Satellite Networks

- Properties
  - Large delay ~ 270 ms
  - Satellite typically acts only as a repeater

    (no intelligence on the satellite)
  - Up and down links are on different frequencies

    (full duplex)
- CSMA/CD will not work because of long delay
- Token networks are not applicable because of long delays, e.g., 100 nodes will have a 27 sec. token return time.

Satellite Networks

- Reservation Aloha
  - Consider a slotted system with N slots
  - Each slot can be in one of three states:
    - Empty, i.e., not is use
    - Mine, i.e., in use my me
    - Other, i.e., in use by another node
  - Protocol
    - If state is *mine* then continue to use it
    - If state is *other* then do not send in that time slot
    - If state is *empty* then contend for that slot using Aloha

Satellite Networks

- At low loads the network performs like a random access systems, i.e., no waiting for permission to send.
- At high loads the systems performs like a TDM system.
- This scheme has a problem with fairness