

Sprint 2 Deliverables

1) Parity

0xBEEFCAFE = 1011 1110 1110 1111 1100 1010 1111 1110

| | | row | |
|------|-----------|--------|---------------------|
| 1011 | 1110 | 0 | 13 extra bits ka |
| 1110 | 1111 | 1 | |
| 1100 | 1010 | 0 | |
| 1111 | 1110 | 1 | |
| col | 0110 0101 | 0 | |
| | | col | |
| | | parity | |

2)

- Ethernet access is managed by CSMA/CD aka Carrier Sense Multiple Access / Collision Detection. Ethernet doesn't guarantee any avoidance of collision, but it only detects it. When collision is detected: stop transmitting, broadcast a 32-bit "jam sequence", then wait some randomized time and re-transmit.
- One of the challenges of implementing collision avoidance in 802.11 is that host can't "listen" during transmission. Another one is the issue of the "hidden node". This occurs when two or more nodes both have ~~the~~ a node in their range and send data to it but they are out of each other's ranges so they can't sense each other. Basic strategy for collision avoidance in 802.11 is ACK where if no transmissions are in progress try to send. If a receiver gets a packet and passes CRC check, receiver sends an ACK back to sender. If the sender gets an ACK, it knows that it was a successful transmission. If not, times out and restart. We also have RTS-CTS where sender before sending data, sends a special RTS packet to receiver and receiver responds with special CTS packet. Other hosts in the area will observe RTS-CTS pair exchange and know to wait.

3) MAC addresses

MAC address is a unique identifier for every host on the network. This is ~~very~~ important since hosts can specify a destination during the transmission via MAC add. and so when a host receives data they will know if it was meant for them. MAC add. is a 48 bit number burned on ROM of every network device, giving every host a unique address.