

# ITU-T The leader on G-PON standards

## G.984.1, Gigabit-capable Passive Optical Networks (G-PON): General characteristics

This Recommendation provides examples of services, User Network Interfaces (UNI) and Service Node Interfaces (SNI) that are required by network operators. In addition, it shows the principal deployment configuration. Wherever possible, this Recommendation maintains characteristics from the ITU-T G.982 and G.983.x series Recommendations in order to promote backward compatibility with existing Optical Distribution Networks (ODN) that comply with these Recommendations.

## G.984.2, Gigabit-capable Passive Optical Networks (G-PON): Physical Media Dependent (PMD) layer specification

This Recommendation specifies the physical layer requirements and specifications for the Physical Media Dependent (PMD) layer. It covers systems with nominal line rates of 1244.160 Mbit/s and 2488.320 Mbit/s in the downstream direction and 155.520 Mbit/s, 622.080 Mbit/s, 1244.160 Mbit/s and 2488.320 Mbit/s in the upstream direction. Both symmetrical and asymmetrical (upstream / downstream) Gigabit-capable Passive Optical Network (G-PON) systems are described.

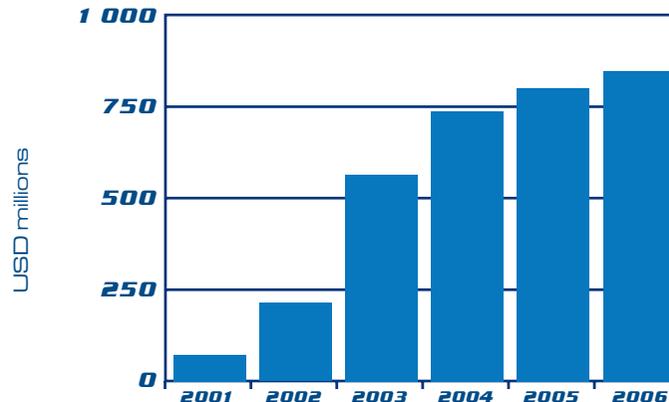
## G.984.3, Gigabit-capable Passive Optical Networks (G-PON): Transmission Convergence Layer Specification

This Recommendation specifies the frame format, media access control method, ranging method, OAM functionality and security in G-PON networks.

# G-PON means

- Full Service Support – including voice, TDM, Ethernet (10/100 BaseT), ATM, leased lines, wireless extension and more.
- Physical reach of at least 20 km with a logical reach support within the protocol of 60 km.
- Support for various bitrate options using the same protocol, including symmetrical 622 Mbit/s, symmetrical 1.25 Gbit/s, 2.5 Gbit/s downstream and 1.25 Gbit/s upstream and more.
- Strong Operation, Administration, Maintenance and Provisioning (OAM&P) capabilities offering end-to-end service management.
- Security at the protocol level for downstream traffic due to the multicast nature of PON.

## Worldwide Passive Optical Networks Equipment Revenue Forecast



Source: In-Stat/MDR 3/02

For more information on ongoing G-PON Recommendation activities, please check the ITU-T Study Group 15 website at: [www.itu.int/ITU-T/com15](http://www.itu.int/ITU-T/com15)

International Telecommunication Union

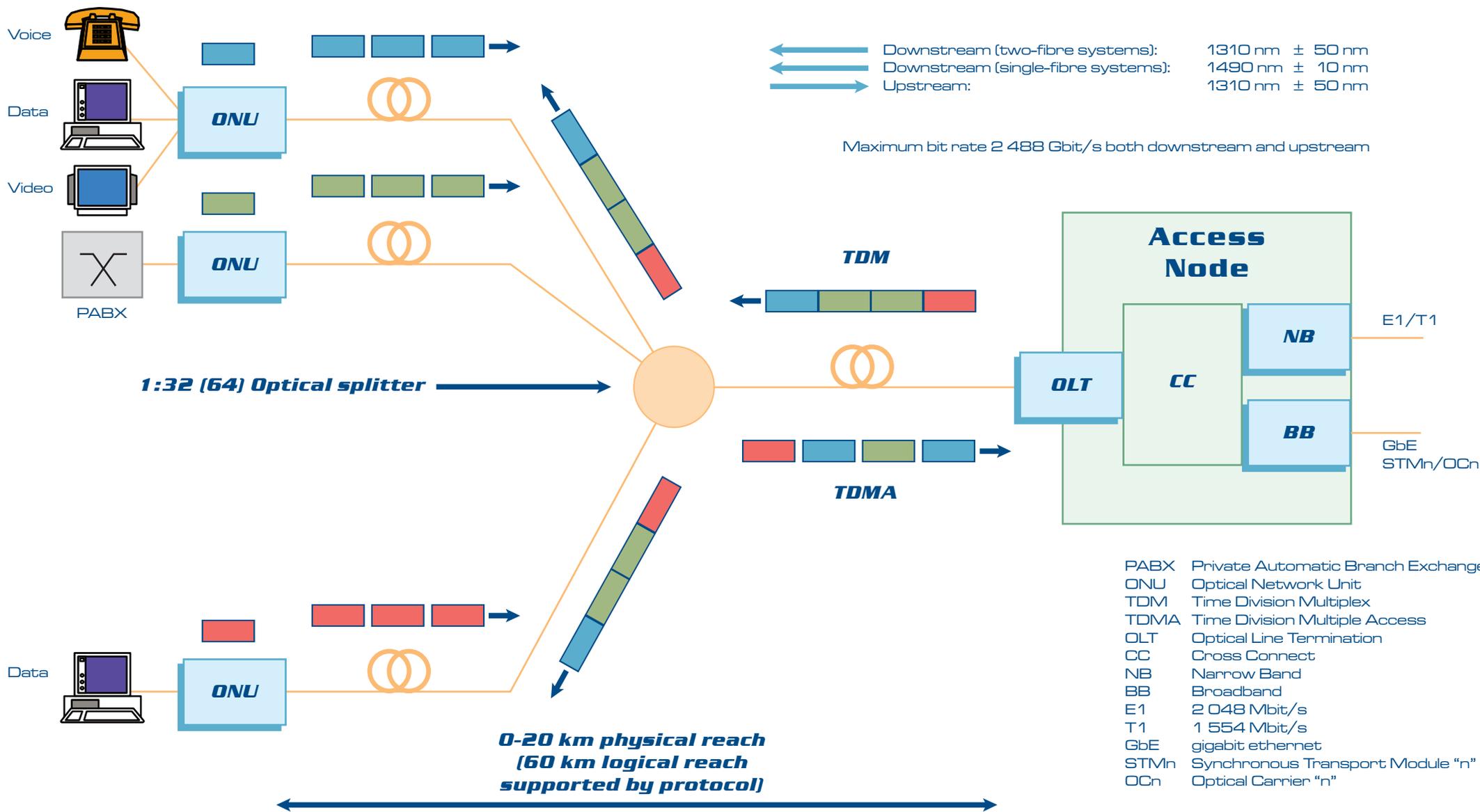


# G-PON

Gigabit-capable Passive Optical Network

Your full service  
fibre optic  
access network  
transport  
solution

# G-PON Access System



ITU-T Study Group 15 Question 2 is responsible for the development of Recommendations in the area of "Optical systems for access networks". See <http://www.itu.int/ITU-T/studygroups/com15/sg15-q2.html> for more details.