

Nomenclature of 200Gbps optical PMDs over MMF link

Update since March Plenary

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Introduction

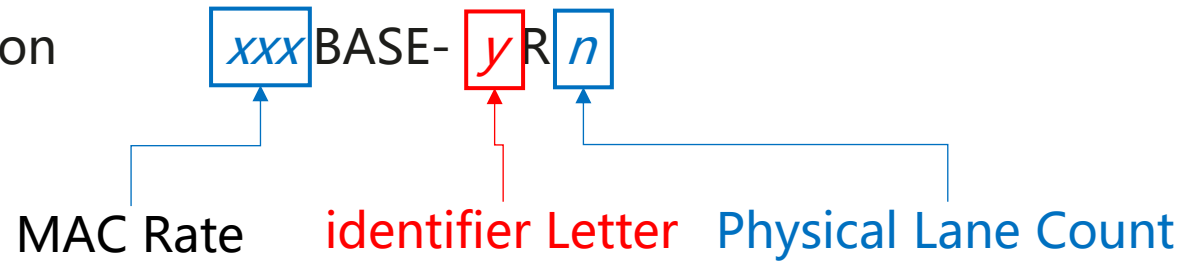
- This contribution brings updates on the nomenclature of 802.3ds objectives/PMDs since March Plenary.
- Goal of this contribution is to continue building consensus on the nomenclature choices
- Nomenclature is almost always an “opinionated” topic; usually a matter of preference

Background

- Adopted Objectives: optical PHYs that can operate with
 - > Series A: n pairs of MMF with lengths up to at least 30m
 - > Series B: n pairs of MMF with lengths up to at least 50m
 - > Where n can be 1, 2,4,8 to support 200GE, 400GE, 800GE and 1.6TE MAC rate
- Adopted a set of baseline specs for PMDs using 850nm wavelength supporting both Series A and Series B objectives.
- There are interest in the TF to develop a second set of PMDs using a different wavelength, i.e. 1060nm, also supporting both series of objectives.
- Conversation in the ad hoc meeting suggested consensus on names but that did not materialize in the Plenary meeting. 😞
- Adopted Timeline means we need to decide on names for the PMDs quickly

Historical PMD Naming Conventions

- BASE-R naming convention



- Previously used identifier letter **y**? for MMF optical PMDs
 - **S** for many generation of MAC rates. **S** meant for short wavelength **or short reach** (850nm)
Impression: **S = 850nm + MMF**
 - **V** introduced in P802.3db for 100Gb/s signaling, a new letter for MMF
- Other legacy cases
 - L was only used for MMF PMDs in 1000BASE-LX, L for long wavelength(1300nm). Now L is more frequently recognized as the identifier for 10km BASE-R optical PMDs
 - A unique case: 10GBASE-LRM

Nomenclature Key Assumptions

- #1: It is assumed that the TF wants to preserve the BASE-R PCS names and the naming conventions from the 1/2/4-lane versions of the PHYs in IEEE Std. 802.3-202x, P802.3ck, P802.3db, etc.
- #2: It is assumed that names should avoid other industry interface names to minimize confusion
 - > For example, avoid "XSR"
- #3: It is assumed that names should not be overly complicated or prescriptive
 - > For example, avoid "200GBASE-SR-MMF-850nm-50m"

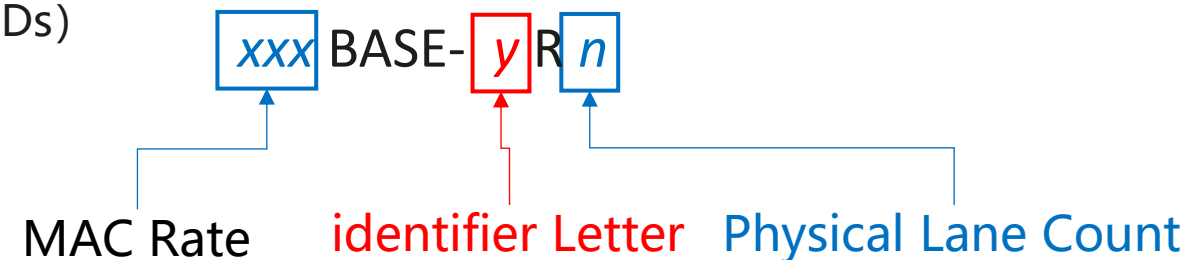
We Have a Decision to Make

- We are on track to have 4 PHYs total: two different reaches using two different wavelengths
- How do we want to distinguish between them?

	30m	50m
850nm		
1060nm		

- **First Decision:**

- > **Horizontal:** Use the same first “y” letter for each row (wavelength)
- > **Vertical:** Use the same first “y” letter for each column (reach)
- > **All:** use the same first “y” letter for all (all MMF PMDs)



Straw Poll

- I prefer the nomenclature direction of using the same first “y” letter for:
 - A> Horizontal
 - B> Vertical
 - C> All
-
- Results: A: B: C:

	30m	50m
850nm		
1060nm		

Next Step – Narrow the Choices

- Now that we have a preferred direction...
- Lets start with the options for the two PMD groups.

IF A:

Horizontal



Use the same first "y" letter for each row (wavelength)

IF A: Same first identifier for each row (wavelength)

The next decision to make: *y* for 850nm

- start with V&S the MMF tagged letter
- Use “-30” and “-50” for now to see how the names look like

	850nm		Straw Poll in March
Option	30m MMF	50m MMF	
850-A	xxx BASE-VR n -30	xxx BASE-VR n (-50)	12
850-B	xxx BASE-SR n -30	xxx BASE-SR n -50	14





	30m	50m
850nm		
1060nm		

What about: *y* for 1060nm

- Still got one letter left that is tagged with MMF.
- OR, a new identifier
 - Other free letters : J and M
 - MR has been continuously use in OIF as CEI-xxxG-MOD-MR for indicating mid reach electrical interconnect. probably want to avoid that possibility.
 - J can be a possible identifier letter. But need to build new connection between “JR” and MMF optics
 - For our Japanese audience, JR is the high speed train!





Straw Poll 850nm

- I prefer the nomenclature direction of using ___ as the first “y” letter for 850nm:
 - A> use V
 - B> use S
-
- Results: A: B:

	30m	50m
850nm		
1060nm		

Straw Poll 1060nm

- I prefer the nomenclature direction of using ___ to distinguish 1060nm:
 - A> use a different identifier y = V or S (pending)
 - B> use a different identifier y = a new letter
 - C> use a second identifier
- Results: A: B: C:

	30m	50m
850nm		
1060nm		

IF B:

Vertical

Use the same first "y" letter for each column (reach)

IF B: Same identifier for each column (reach)

A second decision to make: *how to distinguish the two wavelengths*

Use a second identifier letter `xxx BASE-yzRn`

Use an appendix identifier letter `xxx BASE-yRn-z`

	30m	50m
850nm	↓	↓
1060nm	↓	↓

A third decision to make: *the identifier y for the two reaches*

V for 30m & S for 50m

Other letters

Straw Poll distinguishing the wavelength

- I prefer the style of using ___ to distinguish the two wavelengths PMDs
 - A> a second identifier letter , *xxx* BASE-*yzRn*
 - B> an appendix identifier letter, *xxx* BASE-*yRn-z*
- Results: A: B:

	30m	50m
850nm	↓	↓
1060nm	↓	↓

Straw Poll identifiers for the reaches

- I prefer using letter __ for 30m reach, and ___ for 50m reach
- A > V, S
- B > S, V
- C > other letters
- Results: A: B: C:

	30m	50m
850nm	↓	↓
1060nm	↓	↓

IF C:
All

use the same first "y" letter for all (all MMF PMDs)

IF C: Same first identifier for all (wavelength)

One identifier for all 4 types of MMF PMDs.

Need:

- Way to distinguish the wavelengths
- Way to distinguish the reaches

Back to square one.

	30m	50m
850nm		
1060nm		

Straw polls

Proposed straw poll for reaching consensus on 850nm PMDs

For the 850nm wavelength MMF PMDs nomenclature, I would support the direction of:

Option A: use “V”, such as shown in option A listed on mi_3ds_01_260325, slide 6

Option B: use “S”, such as shown in option B listed on mi_3ds_01_260325, slide 6

	Option A “V”		Option B “S”	
	30m MMF	50m MMF	30m MMF	50m MMF
PMDs	200GBASE-VR1-30 400GBASE-VR2-30 800GBASE-VR4-30 1.6TBASE-VR8-30	200GBASE-VR1 400GBASE-VR2 800GBASE-VR4 1.6TBASE-VR8	200GBASE-SR1-30 400GBASE-SR2-30 800GBASE-SR4-30 1.6TBASE-SR8-30	200GBASE-SR1-50 400GBASE-SR2-50 800GBASE-SR4-50 1.6TBASE-SR8-50

Directional straw poll for building consensus on 1060nm PMDS

- To distinguish between the two families of 200 Gbps/wavelength MMF optical PMDs, I prefer a nomenclature style for the 1060nm PMDs of:
 - > A. “New Letter” -based identifier (E.g. 1.6TBASE-JR4)
 - > B. “A second letter” -based identifier
(E.g. 1.6TBASE-VLR4 or 1.6TBASE-SLR4 // 1.6TBASE-VRL4 or 1.6TBASE-SRL4)
 - > C. “Keep it simple” -based identifier
(E.g. 1.6TBASE-VR8-30 & 1.6TBASE-VR8-50, while 850nm is 1.6TBASE-SR8-30 & 1.6TBASE-SR8-50)
 - > D. No opinion

Backup

Status on nomenclature of the 850nm PMD family

- A straw poll was conducted in March plenary, with three Strawmen for 850nm PMDs

Option	30m MMF	50m MMF	Votes
A	xxx BASE-VRn-30	xxx BASE-VRn	12
B	xxx BASE-SRn-30	xxx BASE-SRn-50	14
C	xxx BASE-VRn	xxx BASE-SRn	3

} Propose a second straw poll between A & B
In later straw poll section

Readout from the Straw Poll

- It seems 802.3ds TF is not in favor of using V and S for 30m and 50m respectively. (option C)
- It seems 802.3ds TF prefers using a unified identifier letter with appendix to indicate the different fiber link lengths. (option A & B)
- It seems 802.3ds TF doesnot have strong preference between the two identifier letter, V and S, but slightly leaning towards S

P802.3ds Straw Poll #1 - Nomenclature 850nm

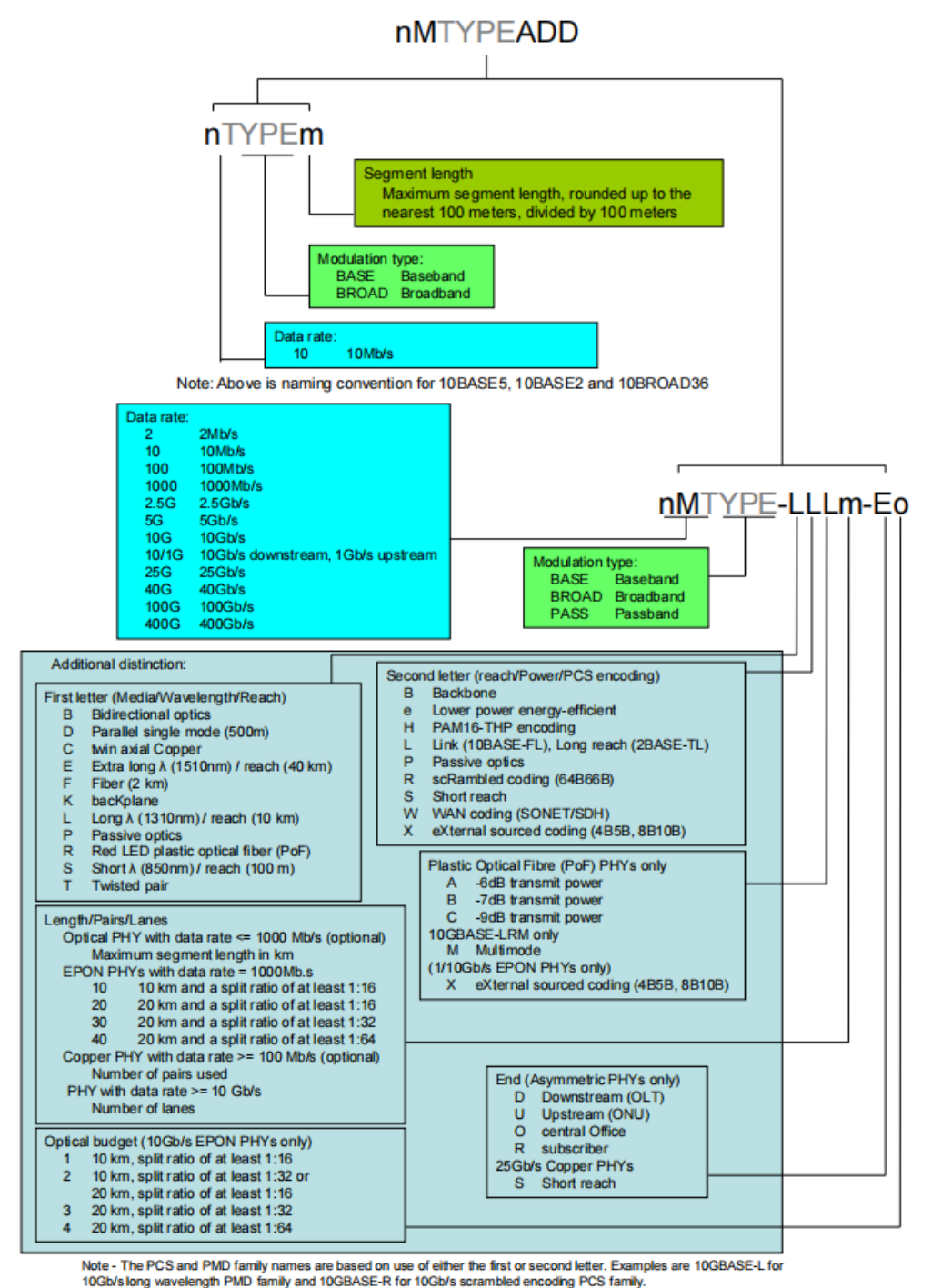
For the nomenclature proposals for the 30m and 50m MMF PMD using 850nm wavelength, that I would prefer to adopt is

- option in slide 5 of [mi_3ds_01_2603.pdf](#), x00GBASE-VRn for 30m reach and x00GBASE-SRn for 50m reach
- option in slide 9 of [mi_3ds_01_2603.pdf](#), x00GBASE-VRn-30 for 30m reach and x00GBASE-VRn for 50m reach
- x00GBASE-SRn-30 for 30m reach, and x00GBASE-SRn-50 for 50m reach

All (a/b/c)

A: 3, B: 12, C: 14

PHY Names in IEEE 802.3



Existing and under development IEEE 802.3 PHYs (Page 1 of 7)

Name	Media (TX wavelength)	Reach	Clause	Notes
2BASE-TL	Voice grade subscriber UTP		61, 63	
10BASE5	Coax	500 m	8	Deprecated
FOIRL	Duplex multimode (850nm)	1 km	9.9	Superseded
10BASE2	Coax MAU	185 m	10	Deprecated
10BROAD36	CATV coax		11	Deprecated
10BASE-T	Balanced twisted-pair (2 pairs)	100 m	14	
10BASE-Te	Balanced twisted-pair (2 pairs)	100 m	14	Lower power
10PASS-TS	Voice grade subscriber UTP		61, 62	
10BASE-FP	Duplex multimode (850 nm)	1 km	16	Deprecated
10BASE-FB	Duplex multimode (850 nm)	2 km	17	Deprecated
10BASE-FL	Duplex multimode (850 nm)	2 km	18	
100BASE-BX10-D	Single singlemode (1550 nm)	10 km	58	
100BASE-BX10-U	Single singlemode (1310 nm)	10 km	58	
100BASE-FX	Duplex multimode (1310 nm)	2 km	26	
100BASE-LX10	Duplex singlemode (1310 nm)	10 km	58	
100BASE-T1	Single Twisted-pair	15 m	96	
100BASE-T2	Balanced twisted-pair (2 pairs)	100 m	32	Deprecated