



Aerospace Successes

Manufacturing success today is increasingly defined by the speed and effectiveness of reacting to omnipresent real world changes.

First-Tier Aero Structures Manufacturer

The world's largest first-tier aero structures manufacturer. builds several important aircraft pieces such as the fuselage and airframe.

ATS CM4D was first implemented in 1996 at their plant in Kansas. ATS CM4D's success there encouraged them to implement another enterprise installation of the software when they opened a new plant in South Carolina a few years later.

For one of the commercial aircraft ATS CM4D provides crucial reporting for the 3D inspections of the assembly processes. As the aircraft has not changed much in many years, ATS CM4D has been doing the same job, year-in and year-out, with very little maintenance or

ICT Department:
"ATS CM4D is the Clean Avenue to Product Acceptance".

attention - testimony not only to the robustness of the system, but also to the high level of automation ATS CM4D performs.

For the other aircraft ATS CM4D analyzes and reports data obtained in the "Trim and Drill" process, where metrology is embedded in the manufacturing process. Thousands of holes, configured into hundreds of groups and patterns, are analyzed for design integrity, functional (simultaneous) requirements, and assemble-ability.

ATS CM4D provides them with a central repository of all their quality reports, easily accessible by all stakeholders. ATS CM4D has also aided in the development of advanced technologies in airframe manufacturing.

Today, their Manufacturing Research and Development (MR&D) department uses CM4D's API functionality to develop custom applications and extend the functionality of ATS CM4D.

JSP Manufacturer

In 2001, this customer became involved in the 10-year System Development and Demonstration program for the Joint Strike Fighter. This company, along with collaborators from nine countries around the world, implemented a self-contained system for manufacturing and quality control for the JSF program. As a result of these proprietary data systems, foreign supplier data could not be processed directly into the JSF databases.

In 2008, they solved this problem of disconnect by implementing ATS CM4D in their Texas, USA facility. ATS CM4D now streamlines the translation of foreign supplier data into the proprietary format used for their highly innovative JSF program.

Helicopter Manufacturer

This helicopter manufacturer first implemented ATS CM4D in their Texas, USA facility in 2009 as part of their Six Sigma Strategy. Their main focus for ATS CM4D at that time was First Pass Yield reports, which are used to determine the most critical problems and ensure that improvement effort is applied where it will be most effective.

As with most aerospace manufacturers, they utilize both automated and manual data collection. Without interfering with working processes, ATS CM4D is able to manage data from existing data collection mechanisms and consolidate it into a single, comprehensive repository. This customer uses various data collection tools for immediate reporting and local troubleshooting, while ATS CM4D is used for high-level analysis and summary reporting.

Roll-up Reports generated by ATS CM4D (either on-demand or via automated reporting) are used to obtain a high-level view of an entire process or part. All data collected over a period of time can be rolled up into a single summary report.

Inter-Operation Reports are used to evaluate how particular operations change the dimensional integrity of a part. For example, when heat treating operations alter the geometry of a part, CM4D reports allow engineers to predict, accommodate, or adjust for the changes. Process Variables are collected along with the dimensional data to provide for deeper analysis. CM4D isolates and analyzes data collected before and after the heat treating operation, allowing engineers to see how different equipment (ovens), temperatures, and pressures can influence dimensional changes.

During the machining process, Machine Tool Probing Data is collected. Using ATS CM4D, the part can be inspected for the purpose of detecting machine tool variation such as tool wear, or for comparing with subsequent manufacturing processes.

Process analysis shows manufacturing capabilities. Data collected on features machined by a particular tool are consolidated into an ATS CM4D report that shows how that tool is performing. Decisions can then be made during the process planning to use the tools effectively and efficiently, as some engineering requirements may only be achieved by using certain machines. As a result, highly-capable tools are not tied up by other requirements that are not as strict.