

# P802.3cy OAM changes to add lane information

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November 23, 2021

# P802.3cy OAM background

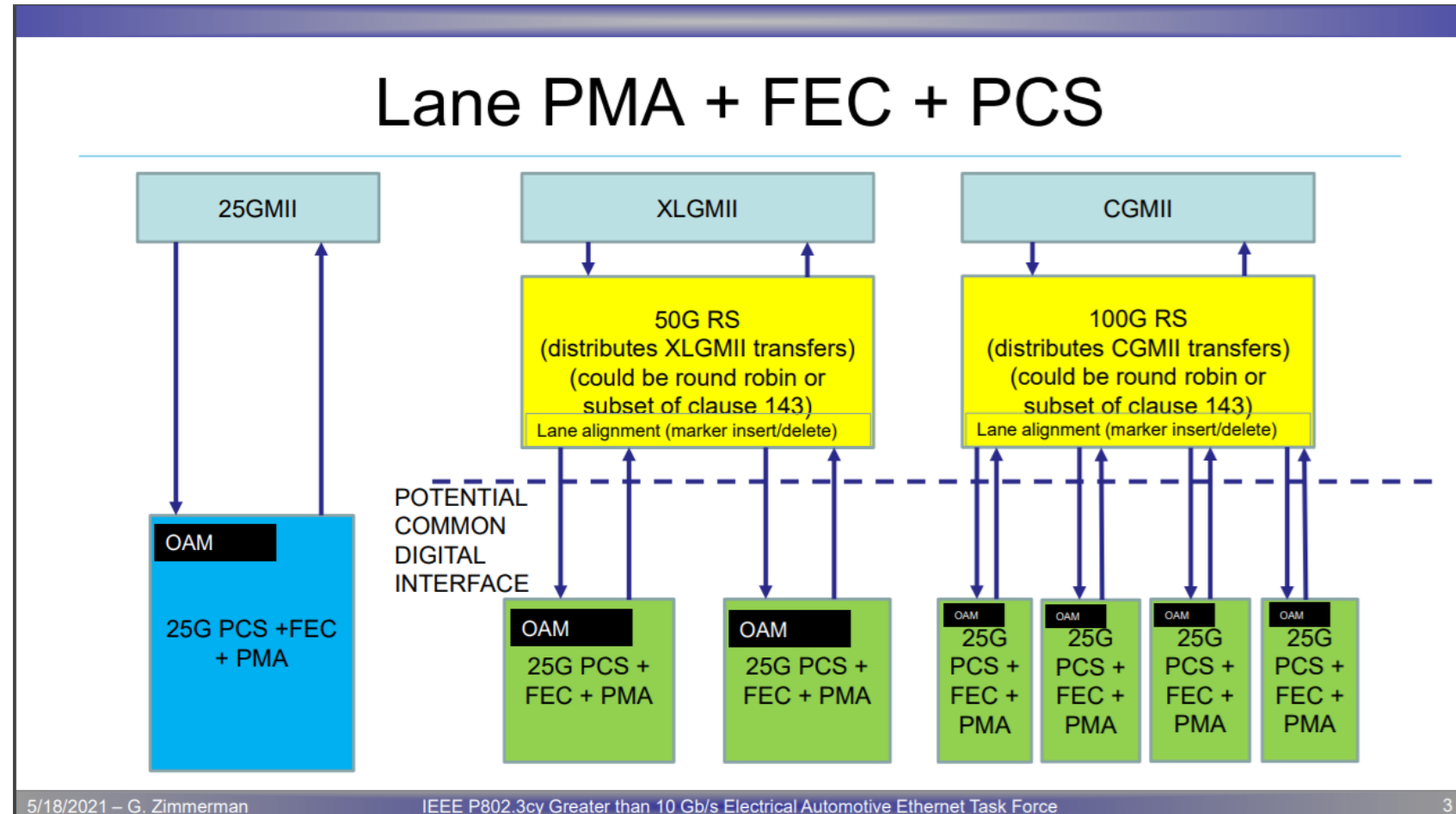
- March 30<sup>th</sup> Motion
- [https://www.ieee802.org/3/cy/public/30mar21/motions\\_3cy\\_01\\_033021.pdf](https://www.ieee802.org/3/cy/public/30mar21/motions_3cy_01_033021.pdf)
- Presentation
- [https://www.ieee802.org/3/cy/public/adhoc/wienckowski\\_3cy\\_01a\\_03\\_15\\_21.pdf](https://www.ieee802.org/3/cy/public/adhoc/wienckowski_3cy_01a_03_15_21.pdf)

## Motion #2

- Move that: 802.3cy specify an OAM similar to the MultiGBASE-T1 OAM, leaving issues of what needs to change (based on the laning method chosen and multi-lane operation) open for future proposals.
- M: Natalie Wienckowski
- S: Haysam Kadry
- Technical (>75%)
- Motion Passed by unanimous consent

# P802.3cy Laning background

- [https://www.ieee802.org/3/cy/public/adhoc/zimmerman\\_3cy\\_01\\_05\\_18\\_21.pdf](https://www.ieee802.org/3/cy/public/adhoc/zimmerman_3cy_01_05_18_21.pdf)



# OAM Straw Polls

- A number of [straw polls](#) were held on May 25, 2021.
- Summary of preferences
  - Behavior if any pair is swapped with another pair - Compensate for swapped pairs to allow communication and report the fault
  - Correct for swap of any two, three, or four pair
  - PHY health (149.3.9.2.5) should be – Per Lane
  - Power supply warning should be – Per Lane
  - Internal temp warning should be – Tie Per Lane/Per Link
  - Degraded link segment should be – Per Lane
  - What would you want reported in the OAM for polarity inversion? – Individual lane status (polarity inversion (y/n) for each pair)
  - REC should be – Per Lane

# What does this mean for OAM

- IEEE Std 802.3ch™ OAM can be used as-is for each lane with minor additions
- Additional information needed for Pair swap detection and correction
  - Number of lanes (1, 2, or 4)
  - Which pair number each lane is (1, 2, 3, or 4)

# Option 1 for Adding Pair Swap Info

	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
Symbol 10	Reserved	1	Status valid	Power supply warning	Internal temp warning	No MAC messages warning	Degraded link segment	Polarity inversion	Clear REC	REC cleared
Symbol 11	Reserved	1	# of Pairs <7:6>	Vendor-specific field <7:0> Pair # <5:4>		Vendor-specific field <3:0>				
Symbol 12	Reserved	1	REC<7:0>							
Symbol 13	Reserved	1	REC<15:8>							

**Figure 149B-1—MultiGBASE-T1 OAM status**

# Option 2a for Adding Pair Swap Info

## – 10 bit FEC symbol

	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
Symbol 10	# of Pairs <1> <del>Reserved</del>	1	Status valid	Power supply warning	Internal temp warning	No MAC messages warning	Degraded link segment	Polarity inversion	Clear REC	REC cleared
Symbol 11	# of Pairs <0> <del>Reserved</del>	1	Vendor-specific field <7:0>							
Symbol 12	Pair # <1> <del>Reserved</del>	1	REC<7:0>							
Symbol 13	Pair # <0> <del>Reserved</del>	1	REC<15:8>							

**Figure 149B–1—MultiGBASE-T1 OAM status**

# Option 2b for Adding Pair Swap Info

## – 12 bit FEC symbol

	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
Symbol 10	# of Pairs	<1:0>	Reserved	1	Status valid	Power supply warning	Internal temp warning	No MAC messages warning	Degraded link segment	Polarity inversion	Clear REC	REC cleared
Symbol 11	Pair #	<1:0>	Reserved	1	Vendor-specific field <7:0>							
Symbol 12	Reserved	Reserved	Reserved	1	REC<7:0>							
Symbol 13	Reserved	Reserved	Reserved	1	REC<15:8>							



# To Be Determined

- Have the Vendor Specific bits been implemented?
- 10-bit or 12-bit FEC symbols?
- Other Suggestions?

Questions?

