Nomenclature Consensus Building

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Supporters

Nomenclature

- Goal: Agree on the nomenclature to enable effective communication
- Plan: Start with generic references with respect to PCS and FEC because it just references 25GBASE-R encoding. Therefore, define 25GBASE-R encoding after more consensus building.

New Clauses/Annexes

Clause	Changes
X	Introduction to 25 Gb/s networks
X+1	25G RS + XXVMII
X+2	25G PCS ***
X+3	25G FEC
X+4	25G PMA
X+5	25GBASE-CR PMD (copper cable) ***
X+6	25GBASE-KR PMD (backplane)
X+7	25GBASE-SR PMD (MMF optical)
Annex (X+4)A	XXVAUI chip-to-chip
Annex (X+4)B	XXVAUI chip-to-module
Annex (X+5)A	25GBASE-CR TP parameters and channel characteristics
Annex (X+5)B	25GBASE-CR cable/host use cases ***
	*** indicates Clauses/Annexes that need significant work

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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."

Easy First!

- **Prefix:**
  - "The alpha-numeric prefix 25GBASE in the port type (e.g. 25GBASE-R) represents a family of Physical Layer devices operating at a speed of 25 Gb/s."

- **BASE-R:**
  - Update BASE-R in 802.3-2012 to include the 25 Gb/s PCS, if necessary:
  - "BASE-R: An IEEE 802.3 family of Physical Layer devices using the 64B/66B encoding defined in Clause 49, ~~or~~ Clause 82, or Clause x+2. (See IEEE Std 802.3, Clause 49, ~~and~~ Clause 82, and Clause X+2.)"

Backplane

- Using the definition in 802.3bj (for Clause 93) and 802.3-2012 as a baseline, propose this:

- "25GBASE-KR: IEEE 802.3 Physical Layer specification for 25 Gb/s using 25GBASE-R encoding over one lane of an electrical backplane. (See IEEE Std 802.3, Clause x+6)"

MMF

- Using the definition in 802.3bm as a baseline, propose this:
- "25GBASE-SR: IEEE 802.3 Physical Layer specification for 25 Gb/s using 25GBASE-R encoding over a duplex multimode fiber. (See IEEE Std 802.3, Clause x+7)"

25GBASE-R

- Propose:

- "25GBASE-R: An IEEE 802.3 physical coding sublayer for one lane 25 Gb/s operation. (See IEEE Std 802.3, Clause x+2.)"

MII and AUI

For the MII and AUI interfaces, some choices include:
- a. Keep the Roman numeral designation. I.e. XXVGMII and XXVAUI
- b. Use the rate. i.e. 25G-MII and 25G-AUI
- c. Something else i.e YMII and YAUI where Y = 25G

The Task Force, if approved, will need to make the decision.

Attachment Unit Interface

- "25 Gigabit Attachment Unit Interface (25G-AUI): A physical instantiation of the PMA service interface to extend the connection between 25 Gb/s capable PMAs over one lane, used for chip-to-chip or chip-to-module interconnections. (See IEEE Std 802.3, Annex (X+4)A and Annex (X+4)B)."

OR

- "25 Gigabit Attachment Unit Interface (XXVAUI): A physical instantiation of the PMA service interface to extend the connection between 25 Gb/s capable PMAs over one lane, used for chip-to-chip or chip-to-module interconnections. (See IEEE Std 802.3, Annex (X+4)A and Annex (X+4)B)."

MII

- "25 Gigabit Media Independent Interface (25G-MII): The interface between the Reconciliation Sublayer (RS) and the Physical Coding Sublayer (PCS) for 25Gb/s operation. (See IEEE Std 802.3, Clause x+1.)"

OR

- "25 Gigabit Media Independent Interface (XXVGMII): The interface between the Reconciliation Sublayer (RS) and the Physical Coding Sublayer (PCS) for 25Gb/s operation. (See IEEE Std 802.3, Clause x+1.)"

Copper Cables

- Cables can go many different ways:
  - A. there are 2 PMD types called 25GBASE-CRx and 25GBASE-CRy, where x and y are something unique. S/hort or L/ong or 3m or 5m or blah
  - B. there is 1 PMD type called 25GBASE-CR, with 2 different classes/styles/whatever.
  - C. ???
- *For reference, here are 40G-CR4 and 100G-CR4:*
  - *"40GBASE-CR4: IEEE 802.3 Physical Layer specification for 40 Gb/s using 40GBASE-R encoding over four lanes of shielded balanced copper cabling, with reach up to at least 7 m. (See IEEE Std 802.3, Clause 85.)"*
  - *"100GBASE-CR4: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding and Clause 91 RS-FEC over four lanes of shielded balanced copper cabling, with reach up to at least 5 m. (See IEEE Std 802.3, Clause 92.)"*

Copper Cables - Simple

Propose:

- "25GBASE-CR: IEEE 802.3 Physical Layer specification for 25 Gb/s using 25GBASE-R encoding over one lane of shielded balanced copper cabling. (See IEEE Std 802.3, Clause x+5.)"

Abbreviations List

- In Section 1.5, add:
  - 25G-MII or XXVGMII   25 Gigabit Media Independent Interface
  - 25G-AUI or XXVAUI   25 Gigabit Attachment Unit Interface
  - C2C   Chip-to-chip
  - C2M   Chip-to-module

THANKS!