

ISO/IEC/IEEE 8802-A:2015-12 (E)

Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Overview and Architecture

Contents	Page
1. Overview.....	1
1.1 Scope.....	1
1.2 Purpose.....	1
2. Normative references.....	2
3. Definitions, acronyms and abbreviations.....	3
3.1 Definitions.....	3
3.2 Acronyms and abbreviations.....	5
4. Family of IEEE 802 standards.....	7
4.1 Key concepts.....	7
4.2 Application and support.....	8
4.3 An international family of standards.....	9
4.4 IEEE 802 standards.....	9
5. Reference models (RMs).....	11
5.1 Introduction.....	11
5.2 RM description for end stations.....	12
5.2.1 SAPs.....	13
5.2.2 LLC sublayer.....	13
5.2.3 MAC sublayer.....	14
5.2.4 PHY.....	14
5.2.5 Layer and sublayer management.....	15
5.3 Interconnection and interworking.....	15
5.3.1 Interconnection at the PHY.....	15
5.3.2 MAC-sublayer interconnection: Bridges.....	15
5.3.3 Network-layer interconnection: Routers.....	18
6. General requirements for an IEEE 802 network.....	19
6.1 Services supported.....	19
6.2 Error ratios.....	19
6.3 Transient service interruption.....	19
6.4 Regulatory requirements.....	19
7. IEEE 802 network management.....	20
7.1 General.....	20
7.2 General-purpose IEEE 802 network management.....	20
7.2.1 Management functions.....	20
7.2.2 Management architecture.....	20
7.2.3 Managed object definitions.....	21
7.3 Special-purpose IEEE 802 network management standards.....	21

8.	MAC addresses	22
8.1	Terms and notational conventions	22
8.2	Universal addresses.....	22
8.2.1	Concept and overview	22
8.2.2	Assignment of universal addresses	22
8.2.3	Assignment by organizations	25
8.2.4	Uniqueness of address assignment	25
8.3	Interworking with 48-bit and 64-bit MAC addresses	25
8.4	Local MAC addresses	26
8.5	Standardized group MAC addresses.....	26
8.6	Bit-ordering and different MACs	26
8.6.1	General considerations.....	26
8.6.2	Recommendation	27
9.	Protocol identifiers.....	28
9.1	Introduction.....	28
9.2	EtherTypes	28
9.2.1	Format, function, and administration.....	28
9.2.2	EtherTypes for prototype and vendor-specific protocol development	29
9.2.3	Local Experimental EtherTypes	29
9.2.4	OUI Extended EtherType	30
9.3	OUI and OUI-36 as protocol identifiers	31
9.4	Encapsulation of Ethernet frames with LPD	32
9.5	SNAP	33
9.5.1	SNAP identifier.....	33
9.5.2	SNAP address	33
9.5.3	SNAP data unit format.....	34
10.	Allocation of OID values in IEEE 802 standards	35
10.1	General.....	35
10.2	OIDs and ISO standards	35
10.3	The OID hierarchy for IEEE 802 standards.....	36
10.4	The OID hierarchy under iso(1) std(0) iso8802(8802).....	37
10.5	Migration from previous OID allocations	37
	Annex A (informative) Bibliography	38
	Annex B (informative) RMs for IEEE 802 standards.....	39
B.1	IEEE 802.3 RMs	39
B.2	IEEE 802.11 RM.....	41
B.3	IEEE 802.15 TM RMs	43
B.3.1	IEEE 802.15.3 TM RM.....	43
B.3.2	IEEE 802.15.4 TM RM.....	44
B.3.3	IEEE 802.15.6 TM RM.....	44
B.3.4	IEEE 802.15.7 TM RM.....	44
B.4	IEEE 802.16 TM RM.....	45
B.4.1	Protocol RM.....	45
B.4.2	Network RM	46
B.5	IEEE 802.21 TM RM.....	47
B.6	IEEE 802.22 TM RM.....	48
B.6.1	Data plane	49
B.6.2	Management/control plane	49
B.6.3	Cognitive plane	49

Annex C (informative) Examples of bit ordering for addresses	50
C.1 General.....	50
C.2 Illustrative examples	50
Annex D (informative) List of IEEE 802 standards	53
Annex E (informative) History	56
E.1 Universal addresses.....	56
E.2 IEEE RA address block products.....	56