Communications News

satellite-based systems appears unlikely — the costs are roughly equal and the demand is seemingly high enough to support both.

—Richard Cunningham

Fiberoptics Move Closer to Home

The communications industry first used fiberoptics in long distance, point-to-point trunk lines between central offices. Recently, the technology moved one step closer to the customer. Telecommunications companies now use fiberoptics in feeder systems that connect central office lines to local carrier service distribution areas, such as major subdivisions or industrial parks. Siecor Corp., Hickory NC, responded with a line of singlemode fiberoptic products that meet the unique requirements of this subscriber-feeder environment.

A feeder system is a 9 or 10 mile long, tree-shaped cable configuration that starts with several dozens of fibers at the central office and drops off two pairs of fibers (one working and one backup) at each carrier service area. Each pair consists of one incoming and one outgoing fiber. The four fibers travel to a remote—a multiplexer/demultiplexer that spreads the optical signals to several electronic cables for the final journey to individual subscriber homes and office buildings.

For efficiency, remotes must be easily added to the feeder when new construction goes up. A new cable design, called Feeder-Bundle, allows separate access to each fiber without disturbing the operation of other fibers. The cables contain up to 18 buffer tubes in a loose-tube construction, each buffer tube carrying one to 12 fibers. The original feeder configuration uses only a fraction of the fibers available. As new construction goes up in the feeder area, a field worker cuts into the cable, finds the unused buffer tubes (identified by color), and splices in new branch fibers.

To go along with the cable, the company developed a silicon array fiber connector that can be either preconnectorized or installed in the field, a splice closure "patch panel" that allows route changes in the field without cutting cables, and a fiberoptic distribution center for central office switching that can be used with any connector.

—Holly Bigelow