

ISO/IEC/IEEE 8802-A:2026-08 (E)

Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Part A: Overview and architecture

Contents	Page
1. Overview	16
1.1 Scope.....	16
1.2 Purpose.....	16
1.3 Word usage	16
2. Normative references.....	17
3. Definitions, acronyms, and abbreviations.....	18
3.1 Definitions	18
3.2 Acronyms and abbreviations	20
4. Family of IEEE 802 standards	23
4.1 Key concepts.....	23
4.2 Application and support.....	24
4.3 An international family of standards	25
4.4 IEEE 802 standards.....	25
5. Reference models (RMs)	27
5.1 Introduction.....	27
5.2 RM description for end stations.....	28
5.2.1 SAPs.....	29
5.2.2 LLC sublayer	29
5.2.3 MAC sublayer.....	29
5.2.4 PHY	30
5.2.5 Layer and sublayer management	30
5.3 Interconnection and interworking.....	30
5.3.1 Interconnection at the PHY.....	31
5.3.2 MAC-sublayer interconnection: Bridges	31
5.3.3 Network-layer interconnection: Routers.....	35
6. General requirements for an IEEE 802 network.....	36
6.1 Services supported	36
6.2 Error ratios	36
7. IEEE 802 network management	37
7.1 General.....	37
7.2 General-purpose IEEE 802 network management.....	37
7.2.1 Management functions.....	37
7.2.2 Management architecture.....	37
7.2.3 Managed object definitions.....	38
7.3 Special-purpose IEEE 802 network management standards	38
8. MAC addresses	39
8.1 Terms and notational conventions	39
8.2 Universal addresses.....	39

8.2.1	Concept and overview	39
8.2.2	Assignment of universal addresses	40
8.2.3	Assignment by organizations	42
8.2.4	Uniqueness of address assignment	42
8.3	Interworking with 48-bit and 64-bit MAC addresses	42
8.4	Local MAC addresses	43
8.4.1	Concept and overview	43
8.4.2	Local MAC address assignment protocols	43
8.4.3	Structured Local Address Plan (SLAP)	43
8.4.4	SLAP local identifier types	45
8.4.5	Network Unique Identifier (NUI)	48
8.5	Group MAC addresses	48
8.6	Bit-ordering within octets	48
9.	Protocol identifiers and context-dependent identifiers	49
9.1	Introduction	49
9.2	EtherTypes and E-Type protocol identifiers	50
9.2.1	Format, function, and administration	50
9.2.2	Public EtherType assignments subset	50
9.2.3	EtherType sub-protocol encoding	51
9.2.4	Local Experimental EtherTypes	52
9.3	LSAP addresses and L-Type protocol identifiers	53
9.4	O-Type protocol identifiers	53
9.5	PIF encoding	53
9.5.1	Type 2 PIF encoding	53
9.5.2	Type 3 PIF encoding	54
9.5.3	Encoding type and PIF length	56
9.6	Context-dependent identifiers	56
10.	Allocation of OID values in IEEE 802 standards	57
10.1	General	57
10.2	OIDs and ISO standards	57
10.3	The OID hierarchy for IEEE 802 standards	58
10.4	The OID hierarchy under iso(1) std(0) iso8802(8802)	59
10.5	Migration from previous OID allocations	59
11.	Allocation of Uniform Resource Name (URN) values in IEEE 802 standards	60
11.1	Introduction	60
11.2	IEEE Namespace ID and Namespace Specific String	60
11.3	ResourceSpecificString values in IEEE 802 standards	60
	Annex A (informative) Bibliography	62
	Annex B (informative) Reference models for IEEE 802 standards	64
B.1	IEEE 802.3 reference models	64
B.2	IEEE 802.11 reference model	66
B.3	IEEE 802.15 TM reference models	68
B.3.1	IEEE 802.15.3 TM RM	68
B.3.2	IEEE 802.15.4 TM RM	70
B.3.3	IEEE 802.15.6 TM RM	70

B.3.4	IEEE 802.15.7™ RM.....	70
B.4	IEEE 802.16™ reference model.....	71
B.4.1	Protocol RM.....	71
B.4.2	Network RM	72
B.5	IEEE 802.21™ reference model.....	73
B.6	IEEE 802.22™ reference model.....	74
B.6.1	Data plane	75
B.6.2	Management/control plane	75
B.6.3	Cognitive plane	75
Annex C (informative) Examples of bit ordering for addresses		76
Annex D (informative) List of IEEE 802 standards		77
Annex E (informative) History		79
E.1	Universal addresses.....	79
E.2	IEEE RA address block products.....	79
E.3	Local MAC addresses	80
Annex F (informative) EtherType listing subset		81
F.1	Introduction.....	81
F.2	Tabular format	81
F.3	YANG module for EtherType subset	84
F.3.1	YANG framework	84
F.3.2	Definition for ieee802-ethertype YANG module'	85
Annex G (informative) Wake-on-LAN		97