

Problem Statements of FlexE Interface Management

draft-jiang-ccamp-flexe-ifmps-00

Yuanlong Jiang, Fan Yang
Italo Busi, Junfang Wang

Presenter: Fan Yang

What & Why is FlexE?

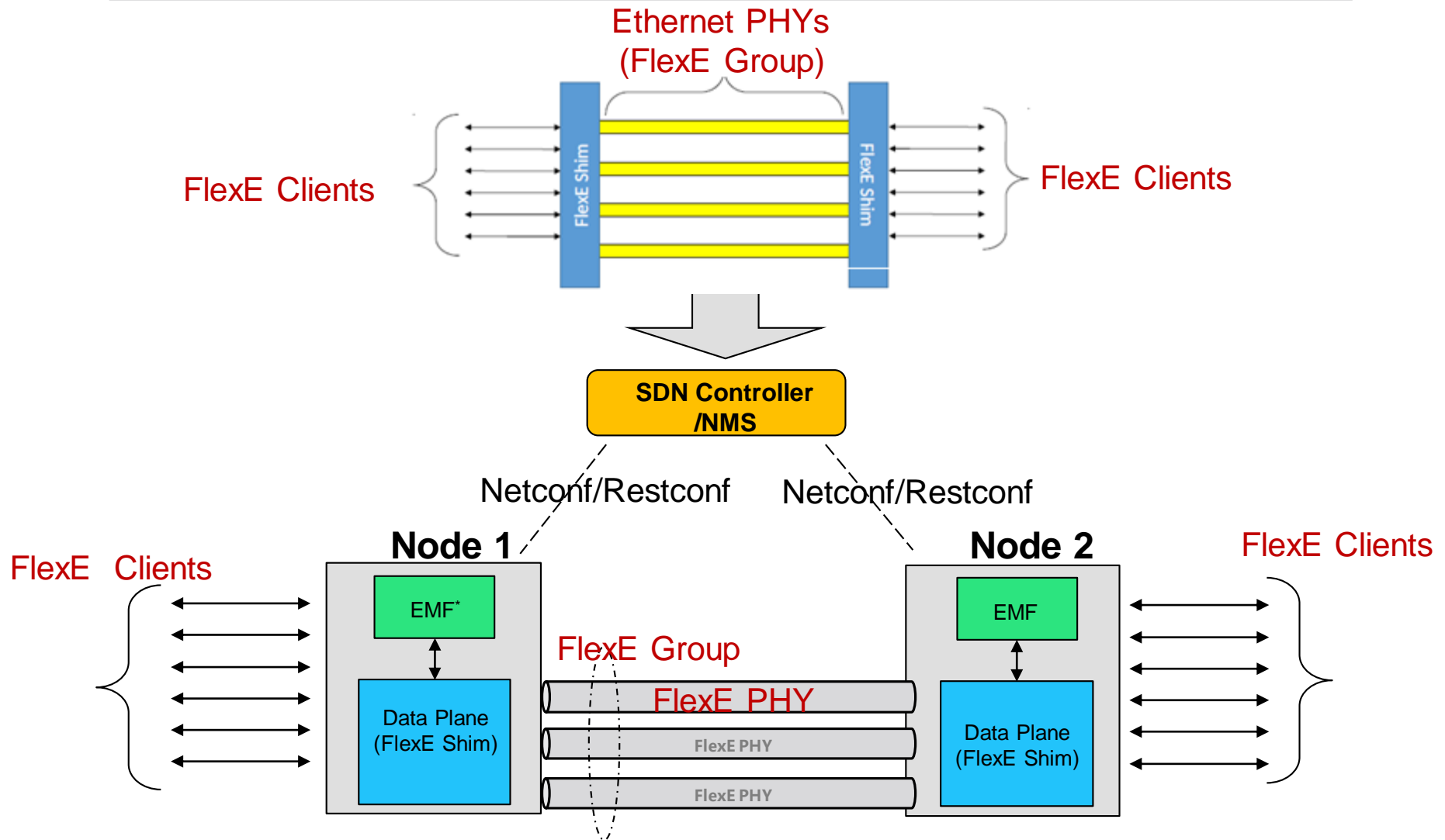
Definition

Provides a generic mechanism for supporting a variety of Ethernet MAC rates that may or may not correspond to any existing Ethernet PHY rate

Why Flex Ethernet?

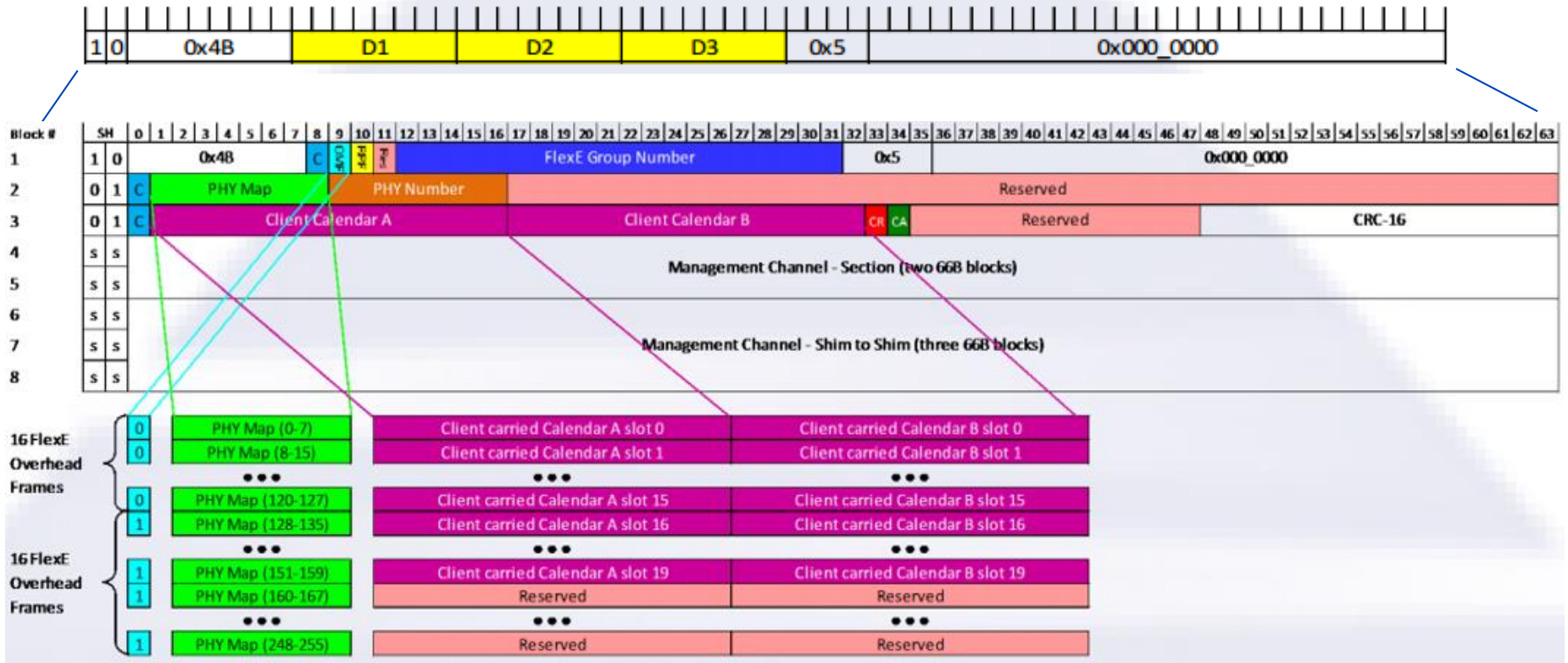
- Flexible bandwidth granularity required
- Rate mismatch between Ethernet and transport/WAN
- Simple and efficient mapping mechanism

FlexE Management Overview



* EMF: Element Management Function

FlexE Management Overview



CCA: calendar configuration A
 CCB: calendar configuration B
 CC: calendar configuration in use
 CR: calendar switch request
 CA: calendar switch acknowledge

Problem Statements of FlexE Interface Management

- **PS1**: provide the function of various MAC rates
 - Bonding of ETH PHY: $n \times 100\text{G}$ over n bonded 100G PHY
 - Sub-rates of ETH PHY: 50G over a 100G PHY
 - Channelization within a PHY or a group of bonded PHYs: e.g., 25G + 75G over a 100G PHY
 - Hybrid of above cases
 - *PHY, FlexE group, FlexE client, slot mapping* should be managed

- **PS2**: meet requirement of transport network mappings scenarios
 - FlexE Unaware: used/unused slots
 - FlexE Termination: used/unused slots
 - FlexE aware: unavailable slots
 - *Slot-status* should be enumerated

Problem Statements of FlexE Interface Management

- **PS3**: how to configure FlexE
 - Static: A fixed implementation, **NOT** open to the SDN controller/NMS
PHY, FlexE group, FlexE client, slot mapping should **NOT** be configurable
 - Master-slave:
PHY, FlexE group, FlexE client, slot mapping should be configurable
 - SDN/NMS:
PHY, FlexE group, FlexE client, slot mapping should be configurable
- **PS4**: implement overhead information or not
 - A *negotiation protocol* between calendars is introduced
 - CCA, CCB, CC, CR, CA should be data plane internal artifacts, **NOT** necessary to be exposed

Problem Statements of FlexE Interface Management

- **PS5:** provide management of FlexE Clients

- Add a client or clients
- Delete a client or clients
- Resize a client or clients
- Adjust slot locations for a client or clients

FlexE client, mapping slot should be managed

Remote procedure call (RPC) can be triggered from SDN controller/NMS

- **PS6:** support of bidirectional transport or not

- FlexE links are all bidirectional symmetric links so far
- Unidirectional parameters Tx/Rx should **NOT** be considered till the real use case

Thank You