Wireless Mobile Worker

An Emerson Smart Wireless Mobile Worker solution puts the DeltaV Remote Operator Station in the palm of your hand.

- Increased Worker Productivity and Accuracy
- Mobile Operations Management
- Scalable, Secure & Reliable Communications
- Full Support Service

Introduction

Emerson's Smart Wireless *Mobile Worker* solution is an engineered solution that puts Emerson Process Management's PlantWeb™ applications in the hands of your field personnel including:

- DeltaV™ Remote Operator Station
- Ovation™ Expert Control System
- Syncade™ Smart Operations Management Suite
- AMS™ Suite: Intelligent Device Manager

In addition to providing our standard applications for mobile workers, Emerson can develop a custom software solution tailored to your process and business needs.

Using IEEE 802.11abg standards-based technology, Emerson provides a fully secure, reliable Wi-Fi communication link in any location of your plant that you choose to provide "hot spot" access to your process operations or business applications. This scalable Wi-Fi network can be shared by many Smart Wireless solutions for your plant-wide operations such as field data backhaul, remote video monitoring, safety mustering, and location tracking.

Support for a mobile worker solution installed by Emerson is provided through our SureService™ organization.

Benefits

Increased Worker Productivity and Accuracy. With rich real-time information from control and asset-management systems, field workers can resolve operation problems much faster. Mobile worker applications allow them to record observations directly into the system avoiding transcription errors. Field workers can independently perform process procedures and initiate or execute work orders while in the process area. Performing multiple tasks in one trip to the process area significantly improves plant workers' productivity.

Empower your field personnel by giving them access to live process data while they are in the process area. Two-person tasks requiring constant communication with the central control room for loop check-out or valve stroke tests can now all be performed by one person. Shorten the time it takes to perform turnarounds in the process area by equipping your field personnel with all the tools and support they require to lockout process equipment, perform maintenance, and bring the equipment back online.

Mobile Operations Management. With access to electronic work order instructions, standard operating procedures, and online equipment documentation, field operations can now follow precise procedural steps for all tasks performed in the field.

Scalable. Emerson can provide a wireless network solution that exactly meets your needs today, while providing flexibility for future wireless mesh infrastructure growth as your needs expand. Emerson's Smart Wireless Plant Solutions can also scale to the types of applications you utilize in your wireless plant. For example, each Wi-Fi mesh node installed to connect the mobile worker can also be used to backhaul WirelessHART™ data from your Smart Wireless field instruments, to wirelessly stream video data, or to track personnel with Wi-Fi RFID tags.

Secure and Reliable Communications. All communications on the Wireless Plant Network are fully secure using AES 128-bit encryption. The integrity of the wireless communication network is continuously monitored and alerts can be sent to administrators if degradation of the wireless signal is detected.

Full Support Service. Emerson SureService provides full 24/7 support for customers who have purchased and deployed a mobile worker solution from Emerson.

PlantWeb applications for the Mobile Worker

DeltaV Remote Operator Station

Part of the PlantWeb architecture, the DeltaV system is the first fully digital automation system. From a suite of digital busses, to embedded advanced control, to easy enterprise integration and optimization, the DeltaV system delivers precision control and predictive maintenance.

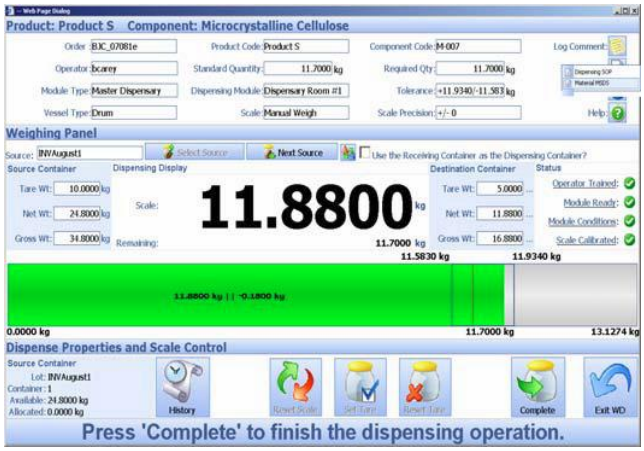
The DeltaV Remote Operator Station mobilizes your operators and allows them to monitor and even control your process from anywhere within the plant. They no longer have to rush to perform actions away from the central control room. DeltaV comes installed on the Class 1 Div 2 Panasonic Toughbook® ultra-lightweight PC and securely communicates with the central DeltaV control system through the wireless plant network.

Ovation Expert Control System

The Ovation expert control system is a product of our four decades of experience in process control for the power generation and water/wastewater treatment industries. Ovation provides a seamless interface with the most widely adopted bus standards allowing you to incorporate smart device technologies into your process. And Ovation's embedded advanced algorithms and proven industry-specific control routines assure that you can optimize your operations to maximize efficiency, productivity, and profitability.

The wireless plant network mobilizes plant operators by allowing them to securely communicate with the central Ovation control system. No longer tied to the central control room, they can monitor, maintain, and even control the process from anywhere within the plant. Ovation remote access works with a TabletPC or industrial handheld PCs, some with suitable zone classifications.

Syncade Operations Management

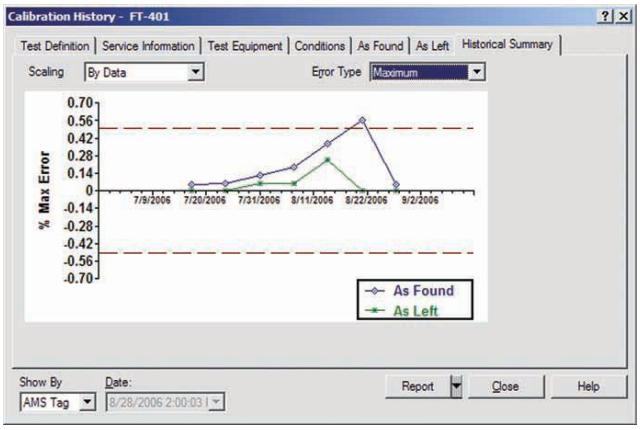


Syncade Weigh and Dispense application includes an easy-to-use operator interface

Syncade Smart Operations Management Suite is a group of off-the-shelf modules designed specifically for cGXP-regulated industries. Emerson is experienced in developing products for the cGXP-regulated environment, and providing solutions that work to solve the paper problems so commonly associated with the industry. All Syncade products are highly configurable to fit any company's needs without the uncertainty of customization that ultimately leads to excessive revalidation and issues of noncompliance. Our products can be trusted to perform as expected in the most critical and complex manufacturing environments.

The Syncade Smart Operations Management Suite enables the mobile worker to be more productive. He can more effectively perform his job with wireless communications by accessing relevant documents, following procedural steps through electronic work instructions, confirming proper equipment and materials, ensuring authorization of actions, and automatically collecting data. The mobile worker can do more in less time and reduce variability in operations.

AMS Suite: Intelligent Device Manager



Past calibration records for your devices can be reviewed by accessing the Calibration History for each device through AMS.

AMS Device Manager is the premier predictive maintenance software application for instruments and valves, providing a single tool for HART, FOUNDATION fieldbus, and WirelessHART device configuration, calibration, documentation, and diagnostics. AMS Device Manager enables your maintenance team to easily monitor field device health status and resolve potential issues before they become costly problems. When installed onsite, AMS Device Manager and DeltaV work together to deliver a seamless user interface in an integrated operating environment.

AMS Device Manager mobilizes maintenance and reliability personnel by enabling live access to smart field devices from anywhere in the plant. They are always connected to the AMS Device Manager system with a single tool to manage all device changes. Tasks that must be done at the device such as performing partial/full stroke or proof tests of safety valves are easier and more accurate.

Wireless Engineering Services

Wireless engineering services are critical to the success of a wireless plant network deployment. Emerson offers a comprehensive services portfolio to help you design and deploy your wireless mobile worker solution.

Site Assessment

Emerson engineers visit your plant site to conduct a Radio Frequency (RF) study, determine access point locations and collect other on-site information.

Network Design and Planning

Based on the site survey results and the specific mobile worker application requirements, Emerson engineers design the overall wireless mesh architecture including the detailed network infrastructure, network monitoring tools, and integrated security.

Physical Network Installation Management

Engineers work with you to install the wireless mesh network equipment based on the detailed network design.

System Commissioning

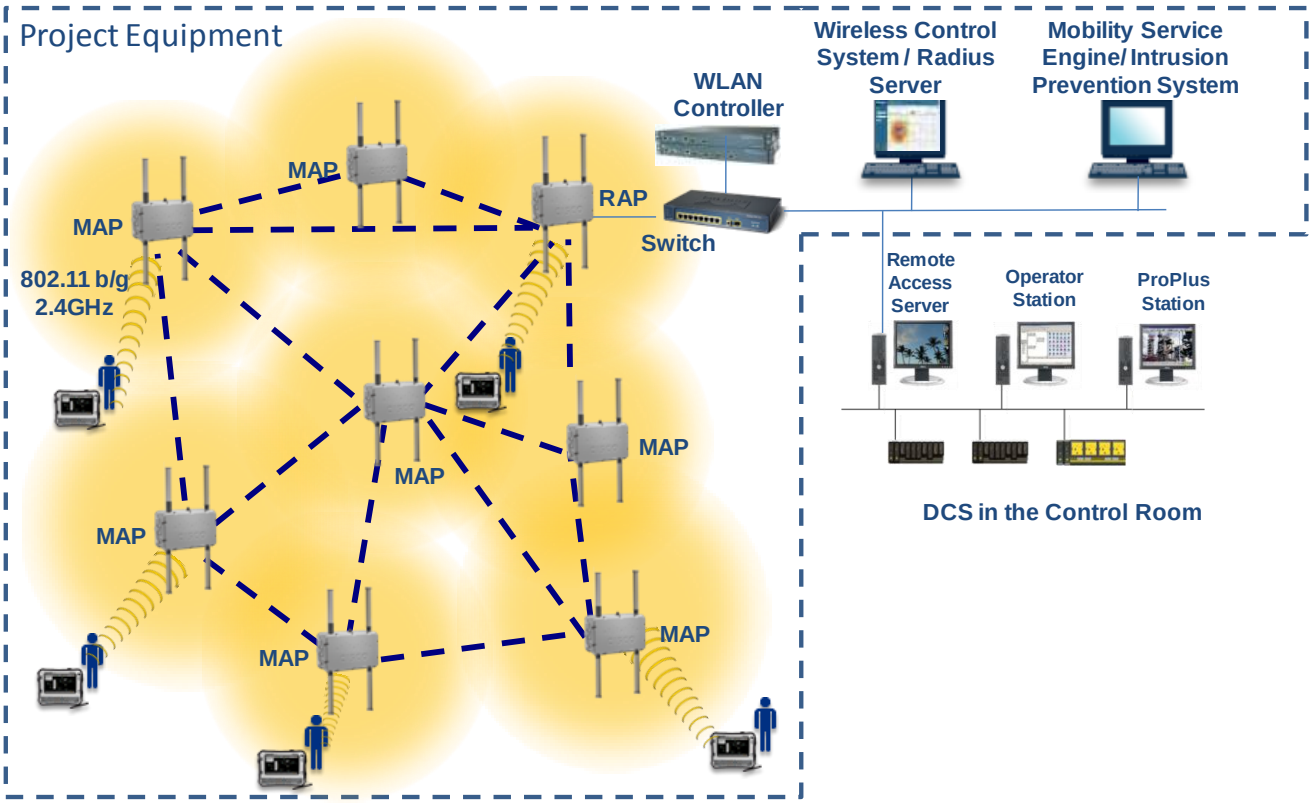
The wireless mesh network is brought online and commissioned onsite. Complete site acceptance testing is performed with your engineers. The turnkey solution includes installation and configuration of all Emerson applications and any custom software developed for your plant site.

Training

Emerson will work with you to specify a training curriculum that meets your specific needs.

Support

Emerson delivers SureService wireless life-cycle services through our engineering centers and global service organizations. Emerson's wireless life cycle services are designed to help you maintain system uptime, apply wireless technology for better business results and preserve your intellectual and capital investment.



Example Wireless Mobile Worker solution architecture

Wireless Equipment

Panasonic Toughbook U1

The first rugged, ultra-lightweight PC capable of running Emerson's PlantWeb applications with a wireless connection to the process. The U1 comes optionally equipped with hot swappable twin batteries, Wi-Fi, cellular, and Bluetooth® radios, a full qwerty keyboard, GPS, 5.6" color screen, 2MP camera, fingerprint scanner, and is available with a Class 1 Div 2 certification.

Wireless Mesh Access Point (MAP)

The MAPs deployed in your plant are Class I, Div 2 or ATEX Zone 2 certified equipment. The MAP's client IEEE 802.11b/g 2.4GHz radio gives your field personnel "hot spot" Wi-Fi access to your plant or office network applications. The IEEE 802.11a 5 GHz radio in the MAP is utilized to wirelessly connect the clients communications back to the plant network. The Root AP (RAP) connects the wireless network to the wired one.

Managed Switch

A managed switch is the device that connects the wireless network with the wired network. The Wireless LAN Controller and Wireless Control System are also connected through the managed switch.

Wireless LAN Controller

The Wireless LAN Controller is the device that is responsible for network-wide wireless functions such as security policies, intrusion prevention, RF management, Quality of Service (QoS), and mobility.

Wireless Control System

The optional Wireless Control System allows network managers to design, control, and monitor enterprise wireless networks from a single location, simplifying operations. It oversees a series of WLAN controllers. This software provides network management including diagnostics and troubleshooting tools to keep the network running smooth.

Wireless Intrusion Prevention System

The Wireless Intrusion Prevention System provides wireless "Defense in Depth" protection against potential wireless attacks. Emerson engineers deliver a wireless solution that controls access to the network, protects the wireless network from hacker attacks, and ensures the integrity of all wireless clients that access the network.

All wireless transmissions between the wireless client and network and within the wireless network are encrypted utilizing AES 128-bit encryption algorithms. All users accessing the network are authenticated with 802.1x EAP standard methodologies.

Certifications

Emerson can deploy Class 1 Div 2 or ATEX Zone 2 certified MAPs as a standard solution, or we can provide Class 1 Div 1, ATEX Zone 1 MAPs as an engineered project solution if required.

The Panasonic U1 is certified Class 1 Div 2.

Additional Wireless Plant Solutions

- **Field Data Backhaul.** Using the same Wi-Fi MAPs for your mobile worker, Emerson can wirelessly connect your remote Smart Wireless field instruments back to your central control room.
- **Video.** Easily add video cameras in remote areas of your plant to monitor the process or site for emissions, safety and security.
- **Safety Mustering.** The MAPs installed as part of the mobile worker solution can also serve as Wi-Fi mustering stations if installed in a mustering area and combined in a safety mustering solution.
- **Location Tracking.** Plant personnel can be tracked throughout the plant site with varying degrees of accuracy depending on your site's needs. Emerson's location tracking solution is flexible to provide a good, better, or best capability depending on your site's needs and budget.

Ordering Information

For inquiries and ordering information, please contact your local Emerson sales office. Prior to order acceptance, Emerson will issue a written proposal for your review and approval to ensure that scope, deliverables, timing, and budget meet your needs and expectations.

For more information, please visit our website at http://www.EmersonProcess.com/SmartWireless

To locate a sales office near you, visit our website at:
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