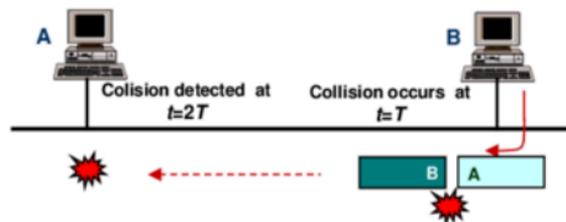
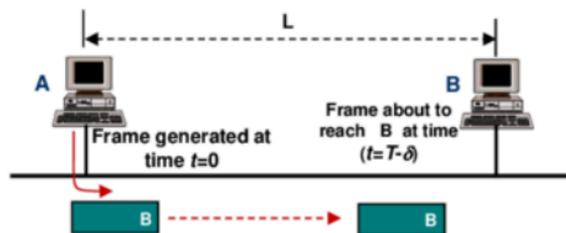


- Each station monitors the channel (*Carrier Sense*) and only sends data if the channel is idle. If the channel is busy the station must wait until is free. All the stations can access the medium (*Multiple Access*).
- Collisions can occur if two stations transmitt simultaneously. When a collision is detected (*Collision Detection*), both stations stop transmission and wait a random period of time before retransmitting.



$T_f = 2 \times T_p = (2x L)/v$, $T_f = N_f$ (minimum) / D_b : Frame duration
 T_p = propagation time (one way); L = maximum distance
 D_b = bit rate; N_f = Number of bits in the Ethernet frame.
 v = propagation speed ; N_t (minimum) = $64 \times 8 = 512$ bits

The standard IEEE802.3 imposes for $D_b = 10$ Mb/s $\rightarrow L = 2500$ m

$D_b = 100$ Mb/s $\rightarrow L = 250$ m

$D_b = 1$ Gb/s $\rightarrow L = 25$ m !!!