



Wireless Solutions for Higher Education

Application Portfolio

Higher Education

Networking Challenges and Wireless Solutions

Educational institutions are faced with multiple challenges when it comes to providing the modern networking capabilities demanded by today's applications. Buildings with historical value, possible asbestos hazards, large campuses, temporary buildings and a vast mobile population can create a networking nightmare. And with a limited budget, these problems might be difficult to overcome.

Wireless technologies solve these problems readily. Wireless offers:

- no new wiring
- fast installation with no permits required
- large coverage areas
- mobile freedom

With a wireless network in place, the infrastructure can be simply employed for multiple purposes – doubling or tripling the advantage of the wireless investment.

Applications for Higher Education

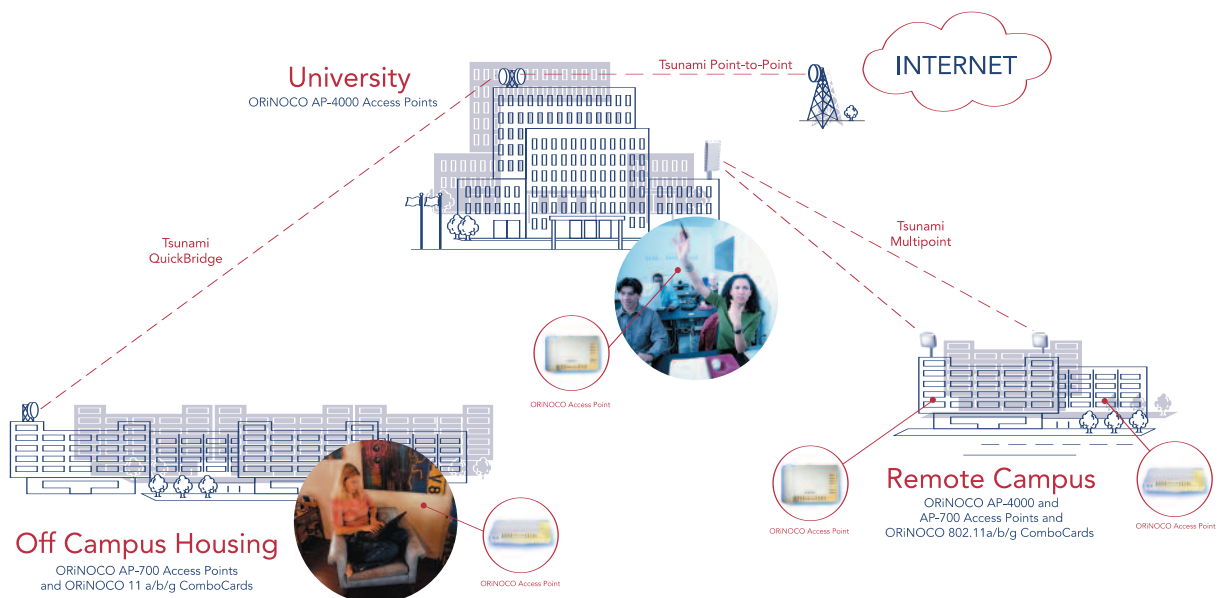
[Mobile Internet Connectivity](#)

[Guest Access for Researchers, Visitors and Conference Attendees](#)

[Network Connectivity for Hard-to-Wire Classrooms, Dorms and Other Campus Buildings](#)

[Connecting a Satellite Facility to the Main Campus](#)

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❖ Mobile Internet Connectivity

The challenge:

Internet and campus network access for students and faculty is a requirement at almost all higher educational institutions today – if not for research, then for receiving and delivering assignments themselves. And more importantly, the students and faculty are constantly changing location, requiring access to the same network resources whether in the library, outdoor cafeteria, classroom or faculty lounge. Providing this level of mobility and access cost-effectively, especially for large campuses, or those with older buildings, is another matter.

The solution:

Wireless LAN access points can be placed both indoors and outdoors, allowing network connectivity to multiple classrooms, or even large expanses of outdoor areas. Installation cost and time are minimal in comparison to wired network options, and the mobility is unequalled. The ability to power the access points through the Ethernet cable further decreases the cost of installation, while simplifying deployment. Advanced security built on the IEEE 802.1X and 802.11i standards ensures that student and faculty data remain private and only authorized users are allowed on the network.

The products:

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



Higher Education

❖ Guest Access for Researchers, Visitors and Conference Attendees

The challenge:

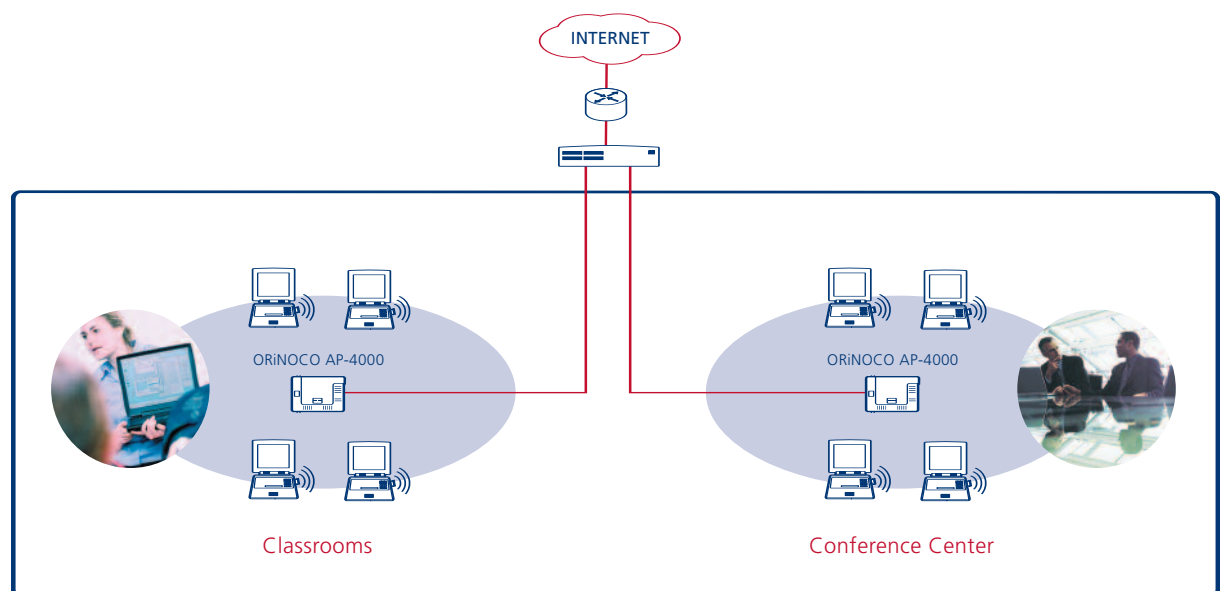
Students aren't the only mobile users in campus networks. Guest lecturers, alumni, students' parents and conference attendees compose a transient group that requests and/or requires Internet access for official and personal use. With the rise in Wi-Fi clients embedded in laptops, users are beginning to expect ubiquitous Internet access. Accommodating guest access on a one-by-one basis – whether through the wired or private campus wireless network – is cumbersome, time-consuming and generally not practical for IT organizations and users alike.

The solution:

The same wireless network used for students and faculty can offer secure, on-demand guest access, too. Proxim's wireless LAN access points can securely support private (student and faculty) as well as public (guests, visitors, conference attendees) networks. Access to the campus network and data remain secure and available only to authorized faculty and students – and visitors access only the Internet using the same wireless access points. The wireless access points will ensure that every guest gets on the network, preventing support calls to the IT organization – as well as the time and expense of manual guest access setup. In case of high guest usage of the network, school IT staff can prioritize users and traffic appropriately.

The products:

- ORiNOCO AP-4000
- ORiNOCO Client Cards



Business School



❖ Network Connectivity for Hard-to-Wire Classrooms, Dorms and Other Campus Buildings

The challenge:

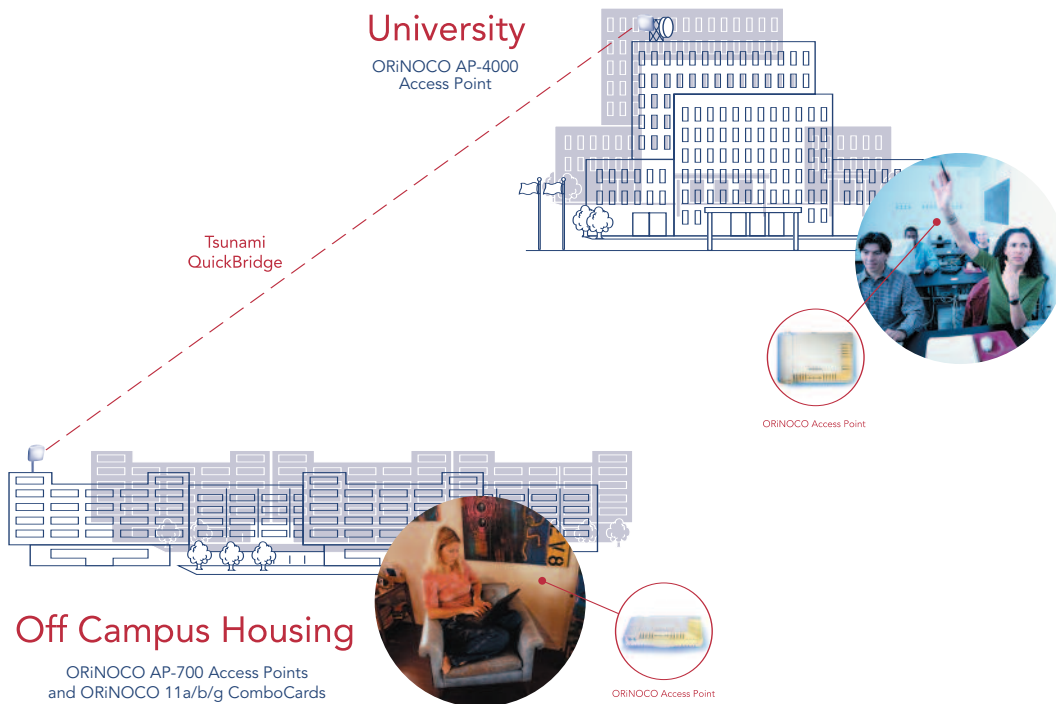
Many educational institutions were constructed decades ago, long before the advent of computers and the Internet. For these older facilities, historical value or safety concerns related to possible asbestos usage make cabling for Ethernet very difficult, if not impossible. Even where these are not concerns, trenching fiber and running Ethernet cabling to each library carrel, student dorm room or seat in an auditorium can make a network connectivity roll-out very slow and cost-prohibitive.

The solution:

Wireless LAN access points and wireless bridges significantly simplify these problems. Because they are such a quick and cost-effective solution compared with fixed-line alternatives, the payback for wireless bridges between buildings comes typically in a matter of months. For network connectivity within the building, wireless LANs deliver broad coverage, without any obtrusive, expensive cabling. Students and faculty connect to the network via wireless-enabled laptops.

The products:

- Tsunami MP.11
- Tsunami QuickBridge
- ORiNOCO AP-4000
- ORiNOCO AP-700
- ORiNOCO client cards



Higher Education

❖ Connecting a Satellite Facility to the Main Campus

The challenge:

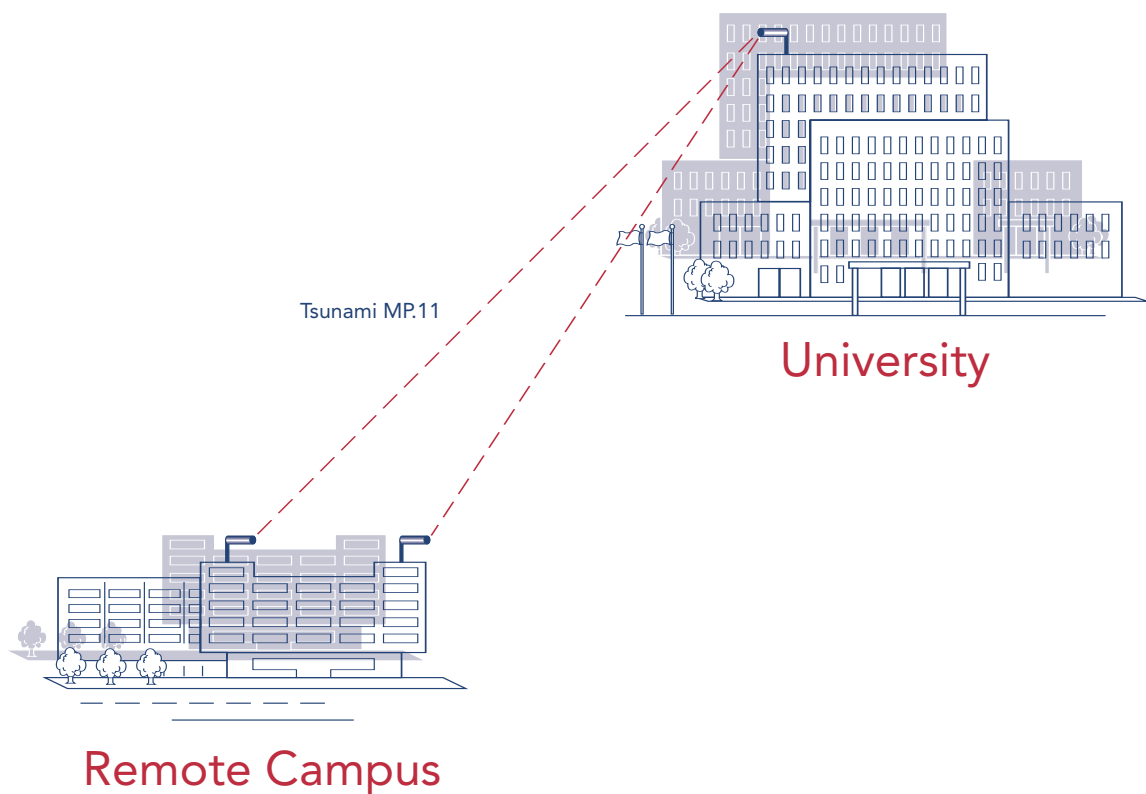
Satellite campus facilities are common for many higher education institutions, enabling better reach to part-time students and the broader community. Connecting these remote facilities into the main campus network often requires leased lines with high monthly fees.

The solution:

As with connecting multiple campus buildings, wireless bridges provide an alternative to leased lines resulting in significant savings without additional maintenance expense. And, for facilities where guaranteed connectivity is required, the wireless bridge can be used as a redundant link, in the event of failure of the primary link.

The products:

- Tsunami QuickBridge
- Tsunami MP.11





❖ Student and Faculty Security

The challenge:

Even more critical than enabling network access is providing a safe school environment. Recent tragic events highlight the growing need for campus security for faculty and students. Video surveillance can significantly increase security when placed at school entry points and throughout the facility, perhaps even acting as a deterrent. While IP video cameras are inexpensive, the expense of laying cable throughout a facility as well as around the perimeter of a campus can forestall needed improvements in school safety.

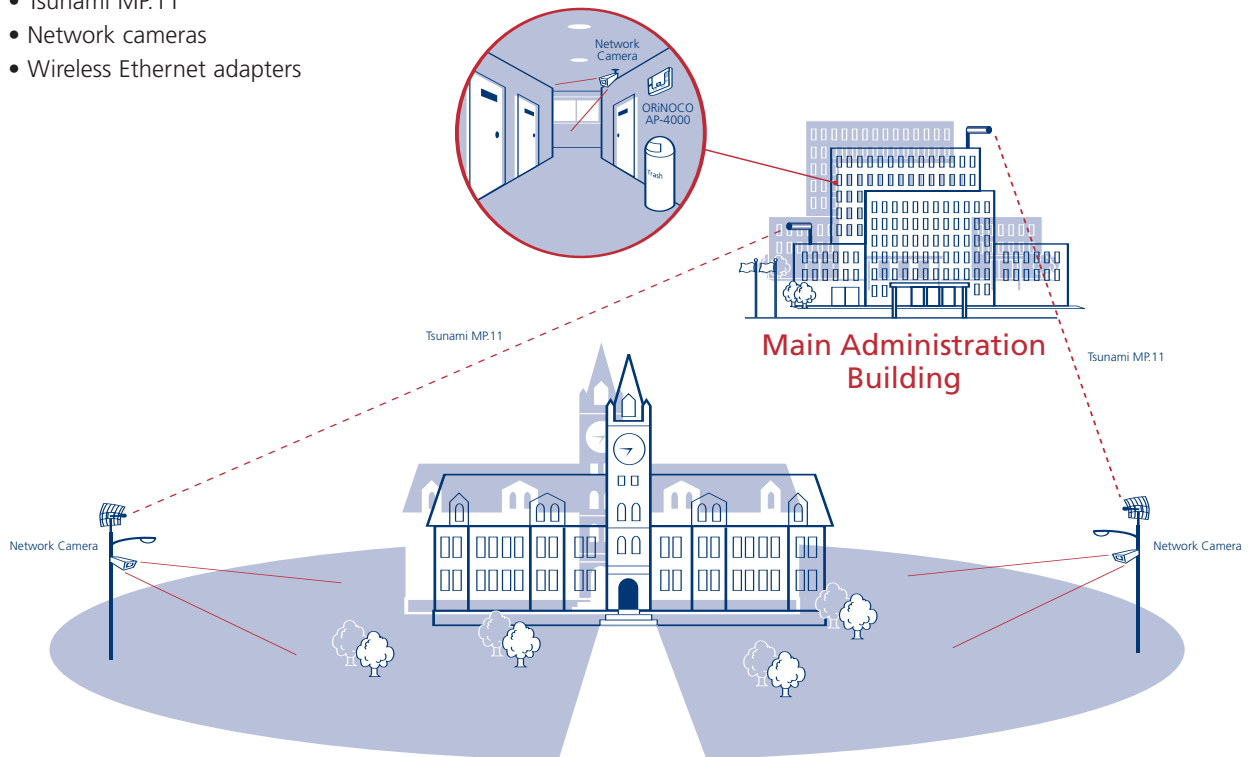
The solution:

Wireless LANs and wireless bridges eliminate the expense of extensive cable pulling. From the main administration building, wireless bridges provide connectivity to the campus perimeter. Network cameras with wireless Ethernet adapters placed on lampposts, school fences, or any other surveillance point transmit back to wireless access points. Inside the school, wireless access points provide a similar function, allowing cameras to be placed inside hallways, libraries and classrooms, with a wireless Ethernet adapter connecting the camera to the wireless access point. All video, indoors and outdoors, is brought back to a central point for monitoring and recording.

As an added benefit, campus security personnel who must also patrol the campus can do so without losing visual contact with all monitored locations. By using an inexpensive PDA, personnel can carry video feeds – and even remotely control camera position.

The products:

- ORiNOCO AP-4000
- ORiNOCO AP-700
- Tsunami MP.11
- Network cameras
- Wireless Ethernet adapters



Higher Education

Proxim's Education 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	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	Economical 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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