



BRIDGING THE DIGITAL DIVIDE IN MOUNTAINOUS RURAL MARYLAND

Garrett County, the U.S. state of Maryland's westernmost county, is a land of rugged beauty with mountains and valleys, a landscape that creates problems for broadband services delivery.

With 30,000 people and covering over 650 square miles, Garrett Co has significant numbers of residences and businesses with no access to broadband services, a situation not unlike many U.S. rural markets.



Declaration Networks Group (DNG), a Vienna, Virginia-based service provider, operating under its NeuBeam™ brand, is closing this Digital Divide with advanced wireless technologies that extend Last Mile broadband connections from Middle Mile backbone fiber optic cable routes.

CUSTOMER SITUATION

Several years ago, the County recognized broadband as a utility that could generate economic and social benefits. It established a

program to attract a private organization to deliver broadband services where incumbent service providers would not.

Garrett Co put up development money and received matching funds from the Appalachian Regional Commission. The County then sought a private partner through a request for proposal (RFP) process.

DNG responded to the RFP and was selected as the private partner in the Private/Public Partnership that garnered public funding and private investment.

"Today's economy requires a connected community, and rural areas are often left behind," said Cheryl DeBerry of Garrett County's Economic Development Department. "Garrett County government is committed to finding a way to extend essential broadband service to as many of our rural businesses and residents as possible. Our use of wireless technology in partnership with DNG is allowing us to fulfill that commitment in remote, unserved areas of our county."

Early on, DNG adopted television white space (TVWS) frequencies (470-698 MHz) for wireless broadband in rural markets like Garrett Co. The County retained a nationally-renown broadband consultant, CTC Technology & Energy, to evaluate potential radio equipment vendors for the Partnership.

Redline proved to be the best vendor for TVWS radio because Redline could program its existing radios where competing vendors were still designing their offer.

SOLUTION

TVWS serves non line-of-sight (NLOS) applications beaming signals from mountain tops down into valleys through foliage and other obstacles. DNG uses 5 GHz radios for line-of-sight (LOS) transmission and plans to use 3.5 GHz when available.



Redline's U.S. TVWS radio delivers speeds that exceed those available from the Incumbent providers. Capacity can be increased by combining multiple contiguous channels. Speed is an important issue for DNG who is bridging the Digital Divide with a range of service packages and the ability to exceed 25 Mbps, the FCC's benchmark threshold, to support current and future high-bandwidth applications.

DNG has its own engineering staff and engages Redline for technology and professional services support. More important, Redline guaranteed performance of the network design with a surety bond that helped DNG secure project funding.

DNG's network uses Redline's RDL-3000 XP Ellipse base stations in both TVWS and 5 GHz bands, depending on the site, and RDL-3100 XG 5.8 GHz point-to-point radios for backhaul.

DNG runs the network operations center (NOC) and provides customer service. Centralized functions allow DNG to deploy new services rapidly.

OUTCOME

Since the Fall of 2016 project launch, DNG has deployed more than 50 TVWS and 5 GHz base stations. This network is designed to cover 3,000 homes that are the most challenging to reach in the County.

With early success, DNG plans to deliver broadband services to all of Garrett Co, and extend its Digital Divide model to other U.S. rural markets.

"TVWS is ideal for this application. Redline played a key role, both technically and in helping us create a robust service. Redline had TVWS off the shelf. The Redline team proved very flexible and eased the ability to move forward. Redline has really followed through!"

- Bob Nichols, CEO, DNG

ABOUT REDLINE COMMUNICATIONS

Redline Communications is the creator of powerful wide-area wireless networks for the world's most challenging applications and locations. Used by Oil & Gas companies, militaries, municipalities and telecom service providers, Redline's powerful and versatile networks securely and reliably deliver voice, data, M2M and video communications for mission-critical applications.