

MPCP FEC issues: Delay In Tx PCS

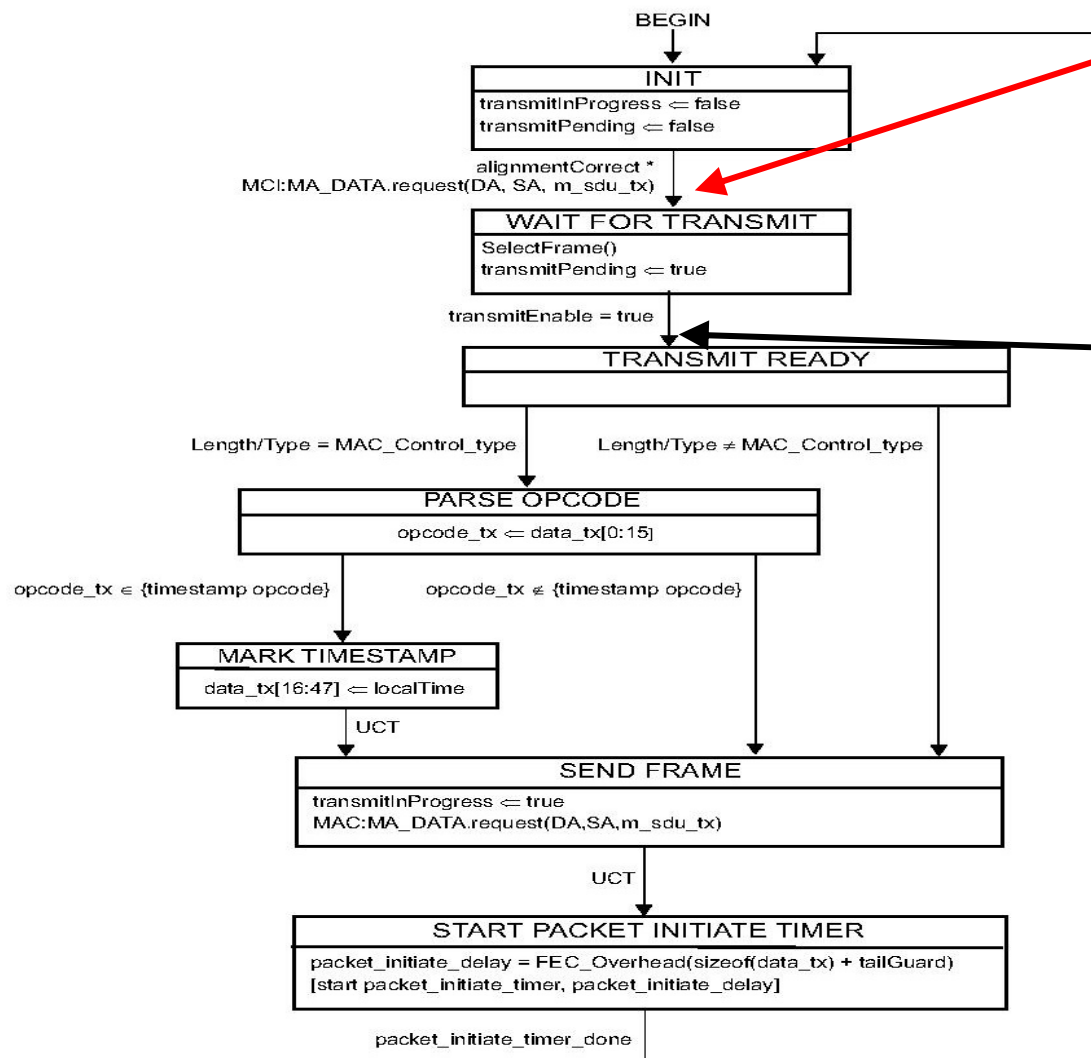
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Summary

A packet which arrives at MPCP from the MAC Client while the PCS is transmitting parity will sometimes be delayed in the PCS up to 32 byte times

- PCS-layer delay variation will thus exceed the 1 TQ limit that is mandated in **76.2.3.2**

Delay in OLT Tx PCS



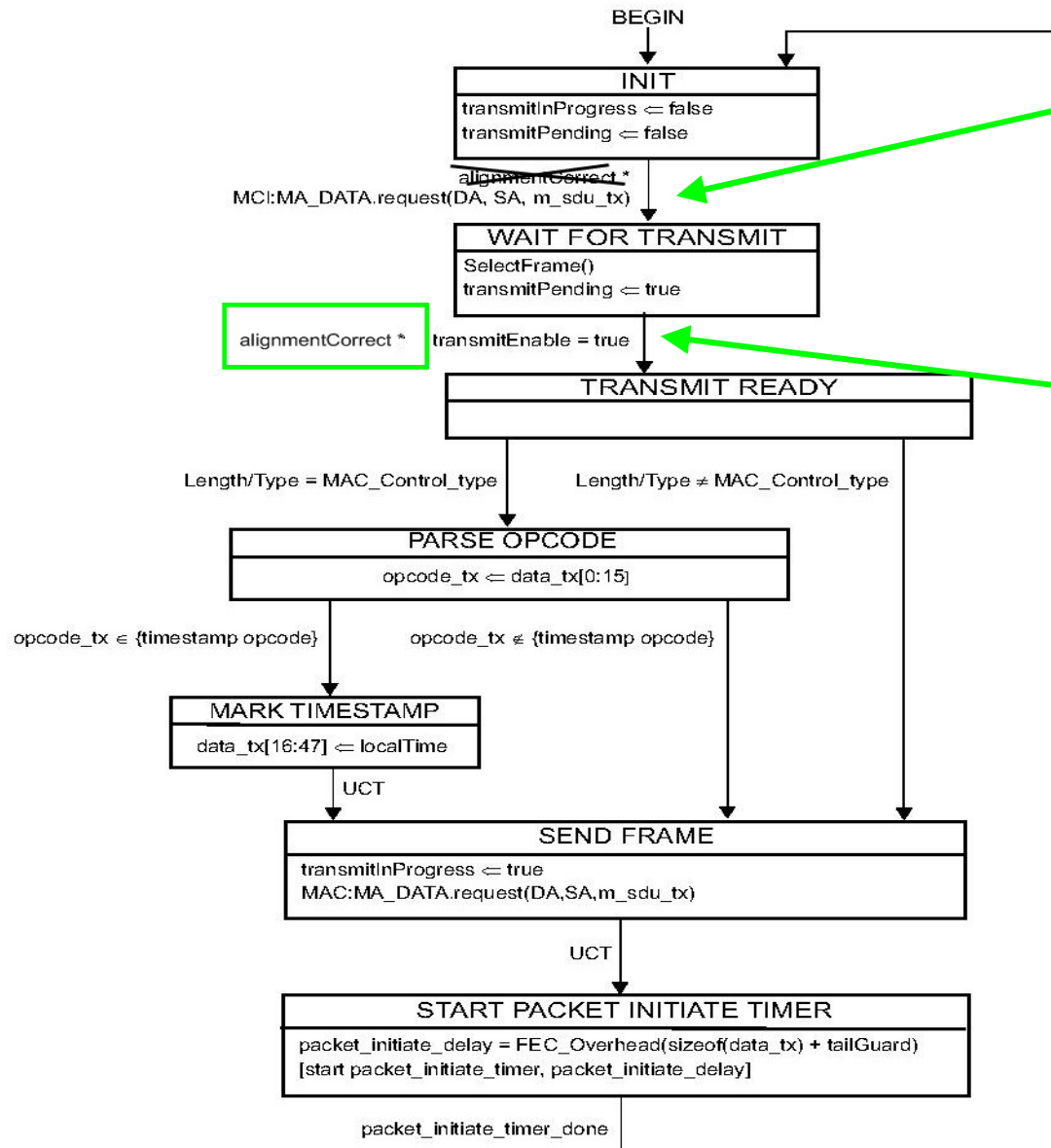
1. **First**, the Control Mux delays the frame transmission (if necessary) until an interval when the PCS will transmit payload data rather than parity

2. **Next**, the frame is delayed again until the particular MAC receives permission to transmit

But after this second delay, the PCS may in fact be transmitting parity.

If so, the frame will experience delay in the Tx PCS of up to 32 byte times

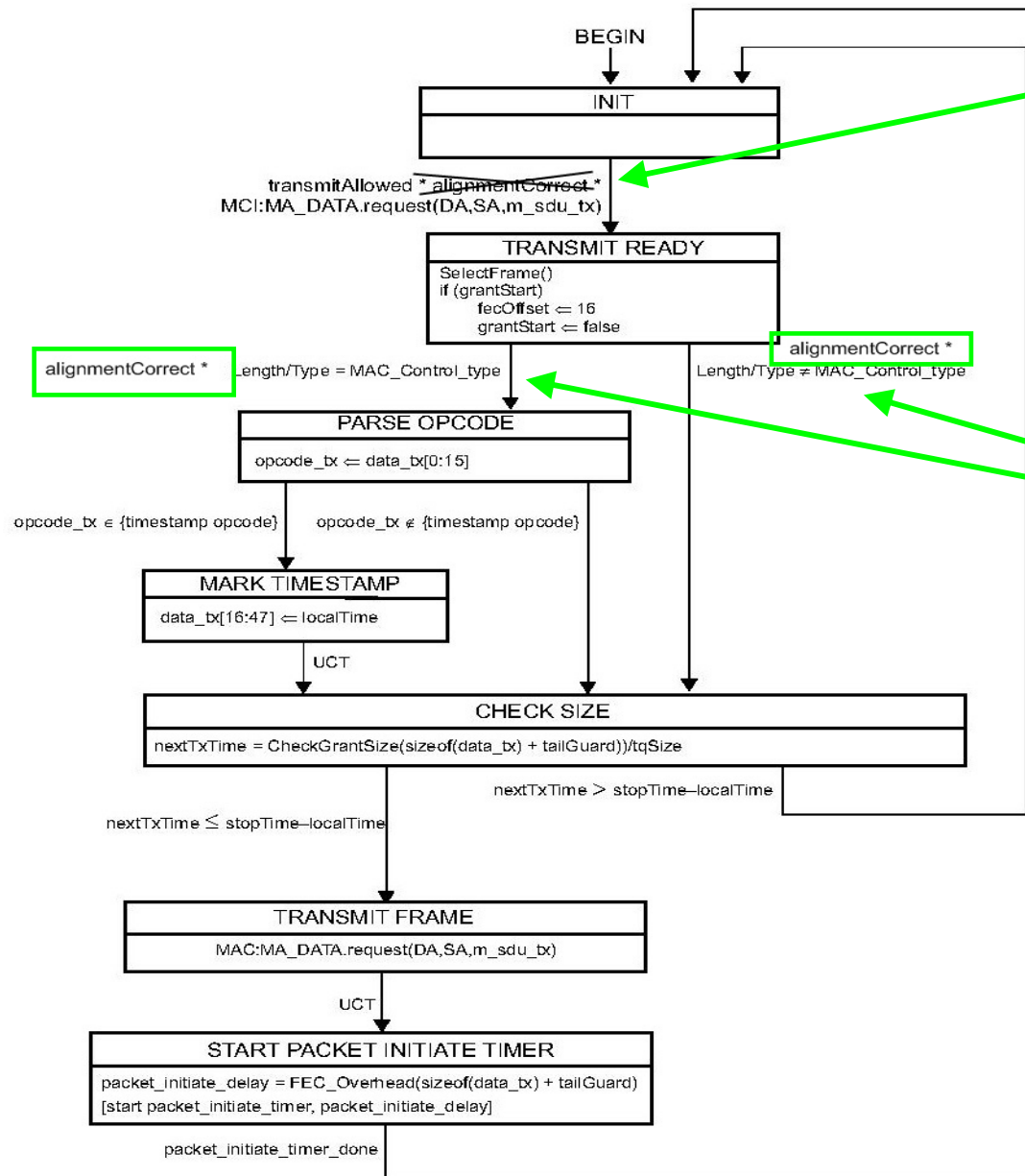
Remedy: Figure 77-13 (OLT control mux)



1. Remove this check for what the PCS is transmitting (as the MPCP instance must anyway wait for transmit permission)

2. After the MPCP instance has received permission to transmit, check whether PCS is transmitting parity and delay if necessary

Remedy: Figure 77-14 (ONU control mux)



1. Remove this check for what the PCS is currently transmitting (because in the case where the upstream burst has not started, the fecOffset info is not accurate)

2. Check for what the PCS is transmitting – but only after the burst has started. If necessary (eg. light traffic during the burst), delay the frame before timestamping