

# Datalink - Framing, Switching



# From Signals to Packets

Analog Signal



“Digital” Signal



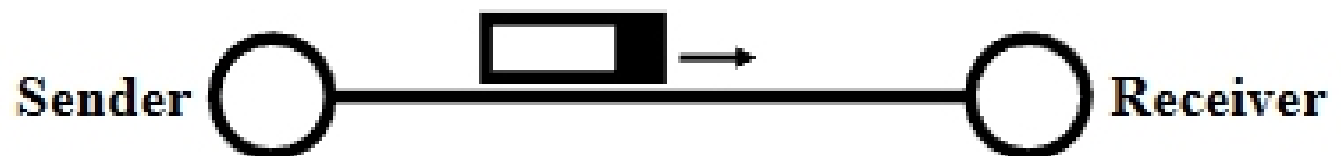
Bit Stream

**0 0 1 0 1 1 1 0 0 0 1**

Packets

010001010101110010101010101110111000000111101010111010101010111010111001  
←-----> ←-----> ←----->  
**Header/Body Header/Body Header/Body**

Packet  
Transmission





# Datalink Functions

- Framing: encapsulating a network layer datagram into a bit stream.
  - Add header, mark and detect frame boundaries
- Media access: controlling which frame should be sent over the link next.
- Error control: error detection and correction to deal with bit errors.
  - May also include other reliability support, e.g. retransmission
- Flow control: avoid that the sender outruns the receiver
- Hubbing, bridging: extend the size of the network