

Possible New Work Items for 802.1 Related to OIF Flex Ethernet (FlexE)

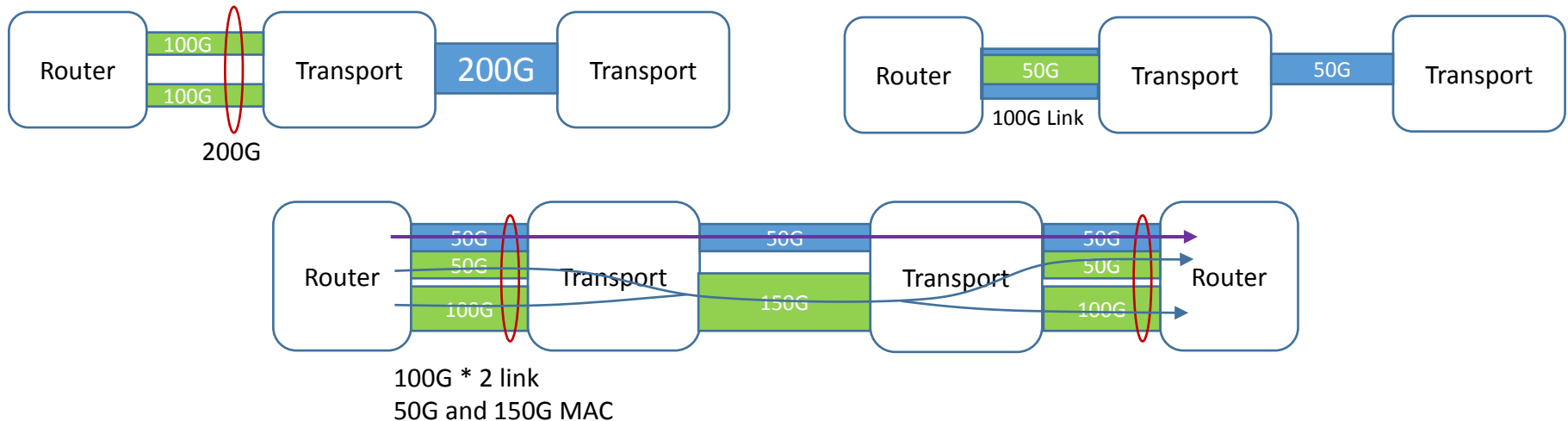
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IEEE 802.1 Interim Meeting, May 2016

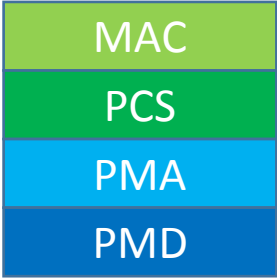
Budapest, Hungary

OIF FlexE

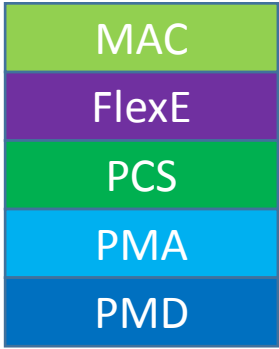
- First version published in March 2016, available on OIF web site: <http://www.oiforum.com/wp-content/uploads/OIF-FLEXE-01.0.pdf>
- Use cases
 - Bonding of Ethernet PHYs, avoid the hash issue of LAG
 - Sub-rates of Ethernet PHYs
 - Channelization within a PHY or a group of bonded PHYs



OIF FlexE – Architecture

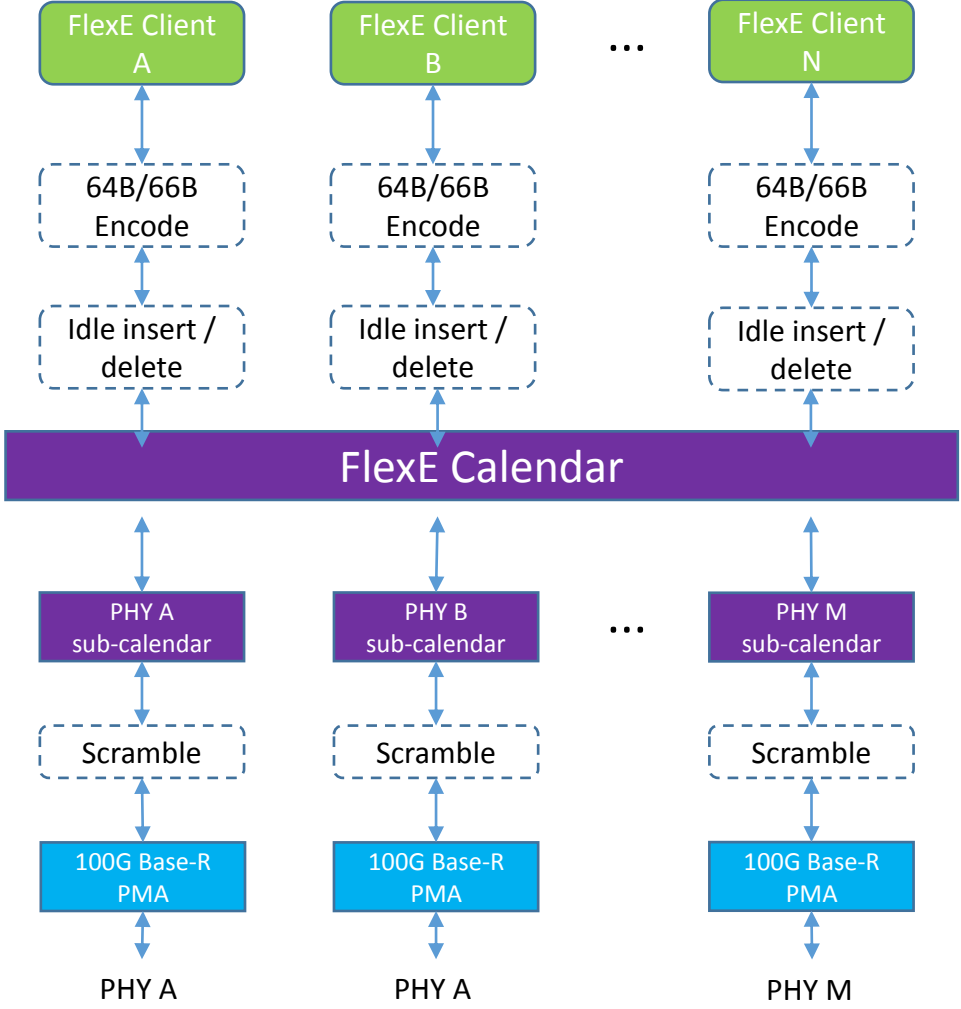


Standard Ethernet

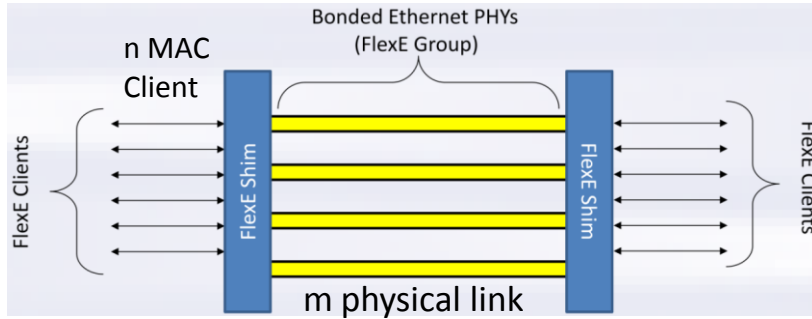


Flex Ethernet

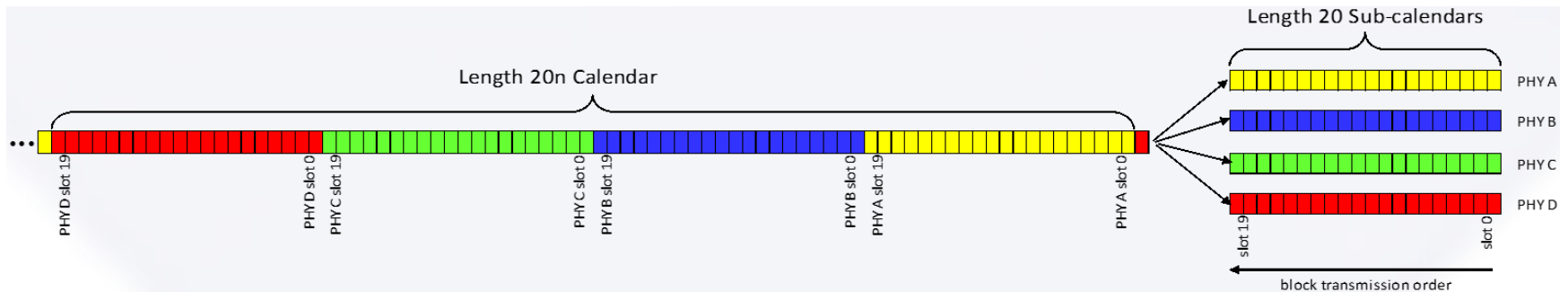
FlexE layer between Ethernet MAC and PCS



OIF FlexE

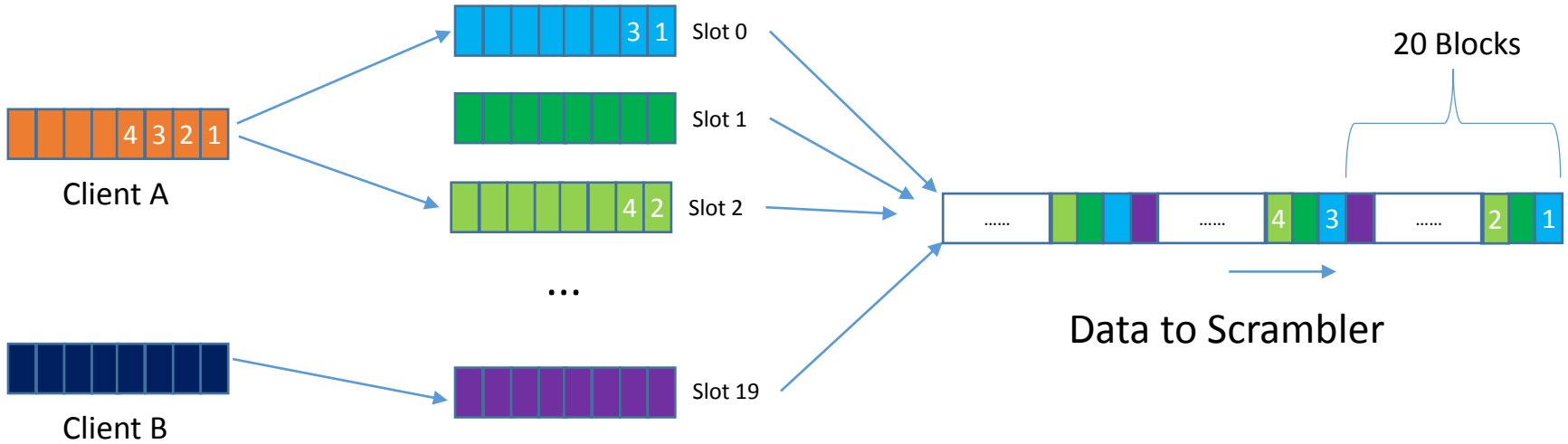


- n MAC Clients over m PHYs
- 20 slots in a 100G PHY, each 5G
- 1 client has any combination of slots in a group



Calendar over m PHYs in a group

OIF FlexE



Scheduling (over a single link / sub-calendar)

FlexE Group Discovery

- Under Discussion in OIF
- Target
 - Enable FlexE neighbor and capability discovery
 - Enable FlexE group automatic configuration
 - Connectivity check and correction
- Start Procedures
 - Start in standard Ethernet mode, then transition to FlexE mode, or vice versa?
Compatibility is a concern
 - or Flex mode only?
- Possible Options
 - LLDP Extension over Ethernet / FlexE management channel
 - New Ethernet Based protocol other than LLDP

FlexE & 802.1 MAC Relay

- Two-Port MAC Relay

Defined in 802.1aj, later merged into 802.1Q since 2011

- Similar Mechanism for FlexE?

Provide an offload path for flows, avoid congestion and achieve low delay and low jitter

Open Discussion

- Wish to kick off open discussion on possible new work items for 802.1 related to OIF FlexE