



# CATIA PLM Express

## CATIA - Mechanical Shape Optimization

**Rapid deformation of any complex shape**

Companies need simple and ergonomic tools to rapidly morph shapes without altering their quality at any time during the design process.

### Overview

CATIA - Mechanical Shape Optimization embeds unique breakthrough technologies enabling to perform quickly global morphing on complex shapes. It allows either to deform interactively shapes or to capture the realistic one based on real-world tests of the product in operation. This easy-to-use environment helps designers to achieve a real productivity gains to optimize the product or the tooling definition.

### Customer Benefits

- Achievement of high productivity gains while performing global deformation on complex shapes without altering models quality
- Optimization of the product or the tooling definition thanks to the comparison between the shape created from as-built measurements and nominal one
- Robust morphing approach promoting the use of high quality generative models ready for manufacturing purposes

## Key Capabilities

### Set of smart tools for local and global morphing of complex surfaces

CATIA - Mechanical Shape Optimization offers several powerful and easy to use options to create local, or global, deformations on a surface, such as Bump, Wrap Curves, Wrap Surfaces, and Shape Morphing

### Immediate comparison between nominal shape and realistic one

It enables to compare the 3D nominal shape to the realistic shape resulting from simulations, or measurements, of products in operation. Those shapes can be used to better assess and enhance the design of the products and tooling

### Creates a curve or a surface deformation based on a defined initial status and a final one

### Manages offset of non-tangent skins with different values thanks to the Variable Offset

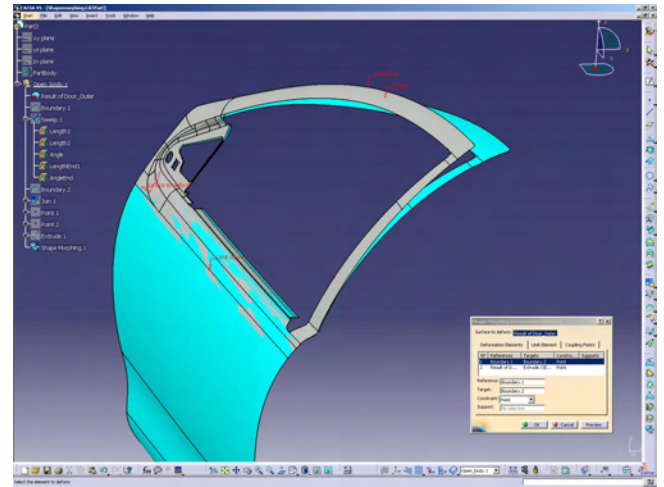
As a unique and powerful technology, CATIA - Mechanical Shape Optimization enables to manage variable offset on complex surfaces, especially in plastic parts industry. It enables automatic join of the resulting area with a high-end quality

### Flexible Rough Offset to deform shapes with constraints

Extending offset capabilities to perform global offset on constrained complex shapes while keeping its main characteristics

### Transfers multiple curves or points laid on a revolution surface on a plane surface and conversely

CATIA - Mechanical Shape Optimization allows the user to transfer curves between revolution surfaces and plane surfaces. It is very useful for manufacturers who are using products with revolution forms



Screen capture of CATIA - Mechanical Shape Optimization

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