Contents
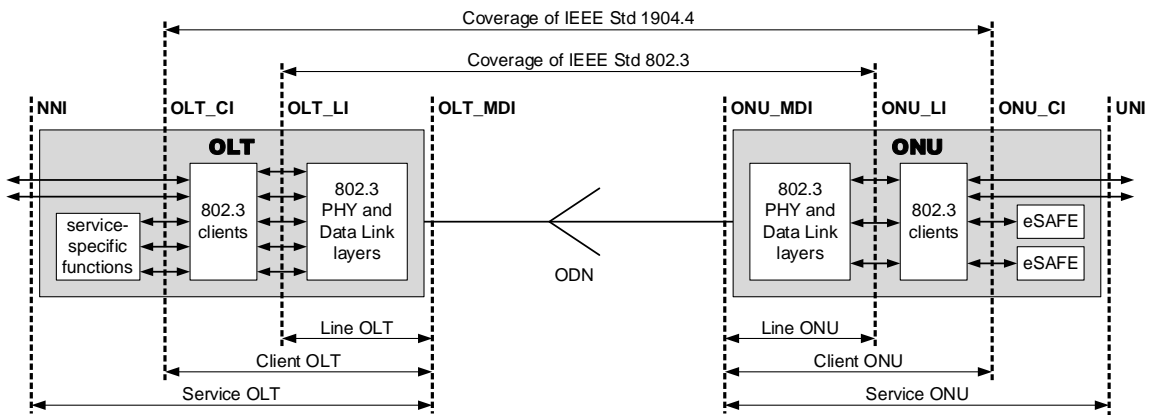
5 Scope and coverage of the standard

5.1 Introduction

This standard specifies a set of features, including a set of mandatory and optional requirements applicable to its specific service models.

5.2 Scope of the Standard

Figure 5-8 illustrates the portions of Nx25G-EPON architecture covered by the IEEE Std 802.3 and by the IEEE Std 1904.4.

Figure 5-6—Target EPON system architecture

The L-ONU/L-OLT entities, which represent the physical layer and portions of data link layer of the Nx25G-EPON OLT and ONU are specified in IEEE Std 802.3, in the following clauses:

— Physical Medium Dependent (PMD) sublayer – Clause 141;

— Physical Medimum Attachment (PMA) and Physical Coding Sublayer (PCS) - Clause 142;

— Multi-Channel Reconsiliation Sublayer (MCRS) – Clause 143;

— Multi-Point MAC Control (MPMC) sublayer – Clause 144.

The basic management of Nx25G-EPON physical layer is covered in IEEE Std 802.3, Clause 30 and Clause 45.

The scope of this standard covers the C-OLT and the C-ONU, i.e., the scope extends from the OLT_CI to the ONU-CI. However, all the functionality located within the L-OLT and L-ONU (i.e., between the OLT_LI and ONU-LI) is incorporated by references to appropropriate clauses in IEEE Std 802.3.

The definitions of the service-specific functions in the S-OLT or embedded service/application functional entities (eSAFE) in the S-ONU are outside the scope of this standard.

5.3 Specified features

The set of features covered by this standard is summarized in Table 4-1. Detailed specifications of each feature and the associated mandatory and optional requirements are provided in the subsequent clauses, as referenced in Table 4-1.

Table 4-1—Definition of SIEPON.4 features

PICS[a] group	Feature	Support	Reference subclause(s)
TVM	OLT VLAN modes	Mandatory	7.2.2.3
UVM	ONU VLAN modes	Mandatory	7.2.2.3
TTM	OLT tunneling modes	Mandatory	7.3.2
UTM	ONU tunneling modes	Mandatory	7.3.2
MC	Multicast connectivity	Mandatory	7.4.2
QSD	Queue service discipline	Mandatory	8.4.1
RLC	Report queue length calculation	Mandatory	8.4.2
RF	*REPORT* MPCP format	Mandatory	8.4.3
USM	ONU transceiver status monitoring	Mandatory	9.1.3
TSM	OLT transceiver status monitoring	Mandatory	9.1.3
PSL	Port Selective Loopback	Mandatory	9.1.9
E	Events	Mandatory	9.2.6
LPTK	Optical link protection, trunk type	Optional	9.3.3 and 9.3.5.1
LPTE	Optical link protection, tree type	Optional	9.3.4 and 9.3.5.1
PS	Power saving	Mandatory	10.4 and 10.5.2
DE	Data encryption	Mandatory	11.2.2
AU	ONU authentication	Mandatory	11.3.3
MG	Management	Mandatory	13.4
DCD	Device and capability discovery	Mandatory	12.2.3
SU	Software update	Mandatory	12.3.3
ME	Management entities	Mandatory	14.4

[a] Protocol implementation conformance statement (PICS) proforma for the listed features is shown in Annex 4A.

5.4 Compliance with IEEE Std 802.3

EPON devices compliant with individual features specified in Table 4-1 are also compliant with the requirements of IEEE Std 802.3, Clause 141 through Clause 144 for 25G-EPON and 50G-EPON devices. Moreover, such EPON devices shall implement management protocols based on Operations, Administration, and Maintenance (OAM) and extended OAM (eOAM) per IEEE Std 802.3, Clause 57. Additional requirements provided by this standard do not invalidate any of the requirements included in the aforementioned specifications.