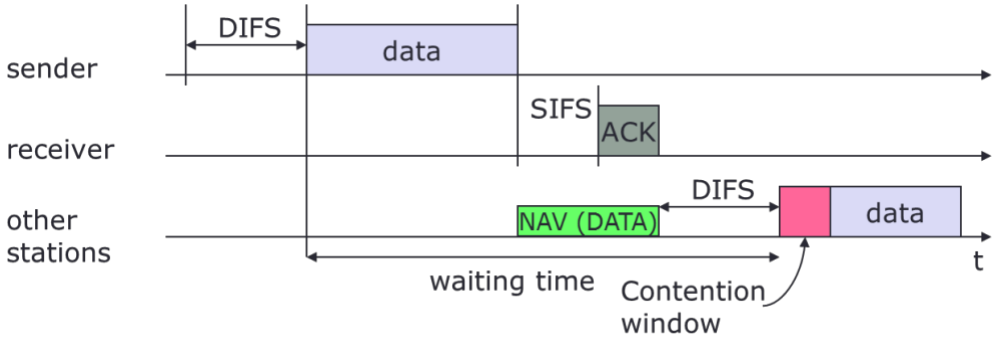
Final Questions

1. **Why the RTS and CTS are not used in CSMA/CD?**

   Because of hidden node problem in CSMA/CD -“occurs when a node is visible from a access point (AP), but not from other nodes communicating with that AP"

   Because wireless is more complicated than wired. In wireless we cannot detect collisions so we have to avoid them!

2. **Explain with a diagram how the CSMA/CA uses different inter frame between the frames?**



- station has to wait for DIFS before sending data
- receiver acknowledges at once (after waiting for SIFS) if the packet was received correctly (CRC)
- automatic retransmission of data packets in case of transmission errors

eathernet protocol uses CSMA/CD for multiple access control when collision is detected. How does the eathernet back-off to avoid future collision CSMA/CD.

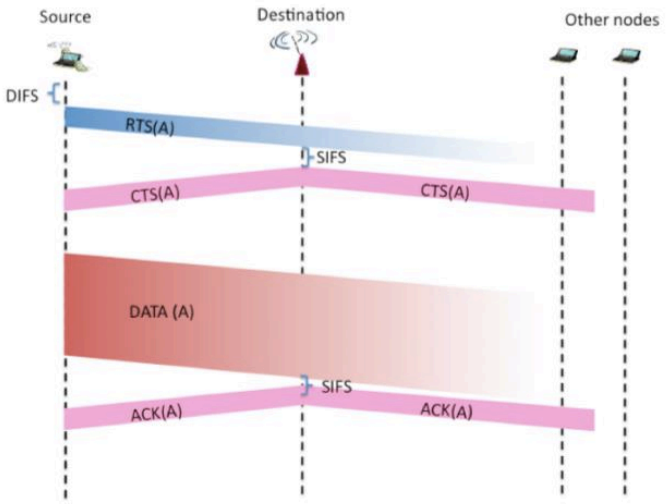
detecting voltage level on the line

detecting power level

detecting simultaneous transmission & reception

use this figure to explain the concept of hidden node problem is wireless communication

Use diagram below to explain how CSMA/CA is realized in the case of the IEEE 802.11 protocol. For your explanation, assume that A wants to send a frame to the destination.



why are ACK used in 802.11 but not in wired Ethernet

> *Usually no packet loss in wired Ethernet. This is much more likely in a wireless scenario. Robustness is increased through retransmissions. To be able to perform retransmissions ACKs are required.*

Use the figure below to explain the “hidden node” problem. What happens when nodes A and C start sending a message simultaneously?

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cannot detect a transmission from C and vice versa. If A and C start sending simultaneously to B a collision at B will happen but A and C will not become aware of the collision