

# PHY Control State Machine and Link Monitor

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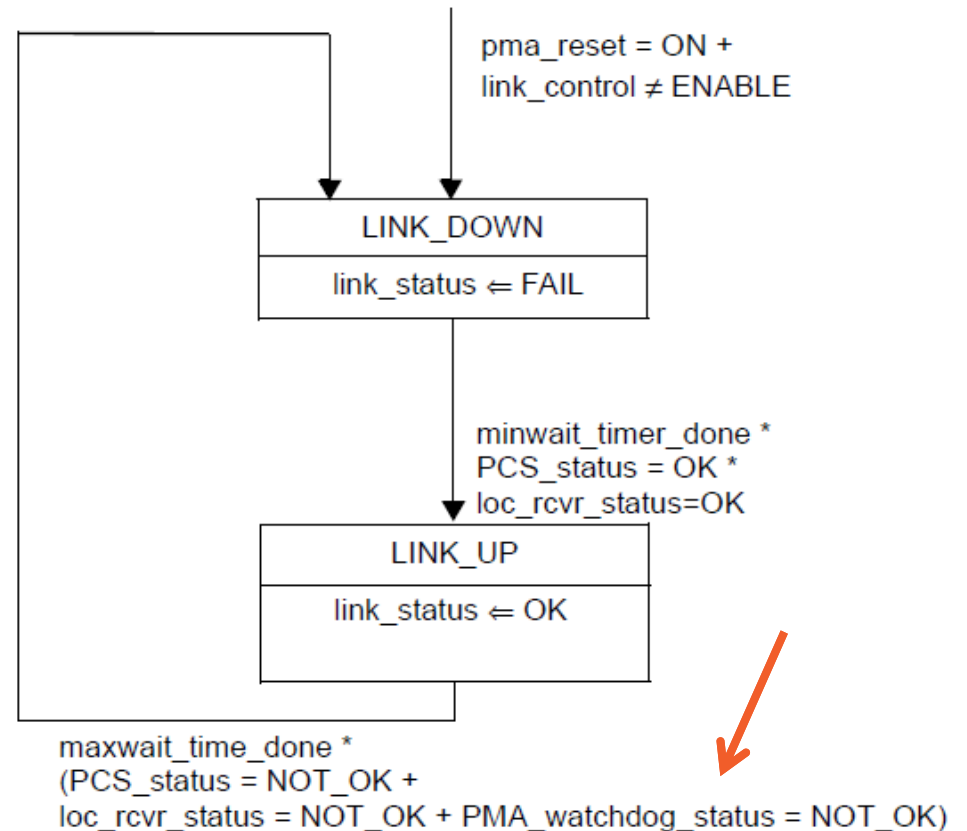
# Dual Quick Link Drop Paths

## Issue 1

- PMA\_watchdog\_status is gated by maxwait\_time\_done
- Was proposed as a fast link drop to ensure a PHY returns to Autoneg or Synchronization when the link partner stops transmitting
- Current equation waits for maxwait\_timer to expire: 98ms

## Remedy

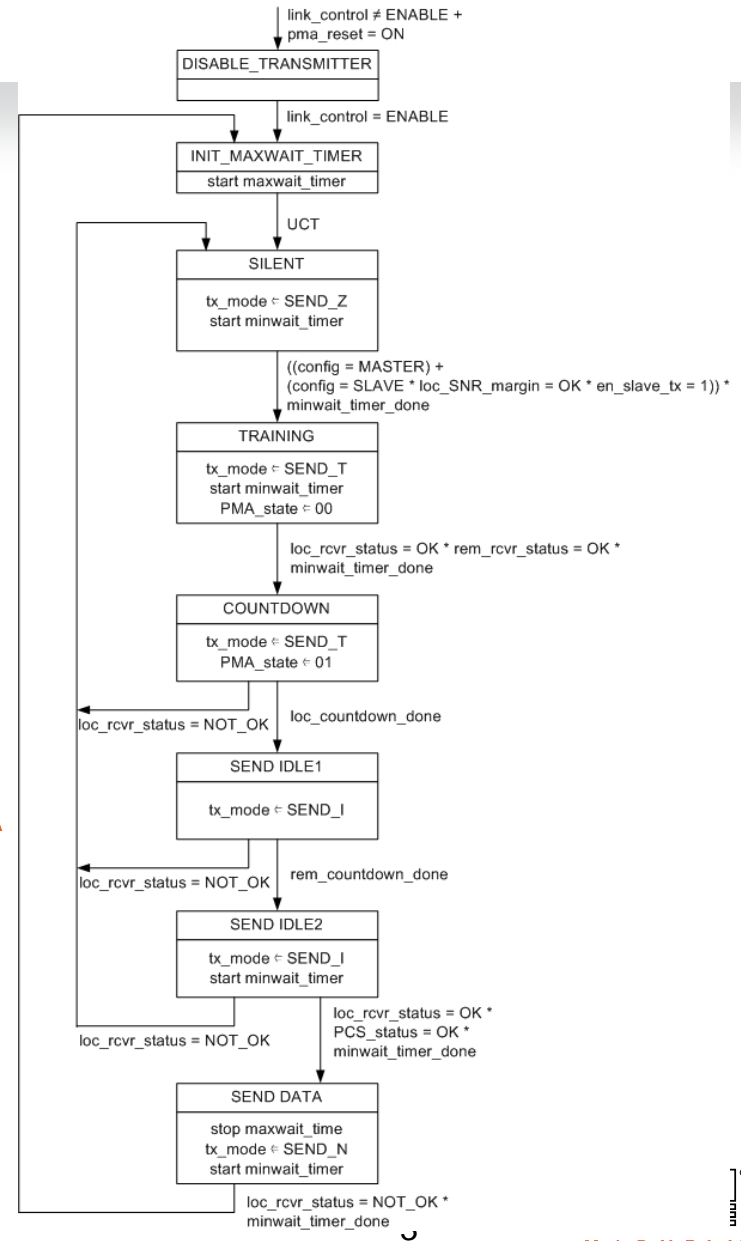
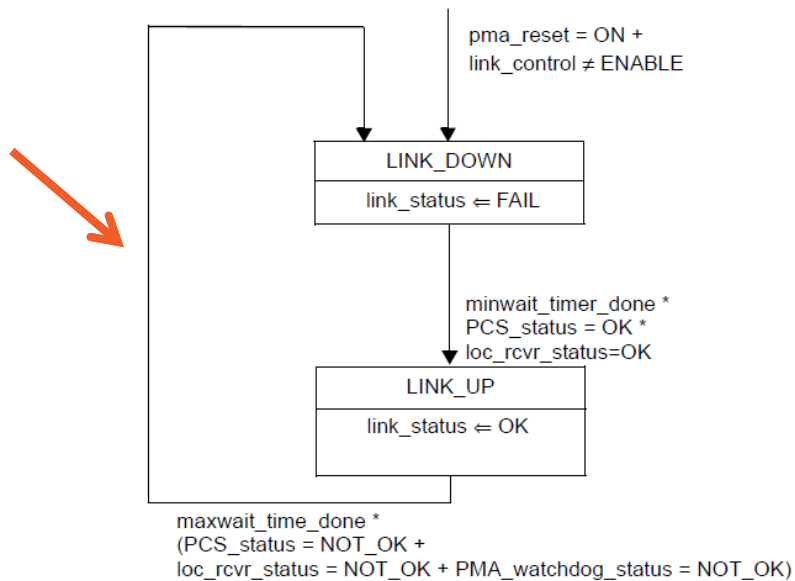
- maxwait\_time\_done \* (PCS\_status = NOT\_OK + loc\_rcvr\_status = NOT\_OK) + PMA\_watchdog\_status = NOT\_OK



# Dual Quick Link Drop Paths

## Issue 2

- Quick link down paths in both PHY Control and Link Monitor lead to LD and LP out of sync
- LD: SEND\_DATA -> INIT\_MAXWAIT\_TIMER-> SILENT
- LP: LINK\_UP -> LINK\_DOWN (Autoneg or Synchronization)



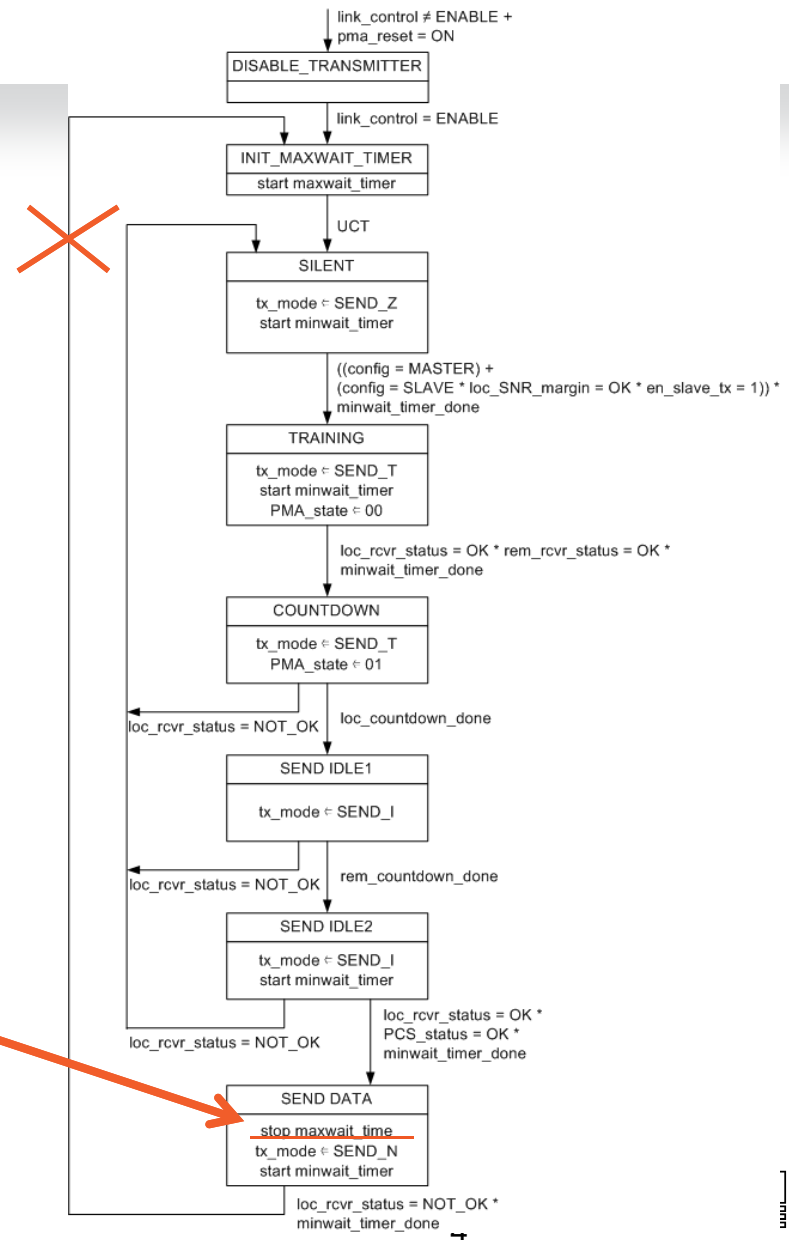
# Dual Quick Link Drop Paths

## Issue 2: Remedy

- ~~Remove INIT\_MAXWAIT\_TIMER~~
- ~~DISABLE\_TRANSMITTER~~ → SILENT
  - When link\_control = ENABLE
- In SEND DATA
  - Remove stop\_maxwait\_timer
  - Remove path back to INIT\_MAXWAIT\_TIMER

## Only exit from SEND DATA is through the Link Monitor LINK\_DOWN

- Back to Autoneg or Synchronization



# THANK YOU