

AIAM TECHNOLOGY MEMBER HIGHLIGHT



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Applied Automation Technologies (AAT) defines the process of generating metrology information directly on the machine tool and immediately using it to make adjustments into the machining process as "Smart Machining" - using closed-loop feedback to provide correction for the machining process and the quality of products being machined.

The primary goal of any shop is manufacturing dimensionally accurate parts at minimum cost. While quality control is indispensable, conventional dimensional measurement methods are not always efficient.

Digitizing measurement data where parts are manufactured and sharing that data with all manufacturing devices enables a modern competitive factory for automotive, aerospace/defense, die and mold, and many other manufacturing industries. More recently, advanced measurement software - namely

CappsNC from AAT - enables machine tools themselves to perform measurements like a CMM. Offline programming with virtual machine models and using CAD part models allow the machine tool to be programmed to perform complex measurement and reporting tasks, including multi-datum profile and true position analysis.

This information can immediately be used to improve the machining process by adapting various machining parameters, such as work offsets and tool offsets. Realistic program simulations, collision avoidance and optimum measurement path generations for multiple geometric features makes it very easy to program, and flexible to make changes for any type of machine tool configurations.

This ultimately enables a very easy method of quickly generating metrology data directly at the production source.

TOTAL NUMBER OF EMPLOYEES

A large, light green number '25' is centered over a dark silhouette of an aircraft. The aircraft is shown from a top-down perspective, similar to the one in the top right of the page.

25

WHAT ARE YOUR COMPANY'S GOALS?

"To continue to be the leader in providing advanced inspection software for on-machine measurements enabling Smart Manufacturing throughout the factory. When people discuss the emerging world of the Smart Factory, they often bring newer production tools into the conversation.

They'll discuss the benefits of collaborative robotics, virtual and augmented reality systems, and 3-D printing. They are all exciting technologies and may well become a boon to any given enterprise, but they are not necessary for an organization to profitably begin Smart Manufacturing.

The most important goal of digitalizing manufacturing with metrology feedback is to produce parts that are dimensionally correct regardless of the changing parameters by using closed-loop feedback at the minimum manufacturing costs."

GREATEST ACCOMPLISHMENT

"AAT has always been an innovation company since it was formed for the purpose of developing software for automating quality control and manufacturing systems. In the 80s, during the PC revolution, AAT created the first 3-D graphics based on metrology software when CAD/CAM systems were just becoming mainstream tools used in the industry.

Later, AAT was able to adapt its measurement software solutions into the manufacturing environment - integrating it to any machining center to work as a closed-loop metrology feedback software.

This is a revolutionary concept and it is the final step in merging dimensional quality control and machining processes. This innovation is also the keystone of *Digitalization of Manufacturing Systems* as it automates part manufacturing while making sure every part is produced in tolerance by adapting manufacturing parameters based on dimensional measurements.

Today, AAT is the world leader in providing software solutions for any machine tools with offline and online capabilities, especially for the aerospace industry."

INTERESTING FACT ABOUT AAT

"We create smart machining and automation based on metrology data created directly on the machine tools and interpreted to create machine tool parameters which are automatically updated into the machine tool controller.

AAT is also the developer of one of the first CAD based CMM inspection software, developer of the first on-machine inspection software, the first software to incorporate non-contact laser line sensor technology for on-machine measurement."