
IEEE Std 802 – A history

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Early material from IEEE 802.1 WG minutes, paper copies 1988-1995, on the 802.1 server
1995-, no drafts prior to IEEE Std 802-1990, drafts of 802-2001 missing from the record.
Some memorable quotes from members of the EC.

802-1990 development

- 1986—1989: 802.1 Interworking concerns (addressing, LSAPs, bridging and routing 802.3 to 802.5; bridging Ethernet) driven by ISO SC6 WG2 (Network Layer) participants.
- 1998 Std 802.1 to publish as multiple documents, new PARs. P802.1A ‘architecture’, ballot to include other WGs.
 - “I get nose bleeds when I get above the data link layer”.
- Removed tutorial on service primitives.
- Much discussion of the Figure “Relationship Among IEEE 802 Standards” with 802.6, 802.7, 802.8, 802.9, 802.10.
- P802.1a/D10 passes final TCCC ballot, and is finalized. Only 48-bit MAC Addresses. 802.6 starts work on 60-bit MAC addresses.
- 802.1 informed 802.1a to be published as IEEE Std 802-1990 with title change to “Overview and Architecture”.

802-1990

- General Introduction: LANs vs MANs, all the uses of LANs.
- Compliance: Prohibition of vague “IEEE 802 compatible” claims.
- Reference and Implementation Models. Positioning 802 Stds in the Data Link Layer (ISO RM point-to-point links - no addressing).
- The SNAP SAP, escape from the limited number of LSAPs.
- Universal Addresses, OUIs, MAC address bit-order. Bit-reversal in Token Ring.
- Standard Group MAC Address (administered by 802.1).

Revising 802-1990

- Network management out of date. 1992 ‘Supplement’ PAR rejected 1992, Revision (entire scope) required. Takes 9 years.
 - Projects with an expected completion time greater than the interval between new requirements or mistakes never complete.
- MAC bit ordering problem for addresses carried in routing protocols.
 - “We like to think of addresses as bits on the wire”
- Not possible to standardize Ethernet bridging before 1995.
 - “Ethernet is not a standard.”
- July 1995 - Withdraw Std 802? ISO/IEC 15802-1:1995, 10038-1993, TR 10178-1192, TR 10735-1193 sufficient (802.1 view)
 - Target withdrawing the 802 Functional Requirements Document (FRD) [including bit-order consistency and XID duplicate address check requirements]
- Revision published as IEEE Std 802-2001

802-2001

- LAN/MAN distinction and application description little changed.
- “Reference and implementation model” largely unchanged, extended bridging description, still mandates XID Test response
- Bit-order based MAC Address issues prominent
- Recognizes Ethernet, and Ethernet carried by LLC
- New clause on 802.9 & 802.6 isochronous bearer services
 - 56, 64 kb/s, ISDN, T1/E1, 384kb/s to 44 .2096 Mb/s compressed video
 - Removed by 802-2014 revision

802a-2003

- Amendment 1 to IEEE Std 802-2001:
Ethertypes for Prototype and Vendor-Specific Protocol Development
- Assigned and explained the use of two Local Experimental Ethertypes for use in development, and an OUI Extended Ethertype to allow an OUI assignee to administer Protocol Identifiers without having to use LLC and the SNAP SAP.
 - Unclear how much use has been made of these capabilities. The OUI Extended Ethertype is omitted from a number of listings.

802b-2004

- Allocation of Object Identifier values in IEEE 802 standards
- Explained and documented OID assignments
- OIDs chiefly (but not exclusively) used by 802 for SNMP

802-2014

- Revision of Std 802-2001, PAR Request Nov 2006, takes 8 years
- Rolled up 802a-2003, 802b-2004
- Alignment with update Style Guide clause requirements
 - No conformance clause (later requirement)
- Updated treatment of key concepts
 - Some definition/redefinition of terms in 802 standards (e.g. “bridge”)
- Uses EUI-48, EUI-64 in contexts where both Universal and Locally assigned MAC addresses are clearly meant
- Introduced LPD and EPD protocol identification
 - Use of terms inconsistent : protocol id values vs encoding on particular media
 - Cut down explanation of address fields as protocol data, no guidance
 - LLC Addresses not covered in “Protocol identifiers” (historic).
Unfortunate—widely deployed protocols (IS-IS routing, RSTP) still use

802c-2017

- PAR requested March 2015, later updated
 - <https://development.standards.ieee.org/myproject-web/public/view.html#pardetail/5924>
- Added optional Structural Local Address Plan
 - Partitioning of Local MAC Address number space into 4 quadrants
- Added ELI-48, ELI-64 (Extended Local Identifier)
NUI-48, NUI-64 (Network Unique Identifier)
 - EUI-48, EUI-64 are OUI derived Universal Addresses