Multiple Access

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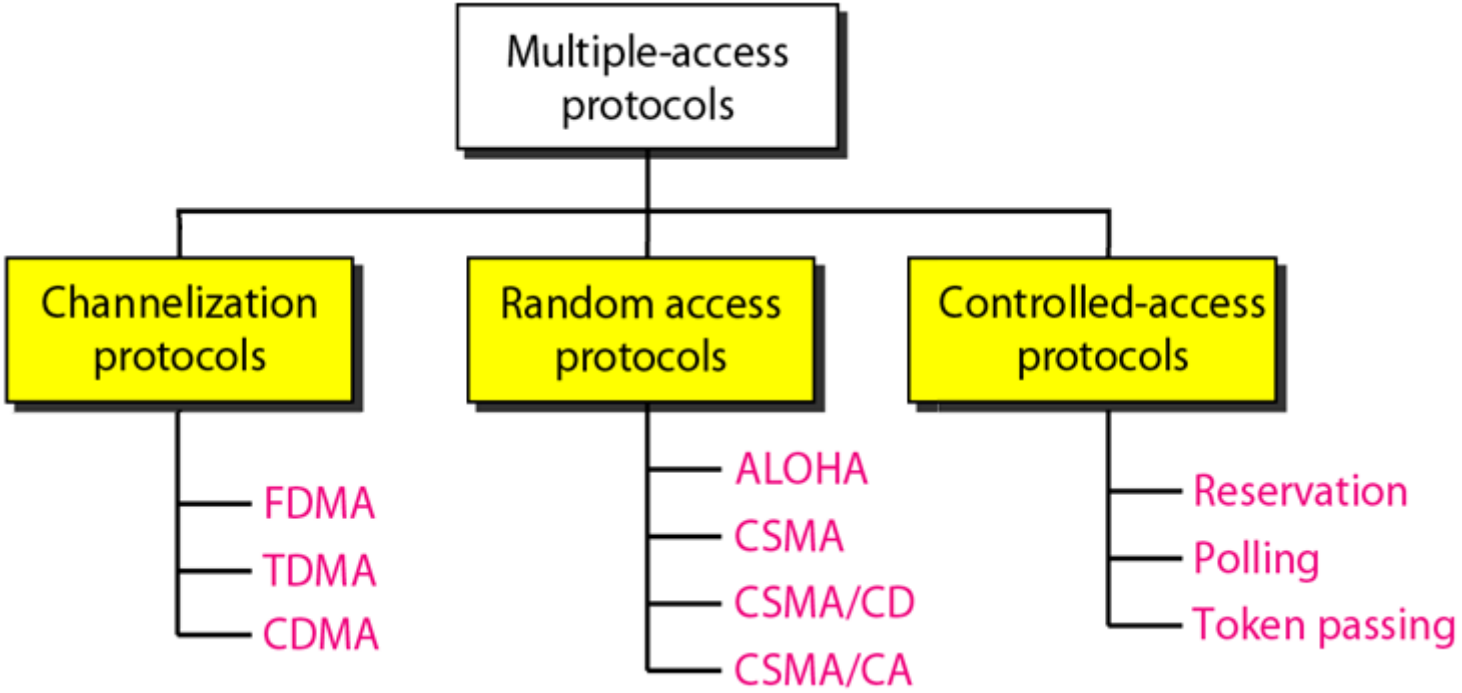
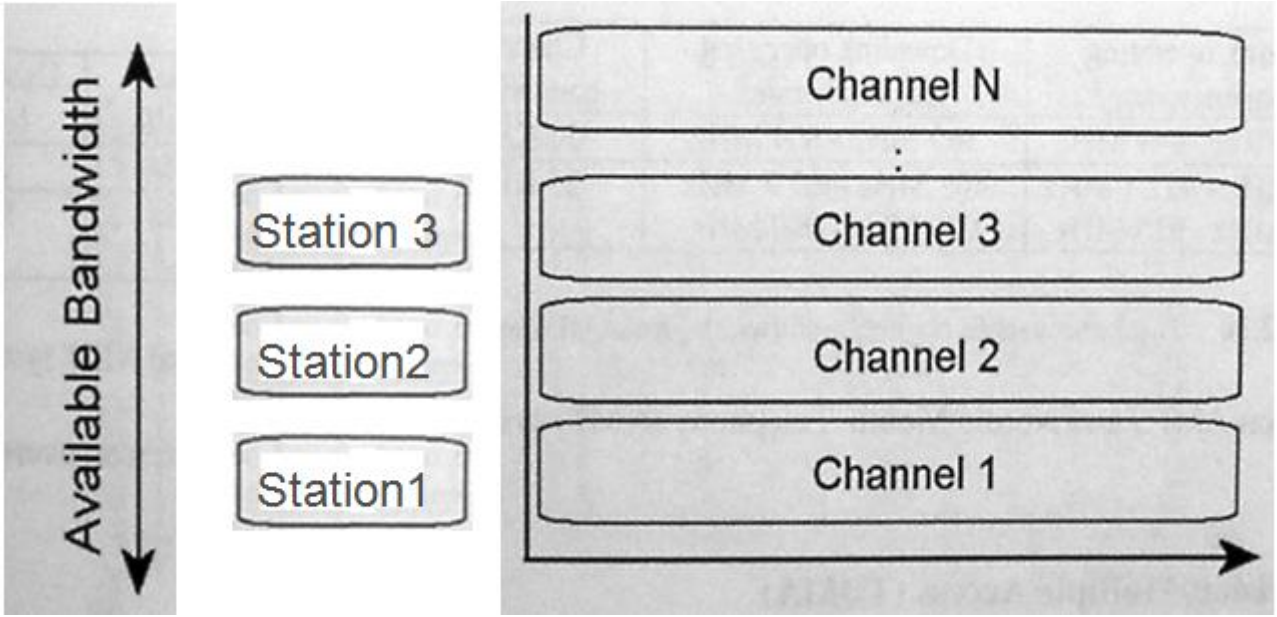
Multiple Access

- ✓ A common communication Channel is shared by Multiple nodes
- ✓ MAC Layer allocates Channel for a Node
- ✓ MAC Layer operates various Protocols

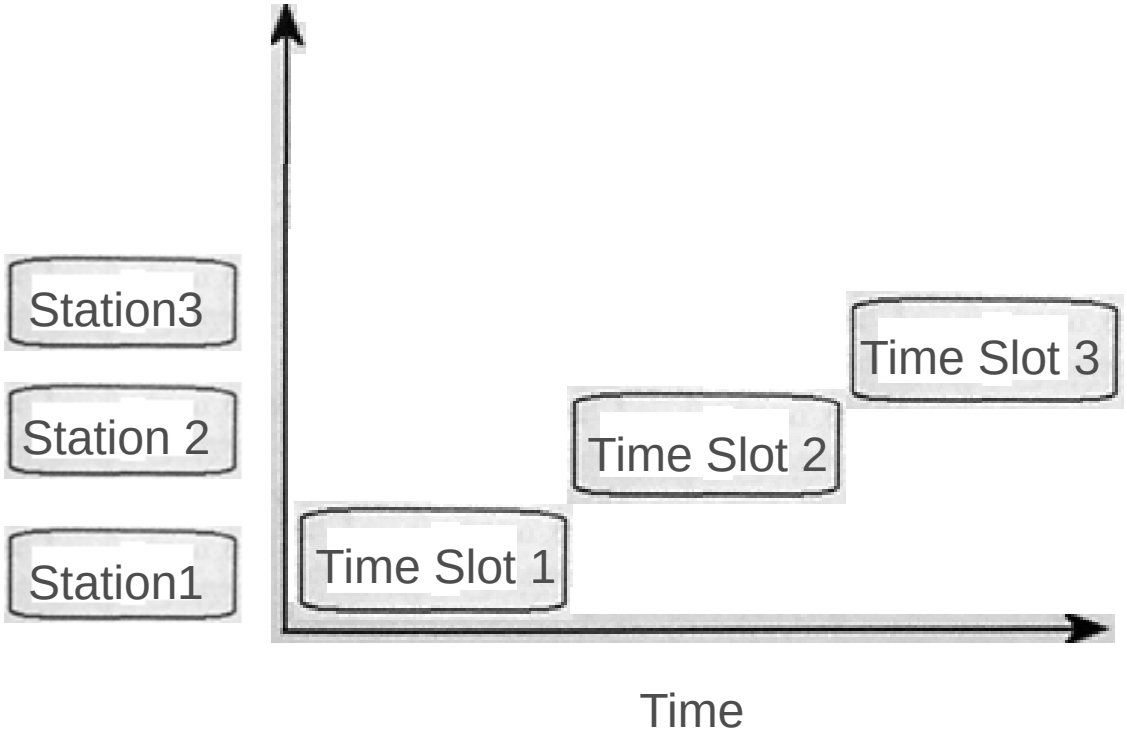
Multiple Access Protocols



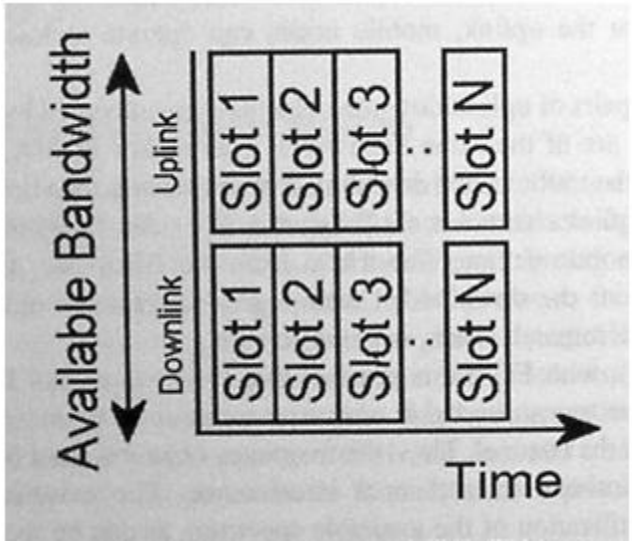
Channelization Protocols - FDMA



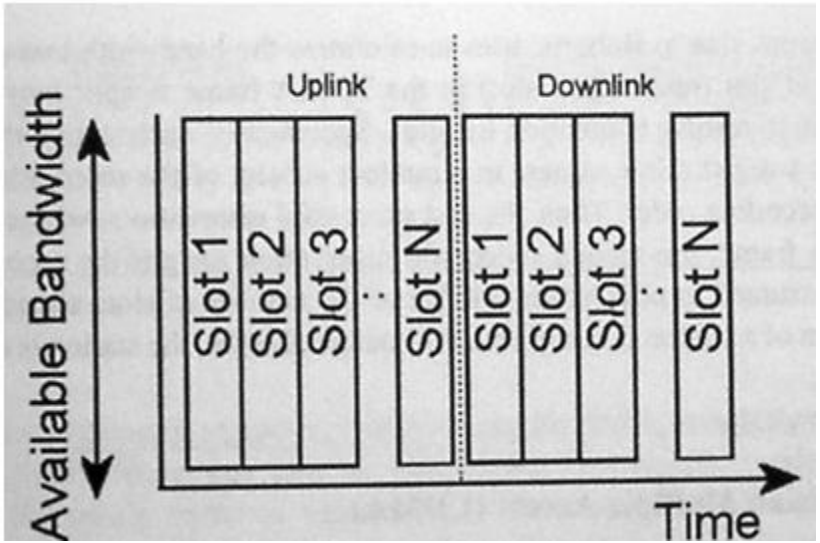
Channelization Protocols - TDMA



Channelization Protocols– Combined



FDD - TDMA



TDD - TDMA

Multiple Access - CDMA

Station codes	Transmissions	Decoding traffic of station:
C_A: 1 0 1 0	A: Bit 1 => 1 -1 1 -1	A: $S*C_A$=(-1 -1 3 -1)*(1 -1 1 -1)/4=1 => binary 1.
C_B: 1 0 0 1	B: Bit 0 => -1 1 1 -1	B: $S*C_B$=(-1 -1 3 -1)*(1 -1 -1 1)/4=-1 => binary 0.
C_C: 0 0 1 1	C: Bit 1 => -1 -1 1 1	C: $S*C_C$=(-1 -1 3 -1)*(-1 -1 1 1)/4=1 => binary 1.

	S= -1 -1 3 -1	

Figure 2.33 CDMA operation

References

- ✓ Book: Data communication and Networking
  Fourth edition
  By : BEHROUZ A FOROUZAN
- ✓ Computer Networking: A Top Down Approach Featuring the Internet, 3rd edition. Jim Kurose, Keith Ross
  Addison-Wesley, July 2004.
- ✓ Various Relevant Websites
  - ✓ Website: www.amjadumar.com

Thank You