Revised 10GBASE-T PHY Control with integrated link monitor (version2)

Slide version of submitted Word document

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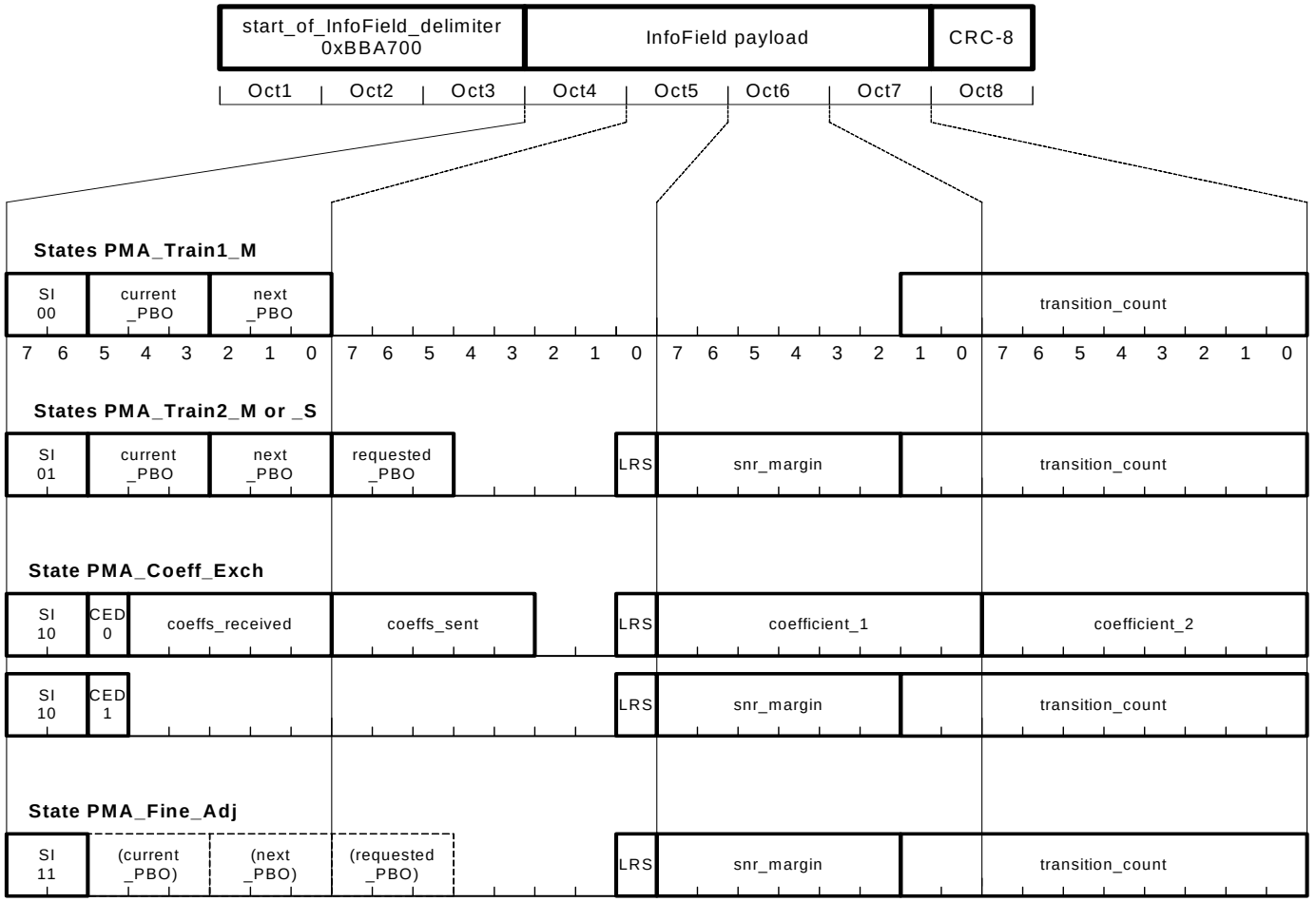
Main points

- **Auto Negotiation, PHY Control, and Link Monitor**
  - **Link monitor function is part of PHY Control**
  - **Redundant maxwait_timer is eliminated; small change in Auto Negation state diagram permits restarting link_fail_inhibit_timer in case of PMA retraining.**
- **InfoFields (IFs) reorganized and shortened to 8-octets**
  - **3-octet start-of-IF-delimiter + 4-octet payload + 1-octed CRC-8**
  - **Number of unused bits and redundant use of bits significantly reduced**
  - **2-bit state indicator shows PHY Control state of transmitting PHY.**

Main points

- **Start of SLAVE transmission**
  - **MASTER sends invitations to SLAVE to start transmission at specified times (rather than allowing SLAVE to start at any time during window of many PMA training frames as in Draft 2.3)**
  - **Minimizes probability of false detection and for some implementations substantially reduces signal processing power required to detect SLAVE signal**
  - **Leads to natural separation of times when SLAVE may start transmission and times when MASTER increases transmit power.**
- **After start of SLAVE transmission**
  - **Final PBO settings are determined prior to coefficient exchange**
  - **MASTER and SLAVE can independently determine minimum time spent in every PHY Control state.**

InfoField format and payloads



SI .... state indicator, CED .... coefficient exchange done, LRS .... local receiver status

Figure 55-aa–InfoField format and payloads

PHY Control state diagram and relation with Auto Negotiation

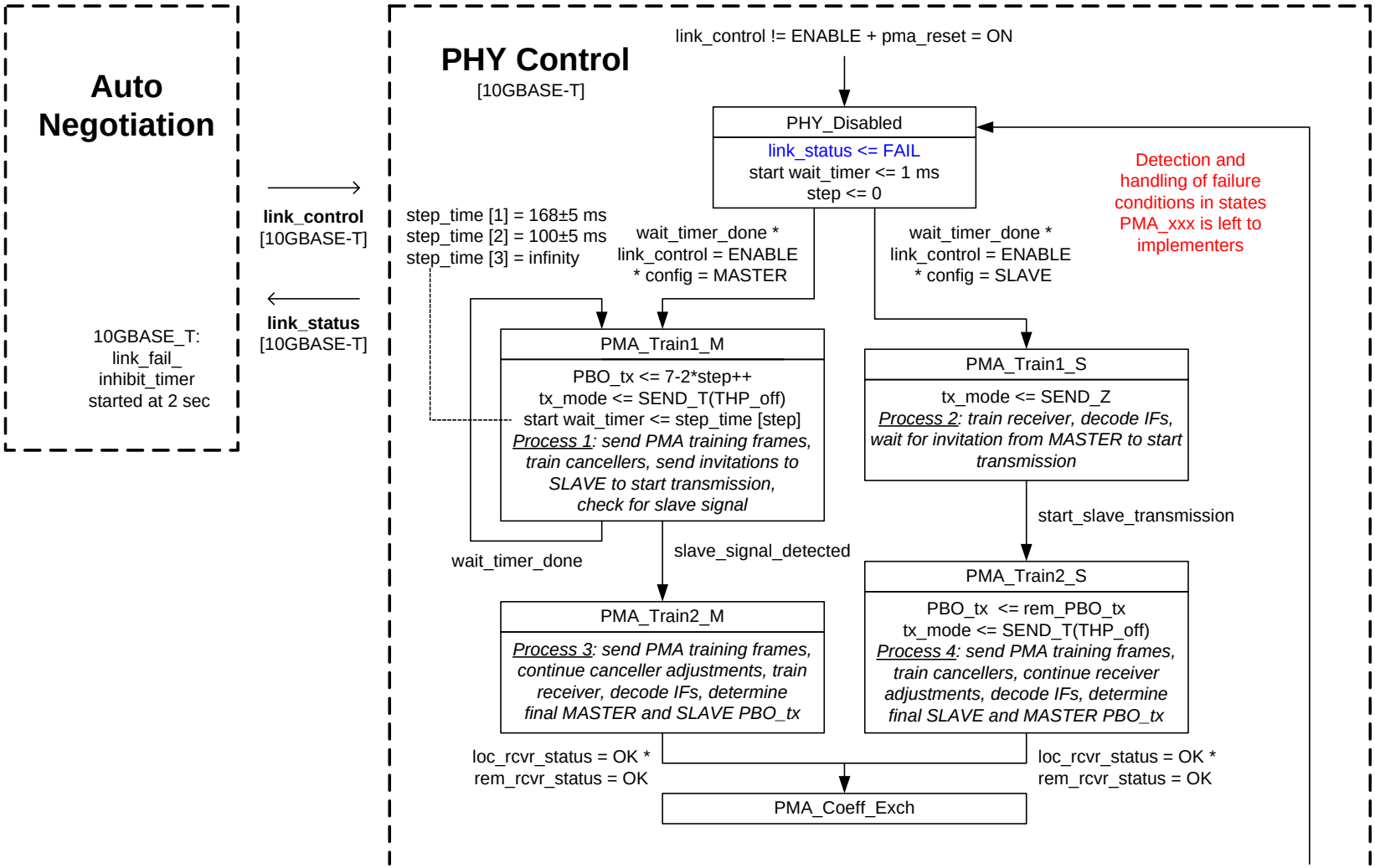


Figure 55-bb—PHY Control state diagram … (upper part)

PHY Control state diagram and relation with Auto Negotiation

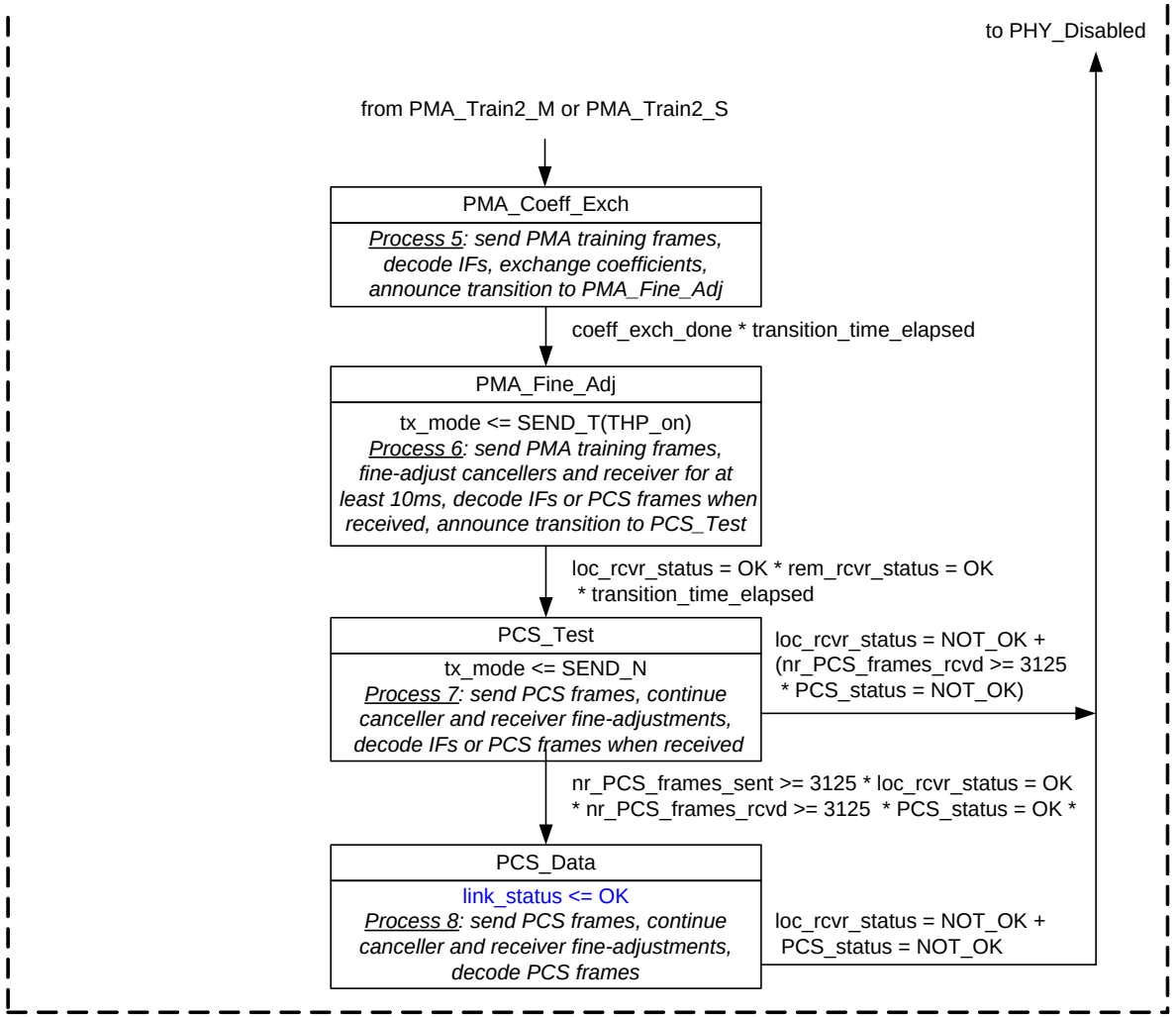
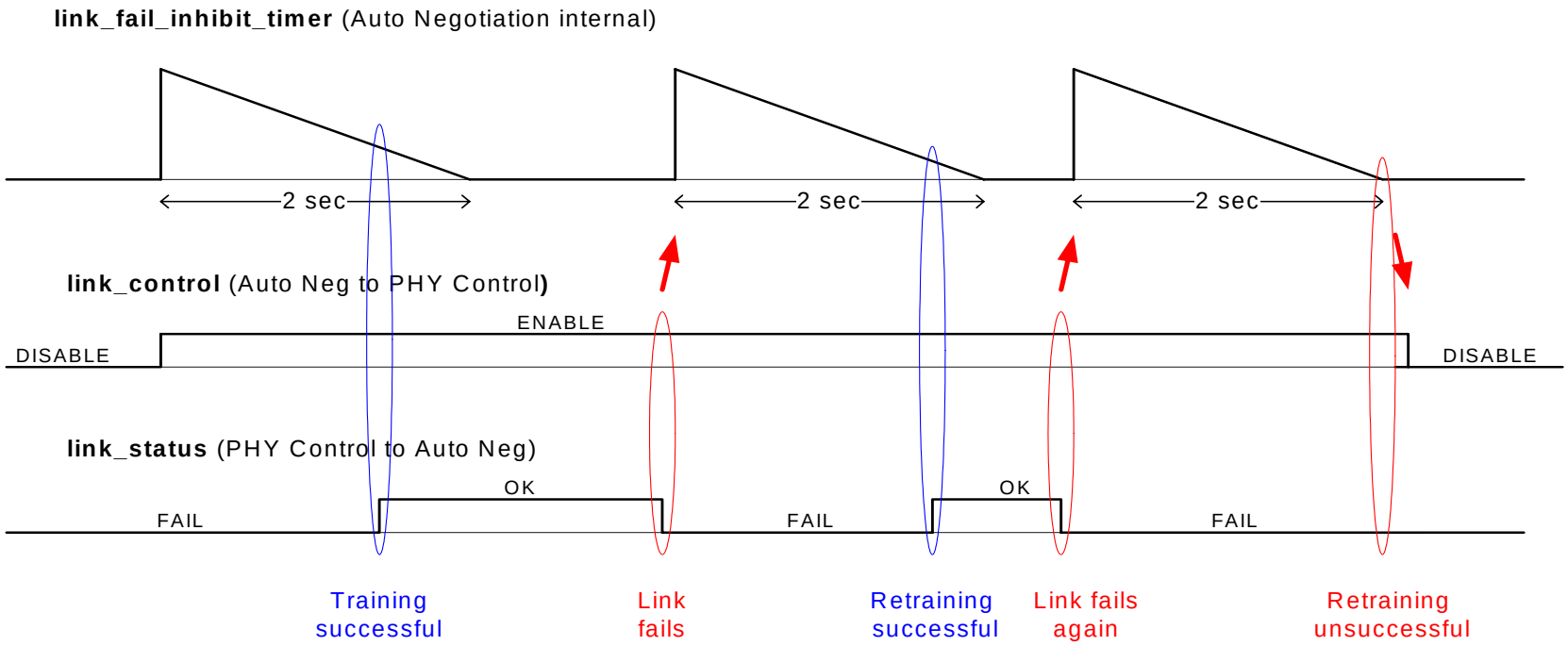


Figure 55-cc—PHY Control state diagram … (lower part)

Interaction between PHY Control and Auto Negotiation



Change required in Auto Negotiation

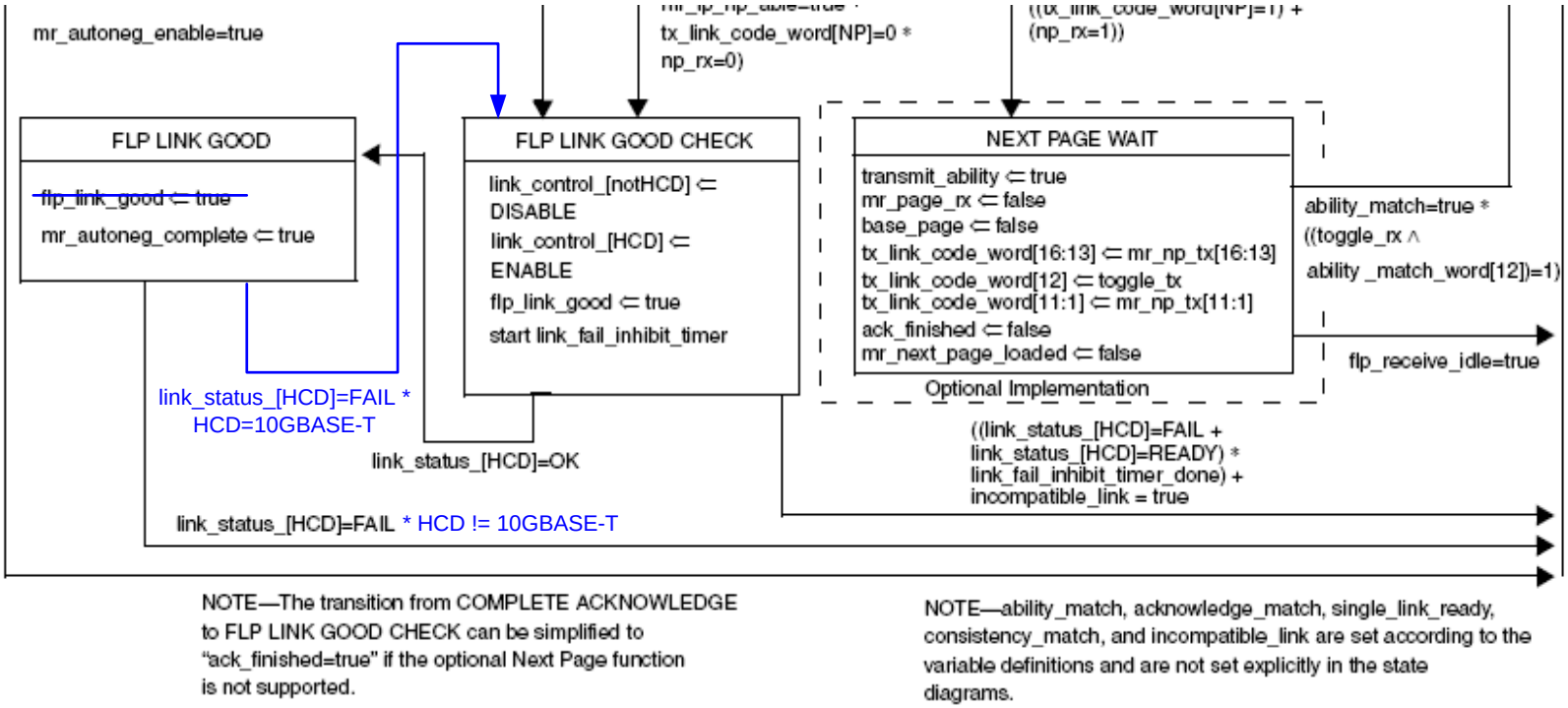
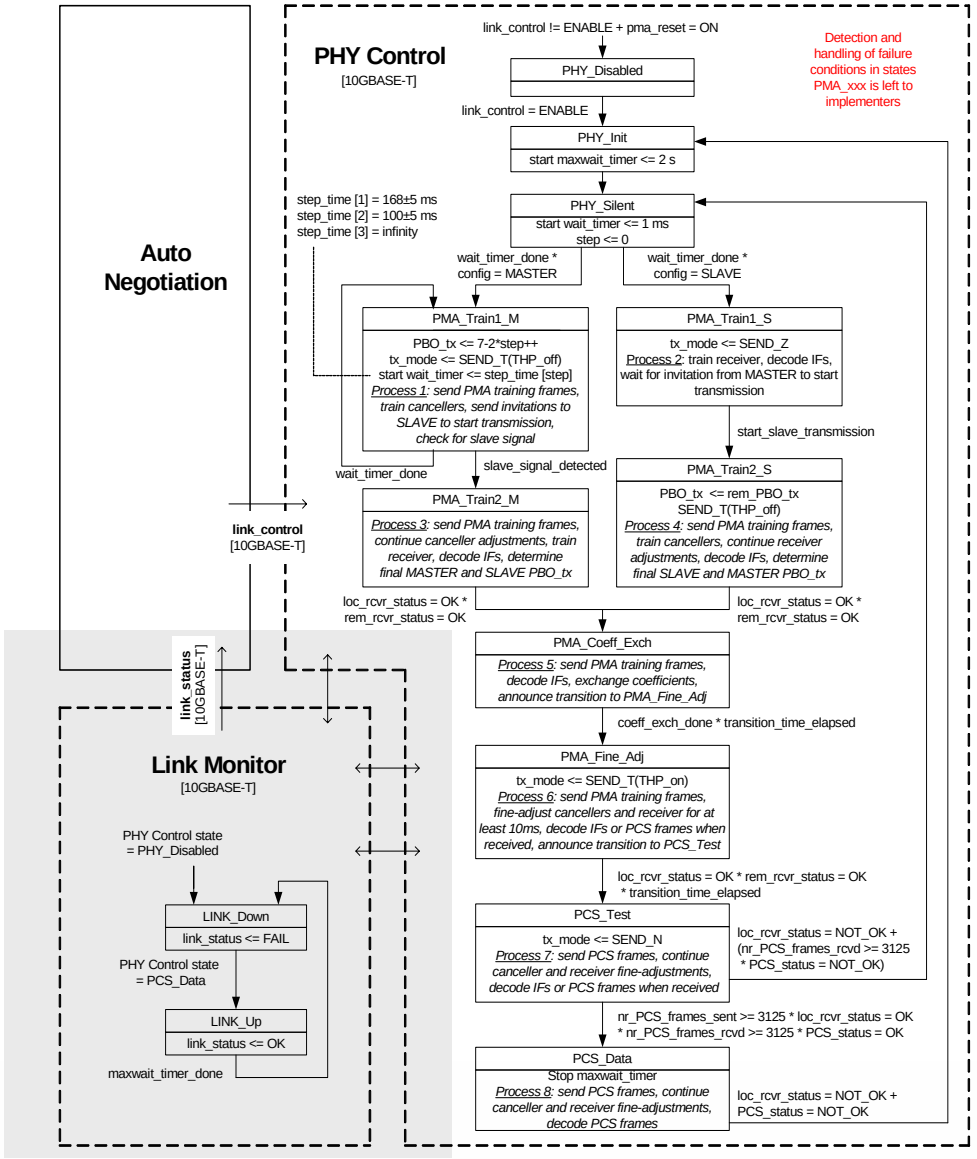


Figure 28–16—Arbitration state diagram

(IEEE Draft P802.3REVam/D2.2 – Section 2, April 24, 2005, page 263)

Solution not requiring a change in Auto Negotiation state diagram



Solution not requiring a change in Auto Negotiation state diagram