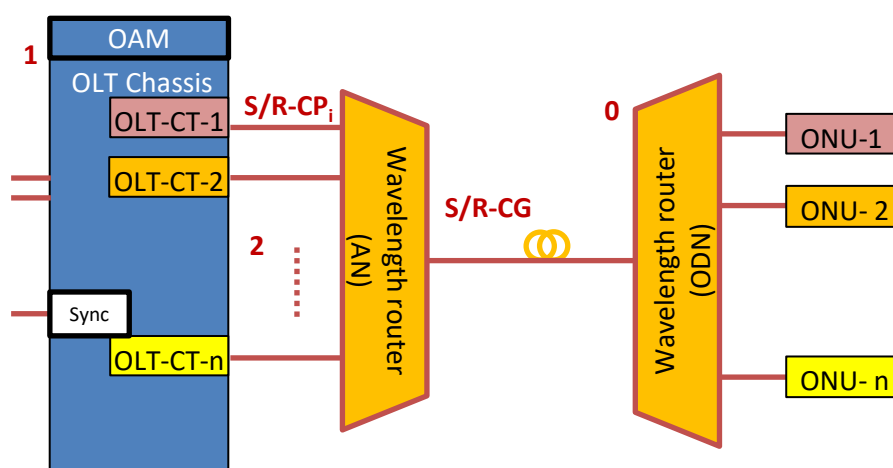


G.9802 Multiple-Wavelength Passive Optical Networks

- Full-service support over multi channel towards antenna site extensions and more
- System is in its first version a standalone without co-existence to the legacy PON systems with channel count of 12/20/40 channels
- Basic physical reach is of 10 km for wireless applications. Extensive physical reach is 20km for more general purpose
- Support for bit-rate options, symmetric 10 Gbit/s and 25 Gbit/s, and open to other line rates with individual evolution per OLT-CT
- ONUs are wavelength agile to tune to the wavelength channel associated to any tributary port of the wavelength router in the ODN
- Strong Operation, Administration, Maintenance and Provisioning (OAM&P) capabilities for end-to-end service management



WDM PON inherits the best of both PON and PtP BiDi world, with following expecting capabilities:

- Various mapping schemes of local OAM data to provide payload transparency when needed
- Means to estimate the round trip delay for stringent time sensitive applications
- A WDM PON-Id extending the PON-Id principles
- to help field engineers in ODN qualification and troubleshooting
- Power saving features include protocol enabled sleep mode and line rate switching
- Protection schemes for high availability

0. ITU-T G.9802 - Multiple-wavelength passive optical networks (MW-PONs)

Describes the general requirements and architecture of PON systems that support multiple wavelengths. It specifies the mechanism of wavelength assignment, wavelength tuning, and wavelength maintenance in MW-PON systems. The functionalities of wavelength resource management and wavelength channel performance monitoring and supervision are also included within the scope of this Recommendation.

1. ITU-T G.9802.1 - Wavelength division multiplexed passive optical networks (WDM PON): General requirements

Defines the general requirements of WDM PON using wavelength routed optical distribution network (WR-ODN), i.e. based on a wavelength multiplexer in the ODN. It provides requirements of WR-ODN based WDM PON, including general system architecture, service requirements, physical layer requirements (e.g., reach, channel count options), system level requirements (e.g., line rates, coexistence), and operational requirements (e.g. guidelines for provisioning, monitoring, energy efficiency).

2. ITU-T G.9802.2 - Wavelength division multiplexed passive optical networks (WDM PON): Physical media dependent (PMD) layer and transmission convergence (TC) layer specification

Gives detailed descriptions of both the physical media dependent (PMD) and transmission convergence (TC) layers of WR-ODN based WDM PON. The PMD layer specification will include the reference logical architecture, wavelength plan, optical path loss, transmitter and receiver specifications, compatible ODN etc. The TC layer specification will include the FEC code, implementation methods of the management channel, management functions, a set of processes and messages, etc. to provide similar operation experience as legacy PON systems, e.g., silent start and capability to map a local PLOAM channel.