

The Wireless World Indoors

... for Healthcare 

Provision of enhanced in-building wireless services to increase efficiency and reduce costs

The Challenge

With the increasingly ageing, growing global population set to push medical resources to the limit over the next two decades, there is intensifying pressure on the healthcare industry to look at new and dynamic ways to boost efficiency. Many leading healthcare providers are now embracing wireless technology and in-building wireless coverage as part of the solution to improving efficiency and communication. Wireless services may include:

Wireless Medical Technology Services (WMTS)

Wireless medical technology has made huge strides in the last few years and continues to gain pace. As well as providing increased comfort and mobility to patients, wireless medical telemetry devices allow healthcare organisations to manage resources more effectively and ultimately improve medical efficiency and practices. These medical services include:

- Ambulatory vital signs monitoring
- Wireless cardiogram sensors
- Radio Frequency Identification technology (RFID) with real time presence
- Internet Protocol (IP) over WLAN-based communications systems, including building automation & CCTV

Commercial cellular communications

The emergence of pioneering, new mobile applications has dramatically increased the mobility and expectations of healthcare professionals, patients and their families for ubiquitous coverage wherever they may be on the healthcare campus.

Public Safety Communications

Healthcare providers have the need and very often the regulatory requirement, to improve the provision of wireless services in their facilities. This is most apparent in the area of public safety. In recent years, ensuring the safety of emergency service personnel entering a building in their day to day work and in emergency or disaster situations has become critical. These services are required throughout the facility, not just in A&E or the main entry points.

The Benefits of Enhanced Wireless Coverage

Improved wireless coverage across the healthcare facility brings many advantages in patient care and efficiency:

- A wire free patient bedside with Continuous patient monitoring and mobility
- Improved crash response times
- Improved communication between Doctors, nursing and administration staff as well as patients and their families
- Cellphones operate on reduced power and minimise any interference¹
- Police, fire, and paramedic wireless service available throughout the hospital
- No paging and messaging deadspots
- Secure environment through ubiquitous public safety coverage
- WMTS provision for all wireless technology services
- Reduction of operational costs through optimisation of your IT expenditure
- Selective streaming of services to certain areas within the building or campus

¹ "The selection of a proper maximum power class reduces significantly the risk of (EMI) Electro Magnetic Interference" (Source: Electromagnetic Interference To Infusion Pumps From GSM Mobile Phones Calcagnini,G., Bartolini,P., Floris,M., Triventi,M., Cianfanelli,P., Scavino,G., Proietti,L., Barbaro,V. Engineering in Medicine and Biology Society, 2004. IEMBS apos;04. 26th Annual International Conference of the IEEE; (c) 2004 IEEE.)

How can you, as a healthcare provider, effectively integrate your specialist wireless needs with coverage for commercial and public safety wireless?

The Solution

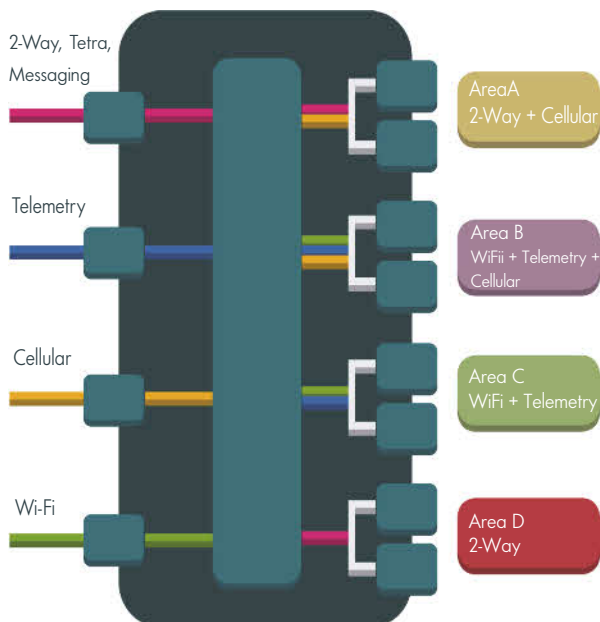
The healthcare campus brings its own unique set of challenges for the provision of reliable wireless coverage. Different materials such as steel and tinted glass, cause in-building penetration of RF signals to weaken resulting in reduced data rates and even complete loss of signal. Without comprehensive, reliable and unified coverage, the healthcare facility is at risk from poor signal, and black spots which could lead to dangerous lapses in patient monitoring and communication systems.

Zinwave's unique 3000 Wideband Active Distributed Antenna System (DAS) removes many of the traditional issues and considerations associated with delivering multiple RF services in buildings. It provides ubiquitous coverage for all wireless services on one easily installed system. In addition, services can easily be routed to the areas of the building where they are required i.e. WiFi can be routed to the office area, but may not be required on the wards - see diagram.

Summary...

There are many exciting advances in wireless medical technology and emerging mobile applications that could significantly increase efficiency in healthcare without the need for sacrificing patient care or heavy financial outlay. However, in order to take advantage of these groundbreaking new developments, it is essential that there is ubiquitous, reliable in-building wireless coverage in place. Zinwave, as a member of American Hospitals Association (AHA), is committed to providing active DAS coverage to healthcare facilities and working in partnership with the healthcare provider to help maximize efficiency and communications

One solution, one system for all your wireless needs...



Key benefits:

True Wideband - Supports any service, protocol and modulation scheme from 150MHz to 2700MHz

Low component count - With as few as four components, an in-building wireless network can be built to support any mix and any number of services

Lowest cost per sqm - Comprising of a single hardware layer, the Zinwave 3000 system becomes more and more cost effective compared to a traditional solution with each additional service

No costly upgrades - Additional services can be added without the need for supplementary hardware, therefore avoiding further cost & disruption

Easy planning & installation - Self-calibration and auto-configure features simplify design & deployment

