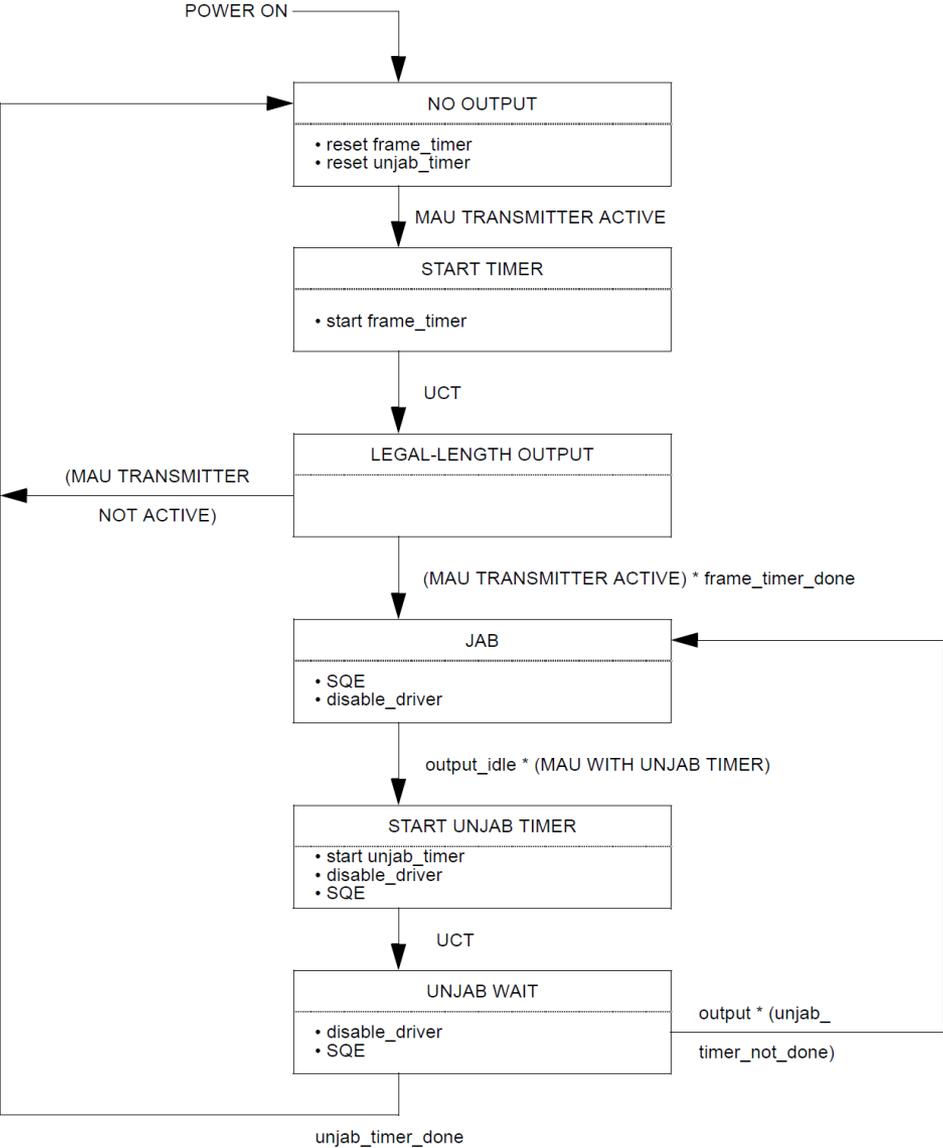# 10 Mb/s Single Twisted Pair Ethernet
10BASE-T1L JAB State Diagram
(Comment #469)

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Pepperl+Fuchs

10BASE-T1L JAB State Diagram

POWER ON

NO OUTPUT
- reset frame_timer
- reset unjab_timer

MAU TRANSMITTER ACTIVE

START TIMER
- start frame_timer

UCT

LEGAL-LENGTH OUTPUT

(MAU TRANSMITTER NOT ACTIVE)

(MAU TRANSMITTER ACTIVE) * frame_timer_done

JAB
- SQE
- disable_driver

output_idle * (MAU WITH UNJAB TIMER)

START UNJAB TIMER
- start unjab_timer
- disable_driver
- SQE

UCT

UNJAB WAIT
- disable_driver
- SQE

output * (unjab_timer_not_done)

unjab_timer_done

- The Jabber state diagrams of 10BASE-2 (see left side), 10BASE-5 or Clause 147 prevent jabber on the transmit side of a PHY in a multi-drop CSMA/CD environment.

- If a faulty PHY transmits longer than allowed, the output driver of the PHY gets disabled according to the behavior defined in the Jabber state diagram.

- This is completely different to what is described in the JAB state diagram of Clause 146.

10BASE-T1L JAB State Diagram
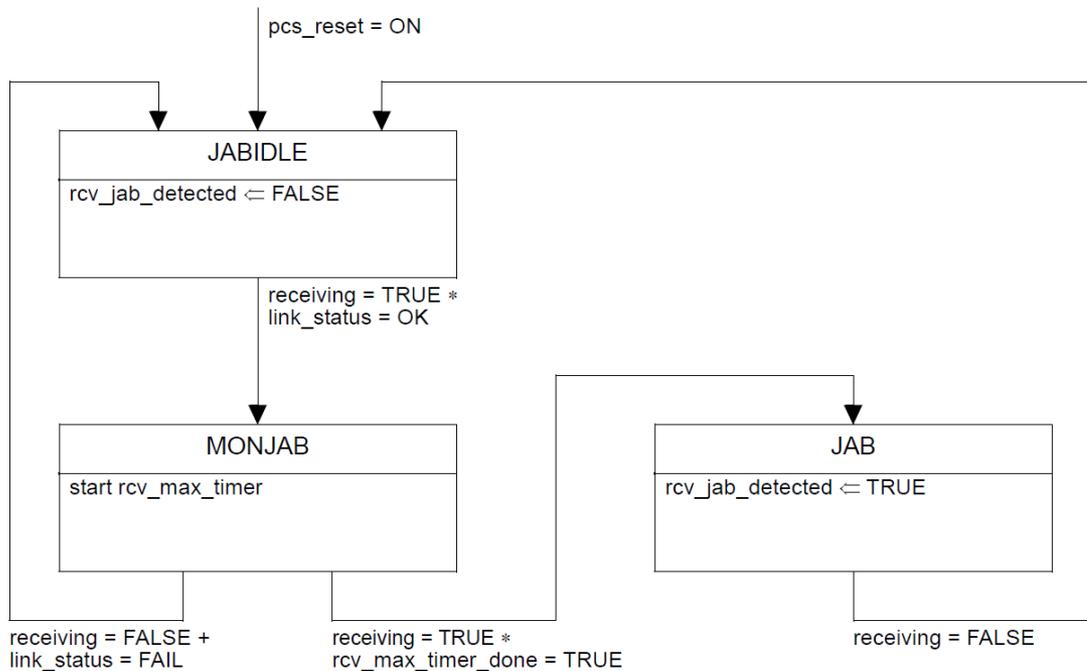
- While the Jabber state diagrams of 10BASE-2, 10BASE-5 or Clause 147 prevent jabber on the transmit side of a PHY, the JAB state machine of Clause 146 is needed to reset the receive state machine of a 10BASE-T1L PHY in case an ESD or ESD with error is not received correctly (in this case the "receiving" variable permanently stays TRUE).
- In such a case the receive state machine is brought back to normal operation within 4 ms, as the rcv_max_timer of the JAB state diagram has elapsed (which has been agreed by the task force to allow for up to 4 kByte Jumbo frames).
- So suggestion is to keep the JAB state diagram, but to prevent confusion with the Jabber state diagrams in other PHY clauses, to rename the JAB state diagram (and references in Clause 146) to e.g. „Watchdog state diagram" (which describes better, what the state diagram is doing).

Thank You