USA Mobility Wireless, Inc.

Overview of Communication Capabilities for The Healthcare Industry

October 29, 2007
USA Mobility Wireless, Inc. – Executive Summary of Capabilities

In order to assist the Joint Commission in an assessment of the communications capabilities of emergency medical and public health care facilities, USA Mobility is pleased to submit this overview of the capabilities provided to the healthcare industry in the important area of critical and emergency communications.

USA Mobility, headquartered in Alexandria, Virginia, is a leading provider of paging, cellular, enterprise applications and other wireless services to the healthcare, large enterprise and government sectors. In addition, the company offers mobile voice and data services as a nationwide business partner for Sprint Nextel including BlackBerry, Treo, wireless Internet connectivity and GPS location applications. USA Mobility Wireless, Inc., headquartered in Alexandria, VA, is a public company (NASDAQ: USMO) that operates on a debt-free basis and financially stable.

USA Mobility serves over 40% of all hospitals in the U.S. through traditional one-way and advanced two-way paging via its nationwide networks covering over 90% of the U.S. population. These devices are used to summon resources to the point of care, often in the most critical of situations including code paging of all kinds and paging to medical personnel who are outside the medical campus.

Hospitals continue to rely heavily on paging services for several reasons, including the reliable performance of the technology, its cost-effectiveness as well its ability to be integrated into hospital workflow and hospital systems. An example of this would be the integration of paging codes into the PBX system throughout a hospital. A large, metropolitan hospital campus may have up to 10,000 paging devices deployed across its workforce including medical, operations, IT and administrative staff.

Healthcare organizations depend on the reliable service of paging due to the critical, life-saving mission they must fulfill each day. There are both architectural and process-oriented reasons for this reliability. Paging technology is substantially different in its architecture than that of the more familiar cellular network. These differences result in important reliability characteristics including superior in-building signal penetration, overlapping coverage on the ground, independence from the public switched telephone network and satellite transmission of paging signals. In addition, USA Mobility maintains a carrier grade network operations center in order to deliver uninterrupted performance to this important user base.

For many of these same reasons, paging technology has also proven to be more survivable and reliable during and after crisis situations. Two examples of this are during 9/11 and Hurricane Katrina, when landline and cellular networks became overloaded and unusable, paging networks continued to deliver reliable performance to its large user bases in both the healthcare industry as well as the government and first-responder sectors.

USA Mobility is the only provider offering a complete suite of communications products addressing the emergency and critical messaging needs of hospitals including enterprise hardware, software, wireless networks and wireless devices. A Private Medical Messaging Network (PMMN) is an example of this type of solution. A PMMN offers hospitals a low cost method to substantially increase the speed, reliability and control over critical messaging during and after emergencies. A PMMN establishes a custom messaging network in a hospital or hospital campus to integrate messaging of all kinds (paging, cellular, Wi-Fi, email) into a single system. By integrating with the backup power generation for a hospital, the PMMN operates independently of public power utilities, the phone system and the Internet. This independence is critical in order to maintain vital, life-saving communication when an emergency situation occurs.
USA Mobility Corporate Overview

USA Mobility, headquartered in Alexandria, Virginia, is a leading provider of paging, cellular, enterprise applications and other wireless services to the healthcare, large enterprise and government sectors. USA Mobility offers traditional one-way and advanced two-way paging via its nationwide networks covering over 90% of the U.S. population and with international roaming partners. In addition, the company offers mobile voice and data services as a nationwide business partner for Sprint Nextel including BlackBerry, Treo, wireless Internet connectivity and GPS location applications. The company’s product offerings include wireless connectivity systems for medical, business, government and other campus environments.

USA Mobility focuses on the business-to-business marketplace and supplies mobile connectivity solutions to over 40% of all hospitals in the United States and 70% of the Fortune 1000. USA Mobility Wireless, Inc. (NASDAQ: USMO) was formed to effect the merger of Arch Wireless, Inc. (formerly NASDAQ: AWIN) and Metrocall Holdings, Inc. (formerly NASDAQ: MTOH), which occurred on November 16, 2004. USA Mobility is a profitable and financially stable company that operates on a debt-free basis.

Role of USA Mobility in the Healthcare Industry

USA Mobility is a leading provider of wireless messaging to hospitals and other healthcare organizations across the country. Our long tenure and commitment to serving the critical messaging needs of this industry sets us apart from other providers and provides the foundation for serving many of the most recognizable and trusted healthcare organizations in the country including:

- Johns Hopkins – Baltimore, MD
- Partners Healthcare – Boston, MA
- MD Anderson – Houston, TX.
- The Cleveland Clinic – Cleveland, OH
- Duke University School of Medicine – Durham, NC
- University of Pittsburgh Medical Center – Pittsburgh, PA
- Kaiser Foundation Hospitals – Oakland, CA
- UCSF – San Francisco, CA

USA Mobility understands Healthcare and delivers a broad selection of wireless communication solutions that improve the quality of patient care, reduce risk for the healthcare organizations and help the healthcare industry prepare for and respond effectively during emergency situations. USA Mobility is the only company offering a complete solutions portfolio for critical hospital communications.

USA Mobility is the nation’s largest provider of wireless paging services. In the healthcare industry alone, the company provides wireless service to more than 2,400 hospitals and over 1.3 million subscribers in the healthcare industry. The company owns and operates multiple nationwide and hundreds of local and regional paging networks that are fully deployed with proven performance during emergency situations. These networks are used by millions of emergency personnel in Federal, State & Local Government agencies and private sector businesses, in addition to hospitals and the healthcare industry.

The company operates dedicated Medical frequencies in major markets across the country. Medical networks provide a dedicated frequency for the Healthcare industry with increased speed and reliability for the critical messaging needed by this market. With an expansive product line and multiple third-party product partnerships, USA Mobility is a valued technology provider to the Healthcare market.
The Value of Paging in Healthcare

Hospitals and other healthcare organizations have entrusted paging technology for the delivery of their most critical messages for decades. There are several reasons for this:

1. Group Capcodes – This is a fast and efficient method for sending out a critical message and it is a capability that is unique to paging technology. A common address is burned into multiple pagers, whereby one message is sent, one message is transmitted, and multiple devices receive the message simultaneously. This is extensively used for code paging.

2. Cost-effectiveness – Paging devices are offered at a fraction of the monthly service cost of a cellular device. Large hospital systems can easily deploy a large number of paging devices or create custom coverage areas at a reasonable cost. The cost-effectiveness of this technology makes it a good option for serving as a back-up communications tool for hospitals and first-responder organizations.

3. Integration with Workflows and Processes – Hospitals, in particular, have integrated pagers into the workflows of their institutions. A common application is to integrate a hospital’s PBX system with a paging system so that code pages can be initiated by dialing an abbreviated extension from any phone in a hospital.

4. Usability – Paging offers the type of usability that hospital workers require. Often a doctor or nurse has their hands occupied and is not able to pick up a phone to get a message. A critical message can be delivered to a pager and read without having to handle the device. Pagers also offer extended battery life that can last up to a month so users don’t have to take time to plug them in during the day.

5. Overall Reliability of Service – Paging has a decades-long history of meeting the reliability demands of the Healthcare industry. The USA Mobility network is supported by carrier-grade network operations facilities and procedures including 24/7 Network Monitoring and 99.9% wireless network availability. The documented Disaster Response plans include backup terminals and generators, COWs (Coverage-on-wheels) and a nationwide team of field technicians. Service and support is provided by dedicated support channels for medical and government accounts and network engineering support teams made up of industry experts. The company owns and operates a satellite uplink facility and nationwide Network Operations Centers (NOC).

6. Broad Coverage – Paging offers expansive coverage both in major metropolitan areas as well as suburban and rural areas. Paging technology also offers the ability to cost-effectively establish custom coverage throughout an entire hospital campus, including basements and parking garages. Expansive wide area coverage is used to reach off-site/off-duty doctors and other key personnel.

Reliability of Paging Technology

To assist the Joint Committee in its assessment of the capabilities of paging technology for emergency medical and public Healthcare facilities, this section outlines some of the unique features of paging technology that impact its reliability characteristics.

1. USA Mobility’s paging networks provide redundant wireless coverage on the ground to best serve the coverage needs of its mission-critical users. In an emergency event that may damage wireless transmitters, having overlapping coverage is critical in eliminating dependency on a single tower.

2. With the paging network architecture, all messages are “simulcast” from multiple towers within a specific coverage zone at the same time. These transmitters are high off the ground (up to 300 feet compared to approximately 90 feet for a cellular tower). Radio transmissions utilize high power up to 3500 watts ERP (effective radiating power).
compared to the low power usage of cellular transmissions of approximately 100 watts ERP, resulting in superior in-building coverage.

3. USA Mobility’s networks utilize satellite connectivity between the core messaging network and the transmitter towers in the local area. Using satellites eliminates a critical point of failure for many wireless systems. Because message data is transmitted back to the network core via satellite, the local public telephone network that is often affected or downed as a result of a disaster situation, as with Hurricane Katrina, is bypassed. The satellite dishes are situated at ground level, making restoration of an offline tower a function of restoring power using a generator and re-pointing the satellite dish.

4. The core network elements of USA Mobility’s network are fully redundant to prevent a distant problem from affecting the network. This redundant infrastructure includes diversity on WAN/LAN, messaging switches, power sources and satellite uplinks. USA Mobility owns and operates its own satellite uplink facilities and Network Operations Centers in Plano, TX and Stockton, CA. This redundancy is intended to keep all network systems continually operational.

Advanced Communications Capabilities

In addition to paging solutions that are offered via nationwide, regional and local networks, USA Mobility also offers a full suite of solutions through a dedicated Healthcare Solutions division. This collection of leading edge technologies addresses the more advanced wireless communication needs of hospitals. These solutions include private messaging networks, messaging software platforms, asset tracking systems, hands free voice communication over Wi-Fi, wireless PBX systems and call handling software systems. Through the company’s partnership with Sprint, we also offer the full line of Sprint Nextel products including phones, BlackBerry, mobile broadband connectivity and custom network solutions.

USA Mobility believes that the nature of hospital communications is summoning resources and delivering information in the interest of improving patient care. USA Mobility provides hospitals with survivable messaging platforms whose primary function is the fast, effective summoning of care giving resources. These platforms are designed to communicate with multiple communication devices and technologies. These messaging platforms are used year-round, so staff is training on its emergency communications every day of the year.

USA Mobility’s Solutions Improve Critical Communications in Hospitals by:
  o Improving workflows
    o Responding to patients more quickly
    o Reducing failure points
    o Installing message archiving and accountability elements
  o Summoning resources to the point of care more efficiently
  o Delivering time-critical information to the point of care
These values are particularly important in time of an emergency situation or disaster when many day-to-day communications platforms fail and the hospitals are serving patients well above capacity. What's more, the survivability means that the system used by the hospital 24x7x365 is the same system the staff will be counting on during an emergency situation. Further, the emergency situation will not be exacerbated by staff having to adapt to a different communication system in the midst of the difficult task of saving lives.

A centerpiece of our offerings is the Private Medical Messaging Network (PMMN). This is a low-cost, private system that establishes a message platform for the exclusive use of a hospital facility or group of facilities. A PMMN is a substantial upgrade in messaging capabilities for any hospital and dramatically improves speed, reliability, and control to critical hospital messaging. It provides nearly instantaneous, independently survivable alphanumeric messaging to code teams, trauma teams, disaster preparedness personnel, security, on-call caregivers, and any other key staff members who should never have to wait for a page.

A PMMN offers increased survivability to ensure uninterrupted service for a hospital's most critical messages. Because it is self-contained, completely on-premises, and utilizes the hospital's backup power generation resources, a PMMN functions independently of external systems that may be impacted by the emergency situation. It is also independent of the company’s wide area paging network and will operate during an electrical outage or during a phone service interruption or congestion.

The PMMN is capable of integrating the communication across a range of wireless messaging platforms including one-way and two-way pagers, PDAs, BlackBerrys, cellular phones, wireless PBXs, Vocera hands-free voice, and e-mail.

A survivable messaging system means that during and after an emergency, critical messages can be exchanged with:
- Code teams
- Trauma response
- Disaster preparedness
- Emergency response
- Neonatal
- Patient monitoring
- Security
- Key on-call personnel

Because of the nature of wireless messaging, integration with existing hospital systems is a proven, repeatable process. Some integration options include:
- Call handling software
- In-room nursecall systems
- Patient monitoring alarms
- PBX (both wired and wireless)
- Two-way pagers, PDAs, BlackBerrys, cellular phones, wireless PBXs, Vocera hands-free voice, and e-mail.

LAN-based interfaces assure that these systems will retain their integration benefits in emergency situations by way of the hospital's backup power.
ACEP Sponsorship

USA Mobility is proud to be the official cellular and paging technology sponsor of the American College of Emergency Physicians (ACEP). Both organizations share a common commitment in two critical areas. The first is serving the needs of emergency medical professionals so that they can be as effective as possible. The second is to improve medical response to emergency situations.

USA Mobility Commitment to the Healthcare Industry

USA Mobility has a long and proud history of serving hospitals and the overall healthcare industry. The technology and the operations that deliver the technology have served this important constituency well by delivering the performance and value that is required to support their life-saving mission. USA Mobility is further committed to using its wireless and integration technology to improve medical performance to emergency situations.

USA Mobility would be pleased to deliver further information to the Joint Committee at their request in order to assist in this important work.
ADDENDUM

Case Studies and Testimonials for USA Mobility

9/11:

“From the initial wireless message to notify our police, fire, EMS, County Manager and ECC staff about the crash at the Pentagon, wireless messaging from USA Mobility has performed flawlessly. All day, every day, wireless messaging has been a reliable aspect of inter- and intra-agency communications. Wireless messaging has always been an integral part of our public safety life here, but it has proven to be mission critical to the work we do. Effective communications is vital to an operation such as this, and we have relied on it and continue to rely on USA Mobility to provide this critical function.”

Lisa Thompson
Wireless Communications Systems Manager
Arlington County, VA

“Almost all aspects of communications continue to be problematic, from initial notification to tactical operations. Cellular telephones were of little value… Radio channels were initially over saturated… Pagers seemed to be the most reliable means of notification.”

Quote from the 9/11 Commission
Staff Statement No. 14.
“Crisis Management”

New Orleans: Hurricane Katrina

“I am with an Urban Search and Rescue for FEMA and with the cell and data service down and systems being flooded. I just want you and your readers know that [USA Mobility’s] ReFLEX [network] is working fine and communications are flowing through the units! We are allowing people to send e-mails to loved ones to let them know they are alive and well. Again the critical use of the ReFLEX in the all the disaster situations I have been to (9/11 NYC, Ivan, Isabel and now Katrina)”

Carter C. Blumeyer
Communications Specialist, Boone County Fire/ MO-TF1 (COMS)
US-Forrest Service (COML, COMT)

“USA Mobility’s dependability became more evident after Katrina when other cellular and paging providers lost service and the USA Mobility system was still going,” notes Mike Meyers, Manager – Information Systems for Tulane University Hospital & Clinic. The problem was that you could not get in touch with anyone by landline or cell phone. The phone numbers being sent to customers had 504 area codes. Calls to phone numbers in this area code could not get through due to Bell South’s system being out of service. Plus, many employees that carried pagers either left them at their homes as they evacuated or lost them during the evacuation. USA Mobility was able to supply them with 70 replacement pagers overnight.
Duke Health Case Study

Duke University Hospitals
Duke Health is based in Raleigh, North Carolina. The accredited 924-bed teaching hospital is a current USA Mobility customer that utilizes approximately 8,000 one-way alphanumeric pagers.

USA Mobility/Amcom Integration Saves Time, Streamlines Processes for Duke Health

Profile
Duke Health was seeking a way to augment several existing systems including AmCom’s Call Handling System, information technology, and facility operations to forward time-sensitive messages to various hospital personnel. The goal was to streamline the steps to patient care through expediting response processes and ultimately improving patient satisfaction.

Business Challenge
Required a solution that would be useful to the various facilities on-site with the organization to be able to dependably deliver critical messages regarding codes including fires and outages. The solution was to supply and seamlessly integrate a customer-owned messaging platform, which is the primary form of wireless message delivery.

The Results
Since implementing a messaging system and the GL3000 for critical messages, Duke Health has numerous benefits. Improved communications has resulted in the following:

- Greater ROI for existing IT and wireless infrastructure
- Productivity gains from automated alerts of equipment failure
- Faster response to patients from real-time notification
- Reduced litigation risk with better critical care alerts
- Instant notification reaches medical personnel anywhere on campus
- Alleviated disparate systems with multiple databases and support

User Interface:
- Desktop computers
- AmCom Call Handling System

Wireline Layer:
- USA Mobility Fully Redundant GL3000

Wireless Layer:
- Customer-owned on-site messaging system

Device Layer:
- One-way pagers
MISSION CRITICAL
PAGING AND MESSAGING CAPABILITIES

In the aftermath of the Hurricane Katrina and Rita disasters along the Gulf Coast, among the most reliable methods of electronic communication throughout the region were the one-way paging and two-way text messaging services provided by USA Mobility, Inc.

USA Mobility is the nation’s largest narrowband personal communications service (NPCS) company, providing mission critical wireless services for police, fire, rescue operations, hospitals, and government, along with many utilities and other businesses that responded to the emergency.

In preparation for the hurricane, USA Mobility technical teams staged equipment and personnel just outside the storm’s path for rapid deployment. The hurricane recovery work demonstrated several of the distinguishing features of USA Mobility’s NPCS messaging – the speed and relative ease of restoration of service, based on a streamlined and cost-effective system design.

USA Mobility’s 16,000-transmitter network is satellite controlled, and is therefore less dependent on the traditional wireline telephone system than wireless cellular two-way voice or mobile phone based data technologies. This architecture enabled rapid restoration of USA Mobility’s services.

On Monday, August 29, the hurricane interrupted operations at 291 of the company’s tower locations along the Gulf Coast. Partial network coverage remained available during the storm and immediately thereafter. Within 48 hours, basic service was restored throughout New Orleans, southeast Louisiana, and Mississippi, the areas hit hardest by the storm. In contrast, most wireline and cellular telephone services have required far more time for restoration and in some cases were still off line weeks after the storm.

USA Mobility’s paging availability far exceeded that of mobile phone providers in the affected areas and when you consider that most pagers operate on a standard AA battery, there is no concern of not being able to recharge when commercial power is out. The bottom line is that one-way and two-way pagers worked when most other wireless services didn’t. This meant that emergency service responders, hospitals, utilities, police, businesses and citizens could receive messages on a pager and initiate messages from a two-way pager when their phones would not work.

FYI I am with an Urban Search and Rescue for FEMA and with the cell and data service down and systems being flooded, I just want you and your readers to know that ReFLEX [two-way text messaging] is working fine and communications are flowing through the units! We are allowing people to send e-mails to loved ones to let them know they are alive and well. Again the critical use of ReFLEX in all the disaster situations I have been to (9/11 NYC, Ivan, Isabel and now Katrina)!

Submitted to “Brad Dye’s Wireless Messaging Newsletter” by
Carter C. Blumeyer
COMMUNICATION SPECIALIST,
BOONE COUNTY FIRE / MO-TF1 (COMS)
US-FORREST SERVICE (COML, COMT)

WWW.USAMOBILITY.COM
USA Mobility also supplied thousands of additional pagers to federal, state, and local emergency response organizations to help respond to the Katrina crisis. To understand why pagers work when mobile phones do not one must consider the very different network architectures. USA Mobility’s systems feature high power transmissions of up to 3500 watts effective power with typical antenna heights of 300 feet or more in a simulcast network topology, in contrast to the 100-watts of power and 90-foot antenna heights of the typical cellular system. USA Mobility’s simulcast networks provide simultaneous delivery of a radio signal from several transmitters, which provides wider coverage area and better in-building penetration than other wireless technologies. This overlapping radio coverage provides natural redundancy in the event of the loss of one or more transmission towers. Cellular type networks, in comparison, assign a single channel in a single transmitter to a mobile connection, typically with a much smaller range, and then rely on the network to “hand off” the call to another tower, but only if a channel is available.

Many federal government organizations need an emergency communication system that provides rapid messaging for one-to-one and one-to-many communications, where voice is not required or message content is sensitive to eavesdropping. The paging and text-messaging services of USA Mobility offer a premier emergency communication solution in these cases at a significantly reduced cost as compared to any wireless voice services.

At a time when our nation is challenged with so many natural disasters, a tried and true technology represents the most reliable form of wireless connectivity at ironically the lowest cost as compared to any other form of mass mobile wireless communications. The paging systems, customer service and engineering resources of USA Mobility should be the first choice of all federal, state, and local governments as well as emergency service response organizations when considering their critical communication needs.

CONTACT USA MOBILITY
USA Mobility’s Private Medical Messaging Network brings speed, reliability, and control to critical hospital messaging. It provides nearly instantaneous, independently survivable alphanumerical messaging to code teams, trauma teams, disaster preparedness personnel, security, on-call caregivers, and any other key staff members who should never have to wait for a page.

Why a Private Medical Messaging Network?

**Speed:** Faster pages mean code teams and on-calls can respond more urgently to patient and hospital emergencies. Subscribers on the Private Medical Messaging Network experience message delivery times of 2–4 seconds. Because the network is on-premise and independent of the Wide Area Paging Network, these paging speeds are delivered 24/7/365.

**Reliability:** USA Mobility’s Private Medical Messaging Network offers increased survivability to ensure uninterrupted service for your hospital’s most critical messages. Because it is self-contained, completely on-premise, and utilizes the hospital’s backup power generation resources, the Private Medical Messaging Network functions independently of external systems.

It is independent of the Wide Area Network and will operate during an electrical outage or during a phone service interruption or congestion.

**Control:** A Private Medical Messaging Network gives hospitals the ability to create and staff code teams as needed, helping eliminate the uncertainty and noise of overhead paging. Hospitals can implement centrally dispatched paging processes, increasing the speed and improving the condition of critical messaging.

Additional features like intuitive group messaging, nurse call integration, advanced directory functions, and paging logs help the hospital gain a new, powerful control over patient care.
For many hospitals, paging currently flows on a service provider’s Wide Area Network (WAN). The WAN is a broad system of servers, transmitters, and antennas traditionally designed to provide extensive coverage areas with transmission redundancies. All paging subscribers share the WAN’s resources, making message delivery times a function of the WAN structure and congestion levels.

For most paging, the WAN is more than adequate. However, there are certain critical pages within the hospital that demand a higher level of speed and dependability.

USA Mobility’s Private Medical Messaging Network provides greater speed, reliability, and control than traditional WAN-based paging.

**Single Messaging Platform**

With USA Mobility’s Private Medical Messaging Network, hospitals gain the additional benefits of two paging networks managed from the same platform. For the hospital’s most time-critical messaging, Private Medical pagers provide nearly instantaneous, survivable alphanumeric messaging. Staff members with less time-critical needs and those who need to be reached outside the hospital campus benefit from the large coverage area of Wide Area Network pagers.

The management and control of both types of devices are unified into one system for increased productivity and patient care.

USA Mobility’s experienced team installs and maintains a private paging system on the hospital premise for the exclusive use of the hospital’s subscribers. Our design engineers integrate the Private Medical Messaging Network with existing communications systems, so hospitals leverage past telecommunications investments for even greater return.

**Advantages Over In-House Systems**

With a traditional in-house paging system, the hospital funds the capital expenditure for the purchase of the system components up front. The hospital is then responsible for all the maintenance and repair necessary to keep the system functioning reliably. The hospital must also purchase and maintain a device inventory made up of pagers that are often difficult to find and expensive to repair. As is often the case over time, operational expenses prohibit the hospital from making much-needed system upgrades. Performance issues and operational headaches leave the hospital searching for a better alternative.

USA Mobility’s Private Medical Messaging Network is a complete messaging solution that delivers all the benefits of in-house paging with none of the headaches. USA Mobility installs, owns, operates, and maintains the network 24/7/365 — all with no up-front cost to the hospital. Maintenance, repair and upgrades are included as part of the ongoing service. USA Mobility also manages the inventory of paging devices in the same trouble-free manner as wide area pagers.

USA Mobility is now making Private Medical Messaging Networks available to hospitals at no up-front cost.

For information, contact: