The *Independent* Solution Provider for Industrial and Process Automation, Quality & IT
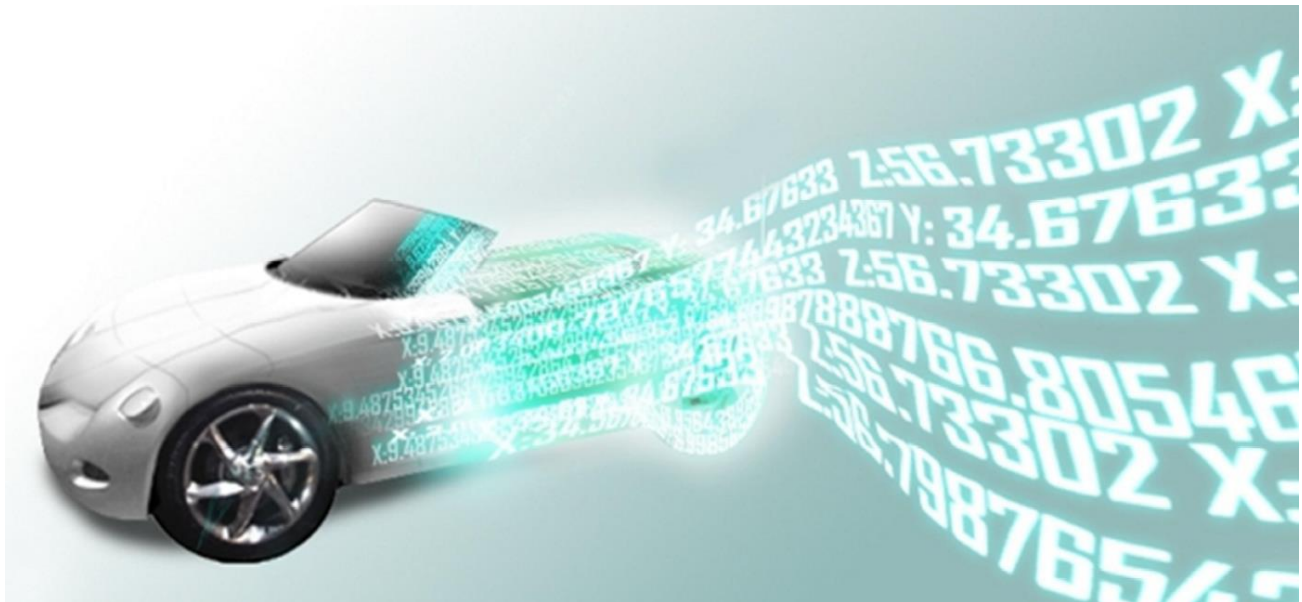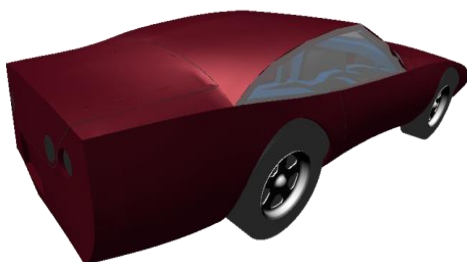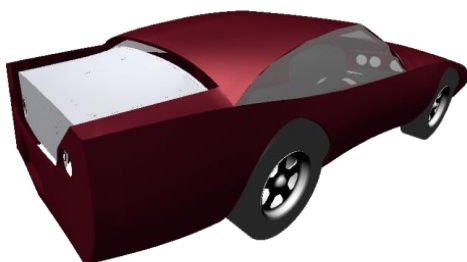
General Product Brochure

Find Out How ATS CM4D Takes 3D Analysis to the Next Dimension

ATS CM4D fills the gap between the virtual design world of Computer Aided Design and the physical world of manufacturing.

It highlights differences between the geometric design specification and the "as built" data from a manufactured item. Tackling these issues allows manufacturers to attain the highest quality possible.
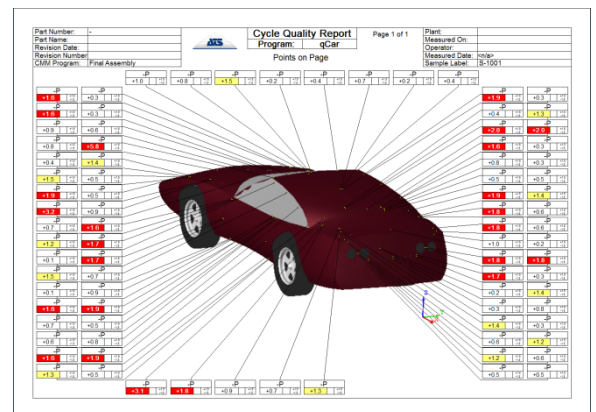
Why do you need CM4D?

How confident are you that a critical dimensional fit problem in your production process or supply chain will be identified before it leads to a production interruption or a missed delivery deadline?

How can you guarantee a good fit every time?

ATS CM4D offers global manufacturers a single automated solution for immediately analyzing all inspection data from in-house equipment and suppliers so that critical quality issues can be addressed early in production, before they lead to late deliveries, or further upstream during engineering processes.

Unlike typical inspection data reporting systems that present part data in an isolated context for comparison back to mathematical CAD designs, ATS CM4D presents your parts in the context of the physical assembly process. It is Product Lifecycle Management for as-built data, which is not supported by traditional PLM.

As-built analysis gives a true image of the situation

Supplier parts can be analyzed to validate critical interfaces before they are shipped. Common issues, such as non-conforming supplier product, limited process capability and poor product manufacturability, are identified before it is too late.

How does it work?

ATS CM4D accepts data from inspection devices on the plant floor and translates that data into a format that can be imported into the CM4D database where it is coordinated with the associated 3D image, imported from CAD.

ATS CM4D then uses the data and 3D model to create charts and graphs to display the

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information in an easy-to-read reporting format, which allows for quick analysis and decision making by appropriate personnel. A wealth of business tools within ATS CM4D gives the user many powerful reporting options.

Gathering Data

Let's start at the beginning. So, you've got a lot of numbers you want to crunch from a lot of different sources. How do you get them all working together?

Thankfully, CM4D is designed to work with all dimensional data from many different sources, including:

- ► Variation Simulation Results
- ► Datamyte®
- ► Perceptron®
- ► LaserTracker®
- ► LMI®
- ► Zeiss®
- ► Hexagon®
- ► LK®
- ► Nikon®
- ► Faro®

ATS CM4D ► **DataSmith** is a universal translator designed to handle all this information. It collects and stores your dimensional data in a relational database to allow quick and easy access for reporting and analysis.
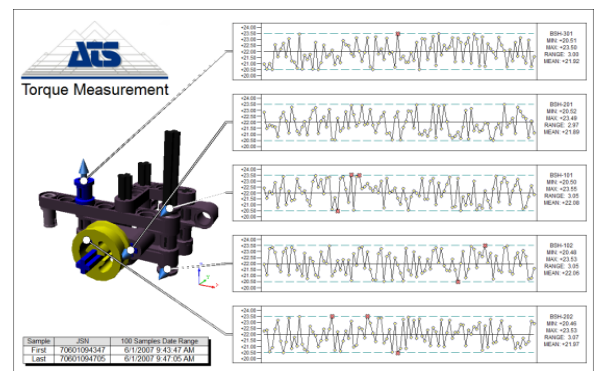

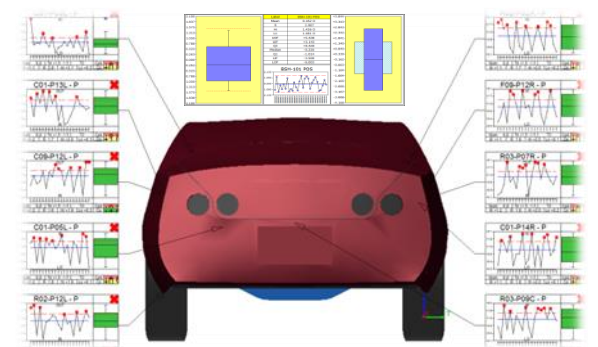**Collate dimensional data from all sources**

Reporting and Analysis

The key to solving any variation issue lies in the ability to visualize and analyze measurement data as quickly as it comes in.

With ATS CM4D ► **Classic**, measurement data is dynamically associated with a representation of the CAD product model, processed by a powerful analysis engine, and formatted into reports featuring various charts and graphs for easy understanding and problem solving.

Fully customizable reports for variable data analysis

With nearly infinite customization possibilities, ATS CM4D can report your data in a multitude of formats, with automatic database population and retrieval.

Organize dimensional data

Alignment Module

The ► **CM4D Alignment Module** allows you to analyse how two parts will fit together and calculate offsets, prior to assembly.

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When looking at parts individually, they may appear to be out of Tolerance. When compared mathematically, the deviations only get worse.

On the other hand, an individual part may appear very good mathematically, but when two parts are assembled, they actually do not line up at all.

Using ► **"Virtual Shims"**, CM4D can analyze true assembly conditions of how two parts will align, as well as calculate the alignment if shim or grind adjustments are applied.
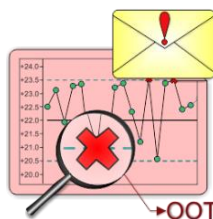
Anywhere, Anytime

With ATS CM4D ► **WTC** you can review any reports you need wherever you are in the world. This web browser based application allows you to stay on top of the process with the latest information.

View your data anywhere, anytime

To save you working late to collate that report for next morning, ► **Scheduler** has been created to generate reports at a preset date and time.
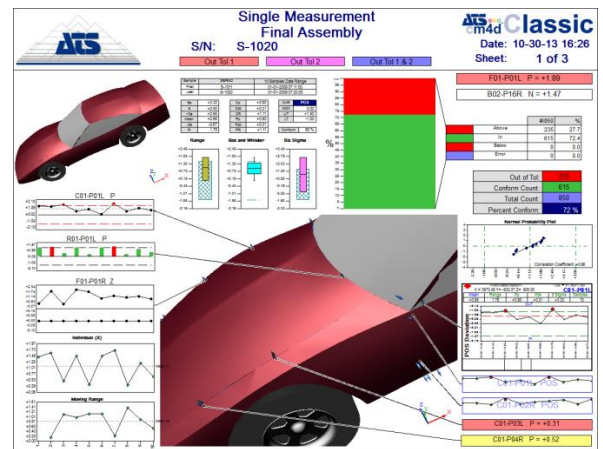
When combined with ► **EventSmith** it can even produce reports when a pre-defined event is triggered. The appropriate people are then automatically contacted by email so that they can immediately review the situation.

A Plethora of Reports

The following is a short list of some of the graphs available:

► Box & Whisker
► 6 Sigma Projection
► Normality
► Histogram
► Pareto
► Benchmark
► Gage R&R

Statistical Process Control charts are also available, such as:

► Trend
► X-Bar
► Range
► Moving Range

Automated Processes

CM4D offers a fully automated process whereby inspection data output from any data collection device is automatically processed into the CM4D database, using ► **DataSmith Batch**, consolidating all your dimensional inspection data enterprise wide.

Web reports are then automatically generated with the new data for immediate viewing, for a truly comprehensive data management and reporting solution.

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A Trusted Solution

Incorporating more than 16 years of experience in Product Quality Validation, ATS's award winning CM4D has been adopted by 10 of the top 15 automotive OEMs globally. Now manufacturers in many different industries are benefiting from lessons learned in the high-volume automotive environment.

Automotive News
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ATS is an *Independent Solution Provider*, with over 25 years experience in the manufacturing systems arena and a wealth of experience undertaking Continuous Improvement initiatives and Manufacturing IT solution design, deployments and 24/7 support assignments.

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