

FlexE at IETF

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FlexE (Flexible Ethernet)

- OIF (Optical Internetworking Forum) dataplane

<http://www.oiforum.com/wp-content/uploads/OIF-FLEXE-01.0.pdf>

CCAMP

- GMPLS Routing and Signaling Framework for Flexible Ethernet (FlexE)

<https://datatracker.ietf.org/doc/draft-izh-ccamp-flex-e-fwk/>

- ISIS extensions for Flexible Ethernet

<https://www.ietf.org/id/draft-zcdc-isis-flex-e-extention-01.txt>

- Couple of liaisons:

- CCAMP->ITU-T SG15 – ask status

- ITU-T SG15->CCAMP – answer

<https://datatracker.ietf.org/liaison/1535/>

- BBF – request information on CCAMP's work

<https://datatracker.ietf.org/liaison/1523/>

Extra, Extra

Deep Dive (from OIF IA)

The Flex Ethernet (FlexE) implementation agreement provides a generic mechanism for supporting a variety of Ethernet MAC rates that may or may not correspond to any existing Ethernet PHY rate. This includes MAC rates that are both greater than (through bonding) and less than (through sub-rate and channelization) the Ethernet PHY rates used to carry FlexE. This can be viewed as a generalization of the Multi-Link Gearbox implementation agreements, removing the restrictions on the number of bonded PHYs (MLG2.0, for example, supports one or two 100GBASE-R PHYs) and the constraint that the FlexE clients correspond to Ethernet rates (MLG2.0 supports only 10G and 40G clients).

More....(from OIF IA)

- The general capabilities supported by the FlexE implementation agreement are:
- Bonding of Ethernet PHYs, e.g., supporting a 200G MAC over two bonded 100GBASE-R PHYs.
- Sub-rates of Ethernet PHYs, e.g., supporting a 50G MAC over a 100GBASE-R PHY.
- Channelization within a PHY or a group of bonded PHYs, e.g, support a 150G and two 25G MACs over two bonded 100GBASE-R PHYs.
- Note that hybrids are also possible, for example a sub-rate of a group of bonded PHYs, for example, a 250G MAC over three bonded 100GBASE-R PHYs.

And More....

- Refer to Fig. 2 and Fig. 3 of IA
- Is it Ethernet or not? Has 802.3 PHY, does not have MAC frame – no MAC address, FEC is optional.
- Uses a FlexE frame comprised of calendar slots which contain 64B/66B encoded clients (with their own separate MACs).