
Philips Medical Systems

Mobile Medical Stations Rely on AirLink® Gateways to Remotely Manage Medical Systems



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Philips Medical Systems, a global leader in healthcare, is committed to providing innovative technology and services that enable health care providers to achieve clinical excellence. The healthcare business is a division of Royal Philips Electronics of the Netherlands, which is one of the world's largest electronics companies with 160,900 employees in over 60 countries.

In response to customer demand for more strategic and efficient customer support, Philips Medical Systems recently established a new North American Mobile Enterprises department. Taking advantage of the startup mentality bred by a fresh opportunity, the Mobile Enterprise department immediately began creating their vision for an innovative mobile medical program. The team's mission is to provide optimal patient care through increased efficiencies and improved service to their partners and customers.

BUSINESS CHALLENGE

One of the Mobile Enterprise team's key initiatives is running mobile imaging centers, which provide use of diagnostic imaging equipment to markets that cannot support purchase and maintenance of fixed imaging equipment. This diagnostic imaging equipment includes MR (magnetic resonance), CT (computed tomography), nuclear medicine and cardiovascular systems. The key markets supported by the Mobile Enterprise team include rural communities, multi-location medical facilities and prisons.

Mobile imaging centers consist of 18-wheel trailers outfitted with Philips imaging equipment and third party drivers and medical staff. These centers have tight schedules and are always in-use or in-transit to a facility, with most centers staying in one location for only a single day. Any downtime of the imaging equipment results in a loss of patient service and revenue for the healthcare provider. Philips needed to find a way to proactively monitor their medical equipment

to prevent downtime and to diagnose and fix issues remotely to avoid sending field engineers on-location for repairs. "For Philips, it's all about patient care, efficiency and productivity," explained Ketan Shah, senior manager, Mobile Enterprise in Philips Medical Systems' Imaging division. "By maximizing our ability to service our customers, the result is improved patient care and customer satisfaction."

SIERRA WIRELESS AIRLINK® SOLUTION

Philips' Mobile Enterprise, in collaboration with partner Astral Communications, developed a wireless-specific solution to complement their existing proprietary remote monitoring solution. Further, Astral Communications, an advanced communications systems provider, is continuing to work with Philips to develop a wireless telemetry solution using the Sierra Wireless AirLink® communications gateway.

The wireless solution is helping Philips to improve efficiencies and patient care in many ways. Historically, Philips' engineers have been able to connect to a secure remote services network to diagnose system "wellness" of diagnostic imaging systems. However, this has not been the case for their mobile "imaging centers", to which service technicians had no remote access.

Since deploying the AirLink® gateways, engineers can monitor and maintain these mobile imaging centers in near real-time. This not only allows the techs at the call center to troubleshoot and fix imaging equipment remotely, but it significantly decreases the frequency and duration of trips required by field service engineers to complete on-site repairs. The gateways' persistent network connectivity provides extensive remote management and configuration capabilities, enabling Philips to monitor and control their network of mobile devices from one central location. For instance, Philips was able to solve the issue of continually re-setting a troublesome router by controlling relays through the management tool, enabling Philips to remotely reset the router as often as necessary.

Because the mobile imaging centers predominantly serve rural communities, they are frequently in locations that are 3-4 hours from the nearest Philips field engineer. Due to the time required for travel, diagnostics and eventual repair, a customer's imaging equipment could be down for a significant amount of time. Utilizing the AirLink gateway, Philips engineers located in the company call center will have the ability to monitor, troubleshoot and fix problems remotely, minimizing the need for travel by a field service engineer. In certain situations, the call center will be able to diagnose issues as the field service engineer is enroute to the remote location. When the engineer arrives at the mobile imaging center, the problem may already be diagnosed, saving valuable resolution time.

Additionally, with the AirLink GPS feature, the location of mobile imaging centers can easily be tracked. In the past, locating mobile systems in real-time was a challenge for Philips, requiring people throughout the organization to spend significant time and effort. With the GPS feature, tracking is a real-time, systems-driven process that improves the efficiency in overall service delivery.

Wireless connectivity enabled by the AirLink gateways provides the opportunity to reduce downtime from days to just hours or even minutes. Since any equipment downtime results in lost revenue, the wireless solution provides an immediate ROI. The current average reimbursement rate for a diagnostic imaging scan is significant. Assuming an average of 10 patients receiving scans each day, the customer could lose a considerable amount of revenue when a machine is down for just one day. Remote monitoring and repair minimizes revenue stream loss and ensures that at-risk patients have the opportunity to use the imaging equipment during the limited time that it is in their area.

Philips is taking a phased approach to their wireless solution. While currently putting in the structural foundation of remote management and tracking solution, Philips and Astral Communications are also planning for an AVL (automatic vehicle location) application from Darby Corporate Solutions (DCS) and additional vehicle telemetry functionality from SimpleCom Tools. With the AVL web interface, Philips and their customers will be able to track the location of the mobile imaging centers online.

RESULTS

According to customer feedback, Philips' Mobile Enterprise solution is the first-of-its-kind in the industry. With a successfully completed pilot, Philips is currently rolling out this technology solution to their mobiles across North America. Furthermore, Philips is committed to evolving the solution to remain on the cutting edge.

Philips is confident that success with their telemetry application will translate to remote monitoring and control applications in other Philips' fixed equipment locations.

Philips Medical Systems' remote monitoring and tracking solution utilizing the Sierra Wireless AirLink intelligent gateways was deployed to produce the following benefits:

- Improve patient care by increasing equipment uptime through preventative maintenance and remote issue diagnosis made possible by remote monitoring of machines
- Minimize potential revenue loss to the mobile customers due to downtime
- Improve overall customer satisfaction through proactive system checks
- Increase efficiency by tracking mobile systems using GPS technology

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- Enhance productivity to both customers and Philips Customer Service organization