



Wireless Solutions for Healthcare

Application Portfolio

Healthcare

Healthcare Challenges and Wireless Solutions

In no other industry are the implications of connectivity clearer than in healthcare. Patient histories, medication information, recent research, test results – each of these components brings a critical piece to holistic patient care. Yet increasingly there is a diverse staff of medical professionals specializing in each of these areas, whose advice must be culled to best diagnose and treat the patient. In addition, the condition of the patient and the individual caregivers change around the clock. Communication and accuracy have become matters of life and death.

Wireless networks bring a whole new way of accruing and utilizing medical information. With Wi-Fi and broadband wireless, medical professionals in multiple locations can collect, access, and share information instantly and accurately – transforming modern healthcare.

Wireless Offers:

- mobile freedom
- complete data access anywhere
- real-time information sharing
- enterprise-class network security and reliability

Applications for Healthcare

[Real-time Patient Charting](#)

[Safer Medication Delivery](#)

[More Productive Respiratory Care](#)

[Better Materials Management](#)

[On-Demand Communication Between Doctors and Medical Staff](#)

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❖ Real-time Patient Charting

The challenge:

Most doctors, nurses and medical technicians still use traditional means of recording patient data: handwritten notes on individual sheets of paper for transcription into a medical record. The staff also can dictate taped notes for a transcriptionist to enter into either a hard-copy or online record. This process is error prone, and can take days to complete.

The solution:

Using wireless LANs with laptops or PDAs at the bedside to record patient notes saves time and improves accuracy. Because data is entered directly into the patient's online record, team-based caregivers in multiple locations have real-time access to up-to-date information (since it does not have to be transcribed). This allows better-informed decisions about patient care. The result is lower cost, greater accuracy and better clinical outcomes.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700
- ORiNOCO client cards



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❖ Safer Medication Delivery

The challenge:

Avoidable adverse drug effects (ADEs) have been identified by the Institute of Medicine as the single largest cause of extending hospital stays. The team care necessitated by round-the-clock shift work in hospitals results in multiple individuals prescribing medicine -- and unless carefully tracked, researched and documented -- can result in adverse reactions.

The solution:

Hospitals that employ a wireless LAN in combination with a clinical information system can significantly reduce ADEs. Wireless mobility allows caregivers to access online information to ensure that the proper medication is ordered and that there are no adverse interactions. When medication is administered, it can also ensure that the right patient is given the right medication at the right time with the correct dosage.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700
- ORiNOCO client cards





❖ More Productive Respiratory Care

The challenge:

Respiratory therapy centers are dynamic environments, changing constantly as new patients come in and are moved between different treatment areas: emergency, cath lab, intensive care. Respiratory therapists criss-cross the entire hospital caring for patients, making inconvenient stops at their offices for scheduling and patient information.

The solution:

With real-time wireless communications, a respiratory care team can cut out a significant portion of wasted time. Using wireless-equipped PDAs or laptops, respiratory therapists can enter patient information into the clinical information system in real time. When a therapy session is completed, the therapist can instantly check his or her schedule and move directly to the next patient without having to return to the office. Not only is data accurate, staff productivity is also significantly increased in terms of patients treated per day.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700
- ORiNOCO client cards



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Better Materials Management

The challenge:

One of the most tangible forms of expense reduction in healthcare comes from accurate tracking of medical supplies. Every aspirin, bandage and syringe must be tracked, both to prevent shortages as well as to bill accurately for services delivered. But actually tracking usage in the operating room, recovery room or patient room can be quite challenging, if not impossible.

The solution:

Using a wireless LAN and bar code scanning, materials can be tracked exactly when they are dispensed. Wireless handheld devices scan supplies at the receiving department, and scanned again when dispensed or distributed to floors or facilities. In addition to being accurately tracked when dispensed to patients, the item can be logged in the patient record, to prevent treatment duplication or omission. Real time wireless tracking reduces waste, mistakes, lost charges and improves inventory management.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700





❖ On-Demand Communication Between Doctors and Medical Staff

The challenge:

Within a hospital, there is a constant barrage of overhead paging announcements. Cell phones are not allowed due to sensitive medical monitoring equipment, so reaching a nurse or doctor requires an overhead page and results in delays in reaching the on-duty doctor or nurse. Studies have shown that up to three hours a day are wasted for each nurse attempting to track down physicians, specialists, and nursing assistants. For every request, a medical professional must leave the patient bedside, return to the nurses station, make one or more telephone calls or overhead pages, wait for a call-back and then relay information.

The solution:

Voice-over-wireless-LAN significantly changes communication inside hospitals. By adding wireless IP phones to the same wireless network used for patient charting or medical management, nurses and doctors can be reached immediately, with no overhead paging or wasted time. New features in the IP telephony system allow user grouping, which greatly facilitates locating the appropriate on-duty specialist. For example, a call can be routed to the group "respiratory care," and the on-duty specialist is automatically called. This eliminates making repeated calls to a list of names in order to locate the available staff. Patient care dramatically improves along with hospital efficiency, as information is exchanged quickly and effortlessly. And IP phone systems are easily linked through traditional PBX systems to the outside world.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700
- NetLink Wireless Telephones offered by SpectraLink
- Hands-free wireless communication devices offered by Vocera



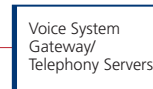
Spectralink
NetLink Wireless Telephone



Vocera
Communications Badge



Wired Ethernet



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❖ Prescription Automation

The challenge:

The last thing a sick patient wants to do is stand in a long line at the pharmacy waiting for the prescription to be taken and filled. Verifying the specifics of the medication, checking insurance coverage, and authorization each slow the process. Yet all of this information is generally available online, and could be processed prior to patient pick-up.

The solution:

Enhancing the quality of care in this regard can be accomplished by employing a wireless LAN coupled with prescription automation technology. At the conclusion of the patient examination, the physician writes the prescription into a wireless PDA. The prescription is checked against adverse drug effects that might occur based on other medications being prescribed against the latest Physicians' Desk Reference. Once prescribed, the prescription is automatically transmitted to a pharmacy convenient to the patient, and the pharmacist can begin preparing the medication before the patient leaves his physician's office.

The products:

- ORINOCO AP-4000
- ORINOCO AP-700
- ORINOCO client cards





❖ Connecting Satellite Clinics

The challenge:

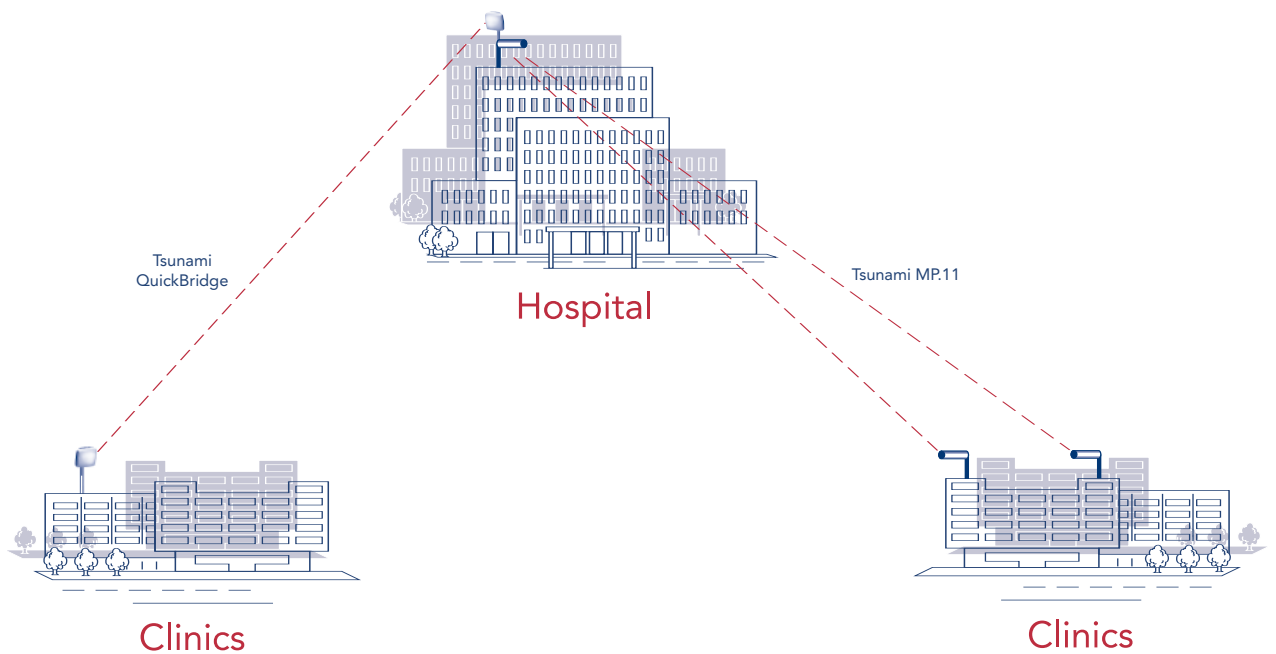
Many physicians groups and clinics are affiliated closely to nearby hospitals, with physicians performing rounds at both and having significant patient overlap. Integrating the satellite clinics with the hospital network is essential to allow physicians and medical technicians to access patient records and input new information in a timely manner -- so that it is up to date and available at both locations. In many cases, clinics are not directly linked to the hospital, are linked via slow dial-up, or are connected into the hospital network with leased lines.

The solution:

Healthcare groups can simultaneously increase access to accurate patient data and minimize operating expense by installing wireless network bridges instead of expensive leased lines. A typical return on investment compared with leased lines is 12 months or less.

The products:

- Tsunami QuickBridge
- Tsunami MP.11 Model 5054-R



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❖ Transferring Files from Mobile Healthcare Units

The challenge:

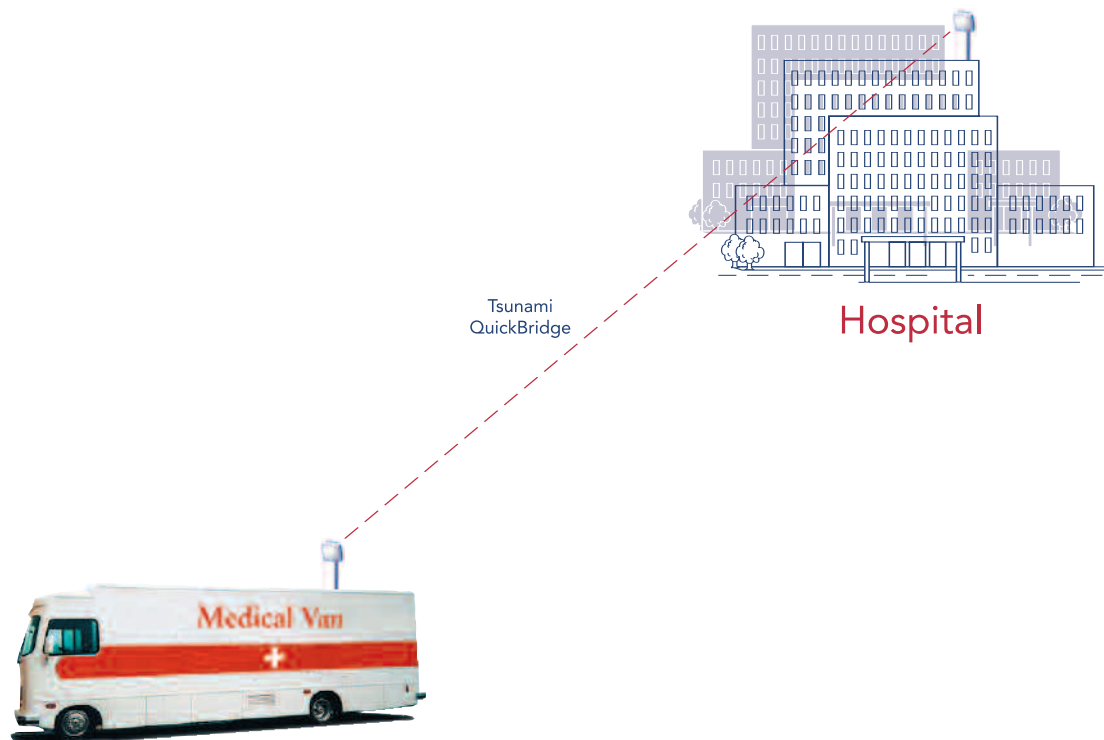
For many rural patients, the only access to specialized medical treatment such as MRIs is through visits by mobile healthcare units. For urban residents, workplaces offer mobile mammograms and dental cleanings as convenience services to employees. These 'labs on wheels' provide needed diagnosis and examinations that otherwise may not happen on a timely basis, or at all. The challenge occurs when the mobile units return to the hospital. Transferring patient files and digital images over a dial-up connection is impossible, due to the size of the files. Physically transporting digital media between the van and hospital is inconvenient and poses the risk of misplacing or damaging the data inadvertently.

The solution:

A wireless bridge between the mobile unit and the hospital offers a perfect alternative. Operating at speeds of up to 860 Mbps, wireless bridges transfer digital images and patient records in a matter of minutes, not hours. And patient privacy (per HIPAA requirement) is ensured with strict security and authentication methods.

The products:

- Tsunami Point-to-Point
- Tsunami QuickBridge





Proxim's Healthcare Solution Components

About Proxim

Proxim Corporation is a global leader in wireless networking equipment for Wi-Fi and broadband wireless networks. Proxim provides solutions for mobile enterprise applications, security and surveillance, last mile access, voice and data backhaul, public hot spots, and metropolitan area networks. Product families include ORiNOCO Wi-Fi products, Tsunami Ethernet bridges, and Lynx point-to-point digital radios.

Proxim has the widest array of wireless equipment to meet the networking needs of colleges and universities. Solutions are comprised of ORiNOCO Wi-Fi LAN equipment and Tsunami broadband wireless systems to supply bandwidth to and between LANs. Only Proxim offers a wide enough array of capacity, capability and cost to properly mobilize schools of all shapes and sizes.

Proxim's ORiNOCO Wi-Fi Access Points

	AP-700 Access Point	AP-4000 Access Point
Description	Enterprise-class access point with either 802.11a or 802.11b/g mode operation	Enterprise-class access point with pre-configured tri-mode (simultaneous 802.11a/b/g) operation
Positioning	For mid-size, full-scale Wi-Fi deployments	For comprehensive 2.4 and 5 GHz rogue AP detection and automatic support of all Wi-Fi client types delivering scalability for evolving networks

ORiNOCO Smart Wireless Suite

Comprised of the Wavelink Mobile Manager, Wavelink Avalanche and Ekahau Wi-Fi Site Survey and Prediction Software, the Proxim ORiNOCO Smart Wireless Suite delivers a comprehensive and centralized solution that lets enterprise IT managers ensure the proper configuration, management and performance of their Wi-Fi networks. In addition, when used in combination with Proxim's latest software release for ORiNOCO access points, the ORiNOCO Smart Wireless Suite delivers a comprehensive, integrated hardware and software solution that lets enterprises automatically deploy 802.11i-based security services, as well as advanced rogue AP and client detection, throughout the network.

Proxim's Tsunami Broadband Wireless Solutions

	Tsunami QuickBridge	Tsunami Point-to-Point	Tsunami MP.11 5054-R	Tsunami MP
Description	Wireless Ethernet solution with superior price performance and capacity of 11-60 Mbps	Wireless Ethernet bridges with carrier-class reliability and capacity of 20-860 Mbps	Indoor/outdoor ruggedized multipoint system offering 11-54 Mbps capacity	High-bandwidth multipoint system offering 20-60 Mbps
Positioning	For organizations requiring quick campus-wide connectivity	For organizations demanding the highest reliability wireless links across campus, or across town	For connecting multiple buildings to a central site or for Internet connection	For enterprise data and Voice over IP applications

Proxim's ORiNOCO Wireless Client Adapters

From economical single standard PC cards to highly flexible 802.11a/b/g ComboCards, ORiNOCO offers a wide range of Wi-Fi certified PC cards, PCI cards and USB adapters.

For more information on Proxim's education solutions, go to www.proxim.com/solutions/mobile/education/



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