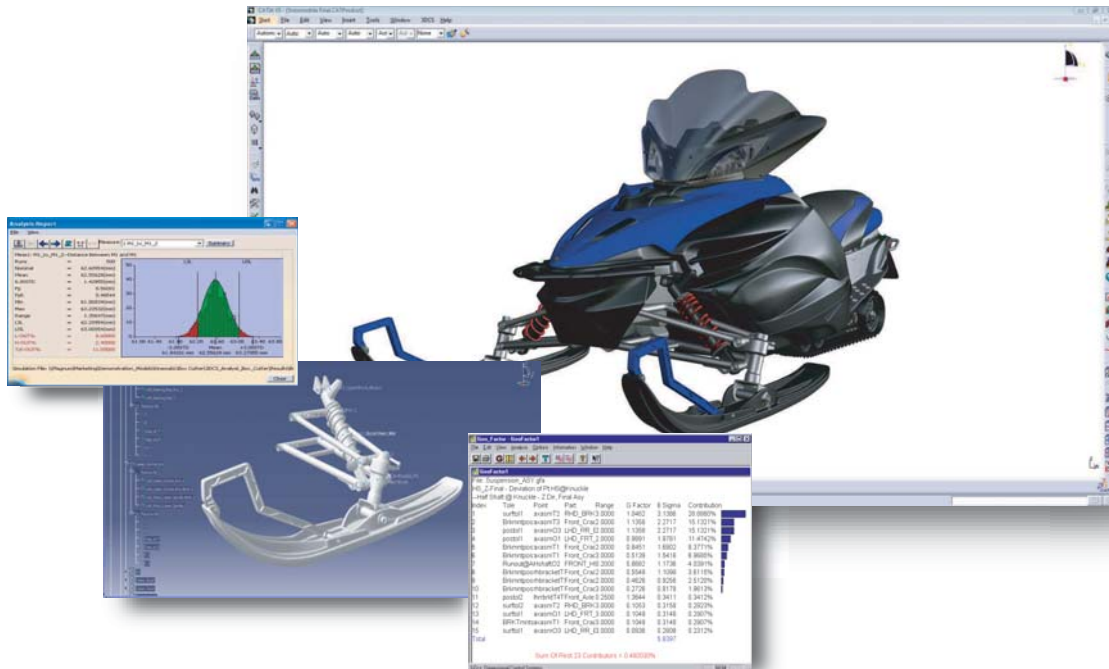


# Visually Observe Dimensional Variation

A manufacturer's ability to achieve required assembly tolerances is often compromised by the complexity of managing many part tolerances within a moving assembly. Variation analysis is an important part of determining proper assembly, tooling, and manufacturing processes. 3DCS Mechanical Variation Analyst is the premier tool, specifically geared for evaluating, optimizing and validating mechanical assemblies for improved quality while significantly contributing to time and cost savings.

## **3DCS Mechanical** Variation Analyst



3DCS Mechanical Variation Analyst (3DCS Mechanical) has an extensive set of tools and features that provide great flexibility to the engineering analyst allowing both dynamic and static models to be analyzed. 3DCS Mechanical is the ideal tool for detailed variation simulation modeling allowing manufacturers to thoroughly appraise design, fabrication and assembly robustness by quickly evaluating GD&T, assembly tooling and build sequencing well ahead of production release.

3DCS Mechanical is a 3D CAD solution available in multiple formats, in order to meet your company's needs. 3DCS Mechanical can be used as an integrated solution in CATIA V5, or as an add-on to either of DCS's 3DCS Variation Analyst tools, CAA V5 or Multi-CAD.

### **Predict**

the assembly variation of manufactured products with virtual prototypes

### **React**

to specific contributors of cumulative variation for optimizing designs

### **Control**

costs and dimensional integrity with proactive 3-D tolerance analysis

# 3DCS Mechanical Solutions

## Optimize Product Designs and Processes

The cost of design errors increases dramatically the later they are detected in the design/manufacturing cycle. 3DCS Mechanical allows the engineering community to evaluate design and assembly concepts up front, where problem areas can be identified and corrected early in the product development cycle. Optimizing for dimensional integrity improves the robustness of design and processes by maximizing part tolerances while controlling the dimensional assembly requirements of the final assembly.

## Reduce Cycle Time & Rework Costs

Shorten development time, accelerate time to market and reduce costs by utilizing the capability of 3DCS Mechanical for virtual prototyping. By maximizing part tolerances while still controlling dimensional assembly requirements, manufacturing costs can be reduced with less rework to tools and gages, minimized scrap and reduced number of warranty defects. 3DCS Mechanical reduces your bottom line and significantly improves product quality by validating that parts fit and function together before production starts.

## Targeted Users

The perfect tool for design engineers looking to perform simple or complex analyses on mobile mechanical assemblies.

## Key Product Features

**Four Types of Analysis Outputs** - Monte Carlo Simulation, High-Low-Mean (Sensitivity Analysis), GeoFactor Analysis and Worst Case analysis.

**Library of Joint and Constraint** - Library of moves allow the modeling of complex mechanical assemblies.

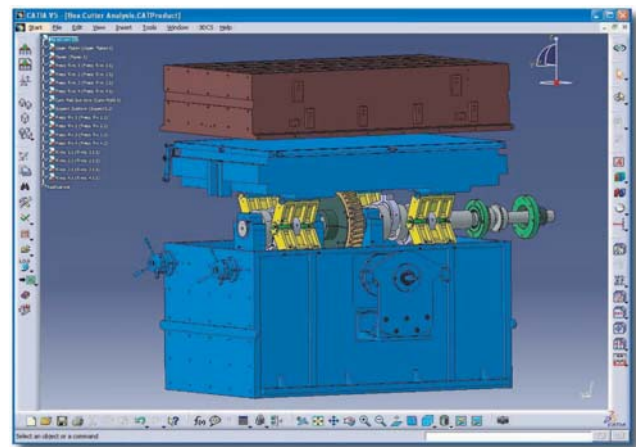
**Reuse Models** - Capture commonly used processes and build your own library of easily accessible models.

**Flexible Assembly Compatibility** - Specialized routines developed for non-rigid parts.

**Specialized Kinematic Routines** - Allow for mechanical systems to be analyzed.

**Use Manufacturing Data** - Import real world data into 3DCS Mechanical for root cause analysis to improve existing build processes.

**Identify Contributors** - Localize tolerances and assembly processes responsible for variation.



**Extract** - Extract CATIA V5 constraints and kinematics for fast and efficient modeling.

**Available in Multiple Formats** - Select 3DCS Mechanical Variation Analyst as an all in one CATIA V5 integrated solution, or as an add-on solution to 3DCS Variation Analyst.

**Animate Variation On-Screen** - Users can visualize clearances & interferences on solid geometry or through a section by sweeping parts and assemblies within their statistical extremes.

**Create Models Without Geometry** - Perform tolerance analysis with 3DCS Mechanical before CAD geometry exists.

**Unique Kinematic Solver** - Solve overconstrained assemblies

**Evaluate Geometric Factors** - Evaluate geometric factors to enhance the robustness of designs.



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