Editor’s Report – Proposal Summary

George Zimmerman / CME Consulting, Inc.

11/18/2020

Recap from 11/3:

Big Ticket Item: PHY & Mixing Segment

- Objectives 1, 2, 4, 7, 8: Define performance characteristics for..., BER, Interoperable w/Cl 147, EEE, Environments
  - New PHY definition with new mixing segment, MDI loading
    - See .../102120/diminico_SPMD_01_1020.pdf
  - EEE definition
  - Failure modes
- **Proposal to consider: (Discussion now, possible motion next meeting)** Adopt a new PHY clause with text from multidrop-relevant sections of clause 147, with MDI electricals and mixing segment characteristics blank placeholders only (because we know they don't match our objectives)
  - Focus discussion on proposals to add or modify

Text Structure for PHY (based on cl 147)

- X.1 Overview (editor to draft when framework is there)
- X.2 Service primitives and interfaces
- X.3 Physical Coding Sublayer (PCS) functions
  - X.3.1, .2, .3, .4 PCS Reset, Transmit, Receive, Loopback
  - X.3.5, .6 Collision detection, Carrier sense
  - Question: X.3.7 – DO WE HAVE A “LINK STATUS” (Cl 147 ‘heartbeat’ is pt-to-pt only)
- X.4 PMA functions (Reset, Transmit, Receive)
  - Question: X.4.4, PMA Link Monitor? – tied to “LINK STATUS” and PCS above
  - Question: Any new “PHY Control?” – EEE, standby states, etc. Would be new section here
- X.5 PMA electrical specifications (EMC, Test modes, TX, RX)
- X.6 Management (but not 147.6.1 – Auto Neg)
- X.8 Mixing segment characteristics
- X.9 MDI specification
- X.10 Environmental specifications
- X.11 Delay constraints
- X.12 PICS

Text change guide (1/3)

- 147.1: Overview:
  - Editor to draft new overview from 147.1 and subclauses, stripping out pt-to-pt modes, and aligning to reach/node count objectives
- 147.2: Primitives: Adopt stripping out 147.2.4, 147.2.5 (PMA_LINK, used for autoneg)
- 147.3: PCS – delete “duplex mode” – half duplex only
  - Adopt PCS Reset, PCS Transmit in full
  - Adopt PCS Receive, strip out “duplex_mode”, “!multidrop”, “link_control” from state diagram, as well as associated variables in 147.3.3.2
    - See next slide
  - Adopt 147.3.5, 147.3.6, cleaning out statements like “When operating in half-duplex mode,” (since we are only half-duplex)
  - Do not adopt 147.3.7 (Heartbeat support)

147.3.3 PCS Receive State Diagram changes

- Fig 147-7: delete exit “C” from WAIT_SYNC; Fig 147-8: delete “HEARTBEAT” states that “C” goes to

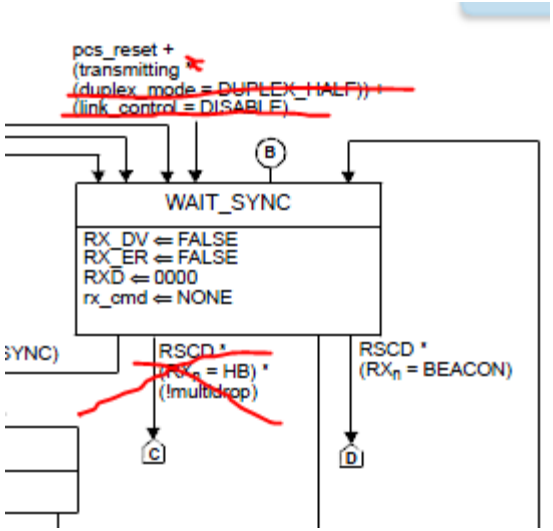

Figure 147-7 (excerpt)

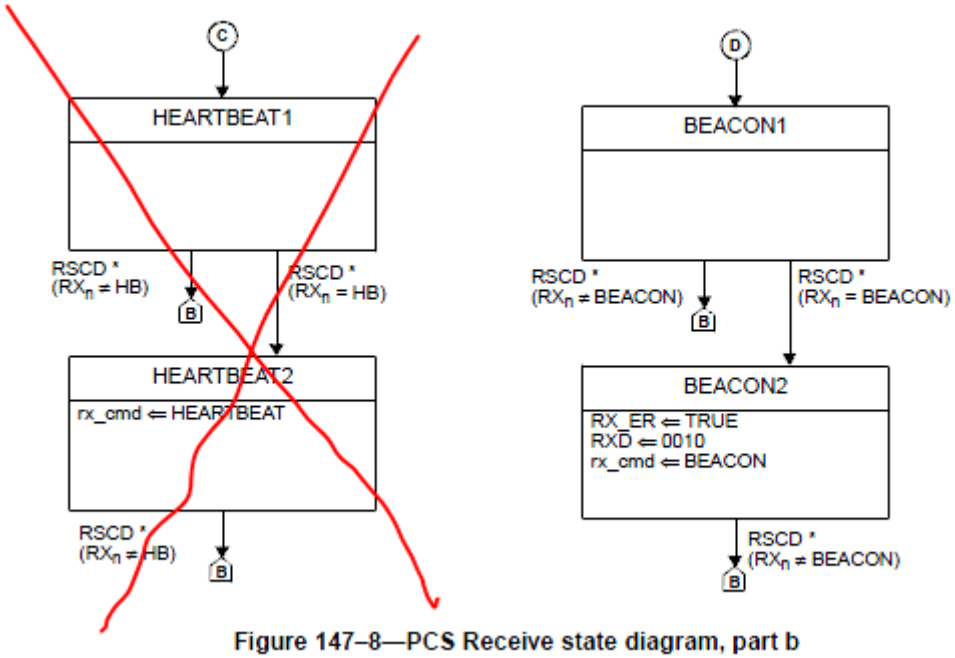

Figure 147–8—PCS Receive state diagram, part b

Figure 147-8 (excerpt)

Text change guide, continued (2/3)

- 147.4: PMA, Adopt 147.4, deleting:
  - “Link Monitor” from Fig. 147-12, and text referring to full-duplex.
  - Point-to-point behavior of tx_sym (147.4.2 item c)
  - 147.4.4 and subclauses (Link Monitor function and state diagrams)
- 147.5: PMA Electrical, Adopt text including subclauses, removing pt-to-pt text, and text stating “for multidrop mode” where found (ed. license)
  - 147.5.2: Delete text exempting non-multidrop PHYs from test mode 4
  - 147.5.4 Modify 2nd paragraph to only specify multidrop mode (delete 100Ω load for pt-to-pt mode)
  - 147.5.4.4 delete sentence beginning “In point-to-point mode...”
  - 147.5.4.5, delete “with multidrop mode supported and enabled”
  - 147.5.5.1 delete references to link segment and point to point mode
  - 147.5.6 delete 2nd paragraph which refers to full-duplex mode loopback, and “If the PHY supports half-duplex mode of operation” at start of 3rd paragraph

Text change guide, continued (3/3)

- 147.6 Management : adopt 147.6, do not adopt 147.6.1 (auto-neg)
- 147.7 Point-to-point link segment: do not adopt
  - Renumber subsequent sections
- 147.8 Mixing Segment characteristics: adopt headers only
- 147.9: MDI specifications
  - 147.9.1 Adopt headers only “MDI connector” (we have a single connector objective)
  - 147.9.2 MDI electrical specification without text
  - 147.9.3 & 147.9.4: (line powering voltage tolerance and fault tolerance) adopt, including text
- 147.10 Environmental specifications – adopt
- 147.11 Delay constraints – adopt
- 147.12 PICS – to be generated from adopted text.

Proposal

Move to:

Adopt a new PHY clause adopting multidrop-relevant text from IEEE Std 802.3cg-2019 clause 147, with MDI specifications and mixing segment characteristics blank placeholders only, as described on slides 3 through 7 of zimmerman_3da_01_111820.pdf with editorial license to align to removal of point-to-point, auto-negotiation, and full-duplex text.

M:

S:

THANK YOU