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Optimize Your Network Capacity by Making the Right Connections

Jan Vandenbroeck, Director of Regional Product Management for Service Providers EMEA, CommScope.

As the demand for bandwidth continues to increase, the migration to all-fiber networks will dominate network deployment decisions.

While fiber was used originally in just the trunk network, the ever-increasing demand for bandwidth made it the future-proof carrier in the feeder, distribution and drop part of the access network, both for business and residential customers. Looking forward, 5G, the Internet of Things (IoT) bandwidth, and latency requirements will further increase the volume of fibers and optical passive devices in the access network; meanwhile, the convergence of wireless backhaul and wireline access networks into one will have the same effect. Our current and future lifestyle and economy will strongly rely on this next generation fiber communications utility grid.

A critical component of the successful fiber network in the outside plant is the fiber splice closure. Used to connect fiber cables, these closures serve two functions:

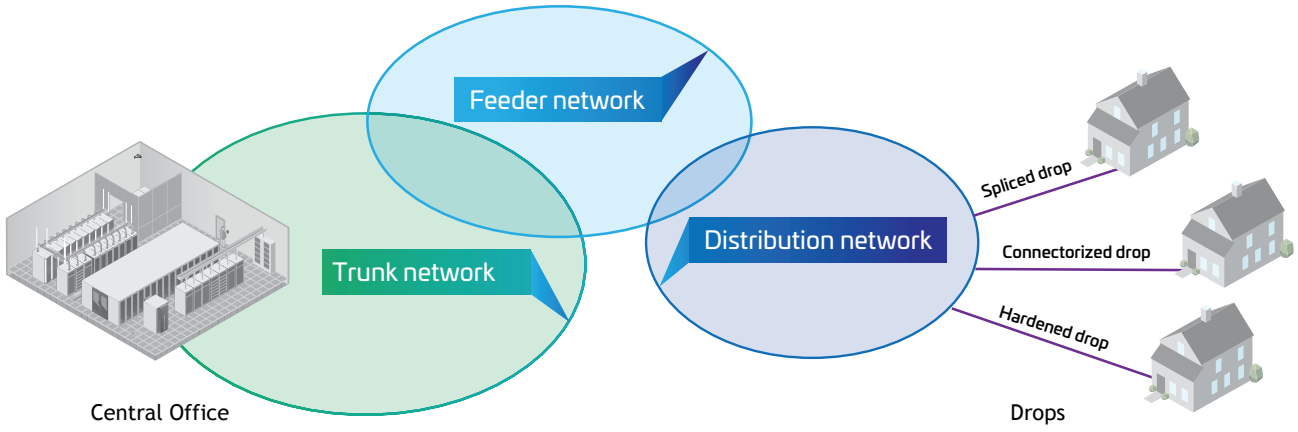
1. **Organize the overlength of exposed fiber strands and optical connections**
2. **Protect fiber strands from the external environment**

However, use of the closures is not a one-size-fits all proposition. Each part of the network brings very specific challenges and requirements. Making the wrong closure choice impacts cost, labor needs, quality of service and network migration readiness.

Trunk: As the main link between large, central offices, the trunk segment must, above all, remain reliable. Directly impacting a broad audience, closures in the trunk connect equipment over a long distance, utilizing cables with a high volume of fibers that are accessed by only highly skilled technicians. In principle, it is an "install and forget situation," and re-accessing the closures is exceptional. Fibers are often mass spliced and organized in the most compact way possible.

Feeder: Branching out from central offices towards large business customers and thousands of end users, the feeder segment is accessed more frequently than the trunk segment. In the 1990s, when fiber was being rolled out in the feeder segment, service providers needed a solution to avoid interruption of service for their large business customers with point-to-point connections in metropolitan rings. To address this challenge, we introduced fiber organizers, allowing technicians to work on individual fibers without disrupting other fibers.

RELIABILITY	INSTALLABILITY	FLEXIBILITY	SPEED



FTTX network

Today, the use of fiber organizers is a recommended method by the standardization body ITU-T. The fiber closures deployed at these points must allow for frequent, transient-free access while ensuring compatibility with disparate infrastructures, both above- and below-ground. The successful connection organizes fibers to individual customers separately, preventing work on one fiber from impacting surrounding ones.

Distribution: The feeder network connects to fiber distribution hubs (FDH)—street cabinets or closures—and can be installed below- or above-ground. From these FDHs, fiber cables branch off to multiple end users into the distribution network.

Flexibility is a paramount concern here, allowing the addition of new development areas while accommodating demographic changes during the lifetime of the network. Distribution networks are often installed above ground, necessitating an aesthetically pleasing look.

Drop: The end point of the distribution network requires a special closure, often referred to as an optical terminal, which connects a drop cable to the customer. These terminals provide plug-and-play simplicity, ensuring easy installations by crews that are in most instances less specialized in optical fiber connections than those working in other segments of the network. Quick customer provisioning and network testing is of utmost importance to control costs and manage customer demands.

With networks growing increasingly complex, deploying the right closures increases network efficiency and productivity.

To learn more about fiber splice closures, **download our new brochure, "Fiber Splice Closures,"** that details the most significant deployment criteria while offering powerful solutions for each segment of the fiber network.

DOWNLOAD

Jan Vandenbroeck is Director of Regional Product Management for Service Providers EMEA at CommScope. He has over 37 years of experience in tele- and datacommunications.

Since 1985, Jan Vandenbroeck has held Product Management and Business Development positions in Europe and North America where he introduced several new product lines for the long distance, metro and access fiber networks. He holds a Master Degree in Electromechanical Engineering and Business Administration.

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