

## 1.2 Coverage

In their quest to find the optimal balance between the performance of subscriber access networks and their cost, the network operators increasingly combine optical distribution section with a copper-based drop section, which typically includes a twisted pair, a Category-5 cable, or a coaxial cable. Network operators require a management system that would allow them to efficiently access and manage the subscriber demarcation device as well as the various devices that interconnect their optical and copper sections of the network. In addition, to achieve the best-possible service quality, the access network operators find it necessary to extend their management domains past the typical subscriber demarcation device, such as an Optical Network Unit (ONU), a Coaxial Network Unit (CNU), Cable or DSL modem, or a Residential Gateway (RGW).

Often certain tunneling techniques become necessary in order to continue using the existing management protocols over the extended management domains. This standard defines the concept of virtual links to allow IEEE 802.3 OAM, ITU-T G.988 OMCI, or other management protocols to be extended over layer-2 bridged networks. This specification provides network operators with uniform, consistent, and interoperable methods to create, control, and manage virtual links in subscriber access networks. The new functionality is confined to the Virtual Link Control (VLC) sublayer of the Data Link layer.

~~As Ethernet-based networks (switched Ethernet, point-to-point Ethernet, or Ethernet Passive Optical Network) are becoming technologies of choice for public subscriber access network, there is a pressing need to provide a universal management channel compatible with Ethernet and that would allow network operators to manage a variety of devices in access network or in subscriber premises in a uniform and consistent way.~~