

Optical Distribution Frames use cases: Flexibility and innovation at work

As networks expand their use of fiber, network managers are finding new and creative applications for ODF platforms. Here are just a few.

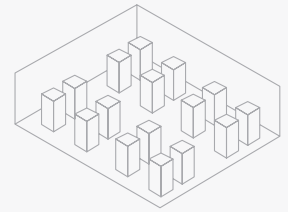
Data Centers

High Speed Migration

Data centers are in the process of migrating to ever higher speeds. 10G technology is now commonplace and modern networks are being designed to support 25G, 40G, 100G, 400G and beyond. This necessitates an ability to support duplex and multi-fiber connector technologies as well as fiber technologies optimized to support multiple wavelengths. ODF solutions are designed with maximum flexibility to support migration to 400G and beyond.

Edge Compute

As new applications drive ever decreasing latency requirements, the physical distance between content and users becomes a major factor in network performance. Concurrently, we see an increase in the requirements of new applications such as virtual and augmented reality to run sophisticated analytics in real time. These factors drive the need for a highly distributed network where density becomes a critical factor. ODF solutions provide superior density and cable management for these distributed facilities.



CLOUD Data Center

In today's Cloud data centers, the amount of home run backbone fiber entering the main distribution area is quickly multiplying. Meanwhile, network architectures like fat tree and mesh are driving more fiber into server cabinets. Cloud data center managers are increasingly deploying ODFs to effectively manage their growing inventory of fiber in both areas.

Central Offices

Fiber to the X

As service providers continue to put large amounts of fiber into the access network to support consumer bandwidth demands, the ODF in the central office is a key element to realizing the long term value of that network. The ODF's ability to manage density, accessibility and flexibility is critical to an operators ability to evolve the service offering.

Multi-use Networks

Access networks that operators are deploying today will need to service more than just one service type in the future. They will need to support residential broadband, Mobile front haul / back haul, business services and other services in the future. These networks will also likely utilize Wavelength Division Multiplexing to maximize the bandwidth capacity of the installed fiber. The accessibility and flexibility of the ODF solution deployed is key to an operators ability to support different services on the network in the future.



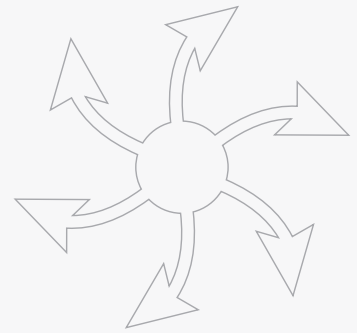
MSO Head-Ends

Network Overbuilds

In order to provide high speed services to business customers, MSO's are rapidly adding high fiber count cables in their OSP networks. High-capacity ODF platforms in the Headend like the NG4 make these deployments manageable.

Fiber Deep

As MSO's try to maximize the potential of the fiber that was deployed to support HFC networks, they are deploying CWDM's to support Fiber Deep or Node Splitting initiatives. The ability of the ODF in the Headend to support the CWDM's and other devices is a key part a successful deployment.



Mobile Networks

Network Densification

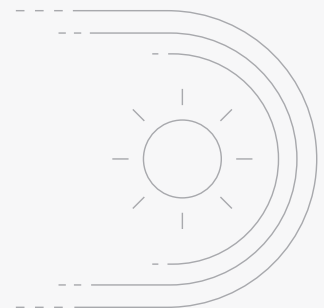
As more small cells are deployed in the network to meet bandwidth of the future, massive amounts of fiber capacity will be needed. Operators will utilize combinations of high fiber count cable and wavelength division multiplexing to support the fronthaul and backhaul needs of the networks. The ODF deployed in the Mobile Switching Center or Central Office will be key to supporting the density and flexibility these networks will need.

C-RAN deployment

Centralization of base band units (BBU's) is the first step toward the deployment of Cloud RAN or virtualized BBU's. the consolidation of multiple BBU's into a single location means that a large amount of fibers will need to be terminated and managed effectively at that location. High density ODF's that accommodate wavelength division multiplexing and monitoring are key to successful C-RAN deployments.

Migration to higher speeds

With the growing virtualization of mobile functions and the increase in mobile edge computing, the infrastructure of the central office is looking more like that of the data center—and with many of the same challenges. The need to support high-speed migration (10-40-100 or 25-50-100), along with LC and MPO connectivity makes flexible and adaptable ODF solutions a good fit.



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CO-1108672-EN (08/18)