Silent Start

For 10/25/50G Bidi PHYs

Silent Start Requirements

- Not required in OLT PHYs
- In ONUs
  - Higher management function
  - No transmission allowed until a good received signal is seen
  - Should not “flicker” (ie., transmission should not go in and out due to a marginal received signal

Potential control keys from PMA/PCS

- BASE-R and MultiGBASE-T receive link status (Cl 45.2.3.15.1)
  - Indicates whether the PCS is in a fully operational state. It is only true if block_lock is true and hi_ber is false.
  - Reflected in MDIO register 3.32.12. A latch low view of this status is reflected in MDIO register 3.1.2 and a latch high of the inverse of this status, Receive fault, is reflected in MDIO register 3.8.10.
- BASE-R and MultiGBASE-T PCS high BER (Cl 45.2.3.15.4).
  - Indicates the state of the hi_ber variable ($> 10 \times 10^{-4}$)
  - Reflected in MDIO register 3.32.1.
- BASE-R and MultiGBASE-T PCS block lock (Cl 45.2.3.15.5)
  - Indicates when receiver acquires block delineation.
  - Reflected in MDIO register 3.32.0.

Proposal

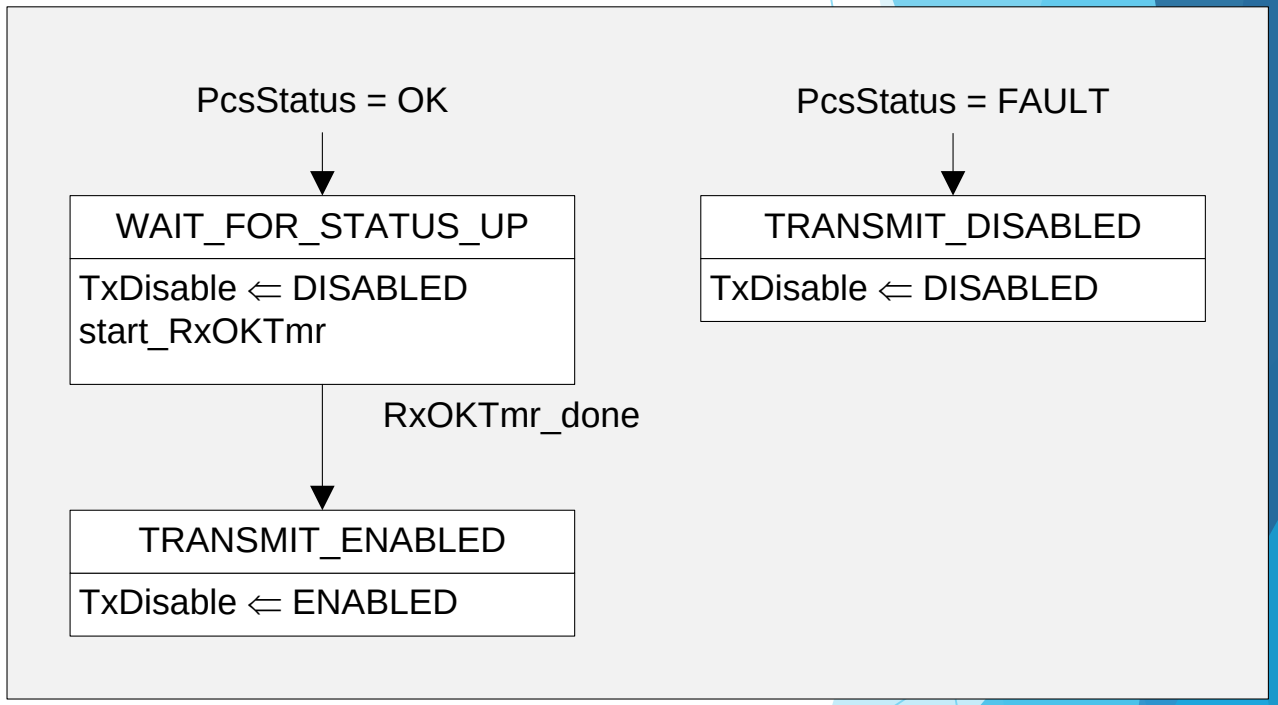
- Use PCS_status as defined in 49.2.14.1 to control Silent Start feature
  - If PCS-status indicates the PCS receive path is up and running normally for some per-determined time period (1 sec ?) the upstream PMD may transmit.
  - If PCS_status indicates there is a PCS receive path fault the PMD shall disable transmission.
- PMD_global_transmit_disable as defined in Cl 45.2.1.8 (register 1.9.0) which is optional in 10/25/50GBASE-R PHYs should be mandatory in 10/25/50GBASE-BxR-U PHYs

Variables & State Diagram

- TxDisable – Boolean variable when set to ENABLED PHY transmission is allowed, when set to DISABLED PHY transmission is disallowed. Maps to Cl 45.2.1.8 (register 1.9.0) PMD_global_transmit_disable

- PcsStatus – Boolean variable when set to OK indicates the PCS is in a fully operational state. When set to FAULT Indicates the PCS is in a non-operational state. Maps to Cl 45.2.3.15.1 (register 3.32.12) BASE-R and MultiGBASE-T receive link status

- RxOKTmr – A timer used to ensure the PHY transmission enable includes hysterisis. The RxOKTmr is set to {1 second} on start.



Thank You