



Altair HyperForm is an industry proven comprehensive finite-element-based sheet metal forming simulation framework. Its unique process-oriented environment captures the forming process with a suite of highly tailored and configurable analysis and simulation tools to optimize all aspects of stamped products development. HyperForm delivers a cost-effective solution to meet the demands of customers varying from individual analysts, and tool shops, and to large OEMs.

### Product Highlights

- Efficient setup for complex multi-stage forming processes of metals and composites
- Intuitive browser-driven setup for product and process optimization
- Fast, robust, and best-in-class incremental and one-step solver
- Customized post-processing tools with one-click report generation
- Optimal blank nesting in transfer die or progressive die layout for maximum material utilization

### Benefits

#### Immediate Cost Savings

Remarkable cost savings are possible because of competitive pricing (based on Altair's patented HyperWorks Units licensing) and dramatic reduction of product development lead time.

#### Accurate and Reliable Solver

The most accurate incremental sheet metal forming solver on the market (Altair RADIOSS®) is seamlessly integrated into HyperForm's process-driven user interface. This solver accurately predicts wrinkles and splits prior to cutting steel, avoiding the unnecessary costs associated with die machining and press downtime.

#### Efficiently Captures the Stamping Process

HyperForm's open framework combined with an extensive built-in knowledge of the manufacturing domain efficiently captures the stamping process. User productivity is further

increased through a comprehensive collection of tailored, process-oriented automations for virtually every stamping scenario.

#### Complete Solution for Stamping

HyperForm offers a complete solution for managing the entire stamping simulation process. It includes robust modules for feasibility and cost analysis, parametric draw die design, final process validation, process and die structure optimization, and results visualization are included for end-to-end stamping simulation.

#### Metal Forming Solutions for Every Need

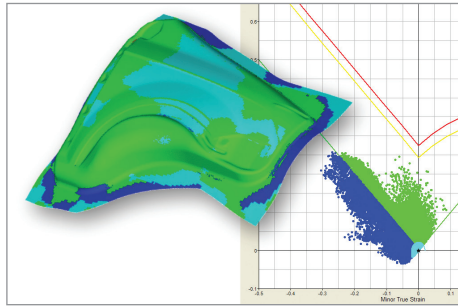
**Product and Cost Engineers** can study manufacturing feasibility and the impact of manufacturing on product performance under structural loading.

**Die Designers** can create conceptual draw dies with a parametric die module to run feasibility analysis or to iterate on the optimal die shape.

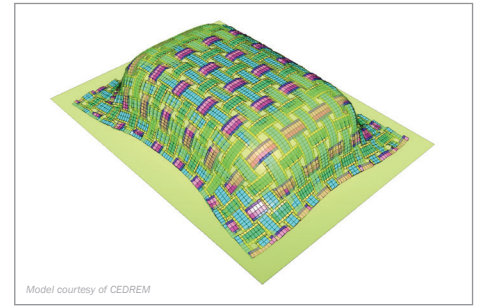
Learn more:  
[altairhyperworks.com/hyperform](http://altairhyperworks.com/hyperform)



Blank nesting to maximize material utilization



Optimization based on formability



Mesoscopic scale composite forming simulation

**Process Engineers** can validate a complex multi-stage stamping process for metals or composites by performing an accurate contact analysis to predict areas of wrinkling, high thinning, loose metal, springback and related manufacturing issues.

**Capabilities**

**Fast and Accurate Feasibility Analysis**

The fastest and most accurate inverse solver in the marketplace for quick one-step analysis addresses forming feasibility early in the product development cycle, minimizing downstream formability challenges and associated costs. It also enables rapid initialization of structural CAE models with thinning and work hardening resulting from stamping in order to incorporate the effect of manufacturing on structural performance.

**Efficient Cost Analysis**

The accurate blank shape prediction and intuitive nesting interface proposes proper blank-sizing and layout to minimize material scrap at the early stages of the product development process.

**Concept Draw Die Design**

The intuitive, parametric, and NURBS based die face development module delivers a powerful tool for process engineers to quickly develop and verify multiple tooling options.

**Fast and Robust Process Validation**

Through its best-in-class incremental solver (Altair RADIOSS®), HyperForm provides product and die engineers with powerful capabilities to:

- Analyze and validate the robustness of the manufacturing process
- Determine wrinkles and splits prior to cutting steel
- Avoid unnecessary costs associated with die tryouts

**Results Visualization**

Customized post-processing tools in HyperView® can be used to visualize blank draw-in, thinning, strains and stresses, and Forming Limit Diagram (FLD). One click report generation enables efficient communication and faster resolution of stamping problems.

**Optimize the Process**

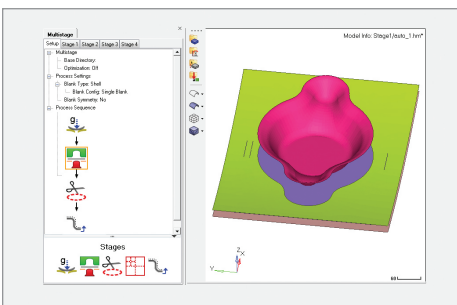
Through a seamless integration with HyperWorks optimization tools (Altair HyperStudy® and OptiStruct®), HyperForm offers unique capabilities to analyze and optimize not only the sheet metal but also the tool structure, allowing die designers to conceive lightweight and stiffer structures.

**Tube Bending and Hydroforming**

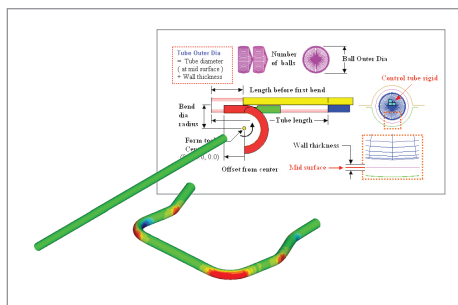
In addition to the complete sheet metal forming capabilities, HyperForm includes powerful utilities for tube bending and hydroforming, delivering a nearly hands-off model auto-setup process.

**Results Mapping**

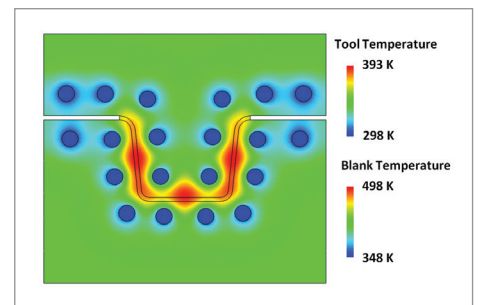
For precise mapping of stamping results from an adaptive or finer stamping mesh to a relatively coarser mesh, a general purpose results mapper is available under HyperCrash®.



Drag and drop to setup complex multi-stage processes



Automated setup for tube bending



Hot stamping and quenching simulation