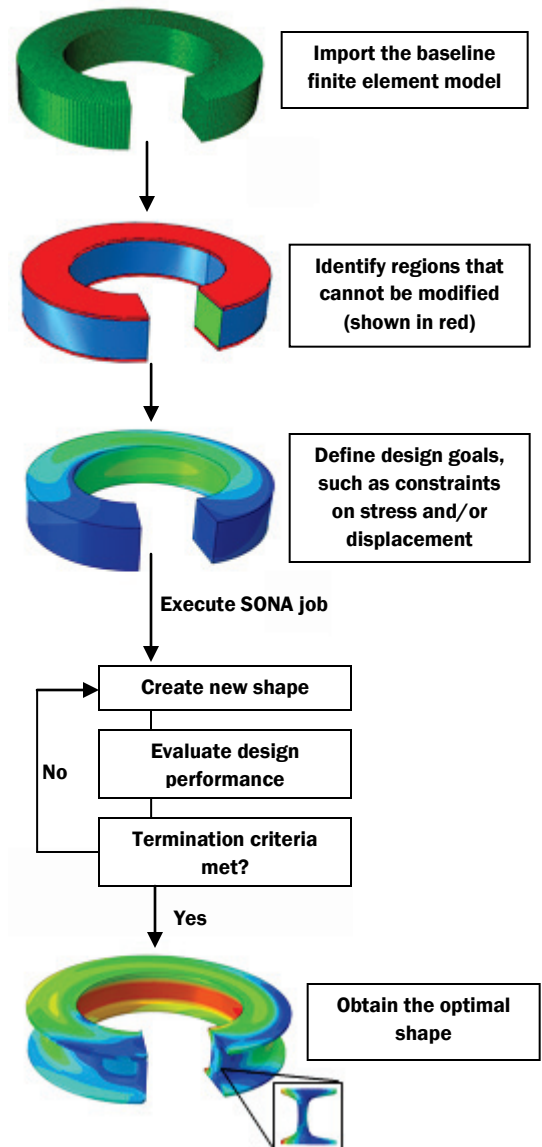
### Benefits of HEEDS NP

HEEDS NP allows engineers to

- **Optimize without creating a parametric model first**, which saves time and allows HEEDS NP more flexibility to explore the entire design space.
- **Improve product durability and fatigue life**, and minimize stress.
- **Make rapid, incremental improvements** to the performance of an existing component or product without a major redesign.
- **Discover cost-effective designs early** in the product lifecycle.
- **Save money** by reducing overall mass and material cost.
- **Use existing FE solver and models**, saving the time usually spent training on a new solver or rebuilding models.

### How HEEDS NP Works

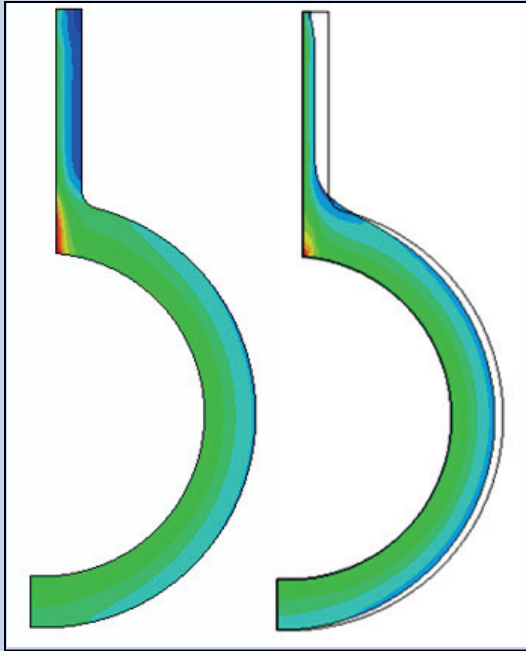
Defining a HEEDS® NP design study is quick and straightforward.



## Example HEEDS NP Studies

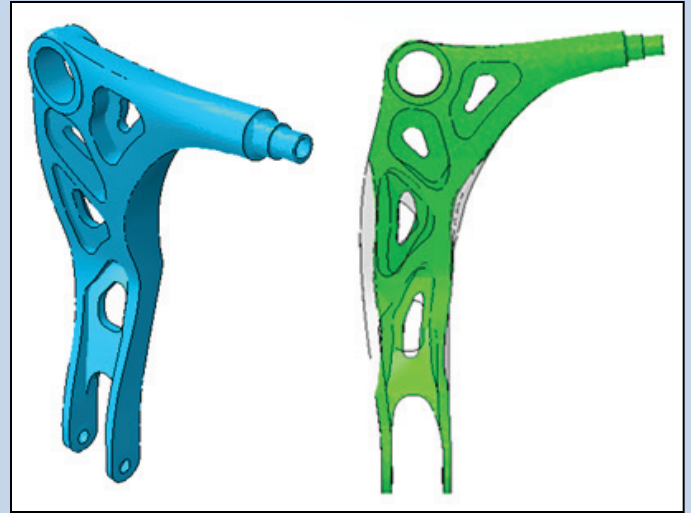
### Pressure Vessel

HEEDS NP was used to optimize a pressure vessel, such that a minimal mass design was found with a maximum stress that was equal to that of a baseline configuration.



### Control Arm

A control arm was optimized with HEEDS NP for a reduced mass design that met the performance constraints of an existing design.



## Looking for Parametric Optimization Software?

**HEEDS® Professional**, also available from Red Cedar Technology, is a robust, easy-to-use software package that interfaces with all of the popular CAE applications to automate and expedite the design optimization process. It intelligently conducts a broad, efficient search for optimized designs, often in a fraction of the time it would take to perform a handful of manual design iterations.

HEEDS Professional is the most comprehensive tool available for parametric design optimization, design of experiments (DOE), process automation, and robustness and reliability testing. Contact us to learn more.

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