



## Farmers Telecommunications Cooperative relies on ADC's Next Generation Frame to Manage its Fiber Infrastructure

### CASE STUDY

#### BACKGROUND

In the early 1950s, most investor-owned telephone companies in the United States refused to serve rural areas of the country, claiming it was too expensive to do so. Several residents of northeast Alabama, like many of their counterparts around the U.S., realized that if they and their neighbors were ever going to get reliable communications service, they would have to provide it themselves. Consequently, they set up Farmers Telecommunications Cooperative (FTC) with the idea of making sure that residents and businesses across sparsely-populated DeKalb and Jackson Counties would have access to the same kinds of services that urban Alabamans enjoyed. Throughout the 56 years that have elapsed since then, FTC's mission has not changed, but the organization itself clearly has, along with its underlying technologies and the services it offers. Now the largest member-owned operating telephone cooperative in the state, Rainsville-based FTC serves nearly 20,000 subscribers in seven exchanges. It recently began a multi-year project to modernize its network by deploying a fiber-to-the-Premise (FTTP) infrastructure. As that overbuild progresses, FTC gradually is adding advanced offerings, including IPTV, to its service portfolio, which currently includes local and long-distance telephone voice; high-speed Internet access; and wireless communications.



Customers in northeast Alabama are no different from subscribers in other parts of the nation or, for that matter, the world; they want more bandwidth and more bandwidth-intensive services. Satisfying customer demands and "improving the quality of life here in northeast Alabama" are part of FTC's mission, says Central Office Manager David Garrett, "and we do that by becoming a world-class broadband provider." Having deployed fiber in strategic sections of its network since 1990, FTC decided a few years ago to pull it throughout the entire network and, wherever necessary, take it all the way to the customer's premise. "We will use our existing copper where it's still sufficient with ADSL 2+ technology to carry whatever services the customer wants," Garrett explains, "but we are ramping up our fiber overlay to the whole network. Our target date for completion is 2015."

With customers clamoring for fast access to advanced services, Garrett says FTC opted for an Active Ethernet architecture, as opposed to a passive optical network (PON) approach, because it "gives you more bandwidth out of the gate." Active Ethernet's point-to-point links enable FTC to deliver 100-Mbps access to each customer, rather than having to divide that bandwidth among 16-32 customers, as the PON architecture requires. Garrett says he and his colleagues also chose a fully-integrated IP/Ethernet-based access solution which offers Gigabit Ethernet transport. "It's a clean solution that really rolls everything onto one platform for [easier] monitoring, maintenance and troubleshooting," he says.

### MANAGING A LOT OF FIBER IS A MAJOR CHALLENGE

FTC's decision to overbuild its existing copper facilities with Active-Ethernet fiber means customers will enjoy all the benefits of a high-performance network. However, it also means there will be fiber--a lot of fiber--coming into the cooperative's central and remote offices, where floor space always is at a premium. Garrett and his colleagues knew they had to find a way to manage all that fiber in those relatively small spaces.

Yet finding a cable-management solution that satisfied FTC's density and scalability requirements was only part of the challenge. The cooperative also found itself in a time crunch to get whatever solution it chose up and running. "We had won a bid to build a fiber network for the school system here in DeKalb County," Garrett explains, "and we were under a pretty short timeline to get that completed."

### A NEXT-GENERATION SOLUTION

After evaluating several vendor's fiber-termination frames, FTC chose the Next-Generation Frame (NGF) from ADC. With a broad range of frame options, the NGF supports various termination, splice, and storage applications. Each frame option holds 12 high-density blocks and includes ample trough space for cable and jumpers, easy access to connectors and storage for jumpers. Garrett says he and his staff particularly liked the NGF's density and scalability. Using the NGF's 144-count blocks with SC/APC connectors, "we can terminate 1,728 fibers on one frame in our larger wire centers," Garrett says, "growing up to that in increments of 144-count blocks, sort of a pay-as-you-grow."

The NGF's small footprint also allows FTC to make the most efficient use of the limited physical space within its wire centers. Garrett says the cooperative has installed the NGF in four FTC wire centers and plans to deploy it in at least 12-14 wire centers in total.

He adds that ADC not only provided the kind of cable-management solution that FTC was looking for but also helped Garrett and his staff get it up and running pretty quickly. The company sent field engineers to help the FTC technicians with the design and installation of the first NGF deployment, which supported fiber connectivity for the DeKalb County school system. As a result of that joint effort, Garrett says FTC was able to make the deadline and to connect about half the county schools with fiber.



## BENEFITS EXTEND FROM THE CENTRAL OFFICE TO THE CUSTOMERS

By selecting ADC's NGF as its cable-management solution, the cooperative is able to deliver multiple benefits to its members/customers. Obviously, with the NGF fiber-termination solution in place, FTC can continue with its network-modernization project and thereby ensure its customers will get the broadband services and access speeds they want. Further, because of the NGF's high density and modular, 12-block design, FTC can scale its new network in a cost-effective manner, investing only in the amount of fiber-termination capacity that it needs at any given point in time.

The NGF's ease of installation is another benefit Garrett and his staff appreciates. "We use the pre-terminated 144-count blocks, so we just put in the frame. If we only need 432 fibers terminated on that frame today, we just pop on three or four blocks and pull the tails either over to the wall or to the outside for the splicers to handle. Then, as far as the central office goes, we're pretty much ready to rock and roll," he says.

ADC's willingness to help FTC with designing and installing the first NGF deployment was, for Garrett, another major benefit. "Hands-on training is usually the best kind," he says, "and that's what we got from ADC. After that, we were able to do our own design and installation of the NGF, and that saves us time and money."

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