Optical Transport Network (OTN)

E-Line services can be delivered over Optical Transport Networks (OTN) using Ethernet over OTN as specified by the ITU-T G.709 Recommendation. OTN is a standard method for transparent transport of services over optical wavelengths in WDM systems. OTN is often regarded as a next generation SONET/SDH technology that supports 10, 40 and 100 Gbps transport links. Transport of Ethernet frames over OTN is highly transparent.

In essence, Ethernet over OTN requires the mapping of ingress frames at a UNI (ingress port) to a specific container called an Optical Channel Data Unit (ODU). For example, the most appropriate OTN container for Carrier Ethernet services at the UNI is ODU0, which supports the transport of a 1000BASE-X signal mapped to the container using Generic Framing Procedure (GFP). This is a scalable solution for delivering high bandwidth EPL Services.

Ethernet over OTN provides the same resiliency as SONET/SDH but with more flexible bandwidth allocation. It is fully transparent to the Ethernet frame, meaning any L2CP frame can be tunneled over the OTN-based network. No MAC learning, forwarding or filtering is performed. Support for EVPL is limited and requires specific mapping and depends on the topology.

VLANs and CoS are not supported.

Support for the various Ethernet services is summarized in the table at right.