Bacardi Distillery, Puerto Rico Application Paper

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At Bacardi's Cataño, Puerto Rico distillery facility, with individual buildings separated by vast distances, Bacardi selected a state-of-the-art SCADA system to monitor activities in otherwise remote locations (Fig 1). Faced with distances up to 3 kilometers separating various buildings, traditional hardwired networking proved to be a difficult and costly task.

Figure 1: Bacardi Distillery, Puerto Rico

At the Cataño distillery, Bacardi's automation control system was limited due to the inability to interconnect and share data between the various buildings. The distance separating the different buildings was detrimental to a hardwired network. With the critical information being monitored throughout the distilling process, a dependable and reliable system is vital. Prior to installing their system, Bacardi personnel teamed with Accurate Solutions & Design engineers to thoroughly investigate all the options available on the market. They needed hardware capable of meeting today's demands with the flexibility to meet future needs. After considering all the options, the obvious choice was a SCADA system utilizing ESTeem wireless modems.

ESTeem, the recognized leader in industrial wireless modems, worked with Accurate Solutions & Design engineers to design a tailor-made wireless network for the world's largest distillery. A radio analysis of the site was conducted and found that 5 deployed ESTeem radio modems would be needed to establish reliable communications and provide full coverage for a common network.

The ESTeem 192C modem was chosen due to its affordability, secure packet burst transmissions and a data rate of 19,200 bps while maintaining a data accuracy of greater than one part in 100 million. Because the ESTeem modems possess the unique ability to operate as a master, remote or repeater node, there is a tremendous cost advantage over conventional systems.

Figure 2: Bacardi Facility

At each remote building, an ESTeem 192C is interfaced with an Allen Bradley MicroLogix PLC. Using RSLinx, the central computer continuously polls data from the remote PLC's. Site data from each building is collected and transmitted wirelessly to a central computer at the master site via a connected ESTeem192C. The information obtained is then displayed in a Human Machine interface (HMI) created using Wonderware. If communication is lost to any of the remote nodes, an alarm is activated that alerts the operator and provides details of the location of the communication loss. Using this configuration, the entire system functions as one network, using the radio modems to interconnect (Fig. 3).

Bacardi Puerto Rico has successfully implemented a state-of-the-art wireless technology to network the individual remote buildings and the master control room. The ESTeem wireless modems allow communication links to otherwise inaccessible areas while eliminating the constraints of hardwiring costs and time-to-implement.

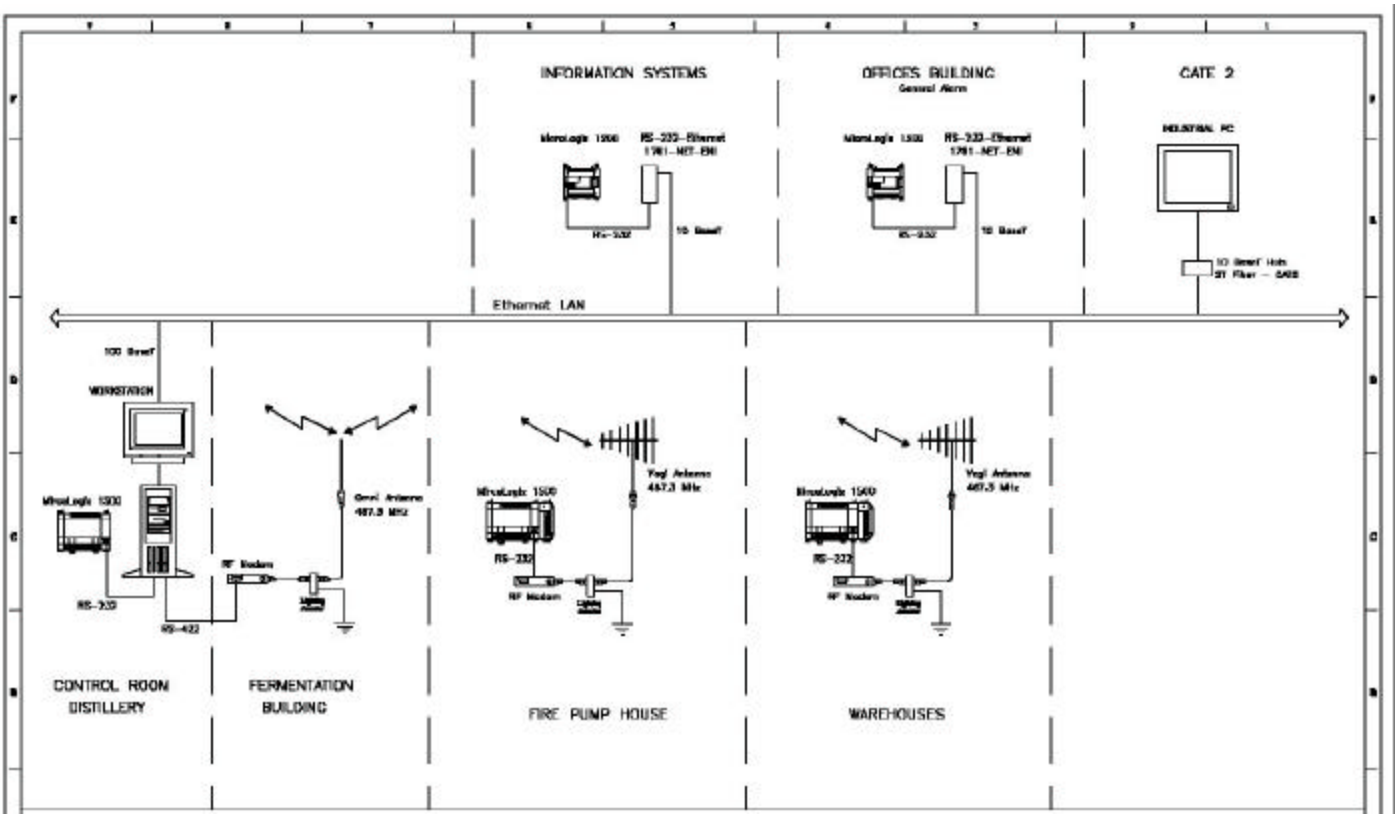

Figure 3: Bacardi, Puerto Rico Site Diagram