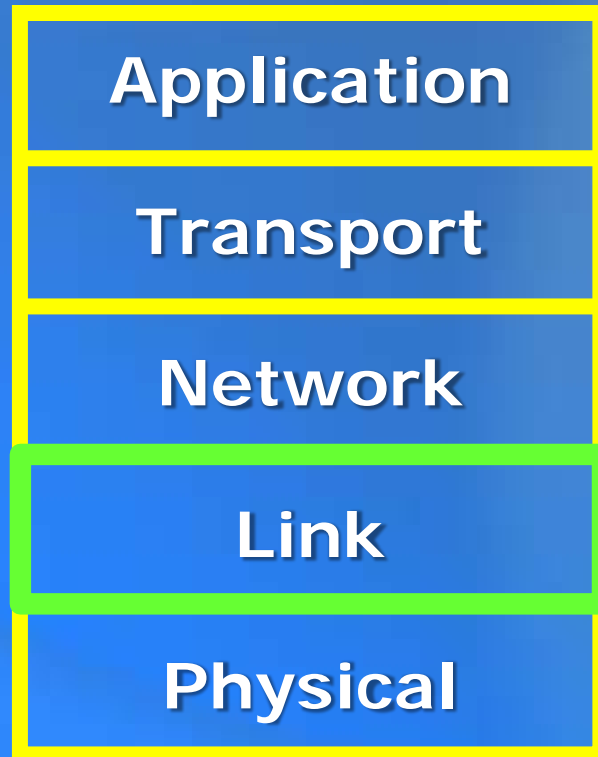


Link Layer

Internet protocol stack



Link layer

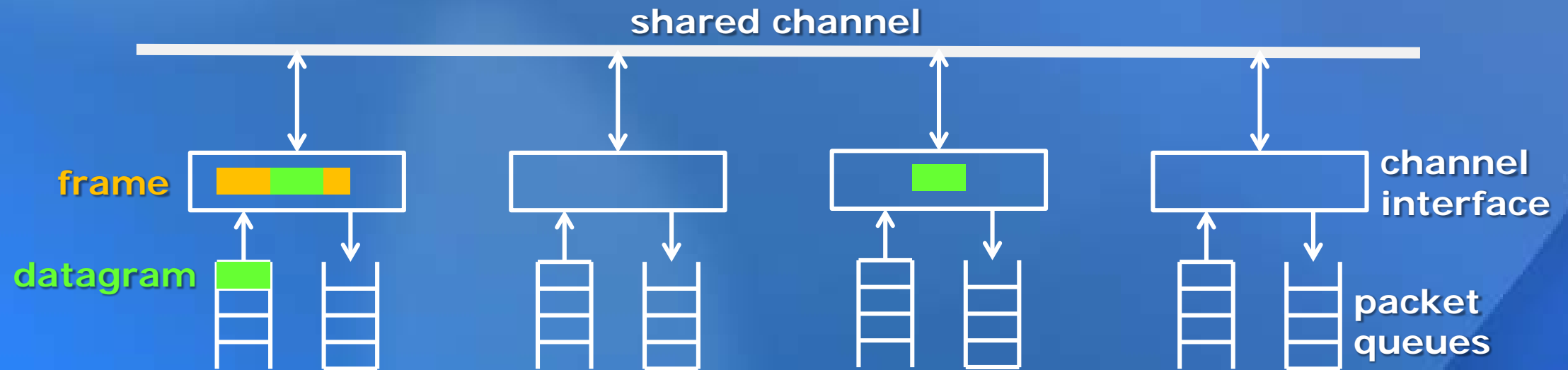
- handles data transfer from one node to a physically adjacent node
- e.g. 802.11 (WiFi)
- implemented in the network adapter or network interface card (NIC)



Link Layer Services

- framing
 - frame = packet in link layer
 - datagram = packet in network layer
 - frame = datagram + header + trailer
- error detection/correction
 - detected errors may be
 - corrected
 - dropped
 - retransmitted
- flow control
- media access control (MAC)
 - channel access to a shared medium

Shared Communications Channels



**Basic idea: avoid collisions between nodes
(two nodes transmitting at same time)**

Performance Metrics

- High utilization
 - Ideal: 100% of time channel is busy transmitting useful data
 - Waste: idle periods, collisions, packet overhead
- Dynamism and scalability
 - Accommodate a large dynamically-changing number of nodes with little effort
- Fairness
 - Ideal: Divide capacity equally among users according to their need