

## **ACT/GMSLE** Training Frame

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### Summary

- This presentation serves as a follow-up to <u>https://www.ieee802</u> org/3/dm/public/050125/jonsson\_razavi\_3dm\_01\_05\_01\_25 pdf.
- Additional details have been included,
  - Allowing for a longer uninterrupted sequence of 0 in SEND\_T
  - Removing the COUNTDOWN state
- William's presentation, titled "Summary of PCS/PMA Logic for ACT/GMSLE Transceiver," provides extensive information on framing and logic
- There are many common themes between both presentations; however, we will not address these in order to save time

#### **100M Training Frame Proposal**



- A COUNTDOWN state is unnecessary
  - The SEND\_T frame mirrors the structure of SEND\_N
  - There is no change in modulation between SEND\_T and SEND\_N
- PMA\_state 01 (COUNTDOWN) can be removed in low data rate directions

#### A zero filled 64B/65B is Acceptable

- While pcs\_data\_mode is set to 0, the 64B/65B will operate in local fault mode
- Additionally, the signature of the infofield can help differentiate between 64B/65B data and all-zero 64B/65B during training



NOTE-Signals and functions shown with dashed lines are only required for the EEE capability.

Figure 149-18-PCS 64B/65B Receive state diagram, part a

#### Modified 100M Infofield Proposal



- The 100M Infofield is influenced by 802 3ch by eliminating unnecessary octets
- The CRC16 may be excluded as the frame employs RS-FEC for error correction
- Octets 4, 5, and 6 can be eliminated and replaced with reserved bits
  - In the absence of a countdown, PFC24 does not exist

#### Infofield Message

PMA_state<7:6>	loc_rcvr_status	en_slave_tx	reserved	reserved	reserved	reserved
00	0	0	0	0	0	0
00	0	1	0	0	0	0
00	1	1	0	0	0	0
01	1	1	0	0	0	0

Table 149–11—Infofield message field valid SLAVE settings

PMA_state<7:6>	loc_rcvr_status	timing_lock_OK	reserved	reserved	reserved	reserved
00	0	0	0	0	0	0
00	0	1	0	0	0	0
00	1	1	0	0	0	0
01	1	1	0	0	0	0

loc_rcvr_status	en_slave_tx	6 reserved bits
0	0	000000
0	1	000000
1	1	000000

loc_rcvr_status	timing_lock_OK	6 reserved bits
0	0	000000
0	1	000000
1	1	000000

- The message field includes loc\_rcvr\_status, en\_slave\_tx, and timing\_lock\_ok as specified in 802 3ch
- 'pma\_state' is eliminated

# Infofield Message and PHY Capability

 The PHY capability field can be same as in 802 3ch, with the appropriate capability set

	loc_rcvr_status	en_slave_tx	6 reserved bit
	0	0	000000
/	0	1	000000
/	1	1	000000

	loc_rcvr_status	timing_lock_OK	6 reserved bit
	0	0	000000
•	0	1	000000
	1	1	000000

Table 149–12—PHY capability bits





#### Conclusion

- This presentation proposes an updated frame structure for the 100M ACT/GMSLE training framework
- Important aspects involve removing the COUNTDOWN state for 100M direction, and allowing for an extended continuous sequence of 0 bits in SEND\_T
- The updated training frame structure is designed to streamline the implementation process, facilitate the locking of PRBS, and enhance interoperability



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