

Emerson's Smart Wireless Solution for Plant-wide Wireless Network Improves Operator Efficiency and Plant Flexibility for Biotech Production Center

BENEFITS

- Increased plant flexibility has helped to diversify production
- Improved operator efficiency
- Plant maintenance efficiency improvements
- Operator station requirements reduced by 50%



CHALLENGE

Novartis, one of the largest and most widely respected pharmaceutical companies in the world, employs over 300 people at Huningue where they produce the active ingredient for Xolair®, a drug used to treat moderate to severe persistent asthma, as well as several monoclonal antibodies and an immunosuppressant. Xolair is derived from genetically modified mammalian cells that are cultivated in a laboratory before being fermented in various bioreactors. Localized control is essential to the efficient management of the process, which is spread over three production levels, as well as being geographically dispersed. A distributed architecture based on Emerson's DeltaV™ digital automation system enabled operator stations to be located near the main areas of the process such as the bioreactors and tanks. To maximize operator efficiency, Novartis recognized that they needed a control architecture that enabled their operators to be fully mobile.

SOLUTION

A plant-wide wireless network was installed to provide a complete mobile wireless solution. Emerson's DeltaV system with a fully integrated Wi-Fi® network and 17 mobile operator stations are providing process and plant information to operators and maintenance staff throughout the facility. Wireless coverage is obtained on all three production levels using 10 Wi-Fi access points spread over two systems. The first system controls the upstream process of cell cultivation and harvesting. The second controls the downstream phase of purification and freezing.

"In 2000 we introduced wireless technology and recognized that it was well suited to our needs. The most recent developments to Emerson's DeltaV system have enabled us to implement a plant wide wireless solution."

Philippe Heitz
Head of Engineering
Novartis

RESULTS

The mobile operator stations provide Novartis with complete flexibility to control its manufacturing processes. Operators can move from one level to another with their mobile station and still maintain an overview of the process. This has significantly improved operator efficiency and made it possible to reduce the number of workstations by 50%.

There have also been efficiency improvements in the area of plant maintenance. For example, by using a mobile workstation it is now possible for just one person to calibrate the instruments when previously it would have required two. Should any workstation have a fault there is no longer a need to shut down a process whilst the station is fixed or replaced. The flexibility offered by the wireless network and mobile workstations provides a perfect back up system.

When a new product is being launched or a recipe changed, the mobile stations can be moved throughout the plant as required, removing the need to install new operator stations. This has helped Novartis to diversify production, changing from a single-chain product, such as Xolair, to being able to produce multi-chain products such as monoclonal antibodies and immunosuppressives.

“Because of the wireless network, we do not need to systematically invest in new control stations, even if the production of new products requires a change to the plant equipment or layout.”

Philippe Heitz
Head of Engineering
Novartis



Mobile operator stations provide Novartis with complete flexibility to control its manufacturing process.

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