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Honeywell: The Future of the Plant Floor in a Wireless Environment

A DEFINING POINT FOR THE WIRELESS PLANT OF THE FUTURE WILL BE THE ELIMINATION OF FIXED WORKSTATIONS AND HARDWIRED CONTROLS AND THE INTRODUCTION OF MODULAR EQUIPMENT CONFIGURATIONS.

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The process industries, in general, view wireless technology as a way to help operators perform non-critical tasks or access historical production or reference data.

The pharmaceutical plant of the future will use wireless technology to enable plant operators to reliably perform all of their current tasks on mobile devices hosted on a common grid shared with production units, sensors and control devices.

What is driving the need for mobile wireless technology? Pharmaceutical manufacturers have for generations configured their facilities to run campaigns of single products. To meet the challenges of the new global economy and blockbuster drugs being replaced by multiple products with small production batch sizes, companies are transitioning their new and existing facilities to modular, flexible plant configurations. For a plant to remain competitive, new technologies will need to be leveraged to help reduce the costs that occur during this type of complex transition.

In particular, the industry sees wireless technology playing a key role in helping pharmaceutical manufacturers design their production facilities for the future. As plants become more modular in nature, the industry will start to see fewer hardwired, expensive consoles. Operators will be able to spend more of their time paying closer attention to equipment and processes using devices such as hand-held tablets enabled by high availability, industrial wireless mesh networks. An operator assigned to multiple production units will now be able to receive alerts at any time and respond to abnormal situations along with performing routine tasks.

A wireless network enables plants to: reduce operating costs, better monitor critical systems, improve production efficiency, track assets, and enable decision-makers to make informed decisions in real-time. The best illustration of the wireless pharmaceutical plant of the future comes through the eyes of the actual people working on the plant floor and having immediate access to data from operations.

Improving Visibility and Information Access

For quality and production technicians, their daily routines will be improved by reducing the amount of time they spend manually collecting data and later logging it into a database. With wireless technology the collection and entry processes would be automated, allowing the technician to spend more time focused on areas where s/he can add real value.

Wireless mobile technology will reduce maintenance costs through better equipment monitoring and notifications. With thousands of assets being monitored simultaneously, the maintenance engineer can respond to a call by accessing equipment records and maintenance procedures online, allowing the problem to be diagnosed on the spot. The equipment's status will be updated and maintenance records will be logged – all while the engineer is still on the plant floor eliminating the need for paper logs books.

Reducing Wiring, Installation, and Verification Costs

For the controls engineer, wireless technology offers quick deployment and greater system agility, which is another key to a successful plant transition from a fixed configuration to a modular design. It is not uncommon for production requirements in modular plants to require 10-20 changeovers per year. Today, when equipment is added or reconfigured for a product changeover, a significant effort is needed to pull new wires to connect/reconnect field instrumentation and to capture the data for validation. With wireless technology, equipment modules can be installed and production units configured without wiring and verification costs.

Meeting the Challenge

For the plant manager, the strength of wireless technology is in its ability to reduce both the initial capital cost of an automation project and the total cost of ownership while at the same time providing immediate access to plant information resulting in reduced operating costs and product losses.

Given the global economic environment that plant managers have to navigate, this savings is substantial. In many cases it can mean the difference between continuing with an upgrade and placing an entire project on hold.

A defining point for the wireless plant of the future will be the elimination of fixed workstations and hardwired controls and the introduction of modular equipment configurations. It will allow better coverage on the plant floor giving operators more capability to interact efficiently with a large range of equipment.

The next decade will be driven by the need for major technology advancements for pharmaceutical manufacturers. Wireless will be the cornerstone enabler that provides a solid platform for plant operations to increase visibility, quickly adapt to market changes, improve production efficiency and rapidly configure equipment controls for new products.