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“Look Ma...No Cables!”

Stowe Machine Goes Wireless on the Shop Floor with MACDAC

When Stowe Machine, one of the Ladish Companies, was designing and building a new 10,000 square foot facility to house an expansion of its advanced precision machining operation, Engineering Manager Ken Anderson had to make a decision: stay with a traditional hard wired shop floor CNC automation network or move to a true wireless LAN communication solution.

The Windsor, Connecticut company serves the aerospace market, including all three major turbine engine builders. It also machines parts for Pratt & Whitney's Space Shuttle Main Engine (SSME) Program. The addition of six new CNC machines in the company's expanded facility gives it the ability to handle parts up to 60 inches in diameter, and brings its CNC machine total to more than 50.

MACDAC wanted to deploy a wireless system with three components: (1) WireFreeDNC[™] Ascendant Technologies Wireless DNC software application, (2) Wireless Ethernet Serial Adapter and (3) an Access Point.

According to MACDAC President Dave Stanley, “we brought all the ‘players’ together, assembling the components and software required to create a true wireless DNC solution.”

“It is currently the only such system available,” adds MACDAC Communications Manager John Carpenter.



Wireless Ethernet Adapter mounted at the machine tool communicates with wireless access point.

“...it gives us the ability to move machines and reorganize ... anywhere on the floor, without changing cable numbers ...or software or hardware.”

**Ken Anderson,
Engineering Manager,
Stowe Machine**

The WireFreeDNC[™] solution works by connecting the CNCs' RS-232 port to Wireless Ethernet Adapters, which are mounted on each machine tool. The Adapters communicate with Access Points, which may be placed anywhere on the user's wired network. The Access Points then communicate with the WireFreeDNC[™] software application, resulting in true Wireless communication with respective CNC equipment.

“After completing our needs analysis,” Anderson says, “making the decision to go with a wireless LAN was an easy call. And working with MACDAC was a natural. We've been using eXtremeDNC for four years. During that time, we've expanded its application from 10 to 50 machines.”

Flexibility Key

“Our operation,” he adds, “is growing and changing rapidly. For the new building, flexibility was key. The wireless LAN gives us the ability to ultimately communicate to an unlimited number of serial enabled machines anywhere within the facility. It also eliminates wiring issues with regard to overhead cranes, and electrical surges on ports caused by lightning strikes. Two years ago, we suffered such a strike and it disabled communications to 12 CNC machines, causing lost production and expensive repair.

“But perhaps the most important advantage of wireless,” Anderson notes, “is it gives us the ability to move machines and reorganize manufacturing cells anywhere on the floor without changing cable numbers, or reconfiguring software or hardware.”

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**MACDAC
at EASTEC**
May 21-23, 2002
**Booth #s
6048, 6049 & 6051**
West Springfield, MA

MACDAC Introduces Raindrop Geomagic® Studio™

Converting 3D digitized data into machinable surfaces

Raindrop Geomagic® Studio™, the 3D photography solution that enables mass customization, is now available from MACDAC.

This advanced, new point closed-to-surface software gives users the ability to quickly convert 3D digitized data into machinable surfaces. It streamlines processes for novice and experienced modelers alike. And its automated features and simplified workflow reduce training time and allow users to bypass tedious, labor-intensive tasks.

The MACDAC Engineering, Inc. Staff has completed a rigorous training program and is ready to train new users with a full curriculum class and ongoing application sessions guaranteed to provide immediate results. Again, MACDAC is in the technical support forefront for its customers.

Geomagic Studio Release 4.1 Advantages Include:

- **Increased throughput.** Users processing complex or freeform shapes report productivity increases of 10:1 or more over traditional CAD software.
- **Enables custom manufacturing.** Creates models in minutes, not days, with the same accuracy and compatibility provided by traditional CAD software. It answers the triple challenge of mass customization: simplicity, throughput and manufacturability.
- **Compatibility.** Works with popular 3D scanners, CAD and graphics software, and rapid manufacturing systems.
- **Closes the loop.** Allows users to work with both physical objects and digital models, closing the loop between clay and software modeling. Imports CAD surface layouts as templates and applies them to points obtained from scanning clay models, eliminating barriers between the physical and digital.
- **True multi-format modeling.** Covers the most commonly used 3D data representations: points, polygons and NURBS. Data integrity is ensured no matter how models are represented.

To learn more about Raindrop Geomagic Studio, contact MACDAC or visit our Web site.

geomagic®studio

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- on-site services for communications
- on/off site post processor writing and finalization
- on/off site service in all areas of CAD-CAM support

Stowe Machine Goes Wireless

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MACDAC's expert installation at Stowe is totally Wireless; and, there are no computers in the new facility. It is linked to an existing building via fiber optics. Operators can request a file and receive DNC downloads and upload at the machine with no computer throughout the wireless network.



MACDAC Wireless LAN Communications: Wireless access point on Stowe Machine's wired eXtremeDNC™ server network communicates with wireless Ethernet adapter mounted at the machine tool.

Remote Monitoring

Stowe's new facility has a wireless infrastructure. MACDAC has helped Stowe configure their DNC system to view CAD drawings and set-up sheets remotely from a laptop. Through the use of Macro B programming at the CNC, Stowe's DNC software application is able to perform remote monitoring of cycle processes. For example, if a machine alarms out, the software application automatically sends an e-mail message to the maintenance department. Plus, it gives users the ability to monitor real-time status, e.g. for spindle speed, X, Y and Z positions, and feed rates.

MACDAC's expertise has helped Stowe configure the WireFreeDNC software to cue up jobs for operators. File queuing helps to organize a preset number of parts or programs to each CNC without continuous operator intervention. This is another advantage of Ascendant's software application and MACDAC's expertise in CNC communications.

"We love wireless machine tool networking," Anderson says. "The system was easy and quick to install, and cost-competitive with wired alternatives. It is the only way to go for new manufacturing facilities."

Free EASTEC Seminar: EASTEC Courtyard B, May 22, 2:00 - 3:00 pm

Come see how MACDAC's true wireless LAN is revolutionizing shop floor communications

Since the introduction of DNC communications by General Electric in 1970, little has been done to change the original concept – until now! With the popularity of mobile computing and technological advances, a true wireless connection to a machine tool is a reality.

MACDAC Communications Manager John Carpenter will discuss the advantages of integrating a wireless infrastructure on the manufacturing shop floor: mobility of equipment...protection from power surges...adding laptops, PDAs, Web Cams, and a host of productivity tools. Monitoring machine efficiency and utilization from a managerial and maintenance level will also be covered.

The seminar is free. No registration is required.

For an "Up Close & Personal" wireless shop floor communications demonstration, check the "Wireless Demo" box in FAX for FACTS and we'll call you to schedule an appointment.