

A POLYCOM WHITEPAPER

# Standards-based Interoperability for Mobile Caregiver Devices

Integrating Voice, Text, and Data Applications in  
the Healthcare Environment

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*This white paper highlights Polycom's participation in the HIMSS '11 Interoperability Showcases™ in collaboration with Integrating the Healthcare Enterprise (IHE).*

## Overview

Polycom is the first provider of wireless communication solutions for healthcare to demonstrate standards-based interoperability utilizing the Integrating the Healthcare Enterprise (IHE) Alarm Communication Management (ACM) profile for alarm endpoint devices. This demonstration shows how a standard wireless communication protocol is used to deliver alarm and alert messages from various sources to mobile devices carried by caregivers in a clinical environment.

Mobile healthcare solutions that combine real-time voice communication with text message alerts from systems such as nurse call and patient monitoring systems improve staff efficiency, patient care, and patient satisfaction by reducing response times. The challenge with integrating various messaging systems with wireless devices from different vendors is that each device vendor may use a different messaging protocol, requiring additional product development efforts or middleware solutions that add cost and complexity to wireless deployments. The IHE organization is addressing this challenge today by developing a standard for interoperability between alarm sources and endpoint devices.

Polycom is demonstrating the Polycom® SpectraLink® 8400 series wireless telephones integrated with alarm generating systems using the wireless communication transfer protocol (WCTP). WCTP was selected by the IHE Patient Care Device (PCD) working group as the standard messaging protocol for alarms in order to foster interoperability between multi-vendor solutions while maintaining a high level of functionality. The SpectraLink 8400 series handsets interface with a WCTP gateway application using standards-based XML messaging which allows the handsets to support multiple applications in addition to standard WCTP messaging. To support even more sophisticated mobile applications, the SpectraLink 8400 series handsets also support a standards-based web browser enabling device-independent mobile solutions for caregivers in the hospital environment.

## The Evolving Needs for Mobility in Healthcare

Mobile communication solutions have become mission-critical for caregivers in most hospital environments. Wireless telephones address the need for real-time voice communication between nurses and physicians, and the integration of paging and two-way messaging capabilities with wireless devices has further improved responsiveness and efficiency. Nearly all nurse call systems today support sending text alerts to wireless devices at a minimum, and most can also provide real-time voice communication between

the patient and the nurses' wireless telephone to further improve responsiveness and patient satisfaction.

Now wireless devices are capable of integrating with even more healthcare systems and going beyond simple messaging solutions. Just as consumer cellular phones have evolved from primarily voice devices with messaging capabilities to "smartphones" with sophisticated application capabilities, healthcare-specific mobile devices are evolving to support clinical applications as well. While specialized mobile data devices have traditionally been used for specific applications such as medication administration, the new generation of wireless communication devices that can support both voice and data applications meet the caregiver's need for a personal device that is simple to use, easy to carry, and reliable enough to meet the rigors of the healthcare environment.

## Leveraging Standards for Unified Solutions

The IHE PCD working group has addressed the longtime need for a standard protocol to deliver text-based alarms and alerts from any patient care system to any communication device capable of displaying text. The WCTP standard was chosen because it meets the minimum criteria for supporting a wide range of devices and because it is an established protocol originally developed for the wide-area paging and cellular industries.

While WCTP meets the need for a text-based protocol for alarms and alerts, new generation wireless devices like the Polycom SpectraLink 8400 series are also leveraging industry standards to support more sophisticated integration with systems and applications. The consumer smartphone revolution has driven the mobile device and application providers to standardize on ways of supporting different types of applications on different types of devices. The most powerful and most widely adopted mechanism for supporting mobile applications today is through web browsers optimized for the mobile device form factor and user interface.

Utilizing a web browser interface for mobile applications has clear advantages for application developers, device vendors, and healthcare enterprises deploying these solutions. From an application developer perspective, using a browser interface allows applications to be device-independent and thereby reduces development and support costs. From the device perspective, supporting applications through a browser reduces device complexity and leverages commonly-used user interface components to minimize user training and speed user adoption. For the healthcare enterprise, deploying thin-client, browser-based mobile applications reduces deployment costs, provides a high level of security, and increases the number of devices available to optimize end-user devices to specific job functions.

## Devices for the Healthcare Environment

Mobile devices must meet the physical and functional needs of the end users and must also integrate with the healthcare enterprise's networks and systems with minimal incremental administrative and overhead costs. Although consumer smartphones are capable of supporting healthcare applications, including voice and messaging, in general these devices are not suited for continuous and demanding use in hospitals.

Most consumer and business communication devices fail to meet the rigorous requirements for use in a healthcare environment, where devices are typically used around the clock and shared by several different users. Caregivers require devices that are not only easy to use and reliable, but also designed to withstand the bumps, drops, and spills that are inherent in any hospital environment. Good voice quality is extremely critical in healthcare. Caregivers need clear and comprehensible real-time communication no matter where they are within the facility, even in areas with significant background noise.

There are many different wireless devices available today, and different devices serve different needs. Wireless telephones are ideal for nursing applications, where both real-time voice communication and text messaging access make caregivers more responsive and accessible to their patients' needs. Wireless telephones such as the Polycom SpectraLink 8400 series provide even more functionality with enhanced application support and optional integrated barcode scanners for quick and reliable data entry. Yet in some situations a fixed computer or mobile workstation is necessary for more data-intensive applications. Trade-offs in device size, weight, application support, and cost must be considered in equipping caregivers with the most suitable devices for their job requirements.

## The Future of Interoperability and Integration

The use of wireless telephones for real-time communication and for messaging is an established best practice in most healthcare environments. Building upon the messaging capabilities of these devices through standards-based interoperability will further improve efficiency and productivity. As innovation in mobile device technology continues to enhance the user interface and application support capabilities of caregiver devices, healthcare enterprises will be able to provide wireless access to more clinical applications and information.

As an IHE member organization, Polycom will continue to focus on the delivery of mobile voice and healthcare applications. Building on its legacy in enterprise-grade wireless communications, Polycom is collaborating with other IHE member organizations to deliver critical information to caregiver wireless devices to help advance healthcare technology and ultimately improve patient care at healthcare organizations worldwide.

### About Polycom

Polycom is the global leader in standards-based unified communications (UC) solutions for telepresence, video, and voice powered by the Polycom® RealPresence® Platform. The RealPresence Platform interoperates with the broadest range of business, mobile, and social applications and devices. More than 400,000 organizations trust Polycom solutions to collaborate and meet face-to-face from any location for more productive and effective engagement with colleagues, partners, customers, specialists, and prospects. Polycom, together with its broad partner ecosystem, provides customers with the best TCO, scalability, and security for video collaboration, whether on-premises, hosted, or cloud-delivered. Visit [www.polycom.com](http://www.polycom.com) or connect with Polycom on Twitter, Facebook, and LinkedIn.

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