Link Delay Model: fiber optic solution

Master time · Slave time

Announce · Sync · Follow_Up · Delay_Req · Delay_Resp

t_1, t_2, t_3, t_4

Relative Delay Coefficient: α

$$\mu = \frac{(t_4 - t_1) - (t_3 - t_2)}{2}$$

WR Link Delay Model

Fixed Delays: Δ_{rxs} Δ_{txs} Δ_{rxm} Δ_{txm}

$$delay_{ms} = \mu + asymmetry$$

$$offset_{ms} = t_2 - (t_1 + delay_{ms})$$
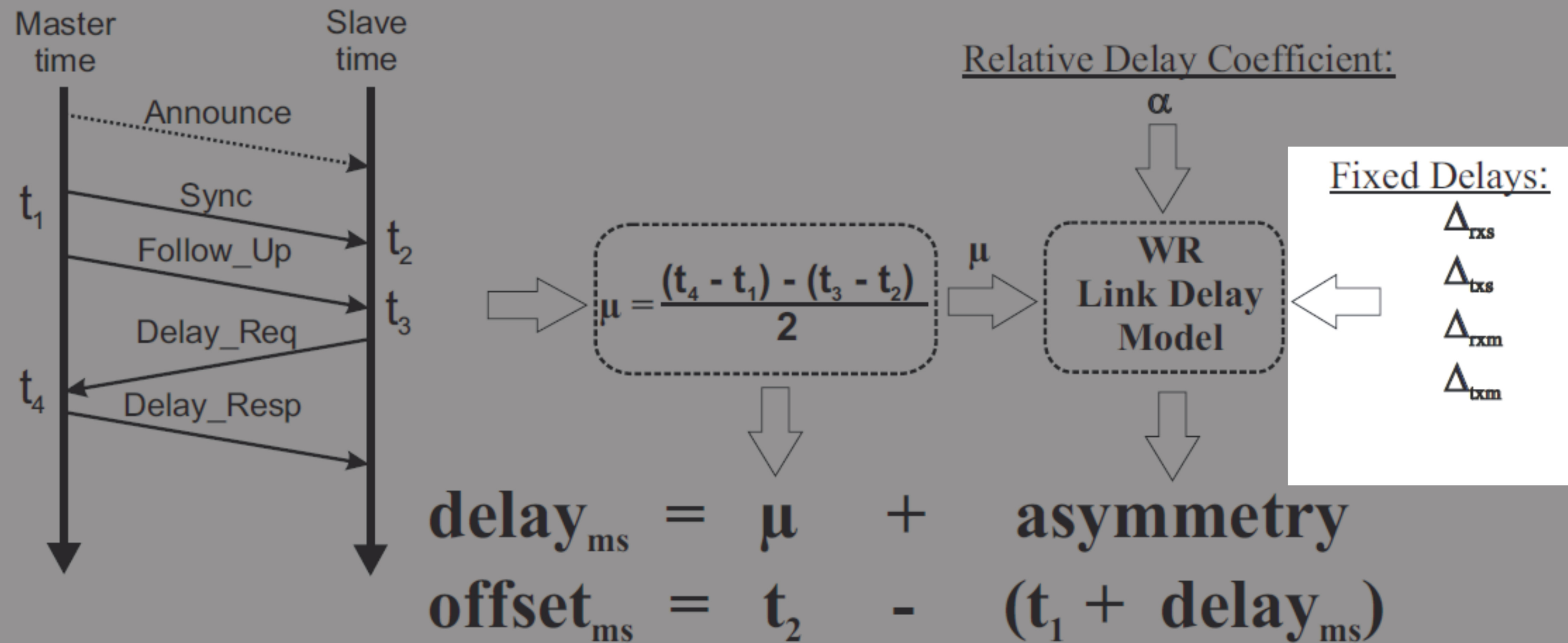
Solution for Ethernet over a Single-mode Optical Fiber

$$asymmetry = \Delta_{tx_m} + \Delta_{rx_s} - \frac{\Delta - \alpha\mu + \alpha\Delta}{2 + \alpha}$$