

Medford Mobilizes Wireless Workforce

Reduced Cellular Bills, New Capabilities And A More Efficient City Workforce Drive Fast Payback For City In Southern Oregon

Medford, Oregon has a population of 70,000 and is growing fast due to its desirable location on the border with California. Like most cities in the country, Medford was depending on the Cellular Digital Packet Data (CDPD) network for data communications with its public safety and public works personnel while they were in their vehicles. However, in mid-2003, the local cellular carrier informed the city that the CDPD network would be shut down and a new, next generation system called General Packet Radio Service (GPRS) would be deployed to take its place.

The City conducted trials of the GPRS system but found it wanting in several ways. First, although the data rates were higher than CDPD, they only supported about 30 to 40 Kbps on average, which is slower than most dial-up connections people have at home. Secondly, coverage was poor and prone to dropouts. Finally, the system still relied on centralized cell towers that create single points of failure throughout the network. The Technological Services Department (TSD) responsible for the city's wireless communications knew there had to be a better solution out there.

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Many Requirements, One Solution

Working with a wide range of city agencies, including Public Safety, Homeland Security, Public Works and others, the TSD came up with an ambitious list of requirements for the mobile data system. The requirements included a survivable, high performance network that allowed them to protect both their existing investment in mobile data terminal laptops and more importantly, the applications and training their departments had already invested in. They knew that upcoming applications like voice, video and multimedia data were in their future. They also needed to support high data rates from the police and fire vehicles as well as to them. Last but not least, the solution had to be affordable.

The fit between Medford's rigorous requirements and the MeshNetworks Enabled Architecture (MEA™) network solution became apparent as the investigation progressed. Since MEA technology was based on technology developed for the battlefield, they knew it was reliable and offered the level of survivability they would need if catastrophe did strike. Its ability to support high-speed handoff between access points enables seamless broadband connectivity at speeds of over 100mph throughout the city. Self-forming, self-healing wireless routing eliminates single points of failure and provides first responders with multiple connection paths. Should one connection fail, redirection across the network occurs immediately and automatically.



They also found that MEA technology turns every user in to a router/repeater for every other user in the network. So as emergency vehicles respond to an incident they literally take the network with them.

Finally, it was clear that the support for industry standard Internet Protocol (IP) would allow day-to-day interoperable communications between first responders, Police, Fire, and Public Works, while also providing reliable and survivable communications during and after a catastrophic event.

A Model For Other Agencies

"MeshNetworks' technology is the best solution I have seen to address the needs of public safety and city governments," said Doug Townsend, Director of Technology for Medford. "That is why we have announced a long term goal to deploy the technology countywide"

Medford is working towards a regional approach to its Homeland Security Preparedness and response.

"As we identify funding, we're going to continue to expand the program until we have

truly countywide interoperability," said Ron Norris, the Medford Deputy Police Chief. "The beauty of this system is that it becomes more robust with the more users you have."

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Deployment of a citywide mobile broadband network allows public officials to access several sources of information at once, even when en route to an incident or worksite. Driver license information can be cross-referenced with a criminal database while video from security cameras can be streamed to the police car.

"If it's as successful as I perceive it to be, it could be a true model for a lot of other agencies, and we will be available at the time to assist them if they want to move into it," Norris concluded.

And since the MeshNetworks system supports the same high data rates both to and from vehicles in the field, large data files such as video and photo images can be sent from the police car back to headquarters.

Fast Payback

According to Doug Townsend, "The City will realize significant savings and see a payback on its investment in about the first eight months of deployment." Savings on monthly cellular services alone are expected to be about \$24,000 annually.

Public Works crews will tap into the network to access information from the field instead of having to return to the service center between jobs. This is estimated to save crews between a half hour and an hour each day in travel time. The total time savings accrued should add up to \$166,400 in labor savings annually.

"This is an example of technology making a huge difference in the community, by improving communications, efficiency, and safety for our officers - and the public we serve." according to Deputy Chief Norris.

