Nomenclature

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Nomenclature

- Goal: Align on the nomenclature to enable effective communication

IEEE-SA Standards Style Manual Guidance

- Guidance from IEEE-SA is as follows
- 10.6.3:
  - "Each definition should be a brief, self-contained description of the term in question and shall not contain any other information, such as requirements or elaborative text. The term should not be used in its own definition."
- 10.7
  - "Acronyms and abbreviations can be used to save time and space in the document."
- B.1
  - "a) New terms and definitions included in IEEE standards should be written in plain English using clear and concise descriptions. Terms themselves should not be used in their own definitions."
  - "b) Needless customization should be avoided so that definitions have as broad an application as appropriate. Definitions that are too specific should be avoided."
  - "c) New definitions that serve to add a new definition to an existing term(s) of the same name should be different enough from the other term(s) so as to justify the addition. Having more than two or three acceptable definitions for any term is discouraged."

Backplane and Copper Cable PMDs

- Entering an era of a mix of single-lane and multi-lane PMDs with the same Ethernet rate, having almost the same name form.

- For the copper and backplane PMD types, the most common form found in the current IEEE Std. 802.3-2018 does not use a lane number indication for the single lane version of SERDES rates over copper cables or backplanes.
  - 10GBASE-KR, 25GBASE-KR, 25GBASE-CR, 50GBASE-KR, 50GBASE-CR, etc.

- However, the "1" at the end makes it obvious of the PMD type when the nomenclature becomes lax in conversation or when referring to a general group of PMD types.
  - (i.e. "100G CR" could collectively mean 100GBASE-CR4 and 100GBASE-CR2 and 100GBASE-CR1)
  - There are some non-IEEE specifications that use a "1" in the PMD name, such as 25GBASE-CR1

- This Task Force will need to decide if the single-lane form should include the "1" or not.

Backplane – Option A

- "P" was used for PAM4 in 100GBASE-KP4 to distinguish from NRZ 100GBASE-KR4. P802.3cd kept the "R" for the PAM4 PMD names. Assume that the Task Force prefers to continue in this direction.
- Propose this:
  - "100GBASE-KR: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding over one lane of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
  - "200GBASE-KR2: IEEE 802.3 Physical Layer specification for 200 Gb/s using 200GBASE-R encoding over two lanes of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
  - "400GBASE-KR4: IEEE 802.3 Physical Layer specification for 400 Gb/s using 400GBASE-R encoding over four lanes of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
- Add in Clause 1.4 and to Table 80-1, Table 116-1 or Table 116-2, as applicable

Backplane – Option B

- Propose this:
  - "100GBASE-KR1: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding over one lane of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
  - "200GBASE-KR2: IEEE 802.3 Physical Layer specification for 200 Gb/s using 200GBASE-R encoding over two lanes of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
  - "400GBASE-KR4: IEEE 802.3 Physical Layer specification for 400 Gb/s using 400GBASE-R encoding over four lanes of an electrical backplane. (See IEEE Std 802.3, Clause TBD)"
- Add in Clause 1.4 and to Table 80-1, Table 116-1 or Table 116-2, as applicable

Copper Cables – Option A

P802.3cd kept the "R" for the PAM4 PMD names also.

Propose:

- "100GBASE-CR: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding over one lane of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- "200GBASE-CR2: IEEE 802.3 Physical Layer specification for 200 Gb/s using 200GBASE-R encoding over two lanes of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- "400GBASE-CR4: IEEE 802.3 Physical Layer specification for 400 Gb/s using 400GBASE-R encoding over four lanes of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- Add in Clause 1.4 and to Table 80-1, Table 116-1 or Table 116-2, as applicable

Copper Cables – Option B

P802.3cd kept the "R" for the PAM4 PMD names also.

Propose:

- "100GBASE-CR1: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding over one lane of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- "200GBASE-CR2: IEEE 802.3 Physical Layer specification for 200 Gb/s using 200GBASE-R encoding over two lanes of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- "400GBASE-CR4: IEEE 802.3 Physical Layer specification for 400 Gb/s using 400GBASE-R encoding over four lanes of shielded balanced copper cabling. (See IEEE Std 802.3, Clause TBD)"

- Add in Clause 1.4 and to Table 80-1, Table 116-1 or Table 116-2, as applicable

AUIs

- Need updates to the definitions for the 100G, 200G and 400G AUIs.

- For now, I assume the terms 100GAUI-1, 200GAUI-2 and 400GAUI-4.

- There may be a need to define a "short" and "long" version of the AUI, as suggested in ghaisi_3ck_02_0119
  - Not yet comprehended in the following definitions

Attachment Unit Interface – 100G

- Change from IEEE Std 802.3-2018 as modified by P802.3cd D3.5

- **"100 Gb/s Attachment Unit Interface (CAUI-n, 100GAUI-n):** A physical instantiation of the PMA service interface to extend the connection between 100 Gb/s capable PMAs over n lanes, used for chip-to-chip or chip-to-module interconnections. Four ~~Three~~ widths are defined: a ten-lane version (CAUI-10), two four-lane versions (CAUI-4, 100GAUI-4), ~~and~~ a two-lane version (100GAUI-2), and a one-lane version (100GAUI-1). (See IEEE Std 802.3, Annex 83A and Annex 83B for CAUI-10, Annex 83D and Annex 83E for CAUI-4, Clause 135, Annex 135D, and Annex 135E for 100GAUI-4, or Clause 135, Annex 135F, and Annex 135G for 100GAUI-2, or Annex TBD and Annex TBD for 100GAUI-1.)"

- Make similar change with editorial license in Clause 1.1.3.2 Compatibility interfaces

Attachment Unit Interface – 200G

- Change from IEEE Std 802.3-2018
- **"200 Gb/s Attachment Unit Interface (200GAUI-n):** A physical instantiation of the PMA service interface to extend the connection between 200 Gb/s capable PMAs over n lanes, used for chip-to-chip or chip-to-module interconnections. Three ~~Two~~ widths of 200GAUI-n are defined: an eight-lane version (200GAUI-8), ~~and a~~ four-lane version (200GAUI-4), and a two-lane (200GAUI-2). (See IEEE Std 802.3, Annex 120B and Annex 120C for 200GAUI-8, or Annex 120D and Annex 120E for 200GAUI-4, or Annex TBD or Annex TBD for 200GAUI-2.)"
- Make similar change with editorial license in Clause 1.1.3.2 Compatibility interfaces

Attachment Unit Interface – 400G

- Change from IEEE Std 802.3-2018

- **"400 Gb/s Attachment Unit Interface (400GAUI-n):** A physical instantiation of the PMA service interface to extend the connection between 400 Gb/s capable PMAs over n lanes, used for chip-to-chip or chip-to-module interconnections. Three ~~Two~~ widths of 400GAUI-n are defined: a sixteen-lane version (400GAUI-16), ~~and~~ an eight-lane version (400GAUI-8), and a four-lane version (400GAUI-4). (See IEEE Std 802.3, Annex 120B and Annex 120C for 400GAUI-16, or Annex 120D and Annex 120E for 400GAUI-8, or Annex TBD and Annex TBD for 400GAUI-4.)"

- Make similar change with editorial license in Clause 1.1.3.2 Compatibility interfaces

THANKS!