

Number	Topic
802.1	Overview and architecture of LANs
802.2 ↓	Logical link control
802.3 *	Ethernet
802.4 ↓	Token bus (was briefly used in manufacturing plants)
802.5	Token ring (IBM's entry into the LAN world)
802.6 ↓	Dual queue dual bus (early metropolitan area network)
802.7 ↓	Technical advisory group on broadband technologies
802.8 †	Technical advisory group on fiber optic technologies
802.9 ↓	Isochronous LANs (for real-time applications)
802.10 ↓	Virtual LANs and security
802.11 *	Wireless LANs (WiFi)
802.12 ↓	Demand priority (Hewlett-Packard's AnyLAN)
802.13	Unlucky number; nobody wanted it
802.14 ↓	Cable modems (defunct: an industry consortium got there first)
802.15 *	Personal area networks (Bluetooth, Zigbee)
802.16 *	Broadband wireless (WiMAX)
802.17	Resilient packet ring
802.18	Technical advisory group on radio regulatory issues
802.19	Technical advisory group on coexistence of all these standards
802.20	Mobile broadband wireless (similar to 802.16e)
802.21	Media independent handoff (for roaming over technologies)
802.22	Wireless regional area network

The 802 working groups. The important ones are marked with *. The ones marked with ↓ are hibernating. The one marked with † gave up and disbanded itself.

Überblick Schicht 2 Protokolle nach IEEE 802

Ethernet Frame Format

Preamble	Destination Address	Source Address	Frame Type	Frame Data	CRC
8 octets	6 octets	6 octets	2 octets	46–1500 octets	4 octets

- Header format fixed (Destination, Source, Type fields)
- Frame data size can vary from packet to packet
 - Maximum 1500 octets
 - Minimum 46 octets
- Preamble and CRC removed by framer hardware before frame stored in computer's memory

Example Ethernet Frame In Memory

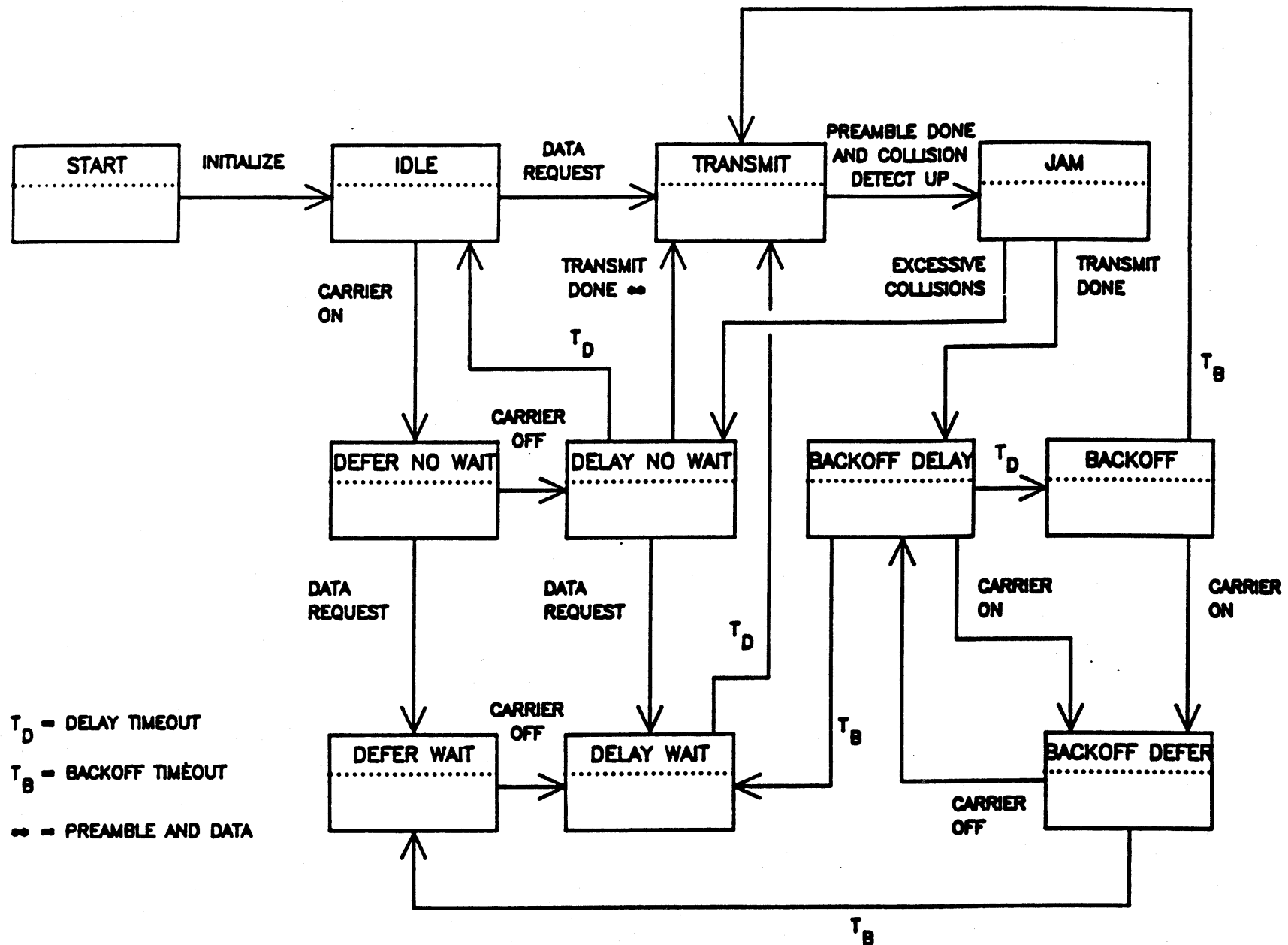
02	07	01	00	27	ba	08	00	2b	0d	44	a7	08	00	45	00
00	54	82	68	00	00	ff	01	35	21	80	0a	02	03	80	0a
02	08	08	00	73	0b	d4	6d	00	00	04	3b	8c	28	28	20
0d	00	08	09	0a	0b	0c	0d	0e	0f	10	11	12	13	14	15
16	17	18	19	1a	1b	1c	1d	1e	1f	20	21	22	23	24	25
26	27	28	29	2a	2b	2c	2d	2e	2f	30	31	32	33	34	35
36	37														

- Octets shown in hexadecimal
- Destination is 02.07.01.00.27.ba
- Source is 08.00.2b.0d.44.a7
- Frame type is 08.00 (IP)

Current State	Event	Action	Next State
0. Start	Initialize	- Perform Initialization	Idle
1. Idle	Data Request	- Construct Frame - Start Frame Transmission	Transmit
	Carrier On	- No Action	Defer No Wait
2. Transmit	Preamble Done AND Collision Detect Up	- Start Jam Transmission - Increment Attempt Count	Jam
	Transmit Done	- Start Delay Timer - Reset Attempt Count - Indicate successful Transmission	Delay No Wait
3. Jam	Transmit Done	- Start Delay Timer - Start Backoff Timer	Backoff Delay
	Excessive Collisions	- Start Delay Timer - Indicate Transmit Excessive Collisions	Delay No Wait
4. Backoff	Carrier On Back off Timeout	- No Action - Start Frame Transmission	Backoff Defer Transmit
5. Backoff Defer	Carrier Off Backoff Timeout	- Start Delay Timer - No Action	Backoff Delay Defer Wait
6. Backoff Delay	Carrier On Delay Timeout Backoff Timeout	- Stop Delay Timer - No Action - No Action	Backoff Defer Backoff Delay Wait
7. Defer No Wait	Data Request Carrier Off	- Construct Frame - Start Delay Timer	Defer Wait Delay No Wait
8. Delay No Wait	Data Request Delay Timeout	- Construct Frame - No Action	Delay Wait Idle
9. Defer Wait	Carrier Off	- Start Delay Timer	Delay Wait
10. Delay Wait	Delay Timeout	- Start Frame Transmission	Transmit

IEEE 802.3:

Zustände,
Ereignisse,
Aktionen und
nächster Zustand



IEEE 802.3: Zustandsdiagramm der Sendefunktion

Assuming that an organization has registered the OUI of AC-DE-48 and that the organization has created the MAC-48 value of AC-DE-48-23-45-67 by concatenating the extension identifier 23-45-67, this MAC-48 identifier has the following binary transmission order:

OUI						extension identifier						field
1st		2nd		3rd		4th		5th		6th		octet
C	A	E	D	8	4	3	2	5	4	7	6	hex
0011	0101	0111	1011	0001	0010	1100	0100	1010	0010	1110	0110	bits
lsb	msb	lsb	msb	lsb	msb	lsb	msb	lsb	msb	lsb	msb	

Structure of MAC Adresses

Registry:

Hex	Name	Reference
00000C	Cisco	
00000E	Fujitsu	
00000F	NeXT	
000010	Sytek	
00001D	Cabletron	
000020	DIAB (Data Industrier AB)	
000022	Visual Technology	
00002A	TRW	
000032	GPT Limited (reassigned from GEC Computers Ltd)	
00005A	S & Koch	
00005E	IANA	
000065	NetScout Systems, Inc.	[Singhal]
00006B	MIPS	
000077	Interphase Corporation	
00007A	Ardent	
000080	Cray Communications A/S	
000089	Cayman Systems Gatorbox	
000093	Proton	
00009F	Ameristar Technology	
0000A2	Wellfleet	
0000A3	Network Application Technology	
0000A6	NetScout Systems, Inc. (internal assignment, not for products)	[Singhal]
0000A7	NCD X-terminals	
0000A9	Network Systems	
0000AA	Xerox Xerox machines	
0000B3	CIMLinc	
0000B7	Dove Fastnet	
0000BC	Allen-Bradley	
0000C0	Western Digital	
0000C5	Farallon phone net card	
0000C6	HP Intelligent Networks Operation (formerly Eon Systems)	
0000C8	Altos	

Registry:

Hex	Name	Reference
0000C9	Emulex Terminal Servers	
0000D0	Develcon	
0000D7	Dartmouth College (NED Router)	
0000D8	3Com? Novell? PS/2	
0000DD	Gould	
0000DE	Unigraph	
0000E2	Acer Counterpoint	
0000EF	Alantec	
0000FD	High Level Hardware (Orion, UK)	
000102	BBN BBN internal usage (not registered)	
0010D1	BlazeNet	
001700	Kabel	
0020AF	3COM ???	
0020C9	Victron	
002094	Cubix	
00802B	IMAC ???	
00802D	Xylogics, Inc. Annex terminal servers	
008037	Ericsson	[Johnson]
008064	Wyse Technology / Link Technologies	
00808C	NetScout Systems, Inc.	[Singhal]
0080C2	IEEE 802.1 Committee	
0080D3	Shiva	
00A03E	ATM Forum	
00AA00	Intel	
00DD00	Ungermann-Bass	
00DD01	Ungermann-Bass	
020701	Racal InterLan	
020406	BBN BBN internal usage (not registered)	
026086	Satelcom MegaPac (UK)	
02608C	3Com IBM PC; Imagen; Valid; Cisco	
02CF1F	CMC Masscomp; Silicon Graphics; Prime EXL	
080002	3Com (Formerly Bridge)	

Assignment of MAC Address-Space to Organisations (Excerpt)