

10BASE-T1L PHY Control synchronization (802.3cg D2.0)

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10BASE-T1L PHY Configuration

10BASE-T1L standard describes two modes of PHY configuration (MASTER/SLAVE)

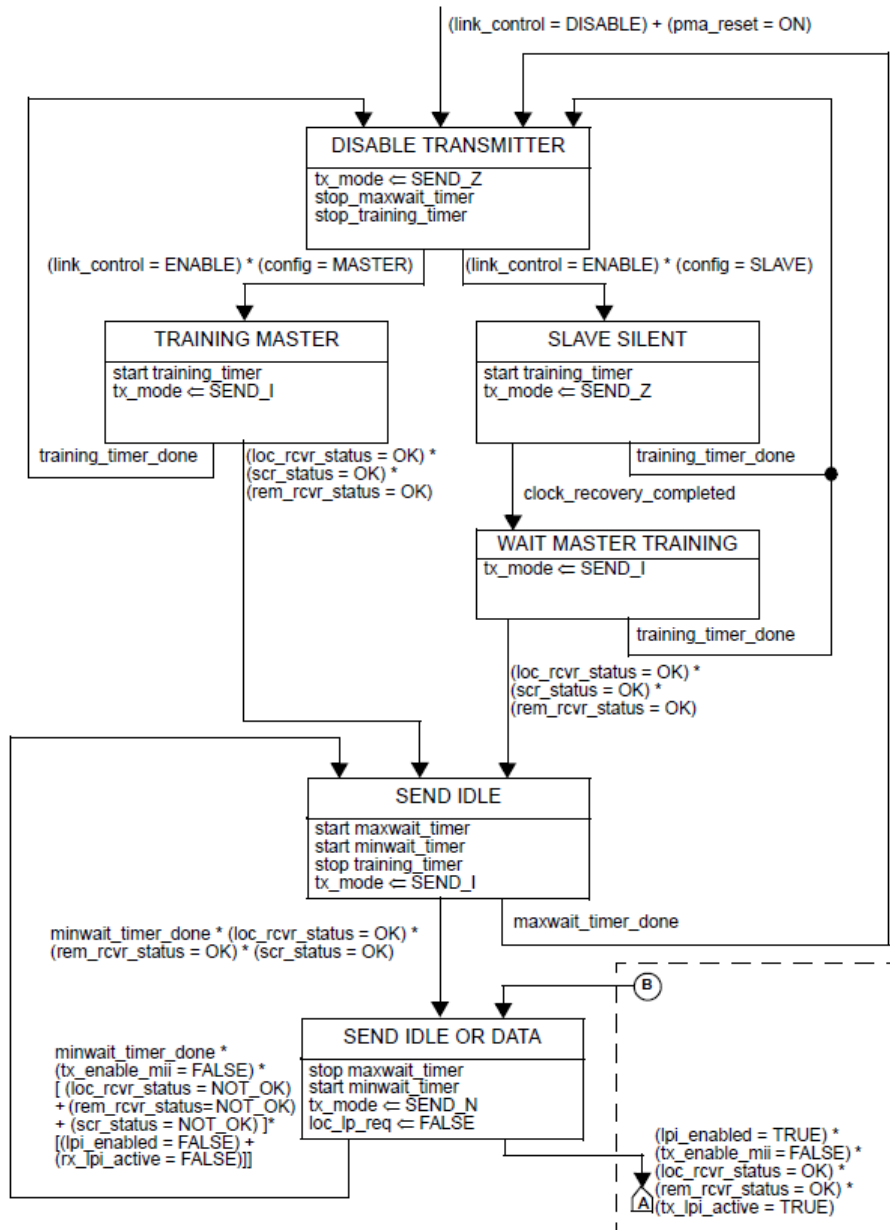
- Auto-negotiation is enabled
- FORCE mode; auto-negotiation is disabled

When auto-negotiation is enabled, successful auto-negotiation should complete at about the same time in both PHYs

- The PHY Control function in both PHYs will start at about the same time

When the FORCE mode is active, auto-negotiation is disabled, PHY configuration is provided by management

- The PHY Control function in the PHY will start depending on when the PHY emerges from reset/powerdown, or when the PHY management agent enables it
- There will be no synchronization between the PHY Control function in the two PHYs



10BASE-T1L PHY Control restart

If training_timer_done occurs, PHY Control state diagram transitions back to DISABLE TRANSMITTER state

- Full restart of link startup/training
- PHY should clear previous state (of channel equalizer, echo canceller, timing recovery functions)

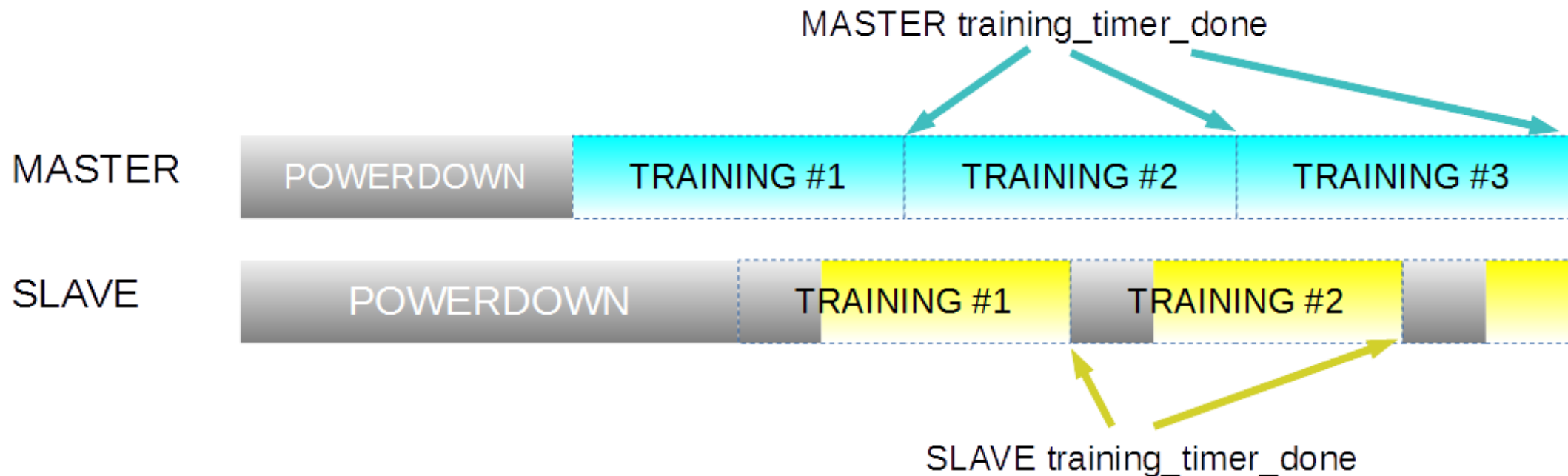
Both PHYs need to have completed training before training_timer expires

- Both loc_rcvr_status and rem_rcvr_status required for transition to SEND IDLE

10BASE-T1L PHY Control function in FORCE mode

There is no mechanism to synchronize operation of PHY Control in MASTER and SLAVE PHYs in FORCE mode.

- They will start (i.e. exit DISABLE TRANSMITTER) at different times
- training_timer will not be synchronized.
- PHY might not have enough time to allow completion of training (in both PHYs)
- Situation might persist



Thank you