

# Startup Protocol for 1000Base-T

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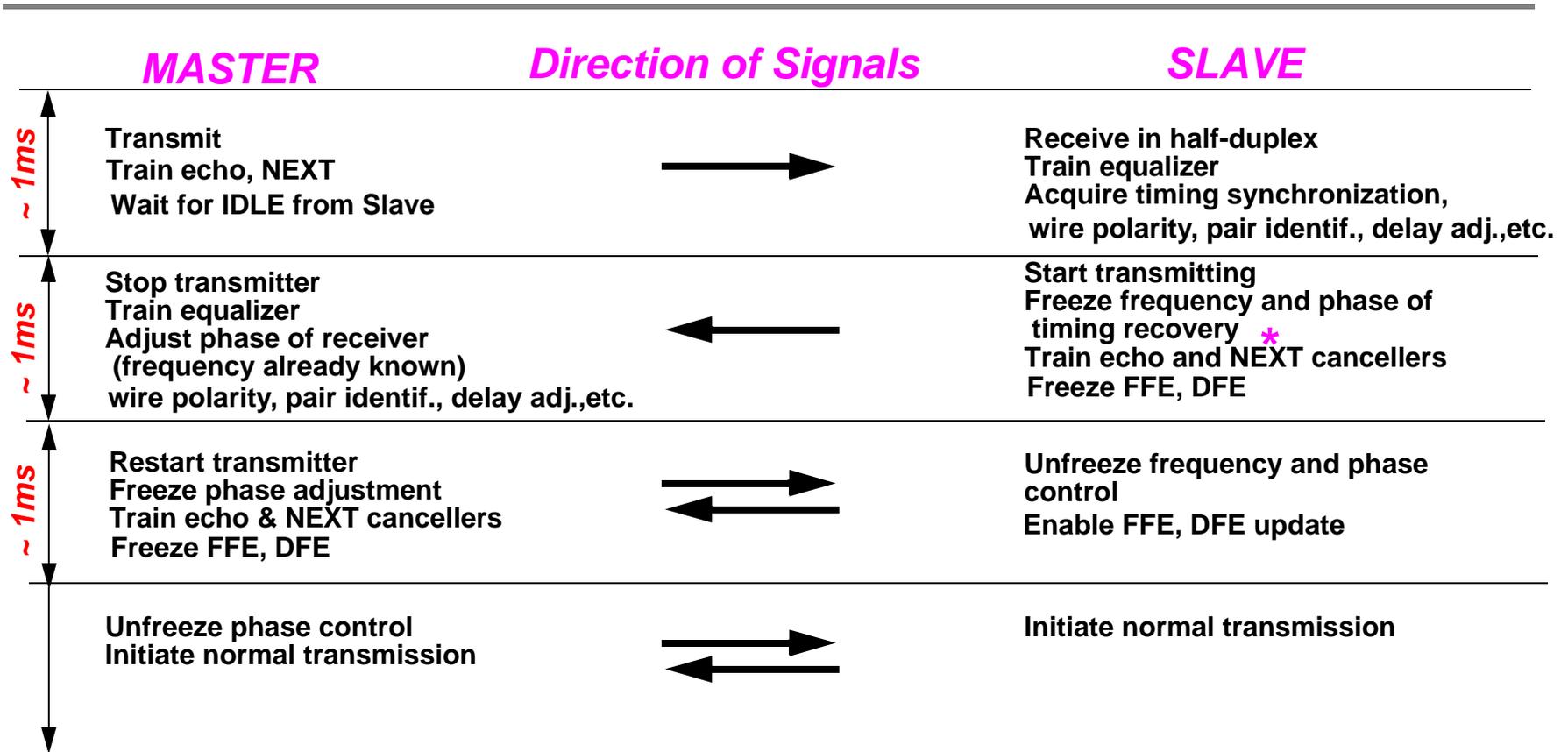


# Motivation

- **Baud-rate receiver uses joint adaptation of forward and feedback equalizers, echo and NEXT cancellers, and timing recovery**
- **A completely blind start of the baud-rate receiver is difficult**
- **Initial convergence is greatly facilitated if the receiver is started in half-duplex mode.**
- **The state diagrams in the following viewgraphs are intended to replace the diagram of clause 32.2.5 of 100Base-T2**



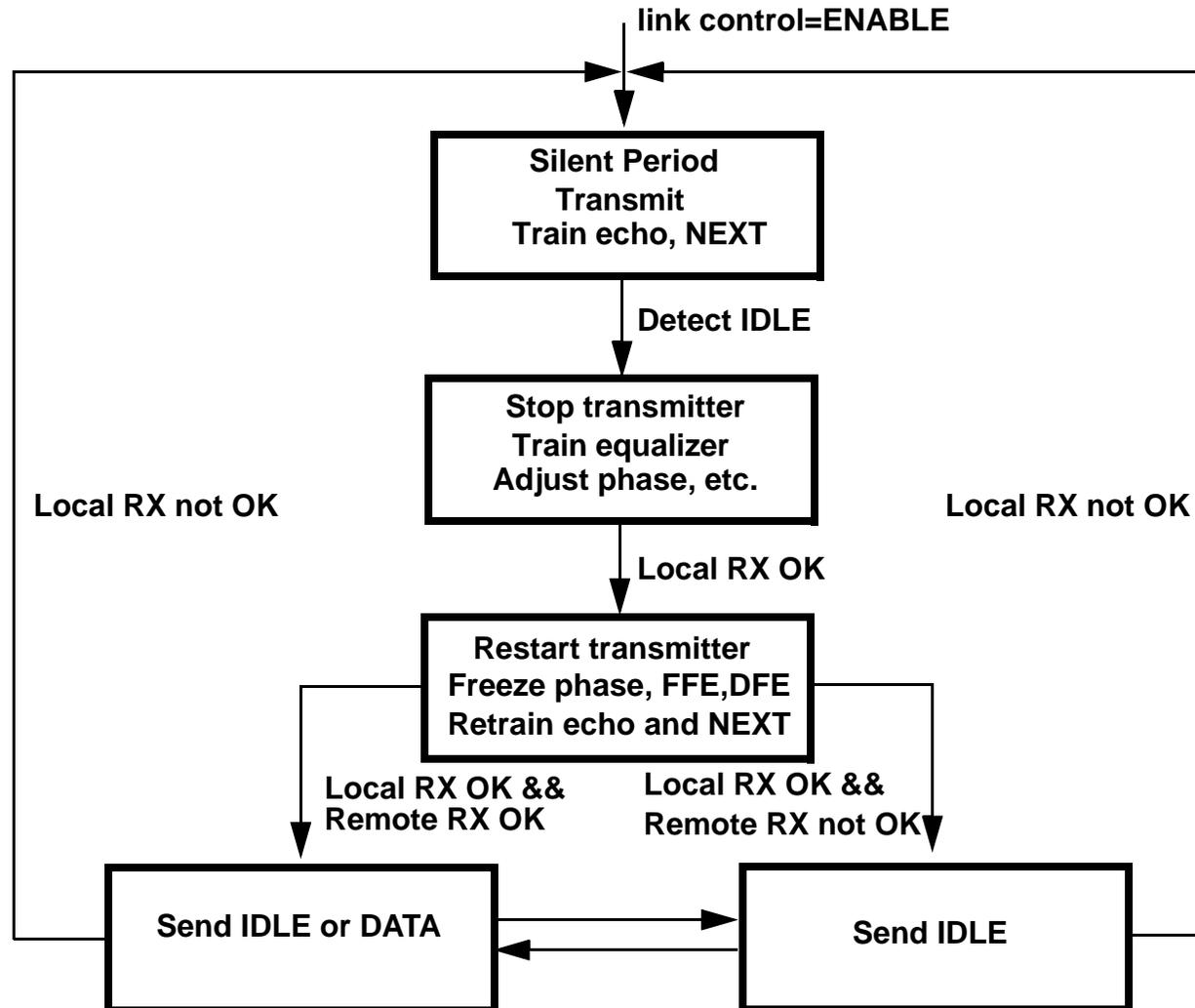
# Start-up Protocol



**\* NOTE:** If a second order (Proportional + Integrating) timing recovery loop is used, frequency error after initial acquisition will be very small, therefore the phase drift during this "open loop" period will be negligible. The phase will still be correct when timing recovery is unfrozen.



# Training State Diagram (Master)



# Training State Diagram (Slave)

