Generic Muxing Behavior – independent of Tx or Rx direction

- Generic Behaviors:
  - Z is the number of PCS Lanes
  - N input lanes, each with Z/N PCS lanes
  - M output lanes, each with Z/M PCS lanes
  - Lane muxing behavior generic, independent of position or direction
For 40GBASE-R, the number of input and output lanes are divisors of 4 and or 100GBASE-R, the number of input and output lanes are divisors of 20

Since the interfaces are abstract when there is not a physical instantiation, we don’t need to draw adjacent PMA stages when there is not a physically instantiation of the interface between them.
100GBASE-R Case 1
All abstract interfaces, FEC with PCS, if present

Diagram:

- PCS
- FEC
- PMA (20:10)
- PMD

MDI m lanes

SP3 ↓ SP4 ↑
100GBASE-R Case 6
FEC independent of PCS or PMD, physical PMD service interface

PMD Service Interface

PMD

SP3

MDI m lanes

SP4

SP5

SP2

PMA (10:10)
PMA D

CAUI

PMA (10:20)
PMA B

CAUI

PMA (20:10)
PMA C

PCS

PMA (20:10)
PMA A

SP6
Generic PMA

1. If adjacent XLAUI/CAUI
2. If adjacent XLAUI/CAUI or PMD
3. If closest PMA to PCS (or physically instantiated interface above-MG)
4. If closest PMA to PMD

PMAserver = PMA, FEC, or PMD
Application of Generic PMA model

• Presence of functions in a given PMA depend on the context
  ▪ Test pattern generation/detection if XLAUI/CAUI above or below, or PMD below
  ▪ System loopback for closest PMA to PCS (issue – and also for any PMA with a physically instantiated interface above?)
  ▪ Line loopback for closest PMA to PMD

• Each PMA has its own set of control and status registers
  ▪ Maximum of four (or five?) PMAs