

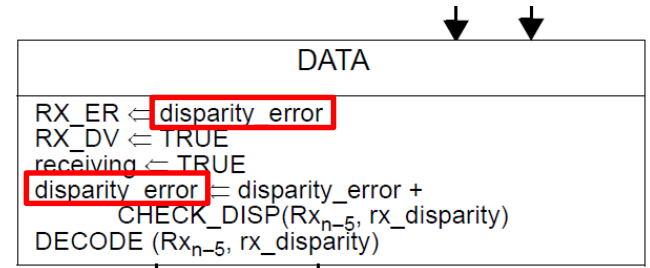


10 Mb/s Single Twisted Pair Ethernet 10BASE-T1L Receive State Diagram Disparity Error

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10BASE-T1L Receive State Diagram

- The PCS receive state diagram in Draft D2.1 has several states (DATA, CHECK ESD COMMA2, CHECK ESD DISPRESET3, and CHECK ESD ESD4), where the variable `disparity_error` is modified, but also used in the same state.

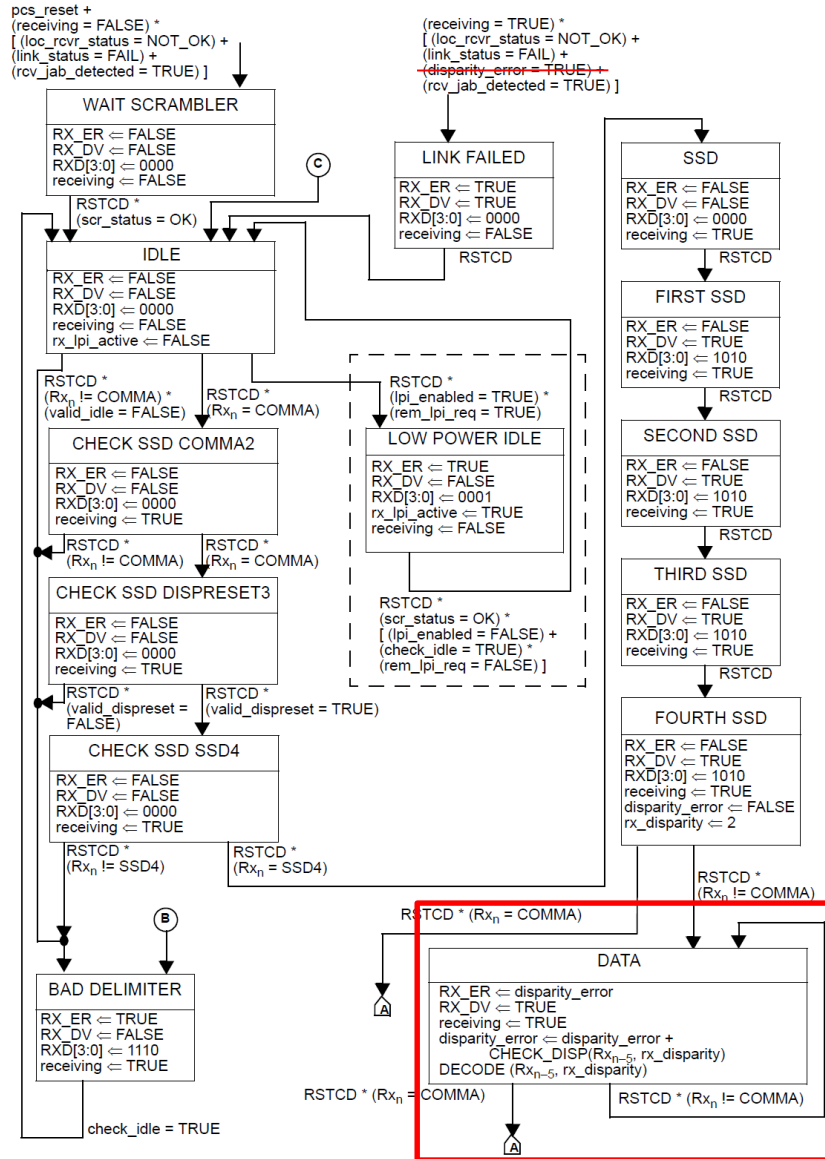


- As the equations provided in a state are only executed once the state is entered and as the order of the equations within the state is not relevant for the order of the command execution, it is not clear, if `RX_ER` is using the old value of the `disparity_error` variable or already the updated value.
- To prevent this unclear situation additional states for setting `RX_ER` are introduced.
- In state ESD there is no update of the `disparity_error` variable necessary, therefore a simple “or” condition can be used:

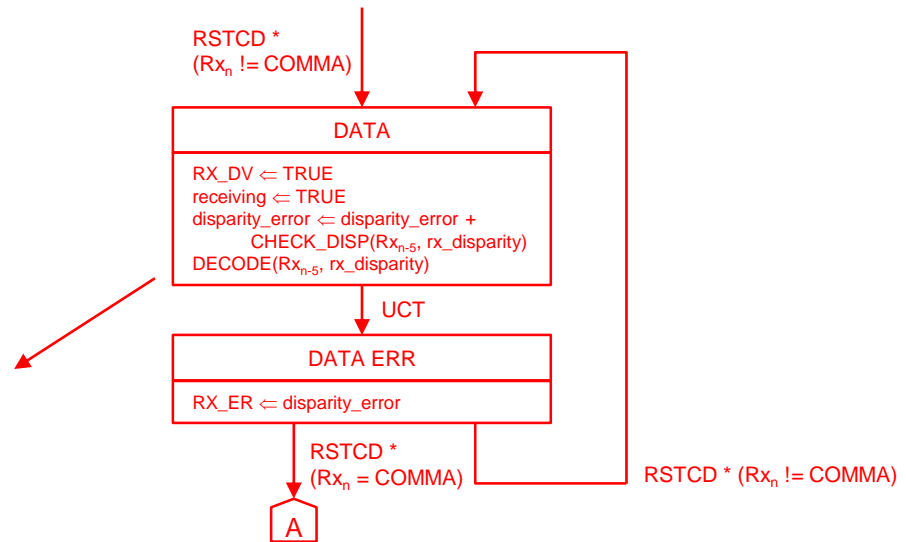
$$\text{RX_ER} \leftarrow \text{disparity_error} + \text{CHECK_DISP}(\text{Rx}_{n-5}, \text{rx_disparity})$$

- Additionally some minor corrections in two transitions of the state diagram are done.
- All changes can be seen on the next two pages.

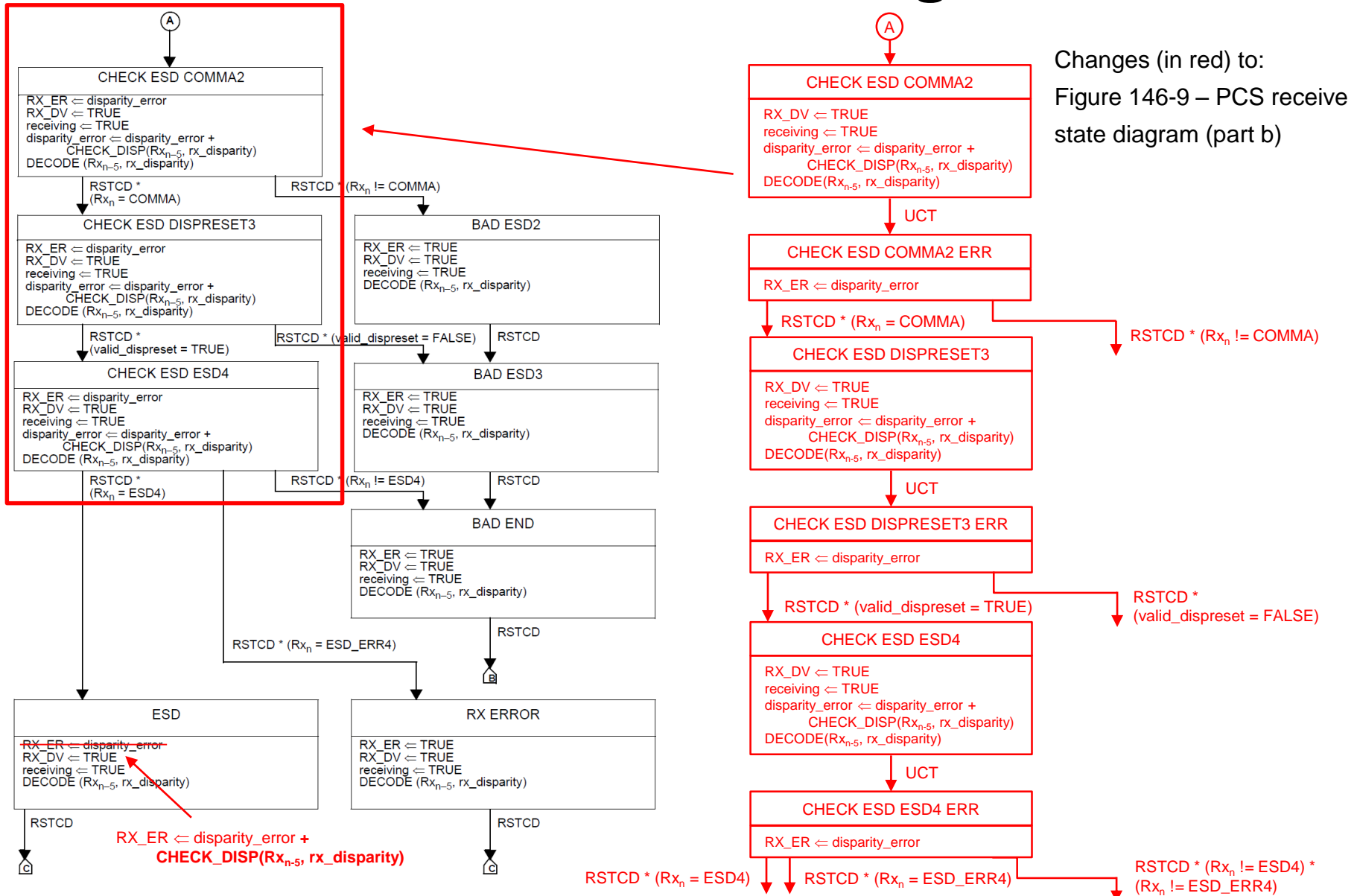
10BASE-T1L Receive State Diagram



Changes (in red) to:
 Figure 146-8 – PCS receive
 state diagram (part a)



10BASE-T1L Receive State Diagram



Thank You