

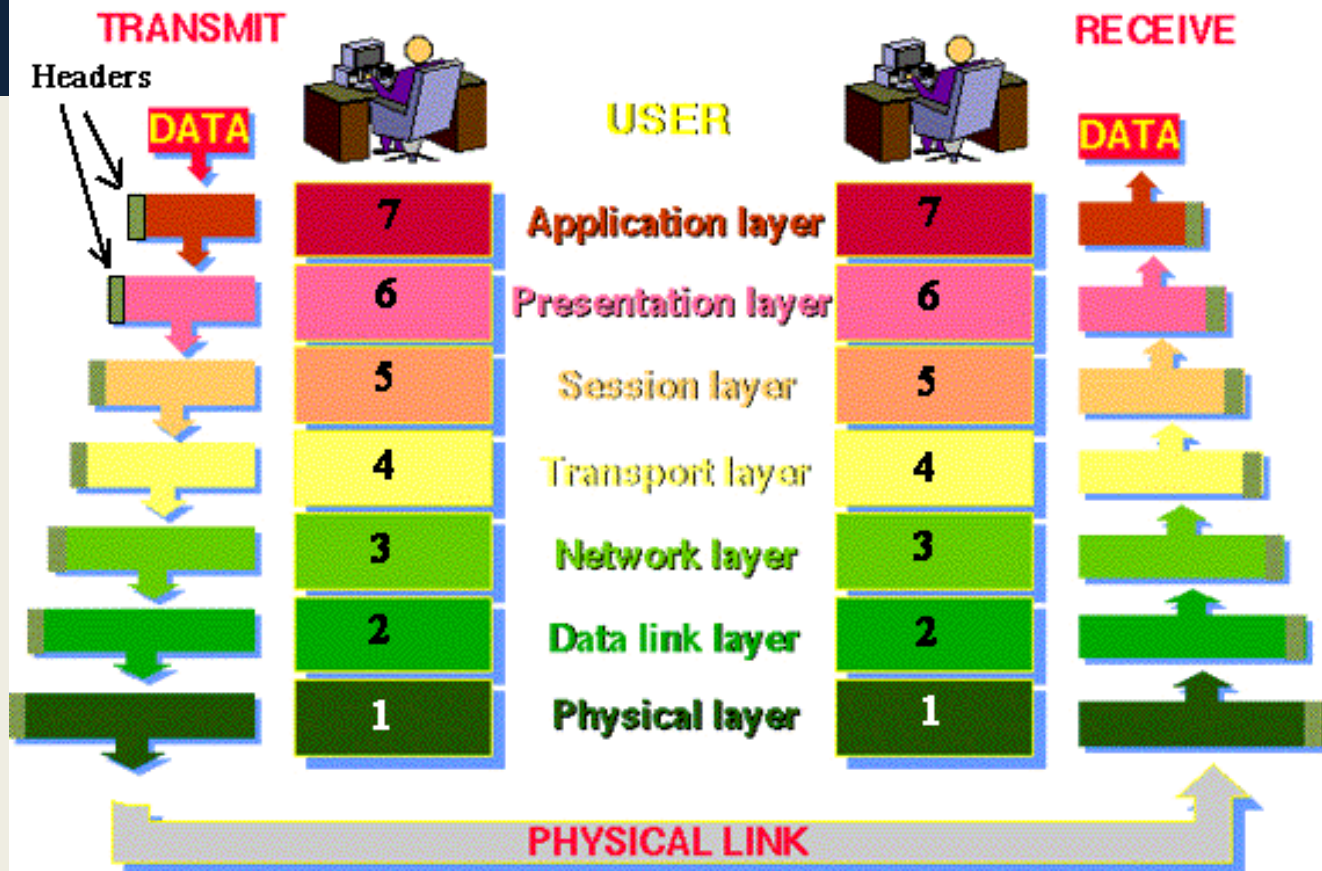
Layer 2

a.k.a. Link Layer

incl. Ramponi's Layer 1 Show

Layers

THE 7 LAYERS OF OSI



Beispiele

Ethernet

Wi-Fi

Point-to-Point

Funktionen

- Collision Detection/Avoidance
- Error Correction
- Source and Destination Addressing

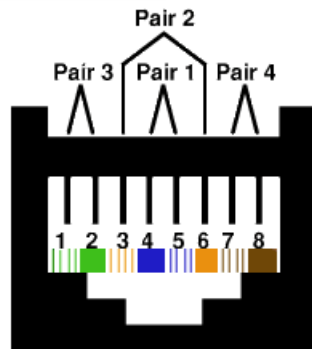
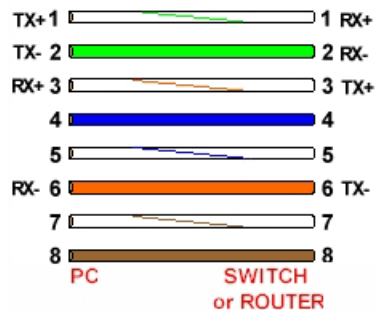
Ethernet



RJ-45

STRAIGHT-THROUGH

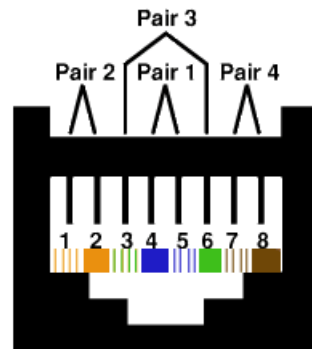
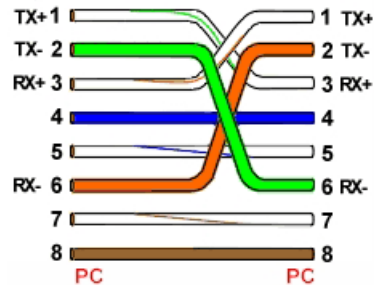
Wiring Standards Used
T568A T568A



T568A

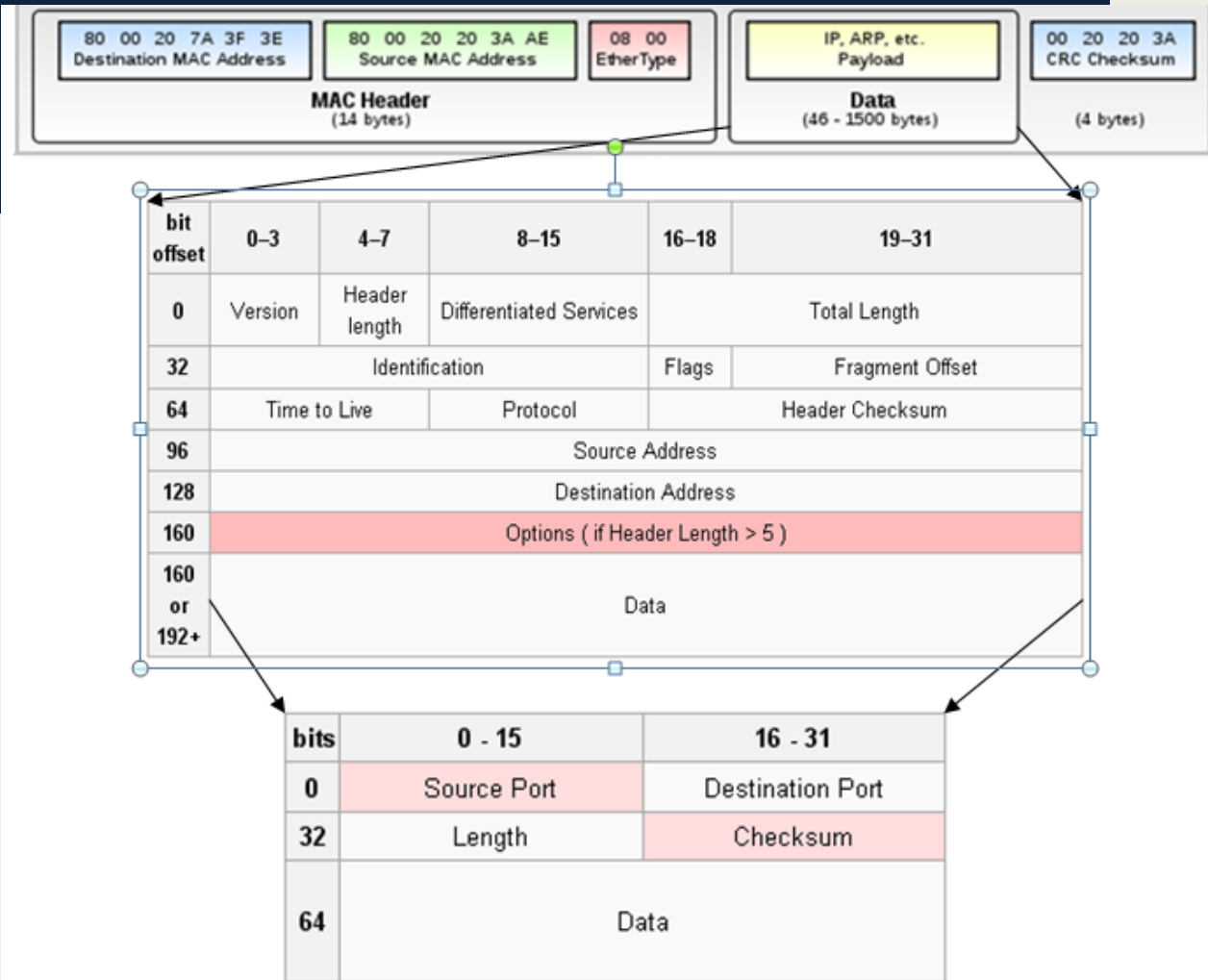
CROSS-OVER

Wiring Standards Used
T568A T568B

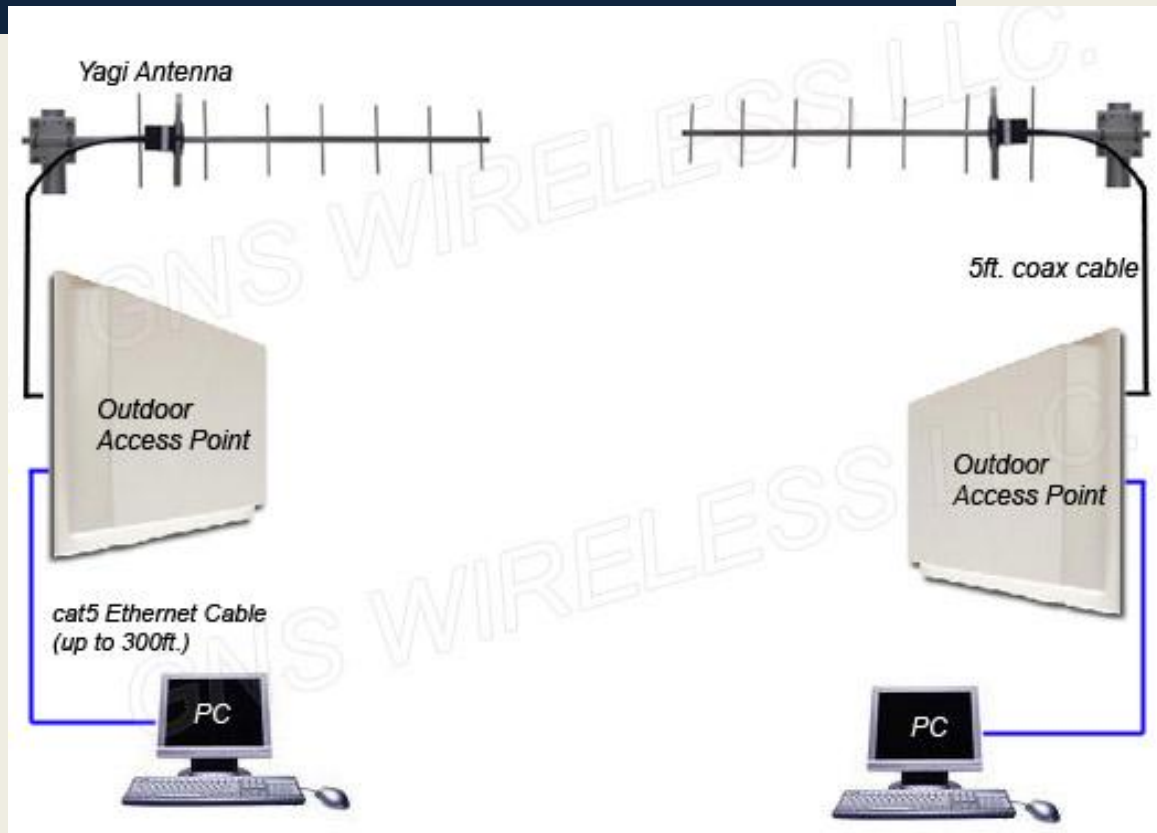


T568B

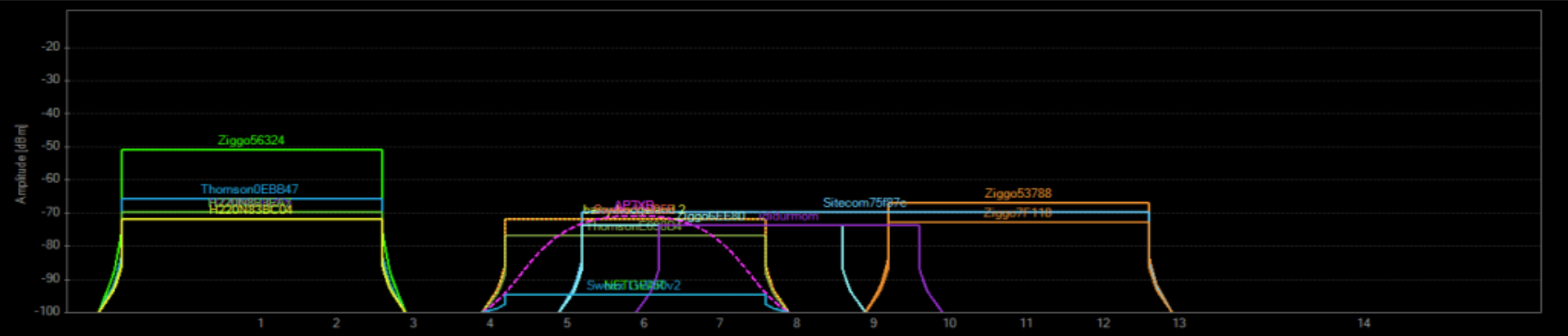
Frame



Bridge



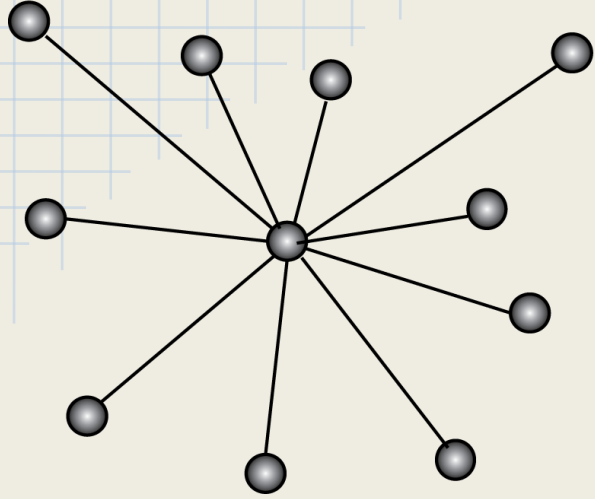
<input checked="" type="checkbox"/>	SSID	Channel	RSSI	Security	MAC Address	Max Rate	Vendor	Network Type	First Seen	Last Seen	Latitude	Longitude
<input checked="" type="checkbox"/>	Ziggo56324	1	-51	WPA2-Personal	4C:72:B9:0F:3E:D6	144		Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	Thomson0E8B47	1	-66	WPA2-Personal	E8:39:DF:0E:BB:47	130	Askey Computer	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	barry hoogeland 2	6	-72	WPA-Personal	00:1E:2A:67:4F:48	54	Netgear Inc.	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	Ziggo53788	11	-67	WPA-Personal	00:0C:F6:59:D2:1C	54	Sitecom Europe BV	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	Sitecom75f7c	11 + 7	-70	WPA2-Personal	00:0C:F6:75:F8:7C	150	Sitecom Europe BV	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	H220N82B2F5	1	-70	WPA2-Personal	FC:C8:97:82:B2:F5	130		Infrastructure	11-04-38	11-53-56	0,000000	0,000000
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<input checked="" type="checkbox"/>	Sweex LW055	6	-72	Open	00:16:0A:11:47:58	54	SWEEEX Europe BV	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	Sweex LW055	6	-72	Open	00:16:0A:10:86:12	54	SWEEEX Europe BV	Infrastructure	11-04-38	11-53-56	0,000000	0,000000
<input checked="" type="checkbox"/>	ThomsonE698B4	6	-77	WPA2-Personal	B4:82:FE:E6:98:B4	130	Askey Computer Corp	Infrastructure	11-04-38	11-53-51	0,000000	0,000000
<input checked="" type="checkbox"/>	AP7XR	6	-71	WEP	00:0A:E9:02:F7:81	11	AirVast Technology L...	Infrastructure	11-04-38	11-53-56	0,000000	0,000000



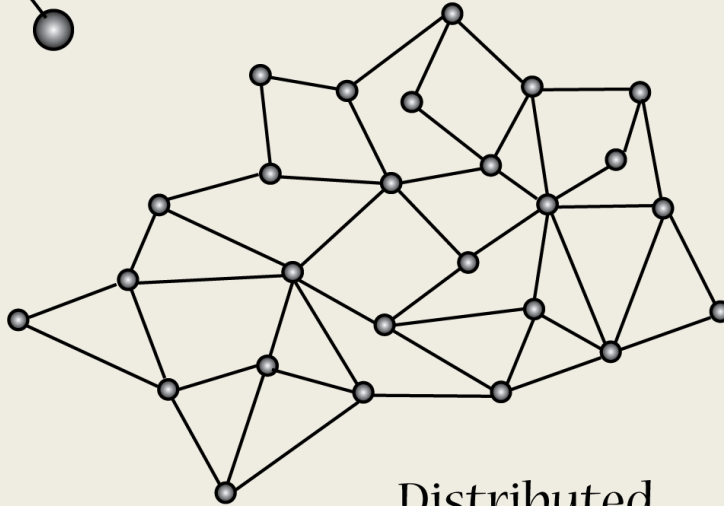
Modes

- Managed
- Master
- Ad-Hoc

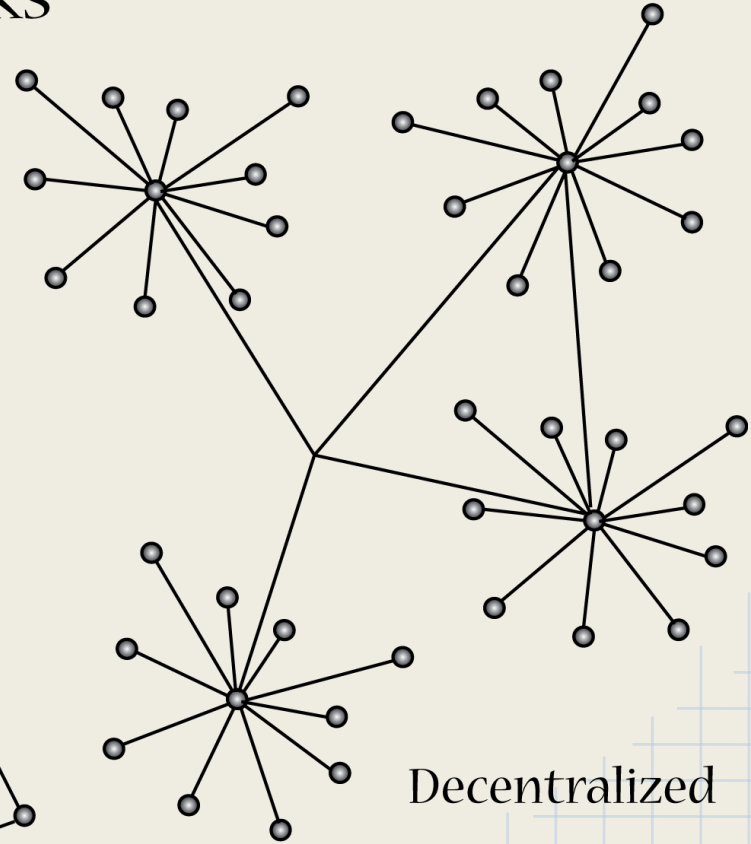
Types of Networks



Centralized



Distributed



Decentralized

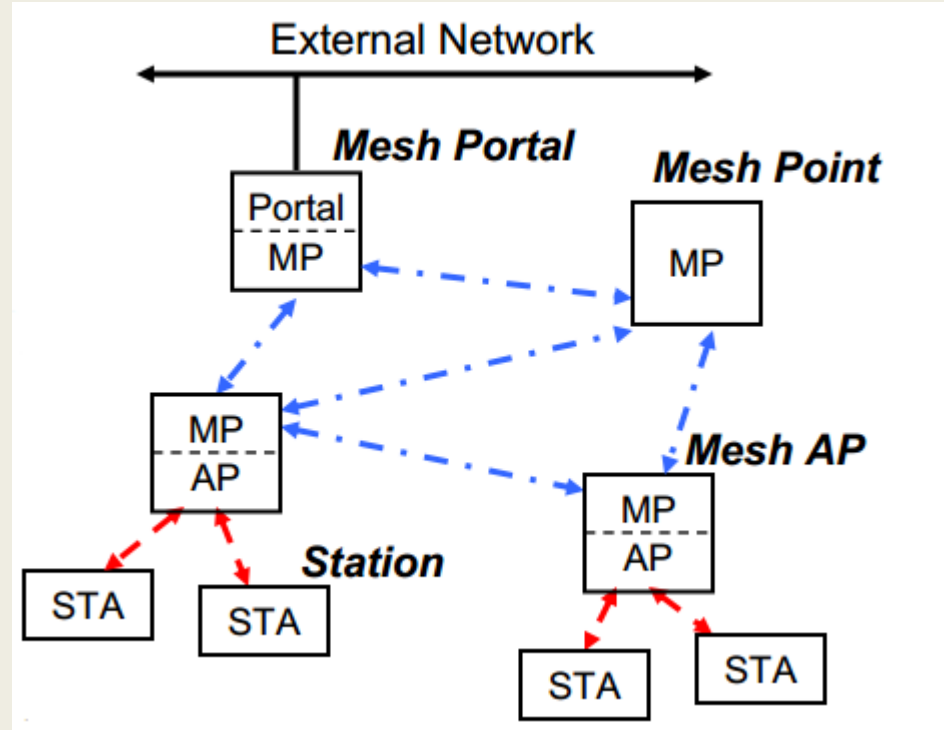
Mesh

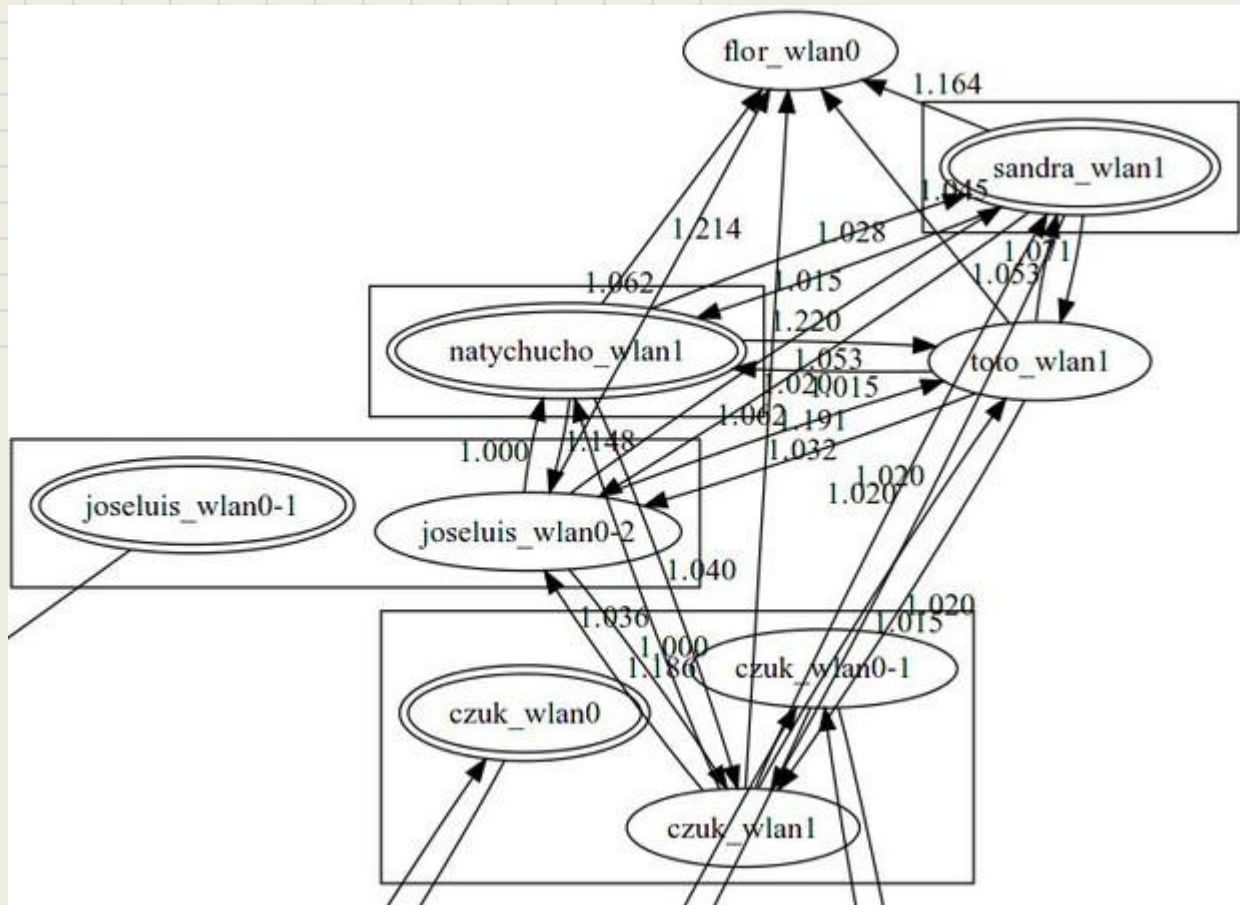
Dezentralisiertes Netz
Unabhängig vom Medium
PDUs werden geroutet

B.A.T.M.A.N.

Better Approach to Mobile Ad-hoc Networking

- Proaktiv
- Dynamisch (war ja klar)
- Originator Table
- Client Table





Steps

```
# modprobe batman-adv
# batctl if add wlan0
# ip link set up dev bat0
# batctl o
# batctl tg
```

Challenge

1. confe Box als Client im C4-WLAN
iw (für den Link)
brctl (für Bridge)
2. confe Box als Master (eigener AP)
3. pinge Boxen gegenseitig im Ad-Hoc Mode
4. erstelle eine Batman-Bridge
5. übertrage Daten von Client zu Client