Stretch Beyond!

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Communication for the open minded

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Stretch Beyond the Boundaries of your Enterprise

Within the next few years 802.11 based wireless networking is poised to dominate corporate networking. WiFi is already ubiquitous on notebook computers, while more and more PDA's and Smartphones include 802.11 radios as a standard feature. Gartner clearly identifies 802.11 technology (WiFi) as mature and ready for broad deployment within the enterprise (Hype Cycle for Wireless Networking Infrastructure, 2007). The soon-to-be released 802.11n standard should provide the icing on the cake – increased bandwidth, range and concurrency. It is likely that 802.11n WLANs will provide a reasonable upgrade for the old-fashioned wired enterprise LAN.

The value of a corporate WLAN is unquestionable, but in the past, broad enterprise deployments have been few and far between. In their 2007 Wireless LAN State-of-the-Market Report (www.webtorials.com), authors Joanie Wexler and Steven Taylor found that although WLANs had been deployed by at least 86 percent of those companies surveyed globally, the majority of implementations were half-done. Their survey reveals that most companies (76 percent) have installed WLAN in common areas such as meeting rooms, lobbies and cafeterias, somewhat less (59 percent), had installed into offices, cubicles and other work areas, but significantly fewer companies had deployed WLAN into the warehouse/factory floor (26 percent), or outdoors (22 percent). Company reluctance to deploy WLAN enterprise-wide made sense in the past when the only data security available was the deeply flawed WEP standard. However, in the last couple of years, WLAN hardware that includes the new and improved 802.11i (WPA2) security standard has become more and more popular. These days it is easy for a company to deploy an enterprise-wide WLAN that is as secure and safe as a conventional wired LAN.

Security used to be the main cause of concern for corporate CIO's planning a WLAN deployment, but it was not the only one. CIO's also worried about the cost of installing and maintaining large, decentralized networks of intelligent APs. Deploying large numbers of 'thick' APs is expensive, and the purchase cost is just the beginning as maintaining a decentralized network can take a lot of time and effort. However, over the last few years de-centralized networks of intelligent AP have given way to networks of thin APs connected to a central wireless controller. Centralized networks of 'thin' APs are cheaper to purchase, setup, scale and maintain. The affordability and manageability of thin APs, together with the security of WPA2 provide a rock-solid foundation for enterprise-wide WLAN deployments. In addition, solutions that include 'ruggedized' APs and Wireless Distribution System (WDS) can extend the reach of the WLAN outside of the building and onto the greater campus and/or into other hard-to-wire locations. The enterprise network can now 'Stretch Beyond' the boardroom, cubicles and offices into the factory, the warehouse and beyond. Truly pervasive wireless networking provides a required solid foundation for high-ROI voice and data solutions such as Fixed-Mobile Convergence (FMC) and Location-based Systems (LBS) for fixed asset tracking.

Wireless Beyond the Boardroom

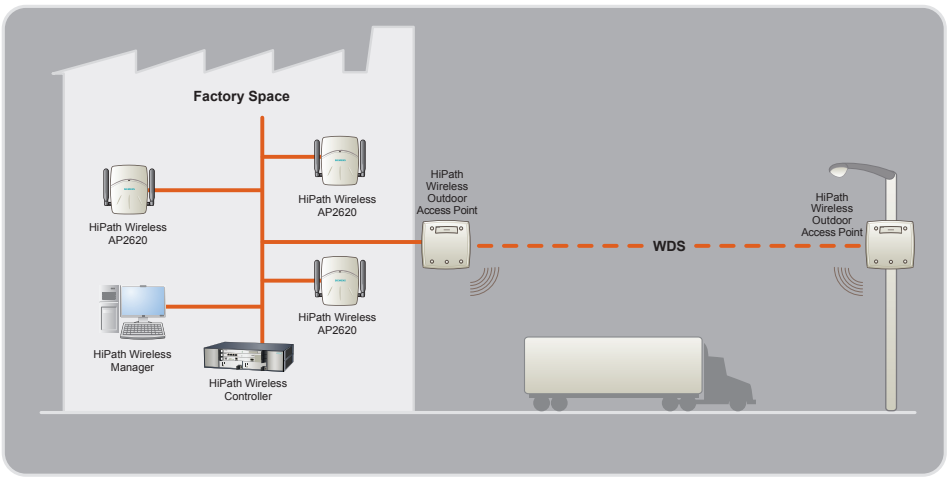
The true value of a wireless network extends beyond simple data connectivity in the boardroom or offices of a company. To maximize its ROI, a wireless network should be pervasive. Companies may install a WLAN to provide connectivity for a specific application, but once an enterprise-wide foundation for mobility is in place, it can be leveraged for new voice and data solutions at very little additional cost. In addition, the introduction of ruggedized APs and WDS make it possible to extend the WLAN into locations that were not previously workable. There are three main 'Stretch Beyond' scenarios; campus coverage, network bridging, and hard-to-wire facilities.

Campus Coverage

For some businesses it may be desirable to extend the company WLAN outside the walls of the office or factory.

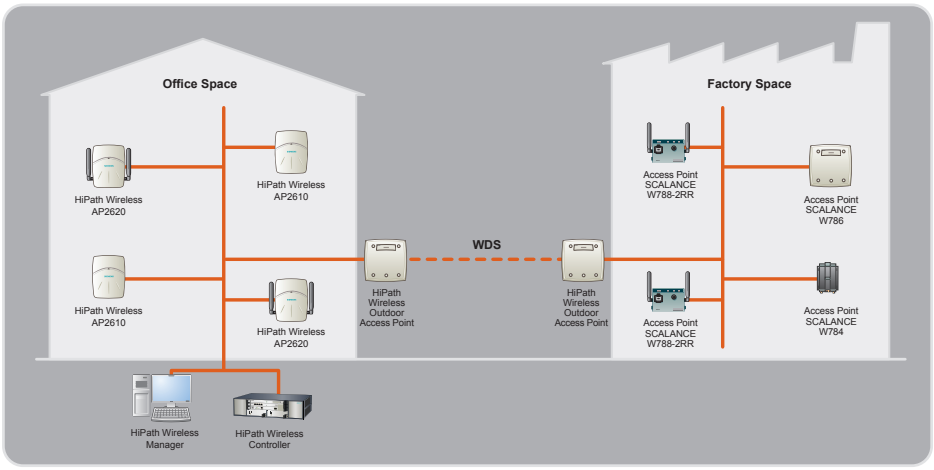
- Universities and large Healthcare centers can provide WLAN coverage for voice and/ or data throughout the entire campus,
- Manufacturing companies can extend wireless coverage out into their staging lots for inventory tracking.
- Container Terminals (Maritime & Inland) and Railway Classification Yards (Hump Yards) can provide widespread WLAN coverage to support active and passive RFID systems for container transshipment.

It is easy to extend WLAN coverage beyond the building using outdoor capable ('ruggedized') Access Points. Outdoor APs are capable of withstanding humidity, moisture and extreme temperatures. In the most basic configuration, outdoor APs can be mounted on the outside wall of the facility with a wired connection back to the LAN. WLAN coverage can be extended even further by using Wireless Distribution System. Additional outdoor APs can be mounted on remote towers or lampposts with a WDS link back to the proximal outdoor AP that is wired into the LAN. By using outdoor APs and WDS a company can easily deploy a WLAN with fence-to-fence RF coverage.



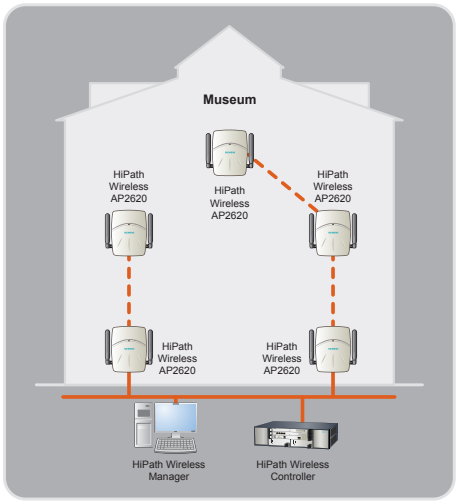
Network Bridging

Using WDS in point-to-point mode provides quick and easy network setup in areas that require temporary network services or where cabling is difficult, for example, in open areas, disaster areas, or battlefields. Outdoor APs and WDS can also be used to provide a LAN 'bridge' across a gap that is impossible or expensive to wire, such as a roadway, railway or river. A wireless solution may be much more economical than installing physical cable or leasing dedicated communications circuits, such as T1 service or 56Kbps lines. WDS provides a wireless multi-hop network, through which WLANs and remote LANs can be connected back to the main wired backbone of the corporation. Depending on the number of WDS 'hops' and the type of antennae, the distance between network segments can approach hundreds of meters. This type of arrangement is ideal for growing businesses where there is frequent office rearrangement and relocation of staff into temporary working areas is required.



Hard-to-Wire Facilities

The implementation of wireless networks offers many tangible cost savings when performing installations in difficult-to-wire areas. Sometimes the most difficult network to build is contained within a single structure. It could be an industrial facility such as a foundry or smelter. These buildings are large and present a hostile environment for wired connections due to extremes of temperature, vibration, or moisture. Alternatively, the structure may be historically protected, an educational institution, museum or historical building. For these older facilities, historical value or safety concerns related to possible asbestos usage make cabling for Ethernet very difficult, if not impossible. Using WDS to connect distant wireless APs back to the main corporate network is sometime the only solution.



Stretch Beyond with Siemens

The HiPath Wireless product family includes wireless controllers, access points and management software. A HiPath Wireless network is extremely scaleable; it can support thousands of APs and tens of thousands of client devices. High-availability features in the controllers and dynamic RF compensation in the APs create a robust, fault tolerant WLAN infrastructure that is required for mission critical enterprise solutions.

- The standard HiPath Wireless Access Point is an enterprise-class dual band (802.11a/b/g) access point that provides radio frequency coverage anywhere that wireless service is required. The HiPath Wireless APs terminate RF traffic and handle dynamic functions including QOS, encryption, and traffic segmentation.

- The HiPath Wireless Outdoor Access Points are designed for temperatures from -40°C to +70°C, and are sufficiently robust to withstand even the harshest environments. They are insensitive to UV, dust and salt spray, and accommodated in a rugged plastic housing that is resistant to both impact and crushing. In addition to the standard HiPath Wireless Indoor and Outdoor Access Points, the Automation & Drives division of Siemens Energy and Automation provides a complete portfolio of 'ruggedized', wireless Access Points and Client Modules to support wireless industrial automation.

- The HiPath Wireless Controller is a full-functioning centralized WLAN router that aggregates all wireless traffic from Scalance W and Hi-Path Wireless Access Points, as well as third-party APs. Global functions like configuration; security management, roaming, and user segmentation are handled by the Controller.

- The HiPath Wireless Manager is a complete set of tools to manage the infrastructure as well as client access and services. The software includes network configuration, management, security and reporting features that are essential in all WLAN deployments. Enhanced features of the HiPath Wireless Manager are designed to help enterprises improve

    1. State-of-the-art intrusion detection and prevention capabilities.

    2. Visual mapping and user location capabilities to help enhance troubleshooting.

    3. Powerful sensing and monitoring capabilities to help optimize network performance.

    4. A management interface to provide real-time overviews of the network with charts, reports and statistics on wireless usage

Stretch Beyond Case Study – Hymer AG

Hymer AG ranks among the most innovative and successful caravan and motorhome manufacturers in Europe. Every year Hymer produces over 8,000 leisure vehicles; 35 different caravan and motor home models, available in up to 23 different versions, with hundreds of different options available for each customer order. Production growth combined with the growth in the number of different assembly components was creating a logistics crisis, as Hymer was rapidly running out of room in their production warehouse.

Hymer worked with Siemens to upgrade to an enterprise-grade WLAN in its production facility. Additionally, they installed outdoor APs to extend WLAN coverage across a large outdoor parking area. Almost 200 access points are installed indoors and outdoors throughout the Hymer factory premises all coordinated by the same HiPath Wireless Controller. The WLAN provides consistent radio coverage to every part of the company that needs wireless services. The enterprise-wide WLAN coverage allowed Hymer to implement Location-based Services (LBS) using RFID tags. The tracking system makes it possible to identify and track the locations of up to 1,800 mobile homes on assembly lines and numerous parking lots.

Location Based Services (LBS) like asset tracking are crucial to accelerating business processes and reducing costs for customers. Leverage a single WLAN infrastructure for additional services (in addition to data access and voice mobility) makes savings and ROI incrementally greater. “By integrating location services into our Siemens HiPath Wireless LAN, we can optimize our assembly line process sequences and access the necessary vehicles more quickly,” said Michael Tregner, Managing Director, Hymer. “It greatly simplified the planning and deployment of those services.”

Stretch Beyond Case Study – Mt. Olive Pickle Company

Headquartered in North Carolina, the Mount Olive Pickle Company is America's largest privately-held pickle company. The company currently packs and ships over 90 million jars of processed and fresh pack pickles, relishes and peppers annually to over 40 states in the USA. Mt. Olive's facilities are located on 110 acres of land with approximately 970,000 square feet of production, office and warehouse space. In addition to the production and packaging equipment inside the factory, the company has over 1,200 fiberglass and plastic brine vats distributed around the grounds.

Mt. Olive worked with Siemens to install an enterprise-wide WLAN to monitor and maintain all of their equipment both indoors and outdoors. In total, less than 40 wireless access points were able to provide Mt. Olive with complete 802.11 a/b/g coverage for close to one million square feet of indoor space and an additional three million square feet outdoors. All of the Access Points are managed by a pair of redundant HiPath Wireless Controllers. "We are totally wireless, fence to fence," says Dan Bowen, who serves as vice president of finance for the company and also oversees the firm's technology initiatives. That's important because those outdoor facilities include a number of brine vats and other systems that require close monitoring. With the wireless network, maintenance personnel can now monitor all of these systems remotely, receiving alerts in real time when things go wrong.

Once the enterprise-wide WLAN was installed, Mt. Olive was easily able to deploy a PDA-based "paperless" work-order system for their maintenance people. The company was able to significantly reduce the amount of time it takes to process work-orders. The maintenance staff were also equipped with wireless VOIP phones to replace the Motorola two-way radios that were having coverage issues. Underlying all of these immediate requirements, Mt. Olive wanted to deploy a system that would grow with them and support changes in their business processes and new technology. Advances such as; wireless security systems, dual-mode phones, PLC to PLC communications and converged wireless PDA's (voice/data) had to be supported within their chose technology. Having made the initial investment in WLAN technology, Mt. Olive now finds themselves in an enviable place. They have a "fence-to-fence" WLAN that has already paid for itself and ambitious plans for the future. In the mean time, the Siemens Wireless Network is providing tangible benefits on a day-to-day basis, Bowen says. "The wireless network provides us with the ability to get information into the hands of the right people at the right time to make the right decisions to make this company as profitable as it can be," he says. "I think we have a technological advantage over our competitors and wireless has helped us achieve that."

Conclusion

Siemens provides a complete wireless LAN solution that enables companies to deploy WLAN infrastructure everywhere and anywhere they need it. Using HiPath Wireless Outdoor APs and WDS technology companies can 'Stretch Beyond' the traditional boundaries of their business and extend their reach into locations that were previously impossible or hugely expensive to cover. By installing an enterprise-wide foundation for mobility at the outset, companies can improve the ROI of their strategic systems in the short-term, and provide a leveragable infrastructure for new data and voice solutions, like FMC and LBS, well into the future. Siemens is ready to help your company 'Stretch Beyond' it's existing wired LAN and partial WLAN. More information about how Siemens can help you build an enterprise-wide foundation for mobility can be found at http://www.siemens.com /HiPath.

Siemens Enterprise Communications is a thought leader and innovator in the enterprise communications industry. We're one of the leading players in the market with full coverage of all the relevant markets from a strong European base with global reach. Our people have the passion, commitment, skills and know-how to deliver a broad range of cutting-edge technologies, outstanding products and professional services. All with the support of an enterprise that has the financial strength to outperform the rest in this competitive, consolidating market.

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