

George Zimmerman, CME Consulting, Inc.

**Suspected Typographical Error in Figure 98-8 of IEEE 802.3bp-2016;
Proposed late comment on 802.3cj D2.0, Subclause 98.5.5**

Figure 98-8, Section 7, Page 227, Line 8.

Comment:

Figure 98-8 has several typos. On 4 transitions (5 places) an OR (+) is indicated for state transitions when the condition should be an AND (*) - line 8, 14,21 (&22) and line 28. Clause 98 is based on Clause 73. There are some important differences but Figure 73-9 shows the expected behavior for the state transitions that are common between them. (see figures attached as zimmerman_3cj_01_0817.pdf showing Figures 73-9 and 98-8). On 4 transition branches, "*" (AND) operators, appear to have been replaced with "+" (OR) operators.

I can only conclude this was a typo made on the implementation of comment 316 going from Draft 2.0 to Draft 2.1, which remained uncaught, for the following reasons:

1. The original contribution that proposed the state diagram had these as "*" (mcclellan_3bp_03_1114_%20Autoneg_baseline_text_proposal_v0p4.pdf, page 25)
2. The proposal was implemented as "*" in draft 1.1 (the first place this showed up): (see e.g., page 88 of D1.1), through d 2.0, but change in D 2.1 when the figure was redrawn based on comment 316 to change the font size, and were unchanged since then.
3. There are no comments on draft 2.0 to change the logic of the transitions on Figure 98-8, or in connection with these variables, based on an electronic search of the D2.0 comment resolution report.

Proposed Change:

Line 8: Change "transmit_mv_end_done + remaining_ack_cnt = done" to "transmit_mv_end_done * remaining_ack_cnt = done" on transition from TRANSMIT DELIMITER TAIL to WAIT 1)

Line 14: Change "complete_ack = true + transmit_mv_start_done" to "complete_ack = true * transmit_mv_start_done" on transition from TRANSMIT DELIMITER HEAD to TRANSMIT REMAINING ACKNOWLEDGE

Lines 22 & 23 (2 instances): Change "complete_ack = false + transmit_ability = true + transmit_mv_start_done" to "complete_ack = false * transmit_ability = true * transmit_mv_start_done" on transition from TRANSMIT DELIMITER HEAD to TRANSMIT ABILITY

Line 27: Change "transmit_mv_end_done + remaining_ack_cnt = not_done" to "transmit_mv_end_done * remaining_ack_cnt = not_done" on transition from TRANSMIT DELIMITER TAIL to WAIT 2.

Background:

Mehmet Tazebay noticed what appears to be a typographical error in the transmit state diagram for single-pair autoneg. We discussed this on 8/23/17 on the 802.3ch NGAUTO ad hoc call, because of a high degree of overlap with the community which developed 802.3bp. Brett McClellan (the original contributor of the figure), was on the call and agreed that typographical errors seem to have been introduced in the editorial process.

On 4 transition branches, "*" (AND) operators, appear to have been replaced with "+" (OR) operators. Researching the issue, I found that the original contribution that proposed the state diagram had these as "*" as

http://www.ieee802.org/3/bp/public/nov14/mcclellan_3bp_03_1114_%20Autoneg_baseline_text_proposal_v0p4.pdf See page 25, and it was implemented as "*" in draft 1.1 (the first place this showed up): (see e.g., page 88 of D1.1), through 2.0.

However, in D2.1, the figure was redrawn (to change font sizes) according to comment 316 on draft 2.0. When the state diagrams were redrawn it changes to the current form, with an OR (+) in Draft 2.1 – and it has remained so ever since.

I checked to see if there were any other comments on D2.0 changing this, and found none. (I can find only 2 comments on D2.0 relating to page 180 (one is comment 316, the other is unrelated), and I can't find anything relating to "complete_ack", "transmit_ability", or "transmit_mv_start_done".) I can only conclude this was a typo made on the implementation of comment 316 going from Draft 2.0 to Draft 2.1, which remained uncaught.

The proposal is to fix these in the revision draft through a late comment, as the most expedient way to fix a clear and obvious typographical error. An email was sent to the IEEE P802.3ch and IEEE P802.3cg reflectors explaining the situation, the proposed change and asking that any concerns be brought forward quickly.

Clause 98 is based on Clause 73. There are some important differences but figure 73-9 shows the expected behavior for the state transitions that are common between them.

Marked up versions of Figures 73-9 and 98-8 follow, showing differences in what is similar logic between the two figures in red circles. OR's in the red circled transition logic of Figure 98-8 should be AND's.

73.10.4 State diagrams

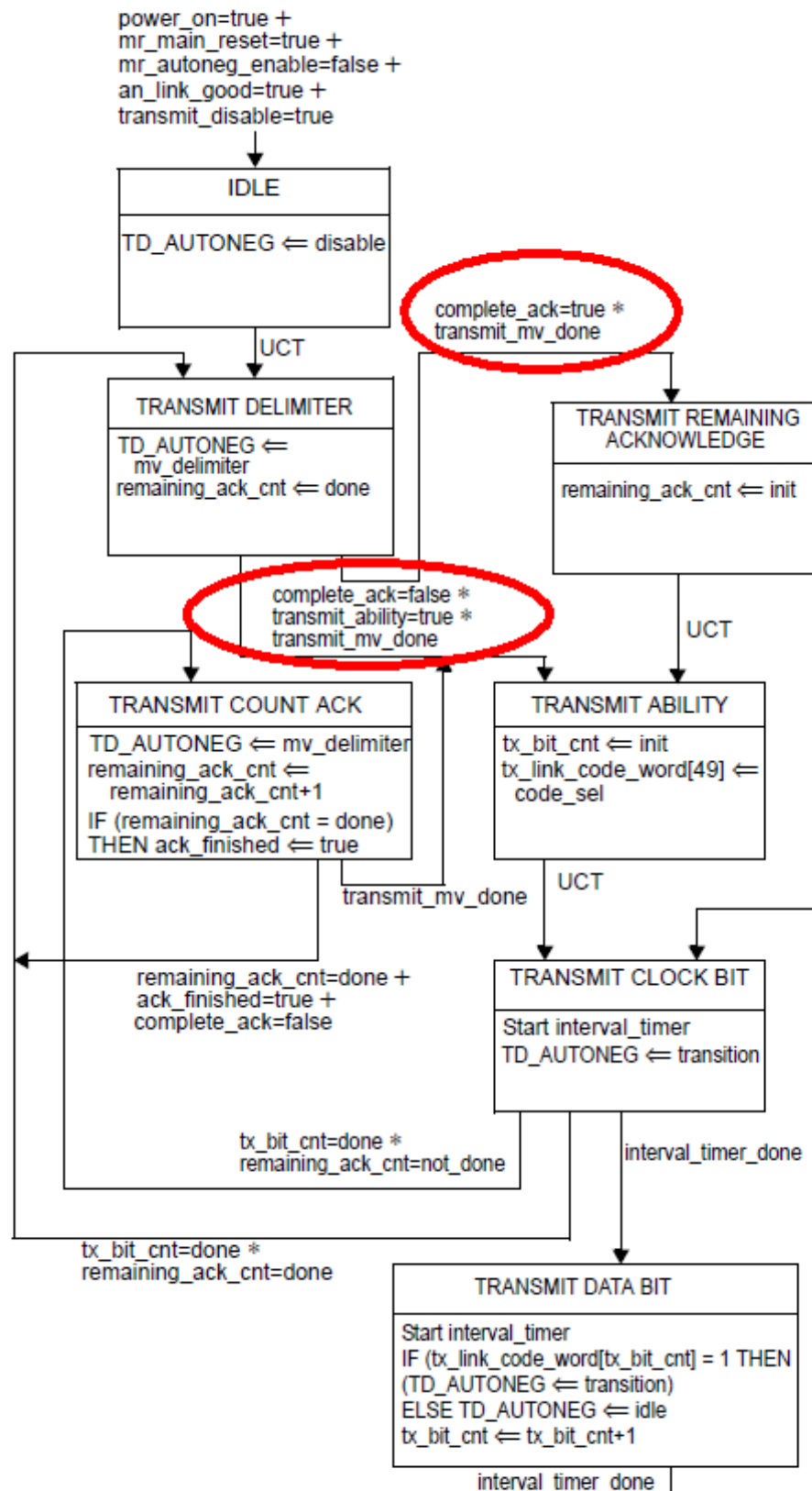


Figure 73–9—Transmit state diagram

Versus, Figure 98-8 from 98.5.5 State diagrams:

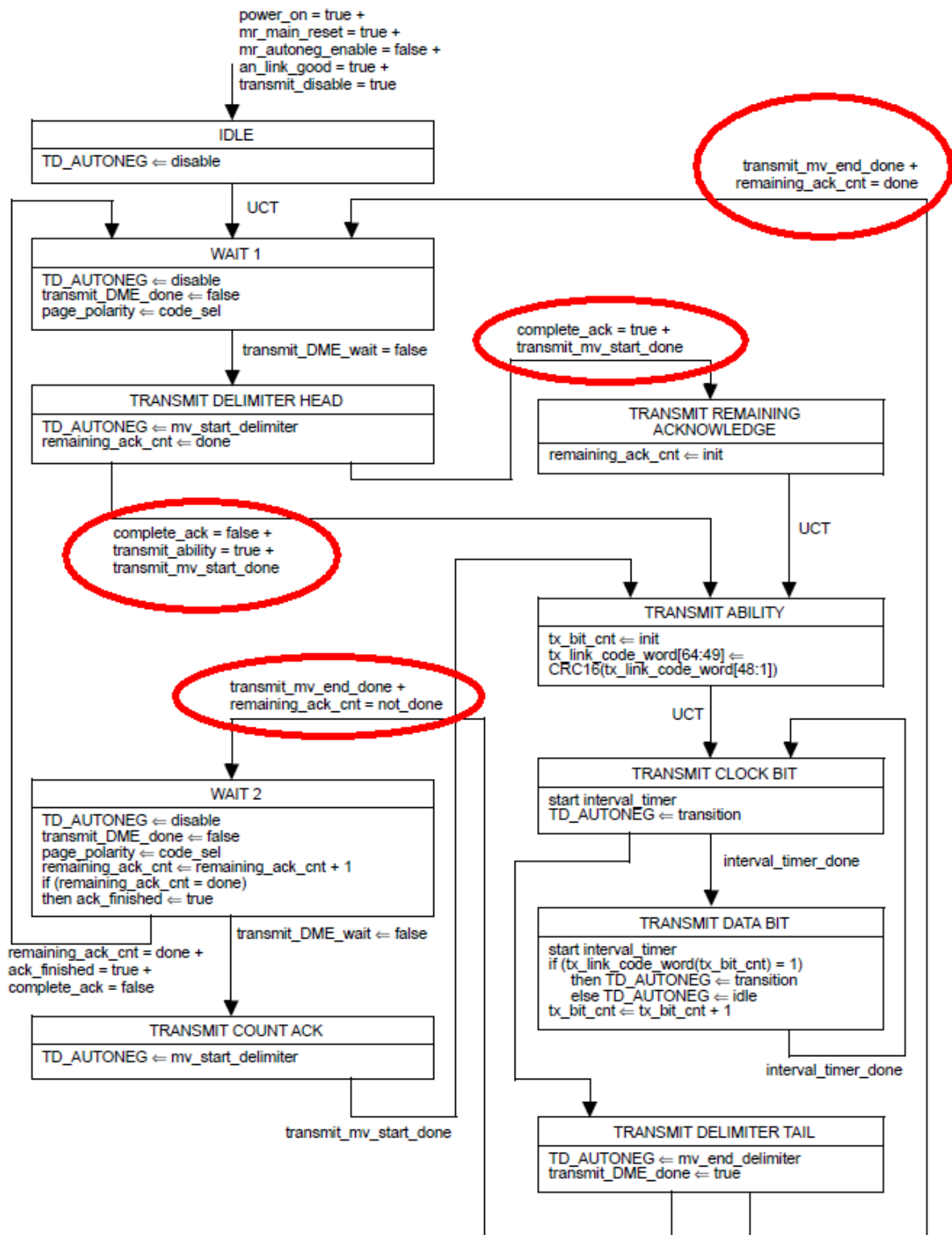


Figure 98-8—Transmit state diagram