

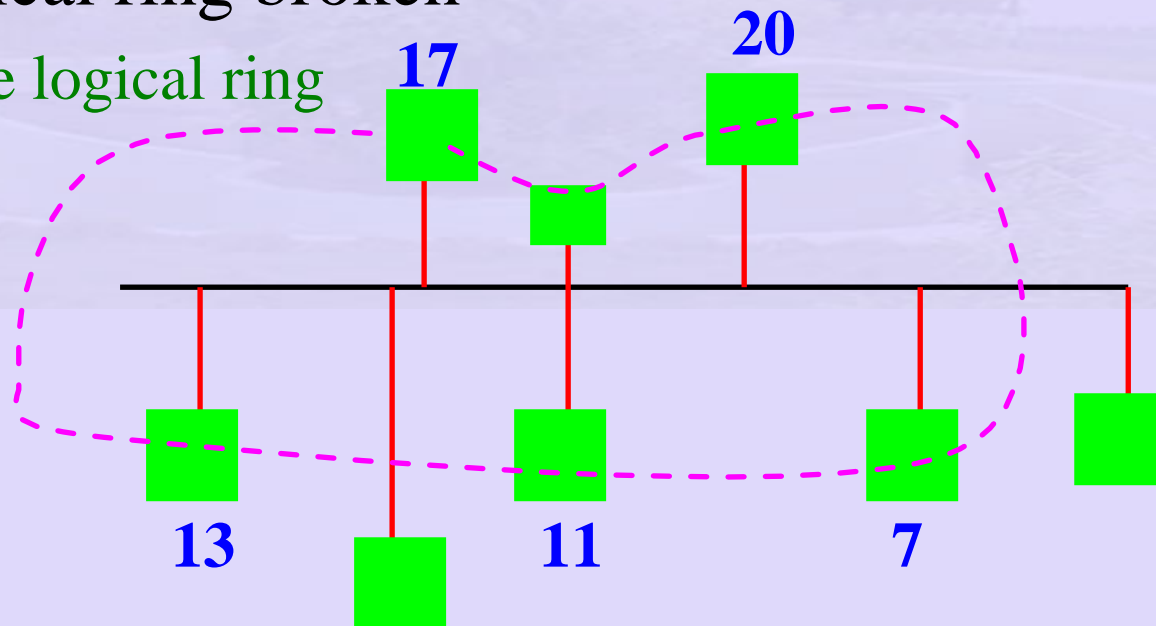
IEEE 802.4 Token Ring

- CSMA/CD – probabilities
 - MAC model – bad link
 - station wait for infinitely a long time!
 - no priorities
 - not useful for real time system.
- Use a ring:

IEEE 802.4 Token Ring

- stations take time sending frames.
 - n frame , nT sec to wait
 - physical ring broken

- use logical ring



Token Bus Ring Organisation

- Linear tree shaped cable on to which stations are attached.
- Each station knows the address of its left and right neighbours.
- Ring is first initialised
 - coordinator to initialise ring.
 - stations inserted in the order of station address

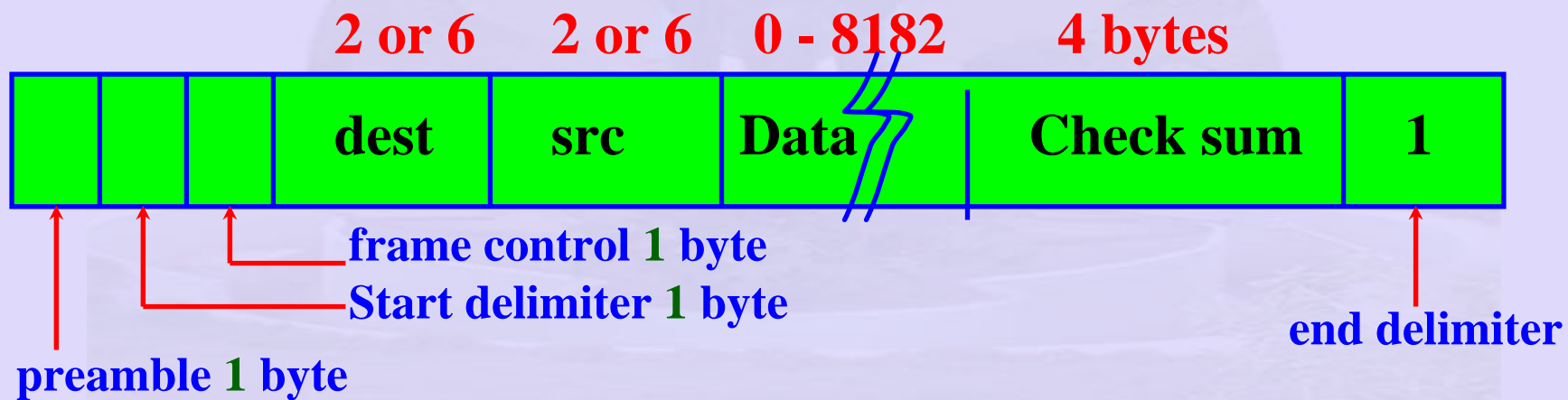
Token Bus Ring Organisation

- Token passing from higher to lower order station address
- Token acquired station transmits for certain amount of time
- Hand over token either at end of time or no frame to transmit
- prioritise tokens

Token Bus

- each maintains a queue of frames
- each has timers
- handover token from higher priority to lower priority.
- fraction of token holding time allocated to each priority.
- useful for implementing real – time traffic.

Token Bus Frame Format



Token Bus Frame Format

- Preamble – clock synchronisation
- Starting and ending delimiter
- frame boundaries
 - analog encoding symbols (other than 0 or 1)
 - does not occur in analog dat
- no need of length field

Token Bus: Issues

- Frame Control
 - Successors,
 - predecessors
 - Entry of new station
 - Claim token
 - Token lost, station with token dead
 - Protocols to handle all issues
 - Useful for real time traffic