

IEEE 802.3bj Draft 1.0 Comments

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Comment #10

- Clause 82 defines the term "100G-BASE-R" based on the entries in Table 80-1.
- However, Table 80-1 does not list the new PHY types adopted in IEEE 802.3bj objectives
 - http://www.ieee802.org/3/bj/objectives_0312.pdf
 - names adopted in Motion 3 of http://www.ieee802.org/3/bj/public/may12/minutes_01a_0512_unapproved.pdf
- For reference, the exact wording from IEEE 802.3bh Draft 3.1, Cl 82.1.1, (Page 99, line 11) is "The 100GBASE-R PCS is a sublayer of the 100 Gb/s PHYs listed in Table 80–1. The terms 40GBASE-R and 100GBASE-R are used when referring generally to Physical Layers using the PCS defined in this clause."

Comment #10

Table 80-1—40 Gb/s and 100 Gb/s PHYs

Name	Description
40GBASE-KR4	40 Gb/s PHY using 40GBASE-R encoding over four lanes of an electrical backplane, with reach up to at least 1 m (see Clause 84)
40GBASE-CR4	40 Gb/s PHY using 40GBASE-R encoding over four lanes of shielded balanced copper cabling, with reach up to at least 7 m (see Clause 85)
40GBASE-SR4	40 Gb/s PHY using 40GBASE-R encoding over four lanes of multimode fiber, with reach up to at least 100 m (see Clause 86)
40GBASE-FR	40 Gb/s PHY using 40GBASE-R encoding over one lane on single-mode fiber, with reach up to at least 2 km (see Clause 89)
40GBASE-LR4	40 Gb/s PHY using 40GBASE-R encoding over four WDM lanes on single-mode fiber, with reach up to at least 10 km (see Clause 87)
100GBASE-CR10	100 Gb/s PHY using 100GBASE-R encoding over ten lanes of shielded balanced copper cabling, with reach up to at least 7 m (see Clause 85)
100GBASE-SR10	100 Gb/s PHY using 100GBASE-R encoding over ten lanes of multimode fiber, with reach up to at least 100 m (see Clause 86)
100GBASE-LR4	100 Gb/s PHY using 100GBASE-R encoding over four WDM lanes on single-mode fiber, with reach up to at least 10 km (see Clause 88)
100GBASE-ER4	100 Gb/s PHY using 100GBASE-R encoding over four WDM lanes on single-mode fiber, with reach up to at least 40 km (see Clause 88)
100GBASE-CR4	100 Gb/s PHY using 100GBASE-R encoding over 4 lanes of shielded balanced copper cabling, with reach up to at least 5 m (see Clause 92)
100GBASE-KR4	100 Gb/s PHY using 100GBASE-R encoding over four lanes of an electrical backplane with a total channel insertion loss of less than or equal to 35 dB at 12.9 GHz (See Clause 93)
100GBASE-KP4	100 Gb/s PHY using 100GBASE-R encoding over four lanes of an electrical backplane with a total channel insertion loss of less than or equal to 33dB at 7.0 GHz (See Clause 94)

Comment #11

- Update Table 80-2 to include the following entries, in this order, starting at the end of the table:
 - 100GBASE-CR4
 - 100GBASE-KR4
 - 100GBASE-KP4
- Add appropriate columns and names for Clauses 78, 91-94 where appropriate.
- Add appropriate O and M markings per Table 92-1, Table 93-1, and Table 94-1

Comment #14-16

- IEEE 802.3bh draft 3.1 Table 80-3 Sublayer delay constraints does not contain entries for new PHY PMD types
- Solution:
 - Add entries for 100GBASE-CR4 PMD, 100GBASE-KR4 PMD, and 100GBASE-KP4 at the end of Table 80-3 and, set Maximum (bit time) & Maximum (pause quanta) & Maximum (ns) values to TBD.
 - Note for 100GBASE-CR4 PMD shall be "Does not include delay of cable medium. See 92.4."
 - Note for 100GBASE-KR4 PMD shall be "See 93.4."
 - Note for 100GBASE-KP4 PMD shall be "See 94.4."

Table 80-3—Sublayer delay constraints

Sublayer	Maximum (bit time) ^a	Maximum (pause_quanta) ^b	Maximum (ns)	Notes ^c
40G MAC, RS, and MAC Control	16384	32	409.6	See 81.1.4.
40GBASE-R PCS	11264	22	281.6	See 82.5.
40GBASE-R FEC	24576	48	614.4	See 74.6.
40GBASE-R PMA	4096	8	102.4	See 83.5.4.
40GBASE-KR4 PMD	2048	4	51.2	Includes delay of one direction through backplane medium. See 84.4.
40GBASE-CR4 PMD	4096	8	102.4	Does not include delay of cable medium. See 85.4.
40GBASE-SR4 PMD	1024	2	25.6	Includes 2 m of fiber. See 86.3.1.
40GBASE-FR PMD	1024	2	25.6	Includes 2 m of fiber, See 89.3.1.
40GBASE-LR4 PMD	1024	2	25.6	Includes 2 m of fiber. See 87.3.1.
100G MAC, RS, and MAC Control	24576	48	245.76	See 81.1.4.
100GBASE-R PCS	35328	69	353.28	See 82.5.
100GBASE-R FEC	122880	240	1228.8	See 74.6.
100GBASE-R PMA	9216	18	92.16	See 83.5.4.
100GBASE-CR10 PMD	9728	19	97.28	Does not include delay of cable medium. See 85.4.
100GBASE-SR10 PMD	2048	4	20.48	Includes 2 m of fiber. See 86.3.1.
100GBASE-LR4 PMD	2048	4	20.48	Includes 2 m of fiber. See 88.3.1.
100GBASE-ER4 PMD	2048	4	20.48	Includes 2 m of fiber. See 88.3.1.
100GBASE-CR4	TBD	TBD	TBD	Does not include delay of cable medium. See 92.4.
100GBASE-KR4	TBD	TBD	TBD	See 93.4.
100GBASE-KP4	TBD	TBD	TBD	See 94.3.3.

Insert
BASE-R RS-FEC
With TBD values



Comment #17-18,

- IEEE 802.3bh draft 3.1 Table 80-4 and Table 80-5 notes section does not include references to the 100GBASE-CR4 and 100GBASE-KR4 PHY PMD types
- Proposed Solution:
 - In both tables, append Notes section of skew points SP2, SP3, SP4, and SP5 to add " or 92.5 or 93.5."
 - Leave 100GBASE-KP4 out of these tables since 100GBASE-KP4 requires FEC sublayer and the optional instantiation of CAUI is not recommended as stated in Editor's note in 94.2.6.

Comment #29

- The scope in 83.1.1 suggests that Clause 83 is the only PMA sublayer for a 100GBASE-R PHY. The definition section in 802.3bh draft 3.1 says "100GBASE-R: An IEEE 802.3 family of Physical Layer devices using the physical coding sublayer defined in Clause 82 for 100 Gb/s operation. (See IEEE Std 802.3, Clause 82.)" Clause 94 is, therefore, considered a 100GBASE-R PMA.
- See P802.3bh Draft 3.1, section 6, page 137, line 7
- Original Text:
 - "This clause specifies the Physical Medium Attachment sublayer (PMA) that is common to two families of (40 Gb/s and 100 Gb/s) Physical Layer implementations, known as 40GBASE-R and 100GBASE-R. The PMA allows the PCS (specified in Clause 82) to connect in a media-independent way with a range of physical media. The 40GBASE-R PMA(s) can support any of the 40 Gb/s PMDs in Table 80–2. The 100GBASE-R PMA(s) can support any of the 100 Gb/s PMDs in Table 80–2. The terms 40GBASE-R and 100GBASE-R are used when referring generally to Physical Layers using the PMA defined in this clause."

#29 Proposed Change

- See [lusted_02_0712.pdf](#)