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 providinginnovative technology and services that enable health care providers to achieveclinical excellence. The healthcare business is a division of Royal PhilipsElectronics of the Netherlands, which is one of the world's largest electronicscompanies with 160,900 employees in over 60 countries.

In response to customer demand for more strategic and effi cient customersupport, Philips Medical Systems recently established a new North AmericanMobile Enterprises department. Taking advantage of the startup mentality bredby a fresh opportunity, the Mobile Enterprise department immediately begancreating their vision for an innovative mobile medical program. The team'smission is to provide optimal patient care through increased effi ciencies andimproved service to their partners and customers.

BUSINESS CHALLENGE

One of the Mobile Enterprise team's key initiatives is running mobile imagingcenters, which provide use of diagnostic imaging equipment to markets thatcannot support purchase and maintenance of fi xed imaging equipment. Thisdiagnostic imaging equipment includes MR (magnetic resonance), CT (computedtomography), nuclear medicine and cardiovascular systems. The key marketssupported by the Mobile Enterprise team include rural communities, multilocation medical facilities and prisons.

Mobile imaging centers consist of 18-wheel trailers outfi tted with Philips imagingequipment and third party drivers and medical staff. These centers have tightschedules and are always in-use or in-transit to a facility, with most centersstaying in one location for only a single day. Any downtime of the imagingequipment results in a loss of patient service and revenue for the healthcareprovider. Philips needed to fi nd a way to proactively monitor their medicalequipment

to prevent downtime and to diagnose and fi x issues remotely to avoidsending fi eld engineers on-location for repairs.“For Philips, it’s all about patient care, effi ciency and productivity,” explainedKetan Shah, senior manager, Mobile Enterprise in Philips Medical Systems’Imaging division. “By maximizing our ability to service our customers, the result isimproved patient care and customer satisfaction.”

SIERRA WIRELESS AIRLINK® SOLUTION

Philips’ Mobile Enterprise, in collaboration with partner Astral Communications,developed a wireless-specifi c solution to complement their existing proprietaryremote monitoring solution. Further, Astral Communications, an advancedcommunications systems provider, is continuing to work with Philips todevelop a wireless telemetry solution using the Sierra Wireless AirLink® communications gateway.

The wireless solution is helping Philips to improve effi ciencies and patient carein many ways. Historically, Philips’ engineers have been able to connect to asecure remote services network to diagnose system “wellness” of diagnosticimaging systems. However, this has not been the case for their mobile “imagingcenters”, to which service technicians had no remote access.

Since deploying the AirLink® gateways, engineers can monitor and maintainthese mobile imaging centers in near real-time. This not only allows the techsat the call center to troubleshoot and fi x imaging equipment remotely, but itsignifi cantly decreases the frequency and duration of trips required by fi eldservice engineers to complete on-site repairs. The gateways’ persistentnetwork connectivity provides extensive remote management and confi gurationcapabilities, enabling Philips to monitor and control their network of mobiledevices from one central location. For instance, Philips was able to solve theissue of continually re-setting a troublesome router by controlling relays throughthe 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 fi eldengineer. Due to the time required for travel, diagnostics and eventual repair, acustomer’s imaging equipment could be down for a signifi cant amount of time.Utilizing the AirLink gateway, Philips engineers located in the company callcenter will have the ability to monitor, troubleshoot and fi x problems remotely,minimizing the need for travel by a fi eld service engineer. In certain situations,the call center will be able to diagnose issues as the fi eld service engineer is enroute to the remote location. When the engineer arrives at the mobile imagingcenter, the problem may already be diagnosed, saving valuable resolution time.

Additionally, with the AirLink GPS feature, the location of mobile imagingcenters can easily be tracked. In the past, locating mobile systems in real-timewas a challenge for Philips, requiring people throughout the organization tospend signifi cant time and effort. With the GPS feature, tracking is a real-time,systems-driven process that improves the effi ciency in overall service delivery.

Wireless connectivity enabled by the AirLink gateways provides the opportunityto reduce downtime from days to just hours or even minutes. Since anyequipment downtime results in lost revenue, the wireless solution provides animmediate ROI. The current average reimbursement rate for a diagnosticimaging scan is signifi cant. Assuming an average of 10 patients receivingscans each day, the customer could lose a considerable amount of revenuewhen a machine is down for just one day. Remote monitoring and repairminimizes revenue stream loss and ensures that at-risk patients have theopportunity to use the imaging equipment during the limited time that it is intheir area.

Philips is taking a phased approach to their wireless solution. While currentlyputting in the structural foundation of remote management and trackingsolution, 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 trackthe location of the mobile imaging centers online.

RESULTS

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

Philips is confi dent that success with their telemetry application willtranslate to remote monitoring and control applications in other Philips' fi xedequipment locations.

Philips Medical Systems' remote monitoring and tracking solution utilizingthe Sierra Wireless AirLink intelligent gateways was deployed to produce thefollowing benefi ts:

- 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 effi ciency by tracking mobile systems using GPS technology

- Enhance productivity to both customers and Philips Customer Service organization