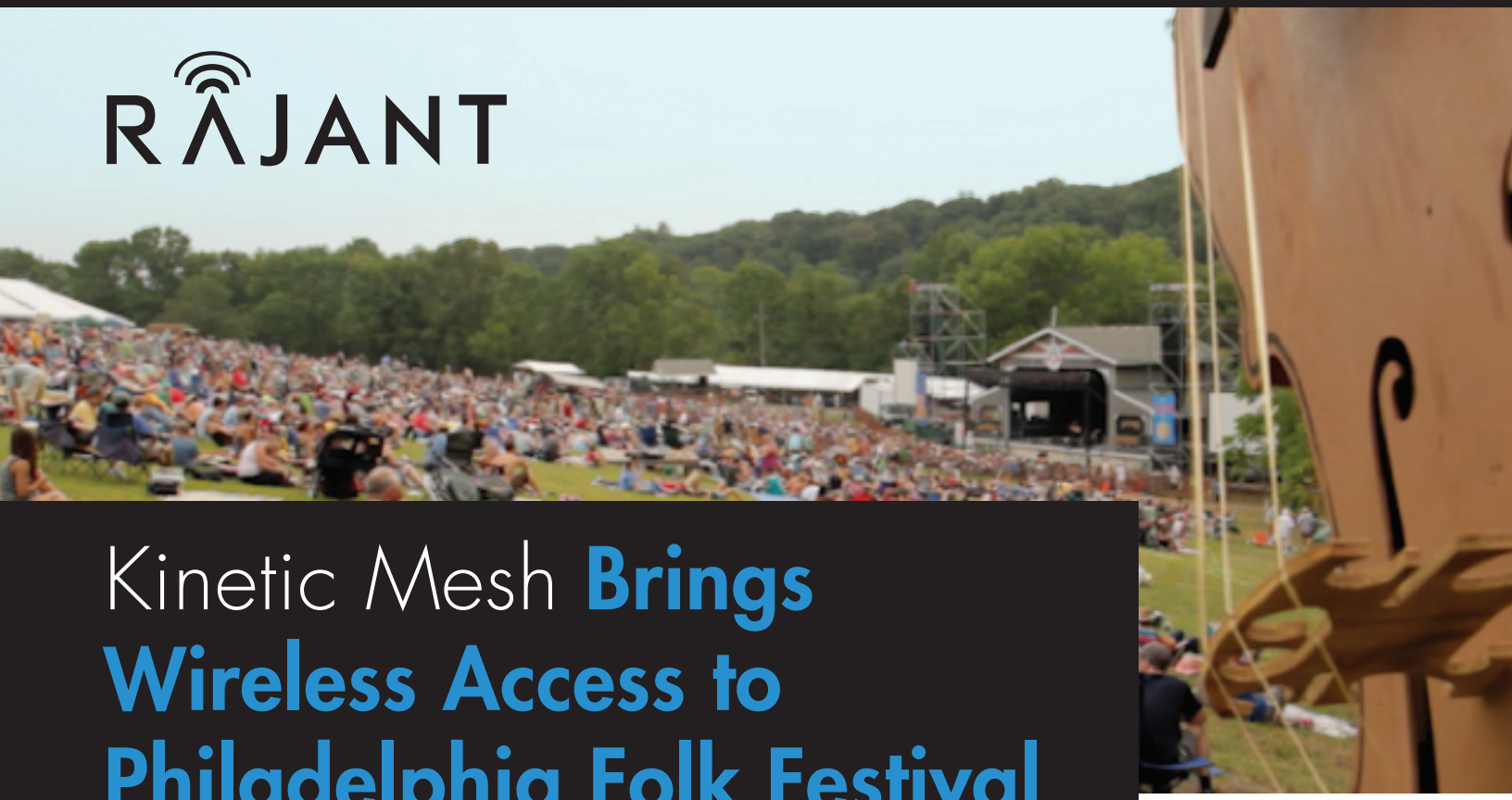
RAJANT



Kinetic Mesh **Brings Wireless Access to Philadelphia Folk Festival**

The **Philadelphia Folk Festival** is the **longest-running** and one of the most culturally significant **music festivals in the United States**, having begun in 1962. Co-founded, MC'ed by legendary folk music DJ and "The Grandfather of Philadelphia Folk Music," Gene Shay, the four-day festival is **staffed almost entirely by volunteers**.

Each summer, on the third weekend in August, thousands of music lovers and campers flock to Old Poole Farm in Schwenksville, PA to hear contemporary and traditional folk artists play on six stages in genres ranging from World/Fusion, Celtic and Singer/Songwriter to Folk Rock, Country, Klezmer and Dance. Over the years, the festival has featured the biggest names in – from David Bromberg, Koko Taylor, Richard Thompson and John Hartford to Arlo Guthrie, Taj Mahal, Elizabeth Cotton, and countless others.

10,000+
Event Attendees

Provided High-Bandwidth Wi-Fi- access

Work at the festival site begins weeks in advance – with parking areas, ticketing stations, food and concession stands, toilets, trash, health and emergency stations, performance sites and recreation areas all carefully planned and managed.

Challenge

Staff and thousands of attendees faced weak cellular coverage, inhibiting their connections to home, work and each other through a multi-day festival.

Solution

Leveraging Rajant Kinetic Mesh Networking, a self-establishing high-bandwidth wireless network of 14 BreadCrumb nodes was deployed to cover the festival's 80 acres.

Results

Festival staff was freed to manage ticketing and security and to maintain communications from anywhere on the event site – while 10,000+ attendees were empowered to stay connected via high-speed Wi-Fi service.

Reliable communication among these diverse facilities and functions is critical to the success and smooth, safe operation of the festival. Traditionally, on-site communication was limited to word-of-mouth, radio and later, mediocre celleular communication.

One might not expect a folk festival on a Pennsylvania farm to offer much in the way of Internet access, but for the past five events, Rajant Corporation of Malvern, PA has voluntarily outfitted the entire Philadelphia Folk Festival with its innovative Kinetic Mesh Networking technology. Leveraging Rajant BreadCrumb wireless network nodes and InstaMesh software, the technology creates a highly resilient, high-bandwidth wireless network that can be utilized by both festival organizers and attendees.

Responding to Wireless Demand

Anticipating a high percentage of smartphone-toting attendees in 2010, Rajant added mobile broadband access to the mix. According to Rajant CEO Bob Schena, the need for broadband at the event is a sign of the times.

"The 10,000-plus people who show up at the festival today are accustomed to being connected – somehow – with the telecommunications network. Our job is to make sure that their expectations are met."

Using a multi-spectrum telecommunications infrastructure, Rajant's radio-aggregating BreadCrumbs provide Wi-Fi access across multiple frequencies. This allows large numbers of smartphone devices to exploit additional spectrum to wirelessly connect to the Internet and even place voice calls over the Rajant BreadCrumb network – rather than attempting to connect to a 3G network in an area with limited coverage.

"It's very important to be able to stay in touch," notes Philadelphia Folksong Society president, Lisa Schwartz. "So we have people who are able to make the time commitment to be here for four days, and yet still be in touch with their home, their office or their business. That is passed through to our customers who see it as a definite value-add."

Easy to Deploy and Manage

This year, 14 BreadCrumbs were rapidly deployed to cover the rolling 80-acre festival grounds. These ruggedized network nodes instantly create a self-establishing mesh network without requiring a network administrator. As each BreadCrumb is added, it multiplies the bandwidth capacity of the entire network, so as the network grows larger, it also grows stronger. In addition, an Ethernet gateway enabled users to gain access to the Internet with ease.

"It's a quick-deployment system," says Lewis Hipkins, Chief Technology Officer, Philadelphia Folksong Society. "They're battery operated, so it's just a matter of mounting it on a pole or a building. The mesh creates itself pretty quickly, and there's a light on the unit so you know when it's working – you can drive past any pole, look up, and know if it's working. The system is divided into multiple SSID's for different access points and different purposes, so we can put it right where we need to have access."

"It's a quick-deployment system. They're battery operated, so it's just a matter of mounting it on a pole or a building. The mesh creates itself pretty quickly."

- Lewis Hipkins, CTO, Philadelphia Folksong Society

In addition to providing broadband access across the festival site, the Rajant network powered the festival's numerous applications, including the ticketing system, communications between trailers and among volunteers, management and staff, and security – including Wi-Fi cameras installed at three main entrances, parking lots, and the campgrounds. According to Hipkins, the real-time access to ticketing and other pertinent information has facilitated event management.

'The Rajant system provides real-time access. We use it for monitoring our ticketing system, so instead of having to get to a terminal somewhere, I can use my iPhone to log onto the network, bring up the ticketing software, and actually look at how many tickets are sold now."

Streamlined Communications

The ubiquitous communications provided by the Rajant network has streamlined the way festival management and volunteers get the word out.

"Festival management is spread out all over this site," says Schwartz "So instead of having to reconnoiter and gather at one location, they can instantly communicate and know exactly what is going on at any point in time, anywhere. In the case of an emergency or some communication that we need to get out, the fact that we can do that in a global sense is very comforting."

Rajant CEO Schena sees nearly unlimited potential for the application of Kinetic Mesh Networking technology as demand makes bandwidth an increasingly scarce commodity.

At the Philadelphia Folk Festival, "what we see happening is continuing growth in demand for network connectivity by attendees and management," claims Schena. "As smartphones become more and more capable, people's expectations rise with those capabilities.

"So as telecommunications service providers scramble to find a solution for this incredible demand for spectrum and bandwidth that's being driven by these new devices, Rajant's technology enables spectrum that was never intended for mobile use to be used by those devices today."

The beauty of the Kinetic Mesh solution is that it is just as easy to take down as it is to put up. Within hours of the close of the festival, the kinetic mesh nodes were removed and the farm was back to being a farm.

New Life for Existing Spectrum

According to a recent Gartner Group study, worldwide mobile device sales to end users totaled 325.6 million units in the second quarter of 2010, a 13.8 percent increase from the same period in 2009. Meanwhile, smart phone sales to end users accounted for 19 percent of worldwide mobile device sales – a 50.5 percent jump from the second quarter of 2009. In another report, Gartner predicted more than 500 million smart phones would sell in 2012.

This explosive increase and resulting business expansion, however, have not come without a cost. Consumers expect wireless coverage – including mobile high-speed internet – to be as ubiquitous and as readily available as a dial tone. Factor in the burgeoning popularity

Gartner predicts **500M** **Smart phones** will be sold in 2012

of mobile applications and 3G-enabled portable computers, and the demand for packet traffic, requiring millions and millions of dollars in investments in cell sites and backhaul capabilities, is painfully clear. As a result, the wireless industry now faces some rather daunting challenges as it works to scale its networks to accommodate demand.

Rajant BreadCrumbs also provide superior coverage for Wi-Fi network expansion. With six available radio cards spanning all frequencies from 350 MHz to 6 GHz, Rajant BreadCrumbs can be tailored to take advantage of nearly any frequency or combination of channels.

Leveraging Rajant's BC Commander management software, network operators can designate channels within these frequencies that correspond with the spectrum they own or lease. As a result, a single BreadCrumb chassis can accommodate a nearly unlimited combination of channels, based on specific network requirements.

The Rajant architecture does not require a root or controller node, freeing available bandwidth normally dedicated to network management. In addition to providing greater flexibility and bandwidth, this also guarantees multiple gateways for wireless-to-wired connectivity, so there is always an available path.

Plus, with Rajant InstaMesh software, node failure does not mean network failure, as packet data automatically reroutes to the next available node using the best possible frequency.

The Rajant BreadCrumb® LX4, LX3 and LX rugged multi-radio wireless transmitter-receivers are the ideal fixed-mount solution for relaying transmissions across multiple frequencies. The LX4, LX3 and LX can all be used as nodes in a portable wireless mesh network using InstaMesh technology.

About Rajant

Rajant Corporation is the provider of the world's most reliable, scalable and flexible portable wireless network technology. Through the combination of Rajant BreadCrumb wireless devices and InstaMesh meshing software, wireless networks can be created that can support hundreds of moving nodes without crippling the network with overhead. By preserving valuable bandwidth for communications, a Rajant network also unlocks higher levels of productivity and speed than other available solutions.

Rajant technology is designed for and proven in the most demanding applications, and is rapidly becoming the ideal choice for ultra-resilient networks that are equally adept in everyday situations and in times of crisis. Rajant also provides its technology to service providers and manufacturers who are looking to extend their own offerings with the power of Kinetic Mesh Networking.

"As telecommunications service providers scramble to find a solution for this incredible demand for spectrum and bandwidth that's being driven by these new devices, Rajant's technology enables spectrum that was never intended for mobile use to be used by those devices today."

- Bob Schena, CEO, Rajant

Rajant Corporation

400 East King Street Malvern, PA 19355

Tel: 484.595.0233 | **Fax:** 484.595.0244

www.rajant.com

RAJANT