

# Weight Management

Altair Engineering is a product development partner to many of the world's major companies, providing support from facilities across the Americas, Europe and Asia. We work with our customers to create early concepts, develop robust designs, provide virtual and physical verification, and refine their product designs. Our cross-functional team has broad experience in automotive, aerospace, heavy equipment, and marine industries. The Altair approach includes an aggressive application of Altair HyperWorks technology and Altair ProductDesign expertise with a focus on weight efficiency. The result is a development process with reduced risk and shorter cycle times, delivering a product that meets functional attributes and mass targets, on time.



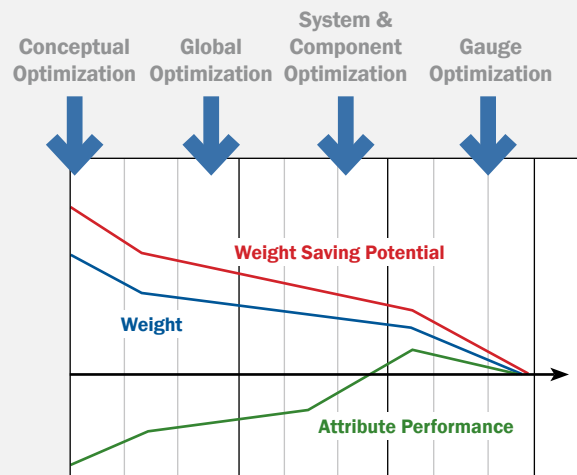
## Aggressive Application of Optimization Technology

Altair HyperWorks OptiStruct is a key enabler of the Altair process. This award-winning technology helps the team predict an optimal structure early in the program. As the design cycle advances, OptiStruct's powerful shape- and size-optimization capabilities are applied to further improve performance. Using highly advanced optimization algorithms, OptiStruct can solve the most complex optimization problems with thousands of design variables in a short period of time, inspiring efficient designs.

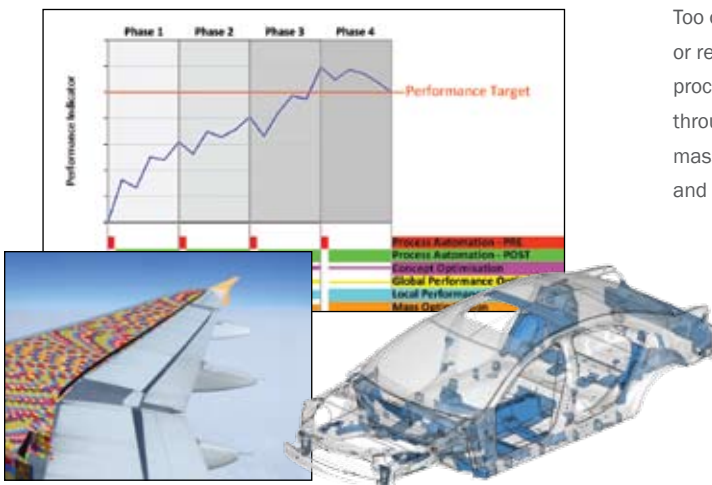
**Create Inspired Designs with Reduced Risk**

**Minimize Weight and Maintain Performance**

**Inject Efficiency throughout the Product Development Process**



## A Rethinking of Weight Management Strategy



Too often weight is improved undesirably as a post-launch development initiative or realized through performance degradation late in the program cycle. The Altair process considers weight as a primary attribute from program inception, tracked throughout the design phases. By considering weight in multi-attribute optimizations, mass targets are met. Attribute performance screening, early global structural studies and local component optimizations are a few of the techniques that are employed.

**Achieve Weight Targets**

**Track BOM with Weight as an Attribute**

**Eliminate the Compromise of Performance**

## Installation of Customer Site **Optimization Centers**

Altair Optimization Centers provide momentum to inject optimization and weight management techniques into your product development system. Initial screening for “quick wins” allows the benefits of optimization to be maximized for a minimum investment. This low-risk strategy is staffed by a combination of Altair ProductDesign experts and customer engineers and is accessed by designers with deep product knowledge and experience of the traditional approach.

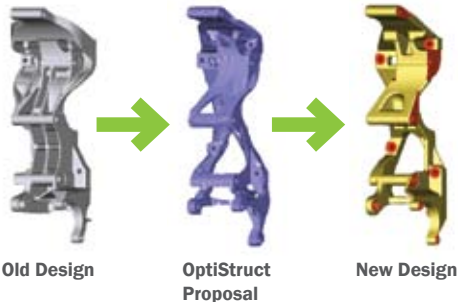
**Promote Optimization** throughout the **Enterprise**

**Integrate** into **Existing Production Design Processes**

**Allow** the **Benefits** of **Optimization** to be **Maximized**



## Achieving Weight Reduction on **Current Production Programs**



The Altair methodology for mass reduction on current production programs has proven effective through many engagements. Initiation starts through gaining familiarity with the baseline product and utilizing the experience of Altair ProductDesign and your engineers to prioritize candidates for weight reduction. Concept design development uses OptiStruct-driven techniques and then rank-orders candidates for release consideration. Finally, support of product release engineers ensures an efficient and manufacturable design.

**Identification of Weight Potential**

**Creation of Component Designs for Weight Reduction**

**Design for Manufacture, Validation and Release**

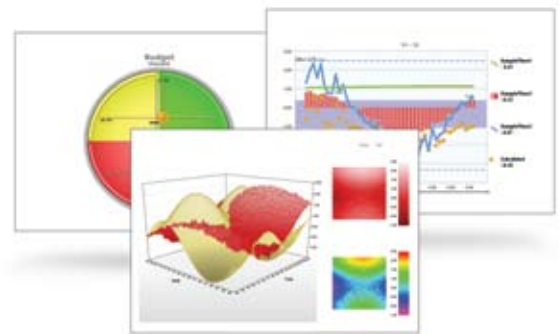
## Elevating **Weight Analytics**

Altair HiQube Weight Analytics is an application of high-performance business intelligence software to weight management. It tracks the BOM (Bill of Materials) across concept-stage estimations, CAD-based calculations, physical-component testing and product test. Additionally, it gives the user the opportunity to perform what-if studies for options and place an error band on results. Weight Analytics delivers an analysis and reporting capability far superior to spreadsheet-based tools.

**Advancing Weight Tracking** with **HiQube**

**Track Weight Variances Against Target Weights**

**Custom Reports of Mass Data Accelerate** the **Design Decision-making Process**



Follow Altair Engineering on:

