BeamSpeed, Arizona, USA

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Michael Melanson, Network Administrator, BeamSpeed

Challenge
To cost-effectively extend a WISP's service footprint by transporting Ethernet services over a T3 radio network

Solution
RAD's RICi-T3 accepts 10/100 Mbps Ethernet traffic, applies rate limiting to the stream and converts it into a 45 Mbps T3 circuit, enabling transport over BeamSpeed's T3 microwave radio network

Benefits
- Cost-effectively extends Ethernet network footprint
- Remote configuration, monitoring and management reduces Opex
- Separate VLANs for management and user traffic ensures security
- 'Plug-and-play' installation

Arizona WISP Expands Service Coverage Area to California and Mexico by Transporting Ethernet Services over T3 Radio

RICi-T3 Enables Configuration Using Standard Ethernet Port Instead of Costly T3 Port

Yuma, Arizona is the third-fastest growing city in the United States. As Yuma's first wireless Internet service provider (WISP), BeamSpeed is growing right along with it. In fact, BeamSpeed's network coverage has expanded to encompass several of the population centers situated along the Arizona-Southern California-Mexico borders.

To date, BeamSpeed's original 18-mile radius service area has fanned out to reach as far as Mexicali, Mexico on the southern end, and as far as Brawley, California on the northern end, covering approximately 1,200 square miles. While these small cities have a population density sufficient to support the necessary infrastructure investments, the intervening areas are largely characterized by open spaces and small desert towns – areas typically unable to support the requisite capital outlay. BeamSpeed, however, saw an opportunity.

By using RAD's RICi-T3 intelligent converters, BeamSpeed is able to tunnel its Ethernet traffic over its existing network of T3 microwave radios. The RICi-T3 accepts 10/100 Mbps Ethernet traffic, applies rate limiting to the stream and converts it into a 45 Mbps T3 circuit that is compatible with BeamSpeed's T3 radios. Using the same setup at the next radio hop, its microwave radio receives the T3 stream and passes it on to the RICi-T3, where it is converted back to native Ethernet. By employing this configuration over several radio hops BeamSpeed is able to span its Ethernet service coverage into Southern California and Northern Mexico.

Winning Features and Intelligent Management Mean Easy Operation
While BeamSpeed could have deployed a competitor's interface converter, or even a broadband Ethernet radio, the RICi-T3 clearly possessed the best combination of features and price. Further, with this configuration, BeamSpeed is able to configure its network router with a standard Ethernet port instead of a more costly T3 port. This cost-effective approach enables BeamSpeed to provide valuable connectivity to the vast, lightly populated stretches between network radio hops, along with the several population centers that define its network boundaries.

The "intelligent" aspects of the RICi-T3 mean that BeamSpeed is able to configure, monitor and manage all of its deployed units from a central location. Among a host of other features, RICi-T3 offers plug-and-play installation, VLAN tag stacking, remote and local loopbacks, and fault-propagation. In fact, it is these features that elicited the most praise from Michael Melanson,

ADVANCED DATACOMM SOLUTIONS

RAD data communications

Ethernet over T3 Microwave Radio

BeamSpeed, Arizona, USA

"We have many RAD products throughout our network: the RICi-T3, IPmux-14, IPmux-11, IMXi-4, the FCD-155, and four or five complete Airmux-200 wireless radio links…We are definitely happy with the products and support we've received from RAD."
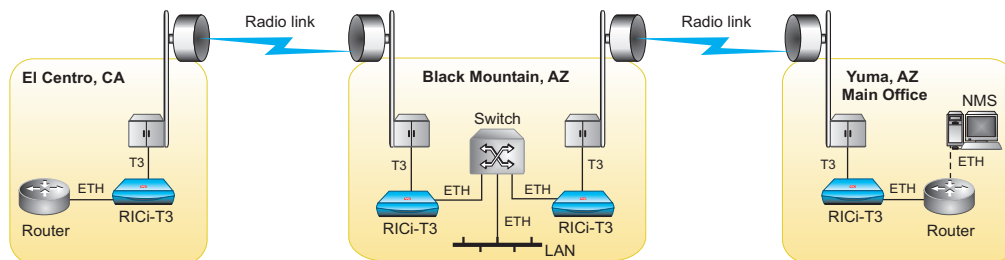
Michael Melanson, Network Administrator, BeamSpeed

BeamSpeed's network administrator. "With the 'intelligent' management features, on a scale of 1 to 10, I would have to give the RICi-T3 a '10' for our level of overall satisfaction," he noted. "They are real easy to install, basically plug-and-play, and real easy to monitor. We really haven't even had any issues with them since we installed them."

Echoing that sentiment is Michael Schmidlen, President of Advanced Datacomm Solutions, the RAD channel partner based in Highlands Ranch, Colorado that assisted BeamSpeed with the selection and acquisition of its network-critical infrastructure. "I've been selling RAD's RIC devices for the past four or five years and have always had great success. Now, with the intelligent management features incorporated into the RIC product family, my clients are happier than ever," said Schmidlen.

Wide Range of Solutions for a Wide Range of Services

Along with its high-speed, wireless Internet service offerings, BeamSpeed offers phone, paging and push-to-talk radio services. To fulfill these services, BeamSpeed has deployed an extensive, state-of-the-art network architecture. RAD's presence in that network is not limited to the RICi-T3. "We have many RAD products throughout our network: the RICi-T3, IPmux-14, IPmux-11, IMXi-4, the FCD-155, and four or five complete Airmux-200 wireless radio links" added BeamSpeed's Melanson.

"Overall we've been real happy with the RAD products we have," Melanson continued. "When we encountered a problem with one of the Airmux installations, RAD's support team was quite responsive and helpful. They even dispatched a technician to quickly resolve the situation. We are definitely happy with the products and support we've received from RAD."

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