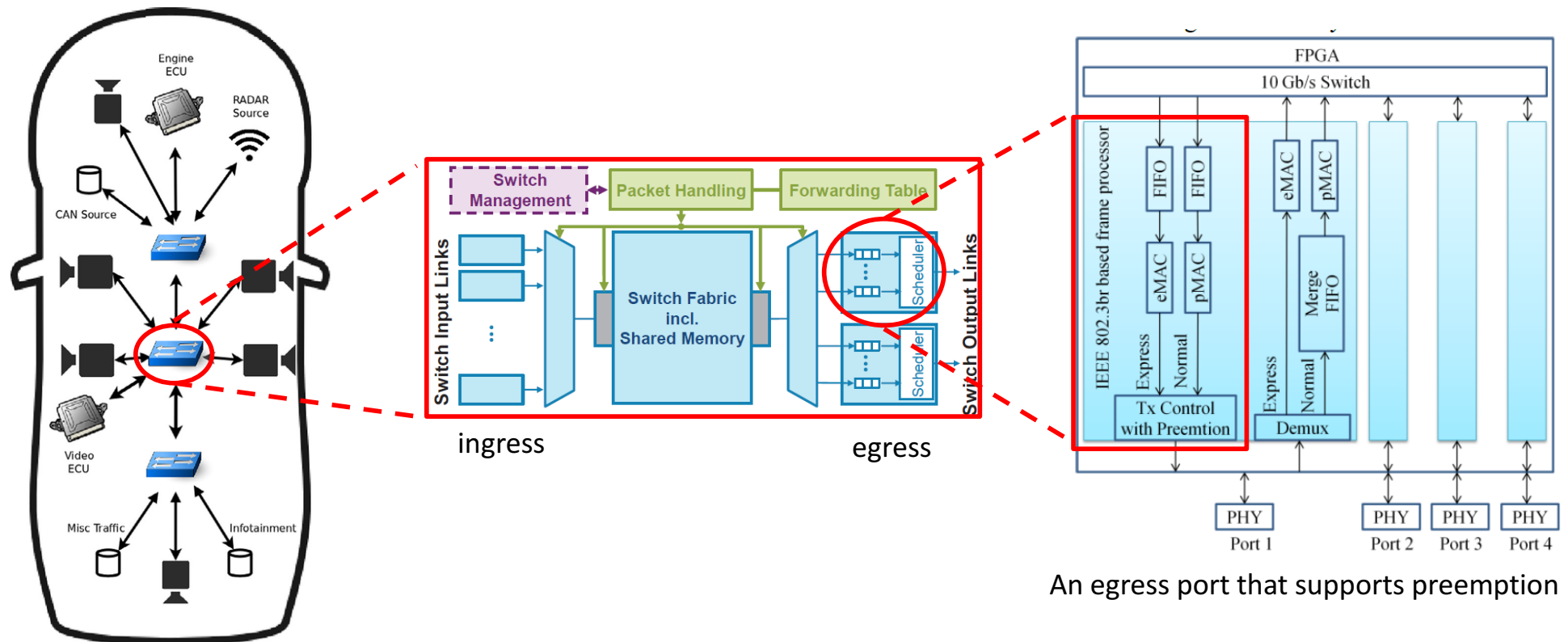


Frame Preemption

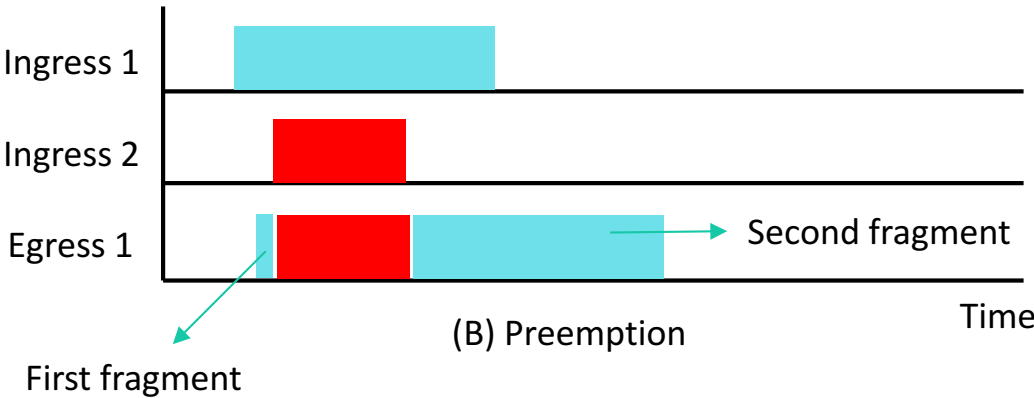
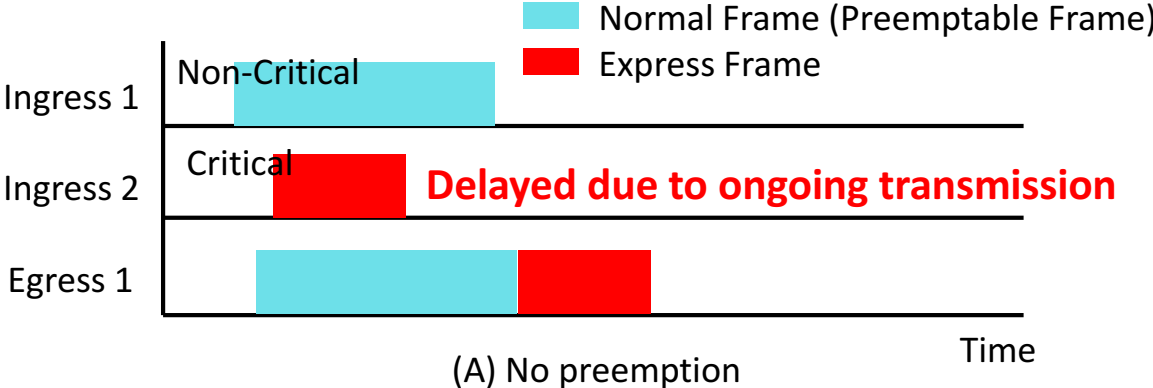
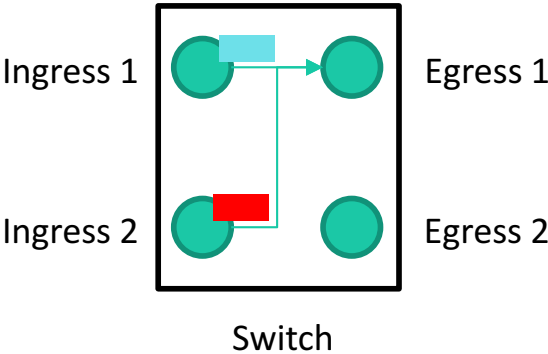
IEEE Std 802.3br-2016

IEEE Std 802.1Qbu-2016

Switched Ethernet with Preemption



What is preemption?



Packet formats (from 802.3br)

MAC Merge frame

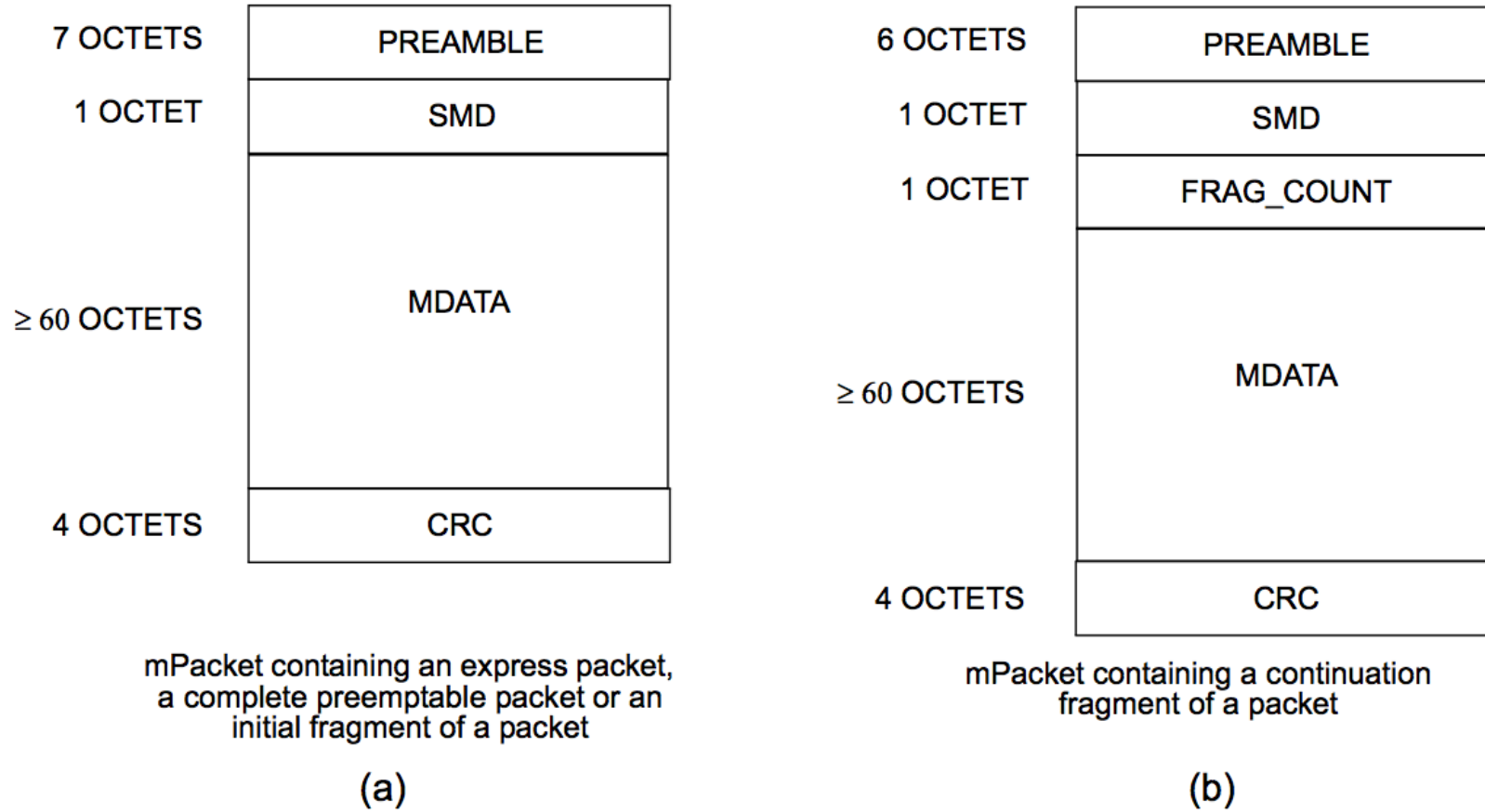
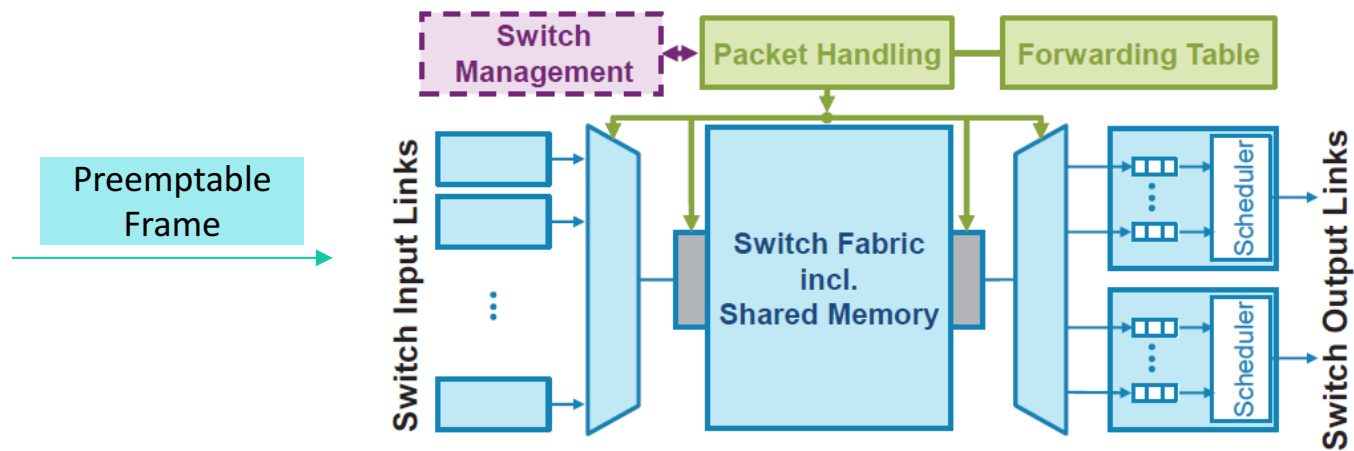


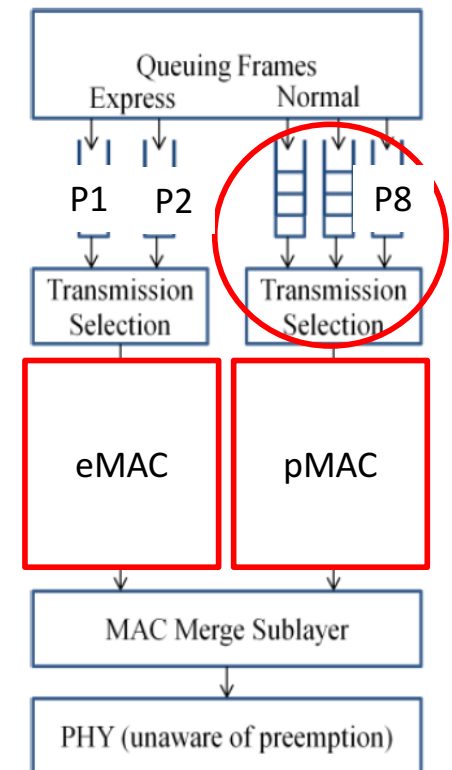
Figure 99-4—mPacket format

Last mPacket = FCS of original Ethernet frame

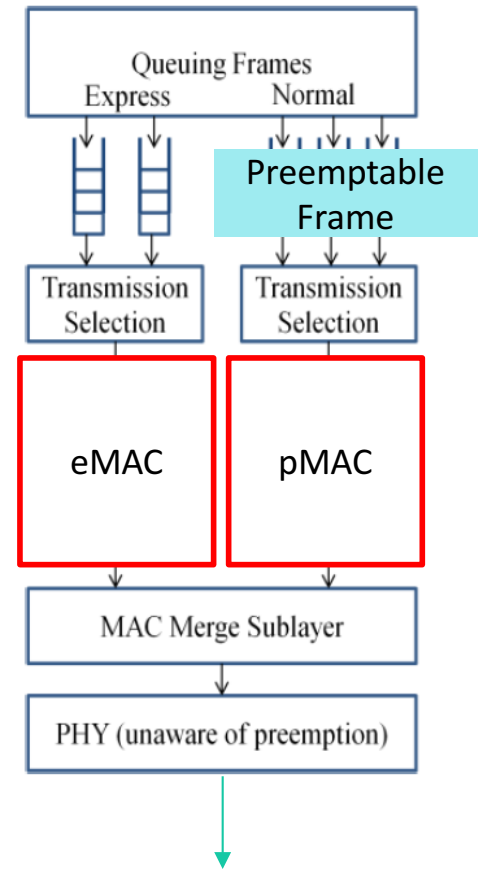
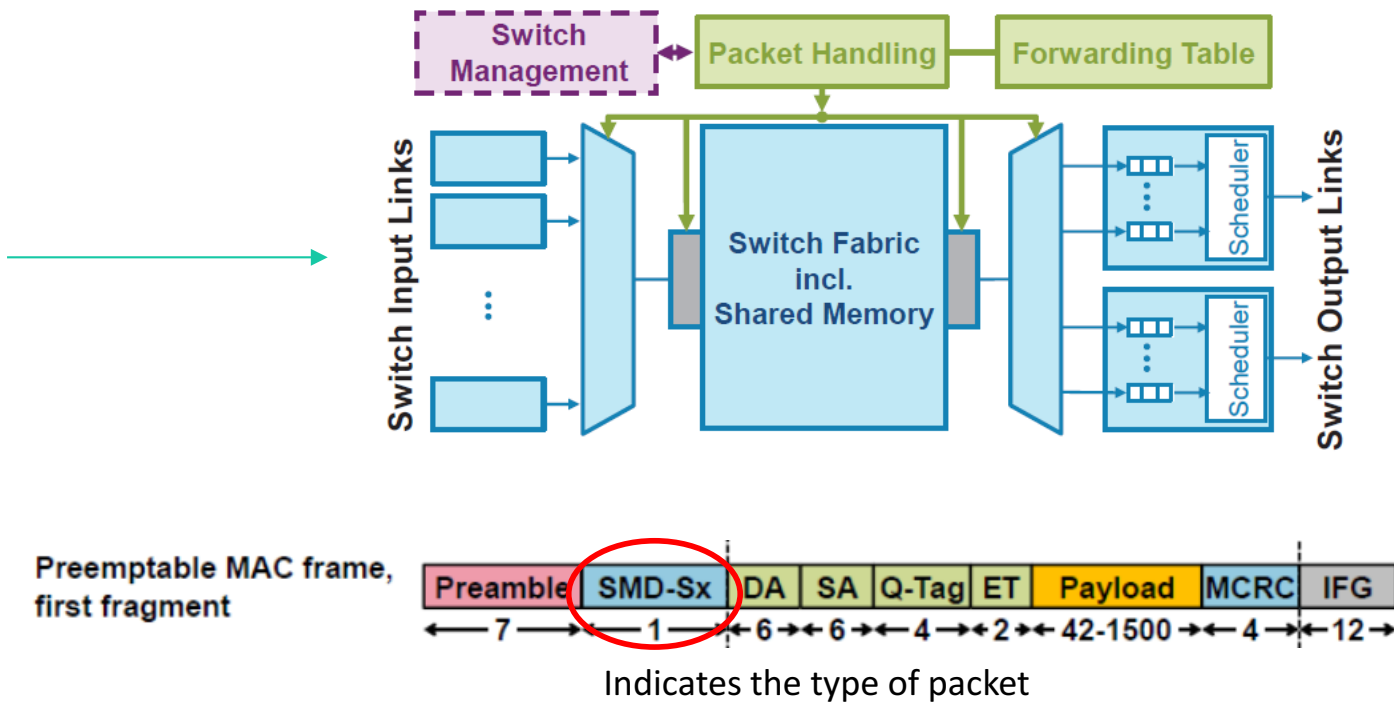
Preemption



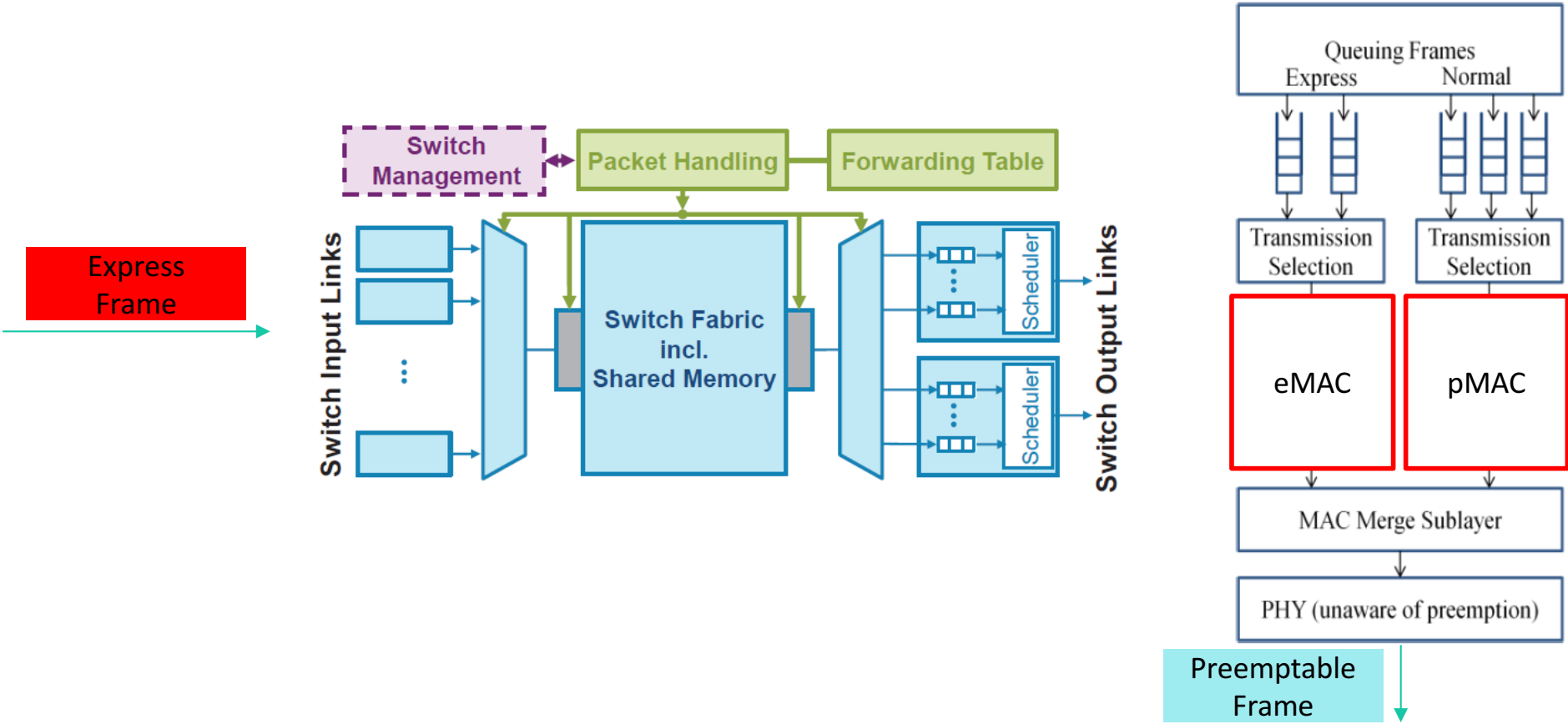
- A queue is chosen based on PCP value in a frame
- Each queue has own priority
- Express/Preemptable queue is statically assigned



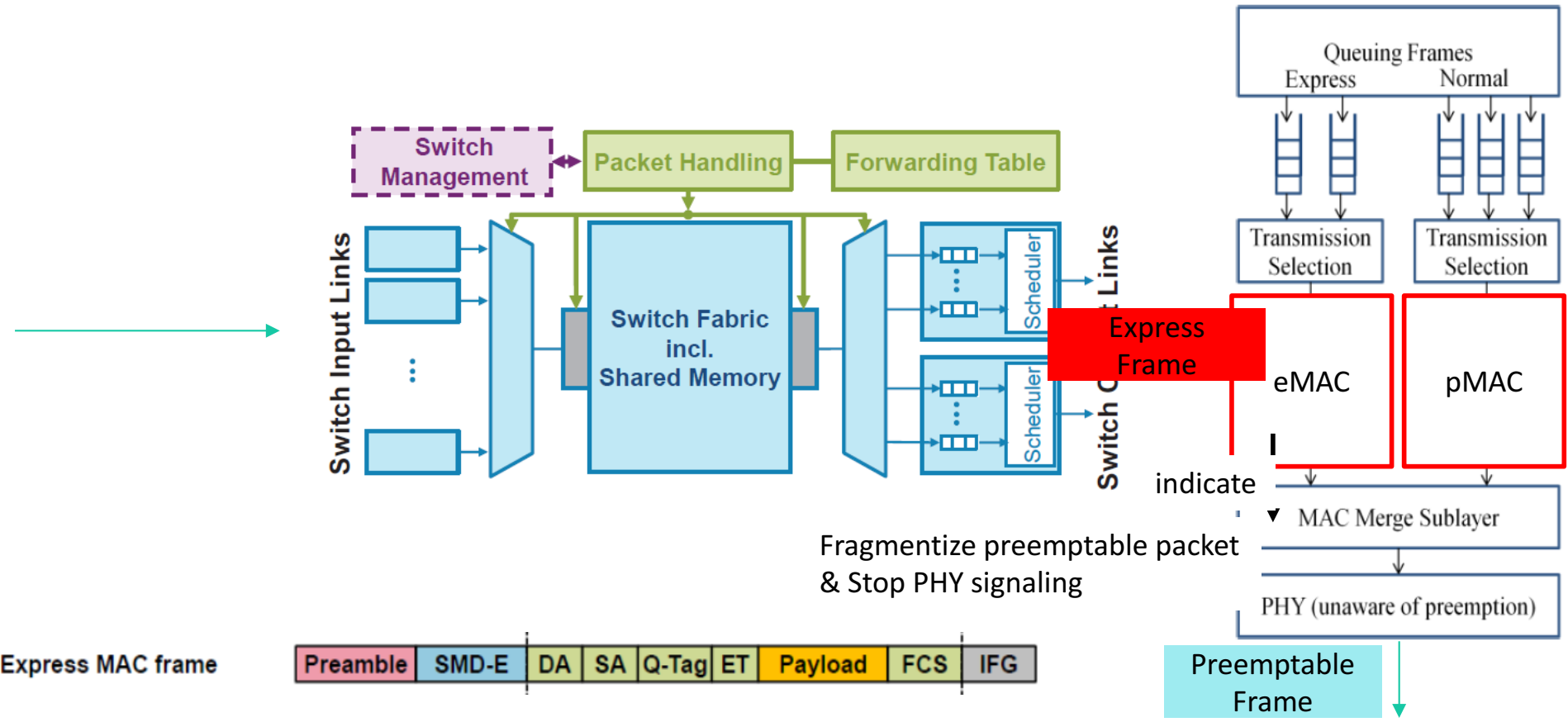
Preemption



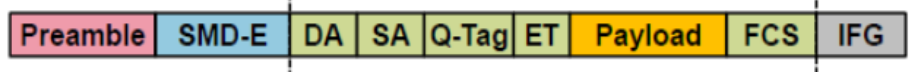
Preemption



Preemption



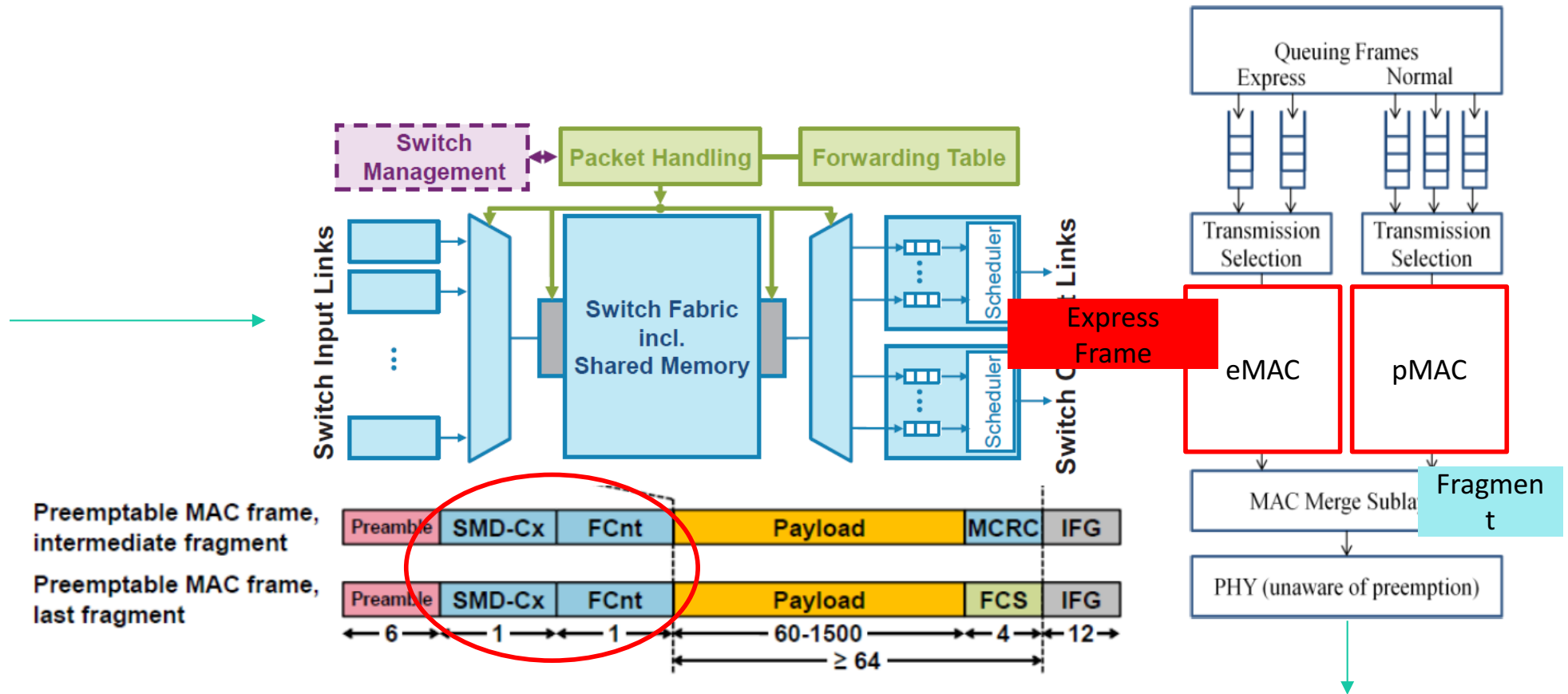
Express MAC frame



Preemption

Minimum fragment size is 64 bytes

So, an 128 byte packet will not be preempted



Summary

- Preemption capability required a change in the MAC layer (802.3br)
 - Express eMAC and Preemptable MAC
 - Ethernet Start-of-Frame delimiter was generalized to indicate whether a frame is express, preemptable, or continuation packet
 - Also include special packets for a port to verify preemption capability of the link partner; also to respond to a verification request
 - Only one level of preemption
 - Queues are allocated either to the eMAC or pMAC
 - Allocation can be unique per port
-