Nomenclature of 4X100 Gb/s optical PHY for lengths up to at least 6km

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Background

- At the Indianapolis meeting, the following motion is passed.

Motion #3:
Move to modify the objective "Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 10 km" to be:

- Define a four-wavelength 400 Gb/s PHY for operation over SMF with lengths up to at least 6 km

And

- adopt the baseline proposal on pages 3-5 of lewis_3cu_02a_0919.pdf for this objective with the addition of an editor's note indicating that the 400GBASE-LR4 naming is provisional

- Moved by: Dave Lewis
- Seconded by: Chris Cole
- Technical (>= 75%)
- Y: 44 N: 1 Abstain: 12

Motion Passes

- As the So-called 400GBASE-LR4 name is provisional, this contribution provide some information to support the discussion.

Revisit L Suffix in Ratified IEEE 802.3 Optical PHY

- L Suffix is first introduced in IEEE 802.3 on GigE with LX for 5km, then LX10 for 10km subsequently

SA = Subscriber Access Networks
BPE = Backplane Ethernet

IEEE Std 802.3-2015
6 Books (Sections) 03-Sep-15/04-Mar-16*

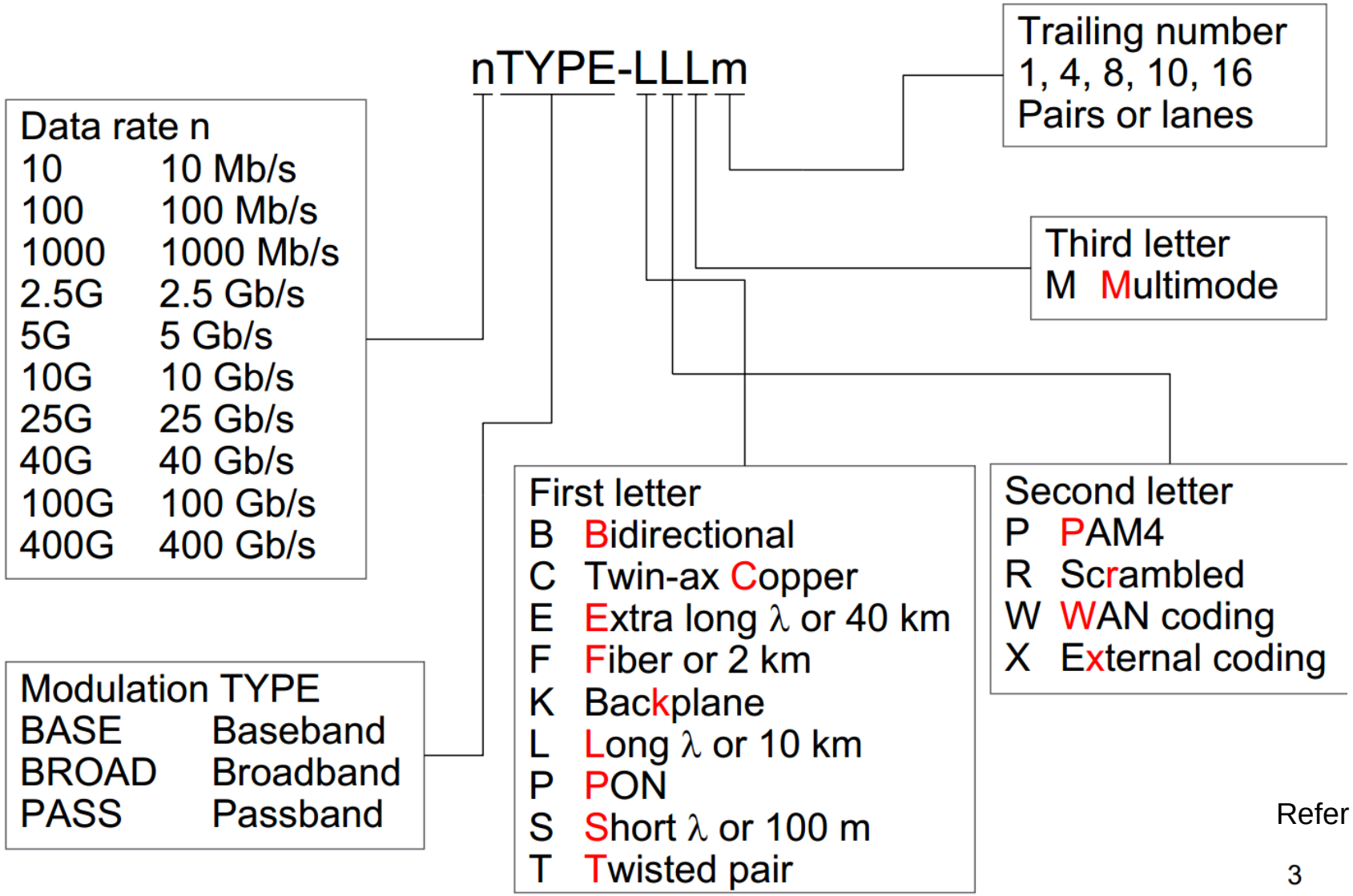
Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
Clause 1 to 20	Clause 21 to 33	Clause 34 to 43	Clause 44 to 55	Clause 56 to 77	Clause 78 to 95
Annex A to H, 4A	Annex 22A to 33E	Annex 36A to 43C	Annex 44A to 55B	Annex 57A to 76A	Annex 83A to 93C
CSMA/CD Overview	100 Mb/s Overview	1000 Mb/s Overview	10 Gb/s Overview	SA Overview	EEE
MAC	MII	GMII	MDC/MDIO	OAM	LLDP TLVs
PLS/AUI	100BASE-T2	1000BASE-X AN	XGMII	MPMC	Time Sync
10BASE5 MAU	100BASE-T4	1000BASE-SX	XAUI	100BASE-LX10	RS-FEC
10BASE2 MAU	100BASE-TX	1000BASE-LX	XSBI	100BASE-BX10	40/100G Overview
10BROAD36 MAU	100BASE-FX	1000BASE-CX	10GBASE-SR	1000BASE-LX10	40GBASE-KR4
10BASE-T MAU	100Mb/s Repeater	1000BASE-T	10GBASE-LR	1000BASE-BX10	40GBASE-CR4
10BASE-F MAUs	100Mb/s Topology	1000 Mb/s Repeater	10GBASE-ER	1000BASE-PX10	40GBASE-SR4
10 Mb/s Repeater		1000 Mb/s Topology	10GBASE-SW	1000BASE-PX20	40GBASE-FR
10 Mb/s Topology	MAC Control		10GBASE-LW	10GBASE-PR	40GBASE-LR4
	Auto-Negotiation (AN)		10GBASE-EW	10/1GBASE-PRX	100GBASE-CR10
10BASE-Te	Management		10GBASE-LX4	10PASS-TS	100GBASE-SR10
			10GBASE-CX4	2BASE-TL	100GBASE-KR4
1BASE5	DTE Power		10GBASE-T	SA Topology	100GBASE-KP4
DTE & MAU Mgmt				10GBASE-LRM	100GBASE-CR4
Repeater Mgmt				BPE Overview	100GBASE-SR4
				1000BASE-KX	100GBASE-LR4
				10GBASE-KX4	100GBASE-ER4
				10GBASE-KR	
				BPE AN	
				BASE-R FEC	
Maintenance 6 – 10	Maintenance 6 – 10 802.3-2005/Cor 1	Maintenance 6 – 10	Maintenance 7 – 10 802.3-2005/Cor 2	Maintenance 8 – 10	Maintenance 10

Refer to: 0318_state_of_std

- All of LR Suffix in current ratified and ongoing IEEE 802.3 standard is mostly with 10km reach

Latest Nomenclature Discussion from 802.3bs

- DR4 Suffix was first introduced for 500m SMF PMD for 400GbE



Refer to: anslow_3bs_03_0715

Feedback from End User after Indianapolis Meeting

- **Gang Chen, Baidu**

  For the naming of 400GE 6km reach specification, we hope it could follow the current nomenclature naming methodology, with the option to identify different reaches. This would help us to identify the type of standard and reach, so that we could have friendly deployment.

- **Junjie Li, China Telecom**

  We believe it is better to name 6km-reach and 10km-reach standard differently, to make them easily distinguishable for end users

Feedback from End User after Indianapolis Meeting

- **Min Sun, Tencent**

  It is meaningful to name each particular reach, especially for the benefit of different application scenarios for future high-speed (optical) modules. Following the current nomenclature style, we suggest to consider “400GBASE-HR4”, where H stands for 6 (Hexa)

- **Weiqiang Cheng, China Mobile**

  If the reach of the new standard is 6km, we suggest that the name of it should be different from “-LR4”

- **Wenyu Zhao, CAICT**

  The industry generally adopts LR for 10Km in recent 10 years, and using 400GBASE-LR4 for 6km will cause misunderstanding in industry activities.

  It is suggested to use other symbols for 6km reach

Summary:

- Given new PMDs with different reach, wavelength, application field and other factors emerging right now, more comprehensive nomenclature would be necessary.
- It is IEEE 802.3cu group' responsibility to consider the name of 6km reach standard to help industry avoiding confusion
- Proposal from cole_3cu_adhoc_102319 can be a good start


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
bedankt
dziękuję
sukriya
kop khun krap
go raibh maith agat
mochchakkeram
arigatō
dakujem
grazie
terima kasih
감사합니다
ありがとう
спасибо
мерси
Баярлалаа
рахмат
хвала
tapadh leat
hvala
mauruuru
sağolun
takk
taiku
dank je
ευχαριστώ
mersi
barka
tack
spas
blagodaram
vinaka
kiitos
dankie
faafetai lava
misaotra
matondo
paldies
asante
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enkosi
sulpay
gracies
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diolch
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shukriya
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