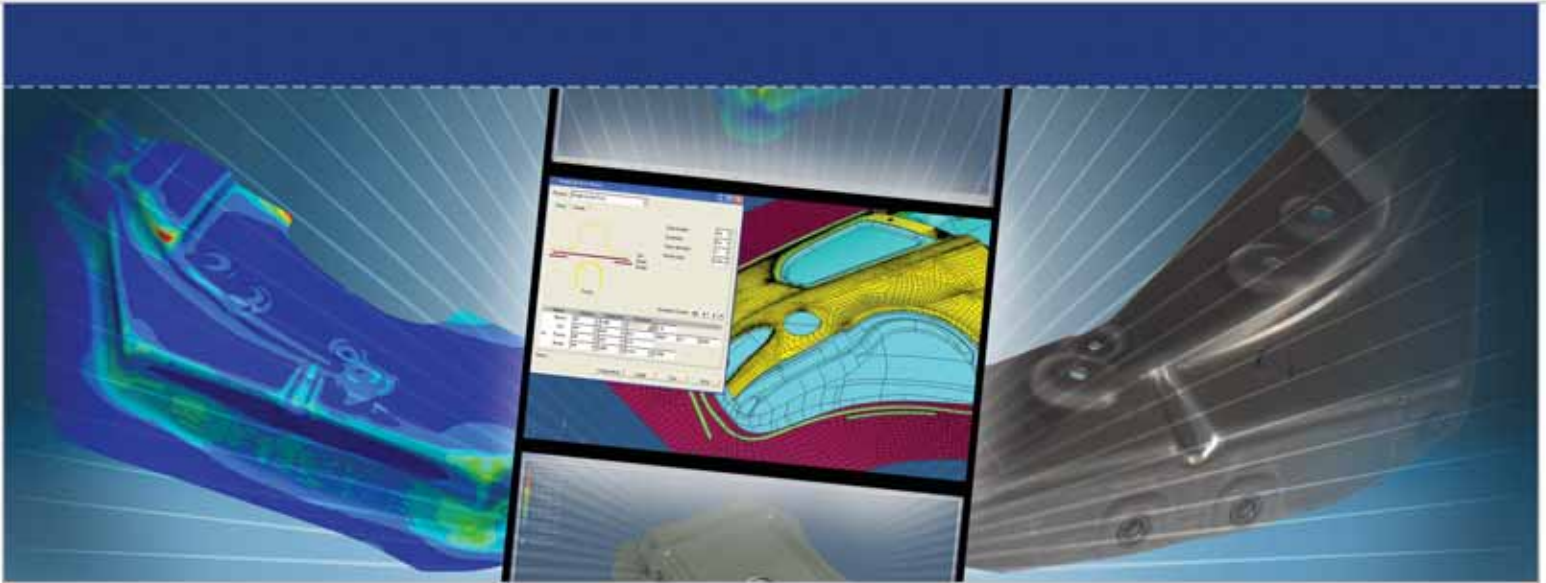




The Enterprise Solution for Product Innovation



Altair® HyperForm®

The Optimal Sheet Metal Forming Process

Altair HyperForm is a comprehensive finite-element-based sheet metal forming simulation framework. HyperForm offers a high-performance feasibility analysis tool in combination with parametric rapid draw die design capability and final process validation, optimization and results visualization.

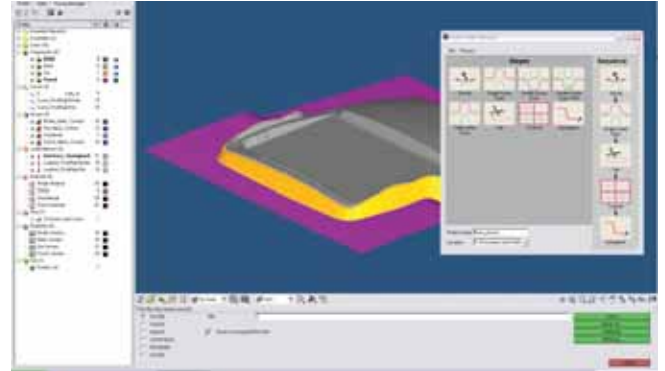
HyperForm leverages years of Altair's experience in manufacturing simulation and process design to lead users towards developing the optimal manufacturing process.



Altair® HyperForm®

Altair HyperForm Is a Unique Environment That Offers:

- Accurate blank-shape prediction and intuitive nesting interface.
- The fastest inverse solver in the marketplace for quick one-step feasibility analysis.
- Fully integrated incremental solver interface and open-architecture framework to perform incremental analysis with auto-set-up and a multi-stage manager for hands-off job execution, running directly best-in-class explicit and implicit solvers.
- Intuitive, parametric and NURBS-Surfaces-based die face development tool.
- Process-oriented model set-up and a direct link to the Hyperworks morphing, optimization, stochastic and DOE studies tools.
- Powerful utilities for tube bending and hydroforming models auto-set-up.
- Link with performance studies through the HyperWorks Result Mapper.
- Automatic creation of interactive and self-explaining MS Powerpoint reports either directly or from Altair Data Manager.
- Flexible user-defined automations through TCL/TK macro generator.
- Accessing to wide array of Altair CAE solutions by way of the patented Hyperworks licensing system, HyperForm offers a tremendous value to CAE organizations.



SHEET METAL FORMING ALL-AROUND SOLUTION

- Product engineers can study manufacturing feasibility in combination with post-manufacturing performance changes.
- Process engineers can build a process and create conceptual die designs with a parametric die module and run quick feasibility analysis or a detailed forming simulation.
- Simulation engineers can validate the conceptual or a real die by performing a full-forming contact simulation to predict areas of wrinkling, high thinning, low spots, springback and related manufacturing issues virtually.
- Die tryout engineers can communicate more efficiently and improve productivity and part quality by utilizing the detailed reports generated from the analysis.



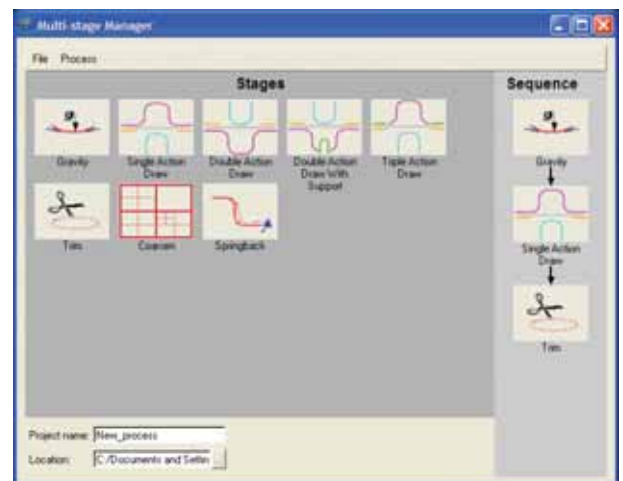
GUIDE THE USER THROUGH THE PROCESS

HyperForm is open-ended and automation-centric and is completely adaptable to the user environment. It comes with a set of pre-defined templates in order to simplify the model set-up for standard processes, driving the user through the definition of even complex simulation models in just a few mouse clicks.

The all new Auto Process is a comprehensive yet intuitive approach to an entire set-up for various scenarios.

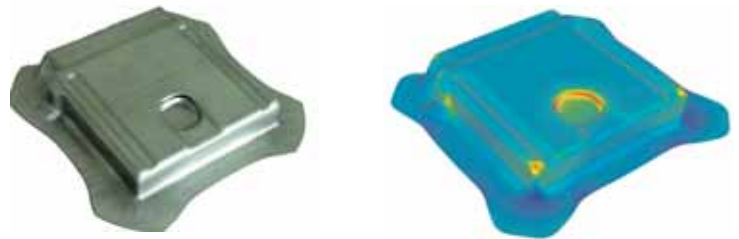
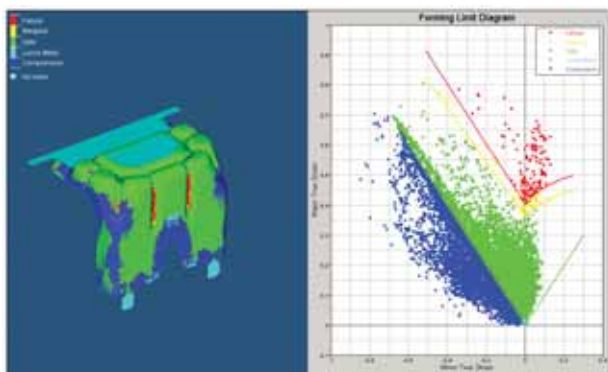
Multi-stage manager is a utility that enables a hands-off approach to sequencing of multi-stage stamping simulation.

Finally, HyperForm provides the user the ability to define even the complex optimization study simply by properly selecting few process variables.



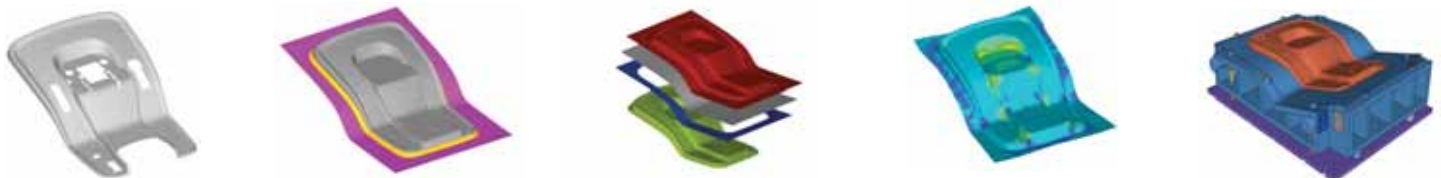
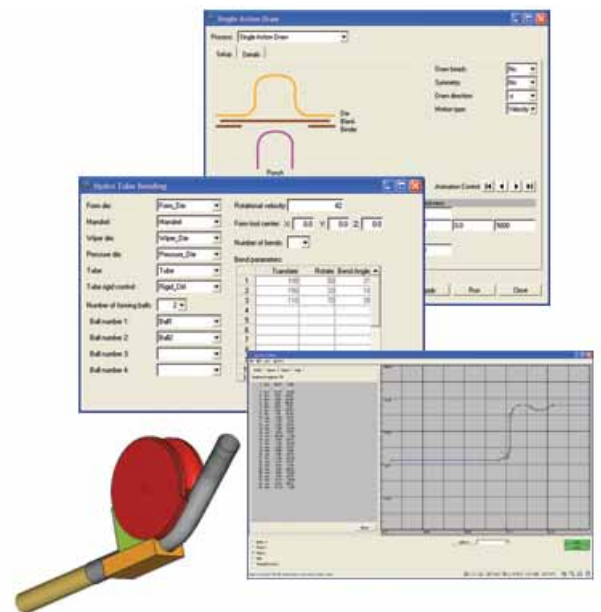
FAST AND ROBUST PROCESS DESIGN

- Addresses forming feasibility early in the product development cycle, minimizing downstream formability challenges and associated costs.
- Provides product and die engineers a powerful tool to quickly modify and verify multiple draw scenarios.
- Intuitive geometry morphing and advanced optimization capabilities to efficiently perform design of experiments, optimization and stochastic studies.
- A specific panel has been developed to submit the optimization and performance studies, selecting between several pre-defined options.
- Accurately predicts blank size, thus minimizing material scrap and provides powerful nesting interface to optimize the effective blank or coil usage.
- Quickly determines wrinkles and splits prior to cutting steel, thus avoiding unnecessary costs associated with die machining and press downtime.



HYPERFORM HIGHLIGHTS

- Auto-process set-up for standard forming operations in one step, including a comprehensive drawbead builder/editor.
- Multi-Stage Manager for hands-off submission of sequential simulations, for increased throughput.
- Major enhancement to surface quality of dies generated from the die module, for loss-free translation to other CAD tools.
- Unique reverse engineering utility to parameterize, edit and integrate with the Die Module, addendum and binder geometry previously generated in external CAD systems.
- Line tracking for monitoring feature-line movement on blanks.
- Complete tool and fast process set-up utilities for complex tube-bending and hydroforming simulation.
- Seamless data-mapping from forming meshes to structural meshes for post-manufacturing performance studies.





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