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IEEE 802.3cg

PLCA Status Reporting

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Outline

- In current draft 2.0, PLCA does not report whether the node is ready to send and receive data.
  - It is desirable to have a “plca_status” indication, similar to “link_status” concept
  - For nodes with ID != 0 plca_status should be
    - OK when a BEACON is received regularly
    - FAIL if PLCA is disabled or the BEACON is not received for a certain time
  - For node with ID = 0 (the one sending the BEACON) plca_status should be
    - OK when the BEACON is sent regularly
    - FAIL if PLCA is disabled or if BEACON is not being transmitted for a certain time
      - e.g. because of RECOVERY function
- This presentation is a proposal for adding the “plca_status” function

Proposed Text Changes

Add the following subclauses

- 148.4.7 PLCA Status
- 148.4.7.1 PLCA Status State Diagram
  PLCA Status State Diagram is responsible for reporting whether nodes are actively sending / receiving the BEACON.

  The PLCA Status function shall conform to the PLCA Status state diagram in Figure 148-TBD and associated state variables, functions, timers and messages.

  Upon reset or when PLCA is disabled, PLCA Status function enters “INACTIVE” state and reports plca_status as “FAIL”. As soon as the PLCA Control function enters the SYNCING state (i.e. receiving or transmitting the BEACON), plca_active variable is set to TRUE and PLCA Status switches to ACTIVE state, reporting plca_status as “OK”.

  From “ACTIVE” state, whenever plca_active is set to FALSE by PLCA Control function, the PLCA Status function enters “HYSTERESIS” state, still reporting plca_status as “OK” and arming PLCA_STATUS_TIMER.

  If plca_active is reset to TRUE, then PLCA Status reverts to “ACTIVE” state, effectively filtering the momentarily inactive state. Instead, if PLCA_STATUS_TIMER expires while plca_active is still FALSE, the PLCA Status function reverts to “INACTIVE” state, reporting plca_status as “FAIL”.

Proposed Text Changes

Add the following subclauses

- 148.4.7.2 PLCA Status Variables

  plca_status

  The plca_status signal is used to report whether PLCA nodes are actively transmitting or receiving the BEACON. This signal maps to aPLCAStatus attribute as specified in 30.3.9.1.2. When MDIO is present this signal maps to register 3.2291.11.

  Values: OK or FAIL

  plca_active

  See 148.4.5.2

- 148.4.7.3 Functions

  No functions are defined for PLCA Status state machine.

- 148.4.7.4 Timers

  PLCA_STATUS_TIMER

  represents the time plca_status is maintained in “OK” state when plca_active is FALSE while in HYSTERESIS state.

  Duration: The duration of this timer is controllable and should be at least 2 * (TO_TIMER * (MAX_ID + 1) + BEACON_TIMER) for reliable operations

Proposed Text Changes

Append text to subclause

- 148.4.5.2 PLCA Control variables

  plca_active

  notifies the PLCA Status function whether the node is waiting for sending or receiving a BEACON or it already sent or received one.

  Values: TRUE or FALSE

Proposed Text Changes

MODIFY
FIGURE 148-4

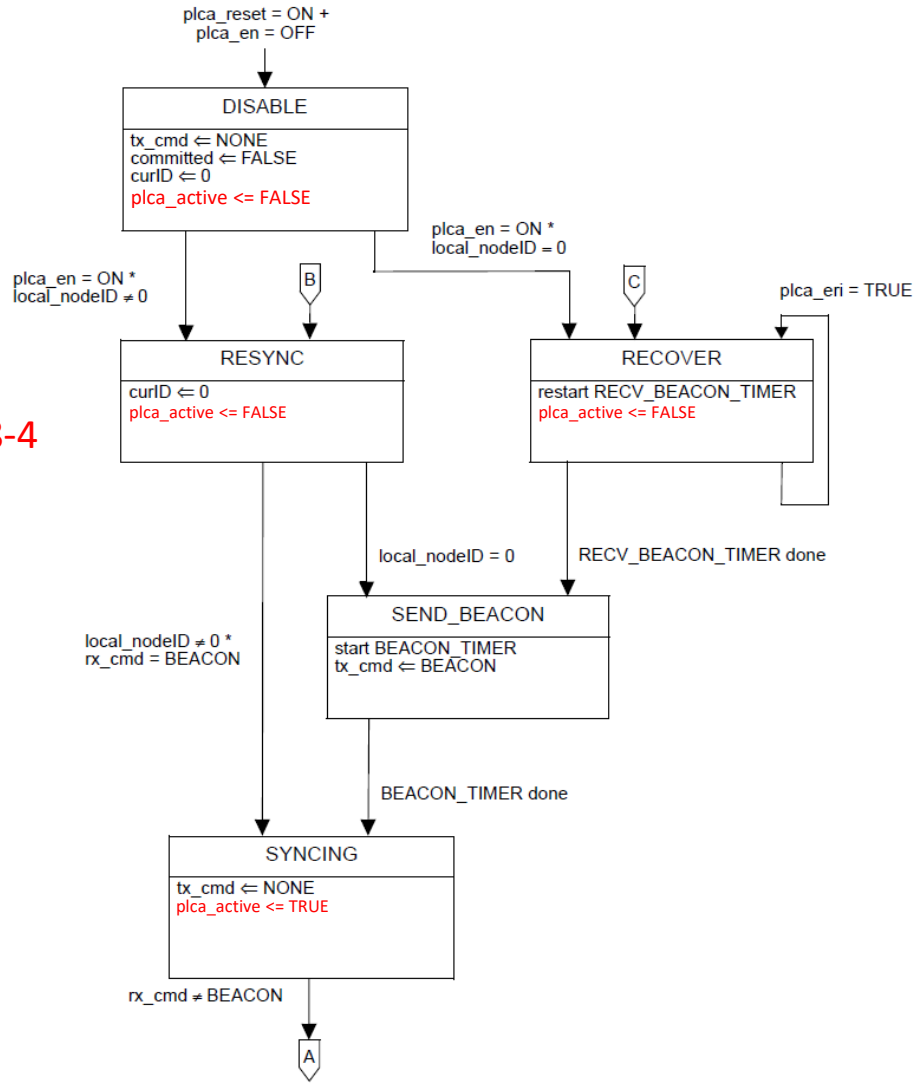

Figure 148–4—PLCA Control state diagram (1 of 2)

ADD
FIGURE 148-TBD
IN CLAUSE 148.4.7

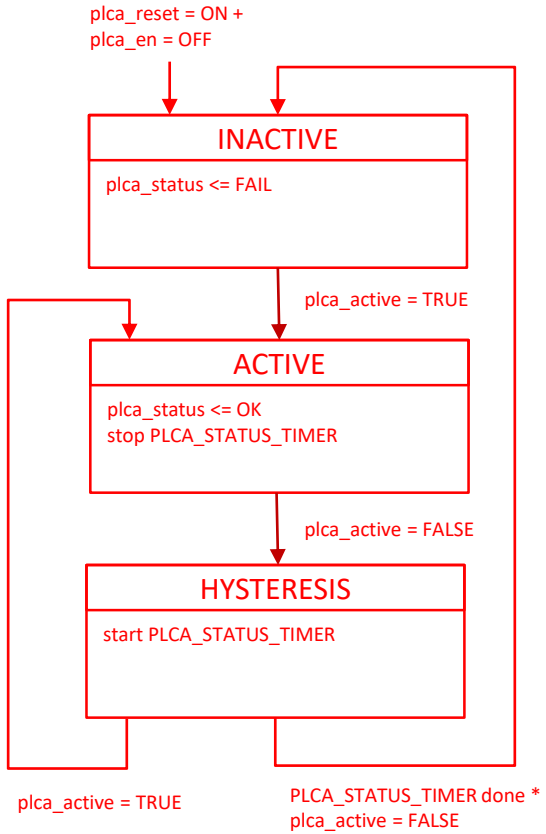

Figure 148-TBD PLCA Status state diagram

Proposed Text Changes

Add subclause

- 30.3.9.1.2 aPLCAStatus
- ATTRIBUTE

APPROPRIATE SYNTAX:

An ENUMERATED VALUE that has the following entries: ok fail

BEHAVIOUR DEFINED AS:

A read-only value that indicates whether PLCA Reconciliation Sublayer is actively receiving or transmitting the BEACON.;

Proposed text Changes

- Modify table 45-220e
  - Remove bit 11 from Reserved bucket
  - Add bit description

Bit(s)	Name	Description	R/W
3.2291.11	PLCA status	1 = PLCA is actively receiving or transmitting the BEACON 0 = PLCA is not receiving or transmitting the BEACON	RO

- Add subclause 45.2.3.58e.5 PLCA Status (3.2291.11):
  Read only bit indicating whether PLCA RS is actively receiving or transmitting the BEACON.

THANK YOU!