Passive Optical Network (PON)

Passive Optical Networking (xPON) is a point-to-multipoint optical access architecture that facilitates broadband communications between an optical line terminal (OLT) at the central office and multiple remote optical network units (ONUs) over a purely passive optical-distribution network with a reach of approximately 40 km (25 miles). PON supports from 1 to 128 users per single strand of fiber.

PON is a cost-effective access method because it conserves fiber for service providers offering high bandwidth business and residential access applications, green field deployments, mobile backhaul and any upgrade from twisted pair or coaxial copper networks. PON typically provides asymmetric bandwidth, with total downstream bandwidth reaching 10 Gbps (statistically shared between all ONUs). The Ethernet Passive Optical Network (EPON) standard was developed by the IEEE and the Gigabit Passive Optical Network (GPON) by the ITU-T. EPON supports symmetrical 1 Gbps communications. GPON provides 1.25 Gbps upstream and 2.5 Gbps downstream. Ethernet services are supported on both platforms. Standards are also underway at CableLabs for translation of DOCSIS management commands into Ethernet formats to manage EPON fiber access equipment. An upgrade path to 10 Gbps exists for both PON types with work being done by the IEEE and ITU-T.

Please note that PON is explicitly excluded from use as at the UNI or ENNI in MEF 10.3, MEF 10.4, and MEF 26.2.

Example(s)

? Unknown Attachment

Related and Further Reading

Broadband Forum | Access Technologies for Carrier Ethernet |

Categories

Carrier Ethernet | Access |

Status	
	DRAFT
Sour	rce(s) and Reference(s)
Ethe Tech	rnet Services and Access nologies - White Paper
Cont	ributor(s)
Larry	Samberg
Revi	ewer(s)
Dani	el Bar-Lev