Broadband Data Applications

FEATURES AND BENEFITS

- ITU-T G.7041 GFP Standard 4xAny TDM multiplexing avoids stranded ports and stranded bandwidth. All 2.5G xWDM wavelengths across the access & metro rings are fully utilised
- Legacy TDM and ESCON SAN services can be overlaid with new GE and FC services from one 232
- Remotely configurable 232 Mux and SFP ports using in-band DCC
- Low footprint, low power and low cost 232/600 solutions optimised for the edge of the access network
- GigaEdge 600 filters support hybrid 2.5G CWDM and 10G DWDM on the same access ring
- Seamless TDM/xWDM multiplexing of traffic from enterprise sites through CWDM access rings and inter-office DWDM metro rings using the GigaMux 3200 product
- The GigaMux 3200 inter-office metro rings can grow to up to 40 x 10 Gbit/s wavelengths in support of future data network growth
- The Sorrento GigaEdge 232 and GigaMux 3200 products offered for the broadband data solutions are NEBS Level 3 certified

Sorrento's GigaMux 3200 and GigaEdge 232/600 TDM/xWDM multiplexers provide a bandwidth efficient end-end solution for service providers wanting to overlay existing legacy services with multiple broadband data services of various types.

Carriers and enterprises alike often have the need to overlay their existing legacy TDM services (such as OC-n for telephony) and older data services (such as ESCON for storage) with new broadband data services such as Gigabit Ethernet (GE) and Fibre Channel. Dense Wavelength Division Multiplexing (DWDM) is used by carriers to multiplex multiple legacy and broadband data services onto the same fiber or fiber-pair.

Unlike carriers, most enterprises are not large enough to justify purchasing and installing DWDM equipment for all of their offices so they instead may lease DWDM wavelengths from the carriers to reduce the inter-office transmission costs. However, such a solution still requires a pair of fibers from the nearest Central Office (CO) to the customer's premises for each legacy and broadband data service to be transported.

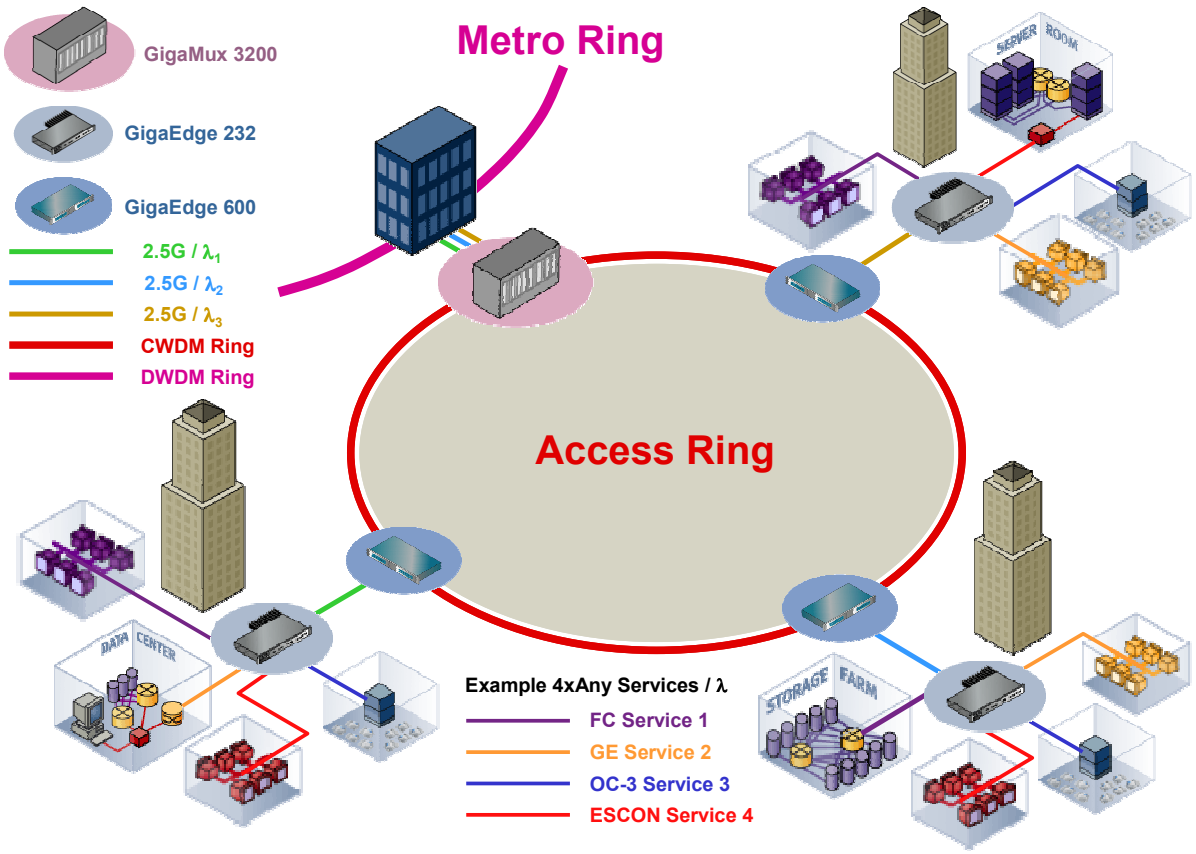
To conserve or recover access network fibers and to reduce access network costs for enterprise customers, carriers may instead offer a range of low cost CWDM and/or TDM multiplexers for deployment at the edge of the access network. CWDM multiplexers using pluggable colored optics and passive CWDM filters (sometimes located in nearby street cabinets, underground vaults or power sub-station basements) provide a low entry cost solution until the CWDM ring capacity is exhausted — which doesn't take long when there are only 8 CWDM channels.

To better utilize the capacity of each CWDM wavelength, Sorrento offers its GigaEdge 232 4xAny protocol TDM multiplexer which can increase the number of services per CWDM access ring from 8 to typically 32. Related Sorrento products providing a total, end-end solution include the GigaEdge 600 CWDM filters and the GigaMux 3200 DWDM platform.

GigaMux 3200

GigaEdge 600

GigaEdge 232



Access Ring—Edge Nodes

The above diagram illustrates a CWDM access ring with three edge nodes installed. Up to 8 edge nodes per fiber-pair are supported on legacy fiber infrastructure. Adding a single GigaEdge 232 at each edge node is shown to increase the number of services by a factor of four using the same number of CWDM channels.

For example, a legacy OC-3 TDM service and a legacy ESCON Storage Area Network are supported while new broadband GE and FC data services are overlaid.

A feature of the GigaEdge 232 product is that it is both programmable and reconfigurable—multiplexing 4xAny standard protocols and having the benefit that there are no stranded ports or wasted CWDM capacity.

The GigaEdge 600 CWDM filters also support up to three DWDM channels or more using the 655 hybrid CWDM / DWDM for the transport of 10Gbps services from client equipment with pluggable colored optics.

Access Ring—Hub Node

At the Hub node, a GigaMux 3200 is configured with appropriate CWDM and DWDM filter cards and SFPs so that in the case of private networks, the remote GigaEdge 232 Multiplexers and GigaEdge 600 filter units do not need to be book-ended at the Hub node.

CWDM or DWDM to DWDM multiplexer cards (eg, 4 x 2.5G) and transponder cards are supported by the GigaMux 3200 so that edge services with capacities between 155 Mbps and 10Gbps can be transported over the Metro Ring with high bandwidth efficiency—equal to that of the Access Ring.

Remote Management

The GigaEdge 232 multiplexers can be managed from other GigaEdge 232s using in-band DCC channels. This allows the 232 to be reprogrammed and using multi-rate SFPs, ports can be reconfigured remotely.

Sorrento Networks
9137 East Mineral Circle
Suite 340
Centennial, CO 80112
www.sorrentonet.com

About Sorrento Networks Inc.