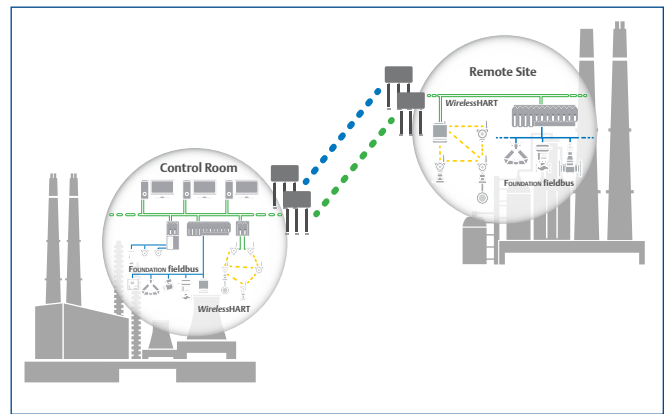# Wireless Control Network Bridge

- Reduced cost

- Eliminate islands of control

- Safer deployment

- Secure and reliable communications

- Full support service

An Emerson Smart Wireless Bridge Solution allows you to wirelessly extend your DeltaV™ Area Control Network.

Introduction

Emerson's Wireless Control Network Bridge for both the DeltaV™ Distributed Control System and the Ovation™ Expert Control System provides a cost-effective and seamless integration between automation system unit areas.

Whether you are extending an existing automation unit for a new remote site, or planning a new plant site that has a highway or body of water separating the control room from the controller; Emerson can deploy wireless technology to solve the problem quickly and at a reasonable cost.

Emerson delivers the Wireless Control Network Bridge as an engineered solution. We work with your engineers to define the requirements of the wireless network based on the amount of control network data throughput required and the geography and distance over which the wireless system is expected to communicate.

Support for a wireless bridge solution that is installed by Emerson is provided through Emerson's SureService™ organization.

Benefits

Reduced cost. When compared to the cost of engineering and trenching a fiber-optic solution, a wireless bridge solution can be deployed at lower cost when the two sites are separated by large distances, difficult terrain, or bodies of water.

Eliminate islands of control. A wireless bridge can connect two areas of control into one larger DeltaV network.

Safer deployment. Trenching a fiber-optic cable in a live process area puts workers in the process area for long periods of time – exposing them to potential hazards and risking disruptions to process operations.

Secure and reliable communications. All communications on the wireless bridge are fully secure using AES 128-bit encryption. In addition to the availability of a redundant wireless solution, the integrity of each the wireless communication networks 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 Wireless Bridge solution from Emerson.

EMERSON

Bridge Solution

Emerson can wirelessly connect remote areas of your process plant control system, enable the addition of a remote operator room, or even connect the control network between platforms on the ocean. Emerson can provide simplex or redundant wireless communications, or provide wireless as a secondary communication link to an existing fiber connection.

DeltaV Control Network Bridge

All of your DeltaV applications are available to you from either side of the wireless network. From the onset, Emerson works with you to ensure the wireless network can support your communications needs based on the bandwidth available (determined by many factors) and on the amount of continuous control network data throughput that will occur in your process – even during process upsets that can cause greater communication traffic.

The solution includes "What's Up Gold" to continuously monitor the wireless network equipment in order to alert you to any communication disruptions and allow you to see the network's performance over long periods of time to ensure there is no slow degradation of performance.

Emerson can also consult with you prior to performing control system changes to ensure that any additional communication loading that would result from a change to the system will not exceed the wireless channel utilization limits.

Ovation Multinetwork Bridge

Two Ovation Expert Control Systems can be connected together though a simplex or redundant wireless communication link allowing for process data sharing between systems for better overall control of your power or wastewater site.

Wireless Solution Consulting

If a third-party telecommunications solution is required, Emerson can provide consulting and solution validation for the DeltaV control network communications requirements.

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 a Wireless Control Network Bridge.

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 your control system requirements, Emerson engineers design the overall bridge architecture including the detailed network infrastructure, network monitoring tools, and integrated security.

Physical Network Installation Management

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

System Commissioning

The wireless (redundant) network is brought online and commissioned on site. Complete site acceptance testing is performed with your engineers.

Training

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

Support

Emerson delivers SureService wireless lifecycle 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.

Wireless Equipment

Wireless Bridge

There are several models of wireless access points available for deployment as a wireless bridge depending on your network needs. There are indoor and outdoor models as well as Class I, Div 2 or ATEX Zone 2 certified equipment. The radio utilized can be the IEEE 802.11n 2.4 GHz or 5 GHz based on local regulations and your requirements. The Smart Wireless Gateway 1552WU can also be part of the Wireless Control Bridge application as compatible equipment for the Wi-Fi infrastructure.

DeltaV Smart Switch

A DeltaV Smart Switch is used in the DeltaV bridge solution. For an Ovation system, a managed switch is used to connect the wireless network with the wired network. The wireless LAN controller and wireless control system are also connected through the 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.

Network Control System

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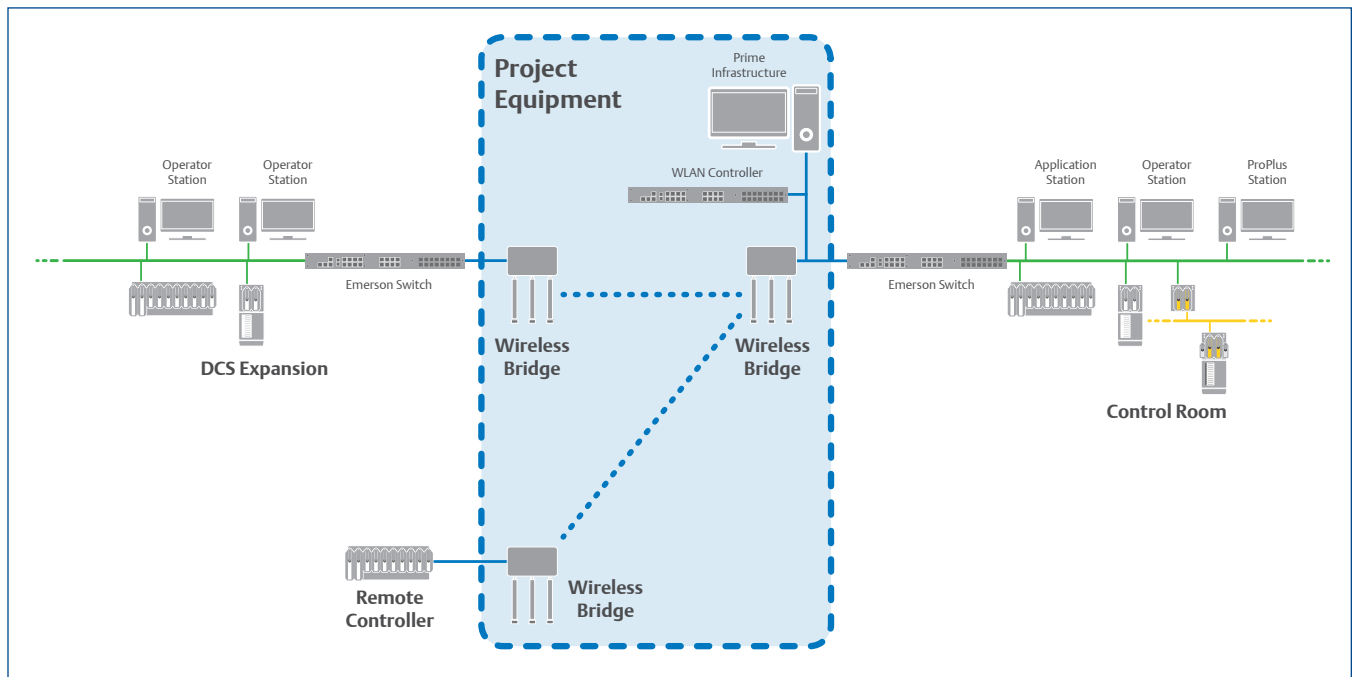
Example DeltaV Wireless Bridge solution architecture.

System Compatibility

This solution is only supported for DeltaV version 9.3 or later.

Certifications

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

Smart Wireless Gateway 1552WU

Emerson offers a full portfolio of Smart Wireless instrumentation solutions enabled by the self-organizing *Wireless*HART® network. The Smart Wireless Gateway 1552WU manages the wireless field instrument network communications and security. The 1552WU is also a fully functioning Wi-Fi Mesh Access Point integrated into any larger controller-based plant wireless solution.

For any further information related to the Smart Wireless Gateway 1552WU, please refer to its Product Data Sheet.

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.emerson.com/wireless**

Unsupported Products

- DeltaV SIS Network. The DeltaV SIS remote peer bus network is only supported with fiber-optic cable. Logic Solvers can be on each side of a wireless network so long as their communications are not linked across the wireless segment.

- Additional Wireless Plant Solutions. The wireless control network bridge can only share the same wireless infrastructure with the Wireless Mobile Workforce and the Wireless Field Data Backhaul solutions. Other wireless plant solutions cannot be integrated with a wireless control network bridge.
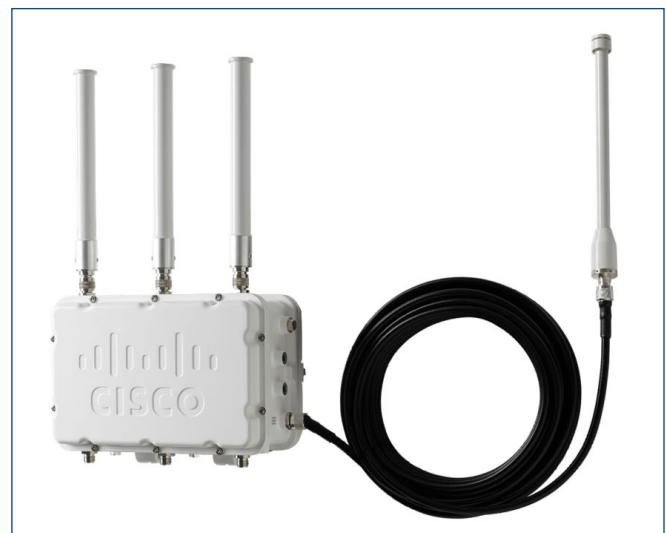
1552WU with 5GHz Wi-Fi omni antennas and remote mounted WirelessHART omni antenna.

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