Initial State Machines for IEEE 802.1AS

Geoffrey M. Garner
SAMSUNG Electronics (Consultant)

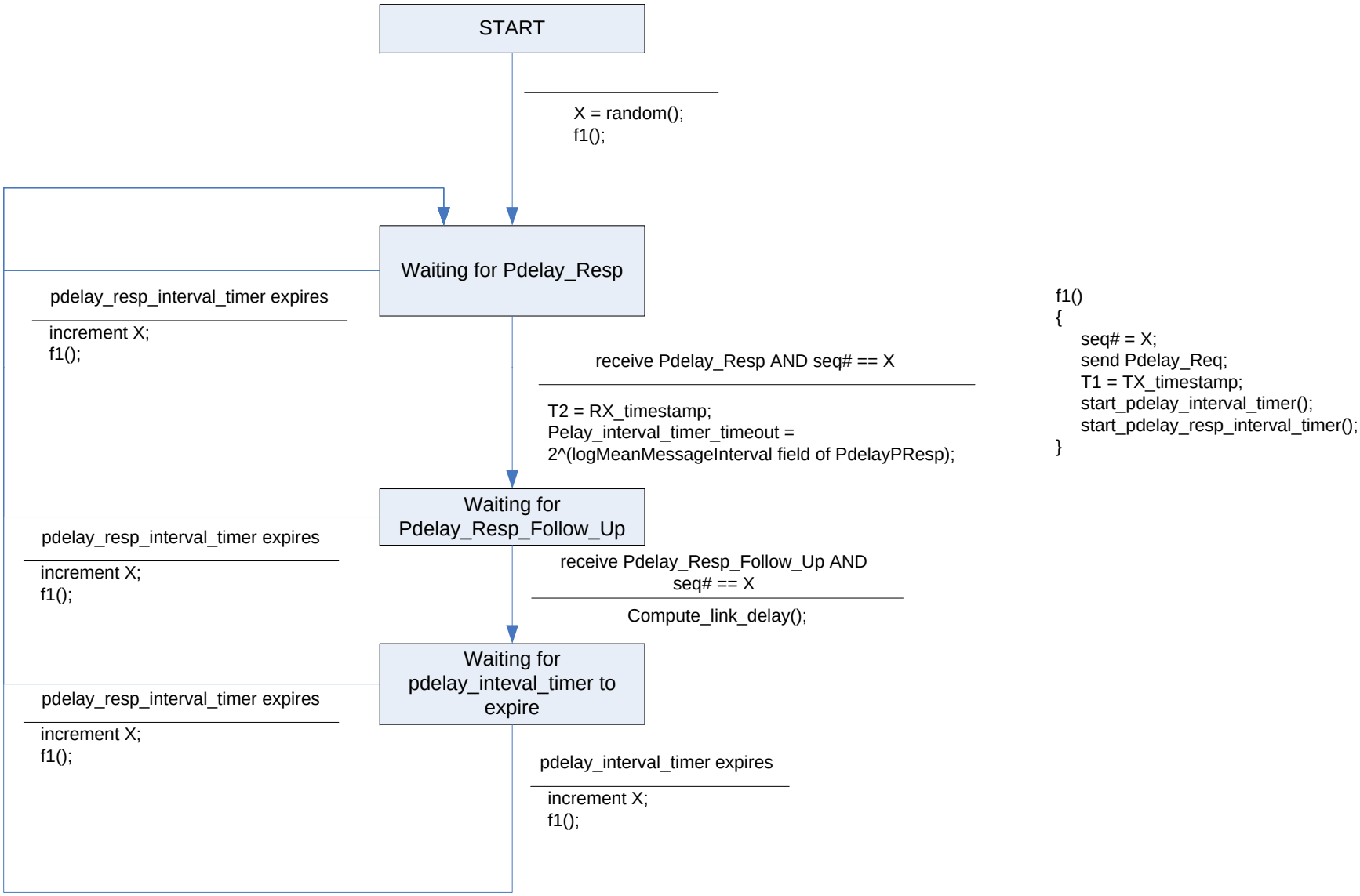
IEEE 802.1 AVB TG
2007.03.05

gmgarner@comcast.net

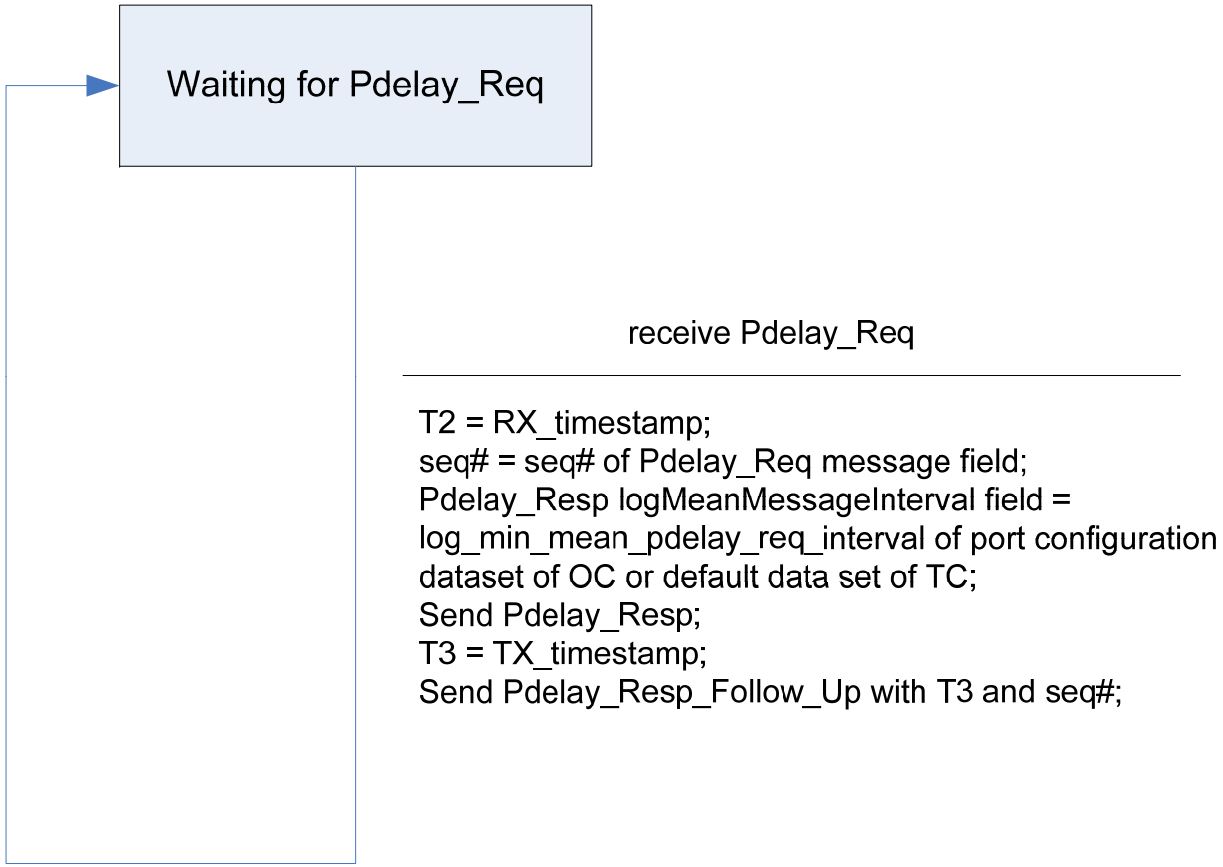
Summary

- Pdelay requestor state machine
- Pdelay responder state machine
- State machine for receipt of Sync and Follow_Up by transparent clock (TC) port
  - Includes the constraint proposed in the AVB TG that the TC need only look at one port at a time for incoming Sync and Follow_Up messages
    - This gives rise to the notion that at most one port is in the “active” state at any one time
    - The TC node state machine is needed to signal to ports when the current active port becomes inactive or when a port becomes active
- TC node state machine
- State machine for receipt of Sync by ordinary clock (OC)
- State machine for sending of Sync by ordinary clock (OC)
- State machine for sending and receiving of Announce by OC
  - Simplified version – covers states that occur in steady-state operation (e.g., startup and faulted conditions are not yet included)

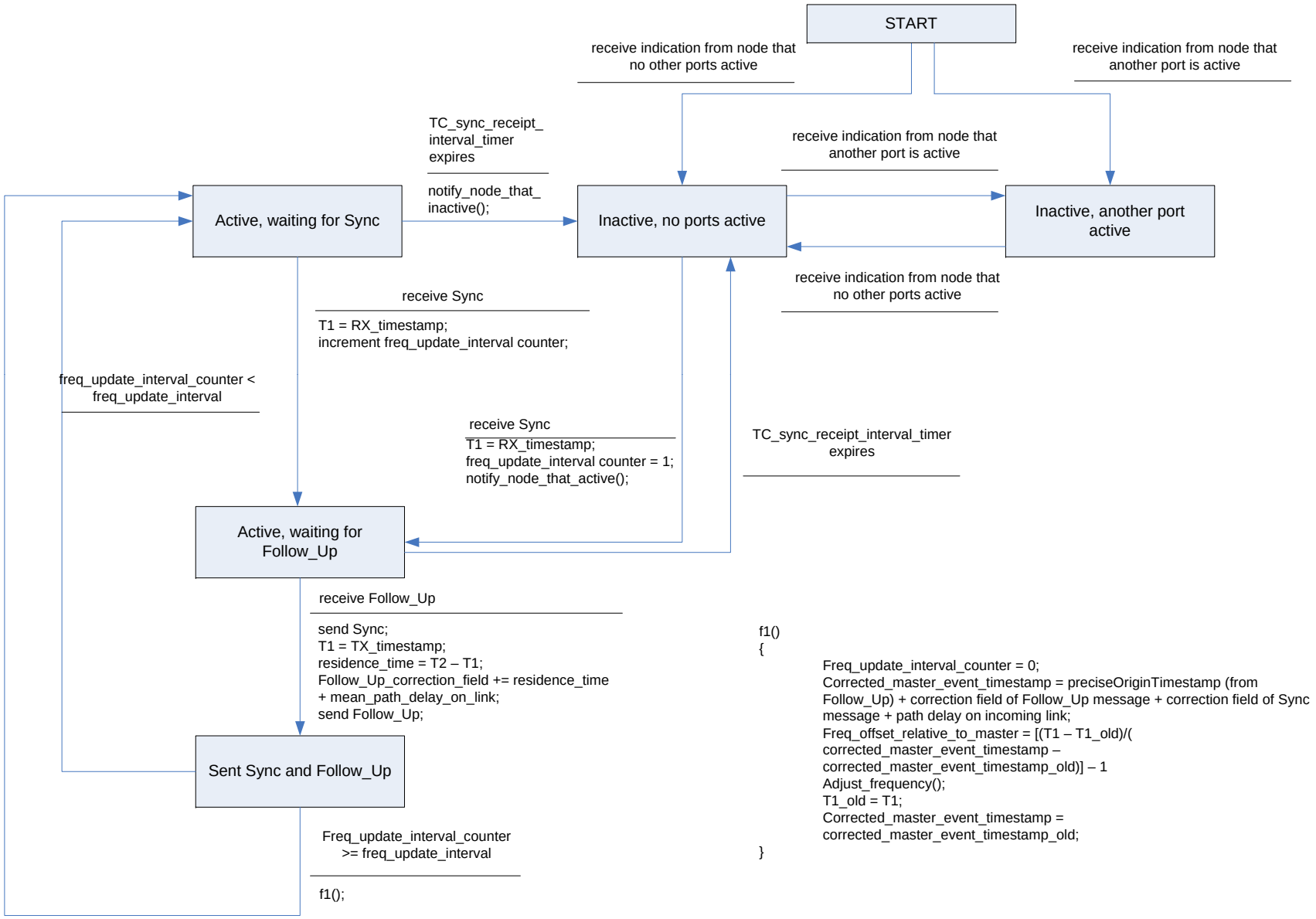
Pdelay Requestor State Machine



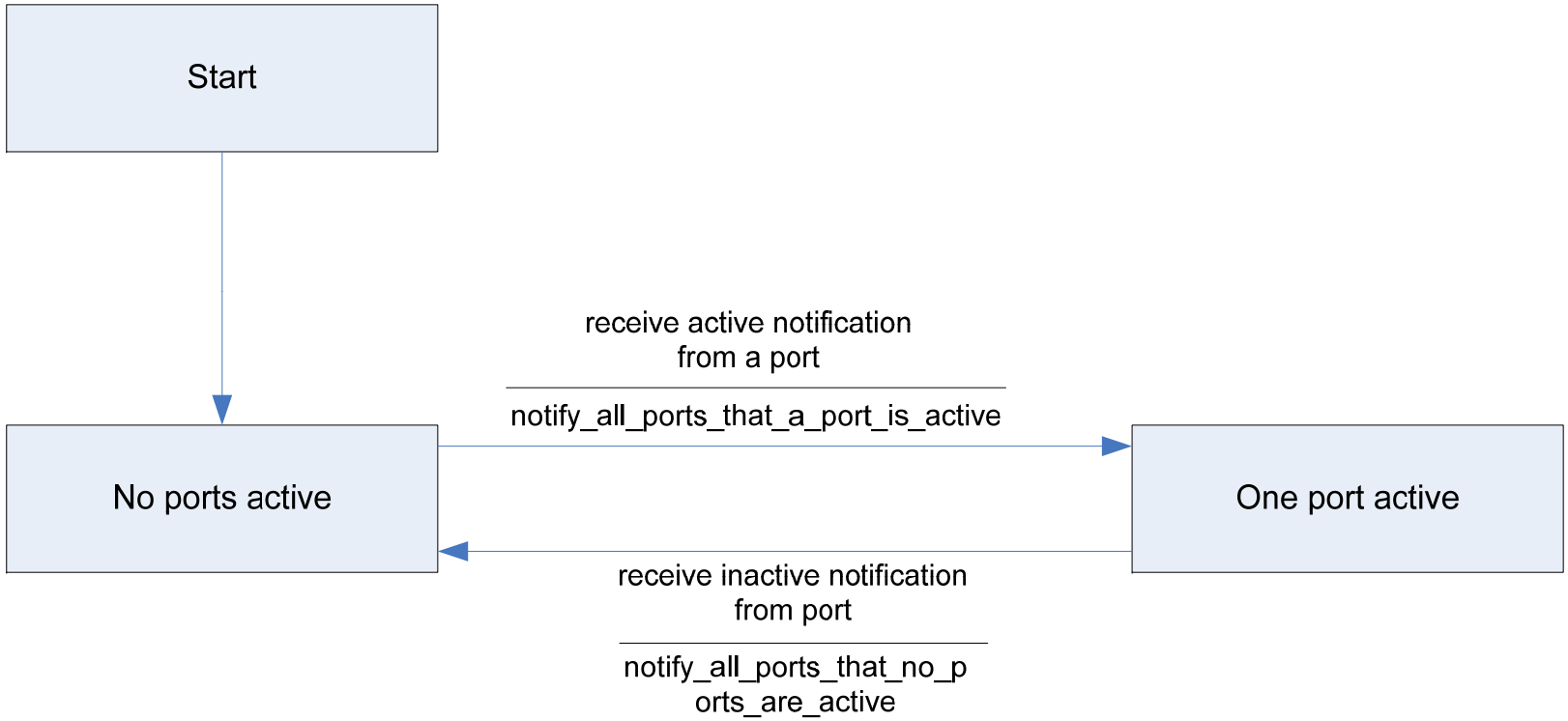
Pdelay Responder State Machine



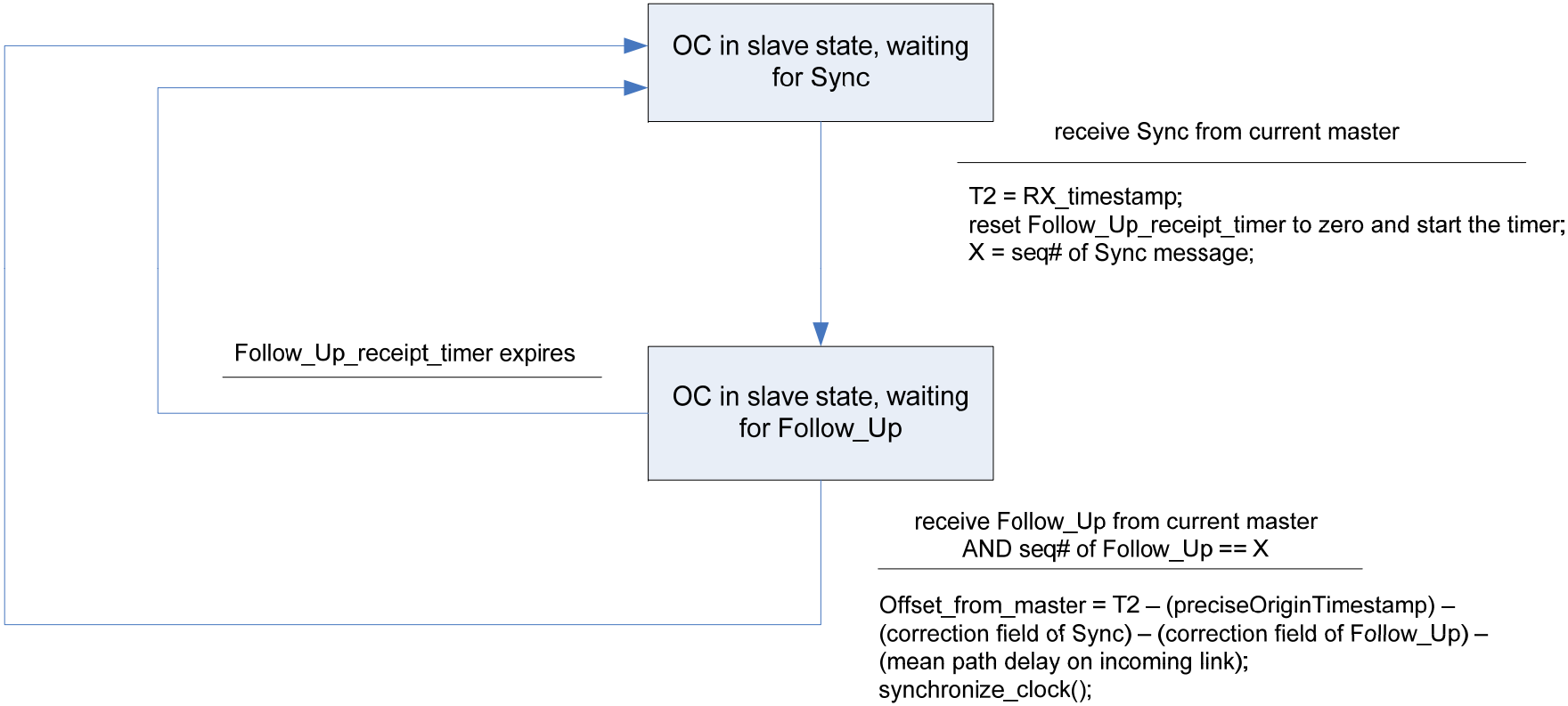
State Machine for Receipt of Sync and Follow_Up by TC port



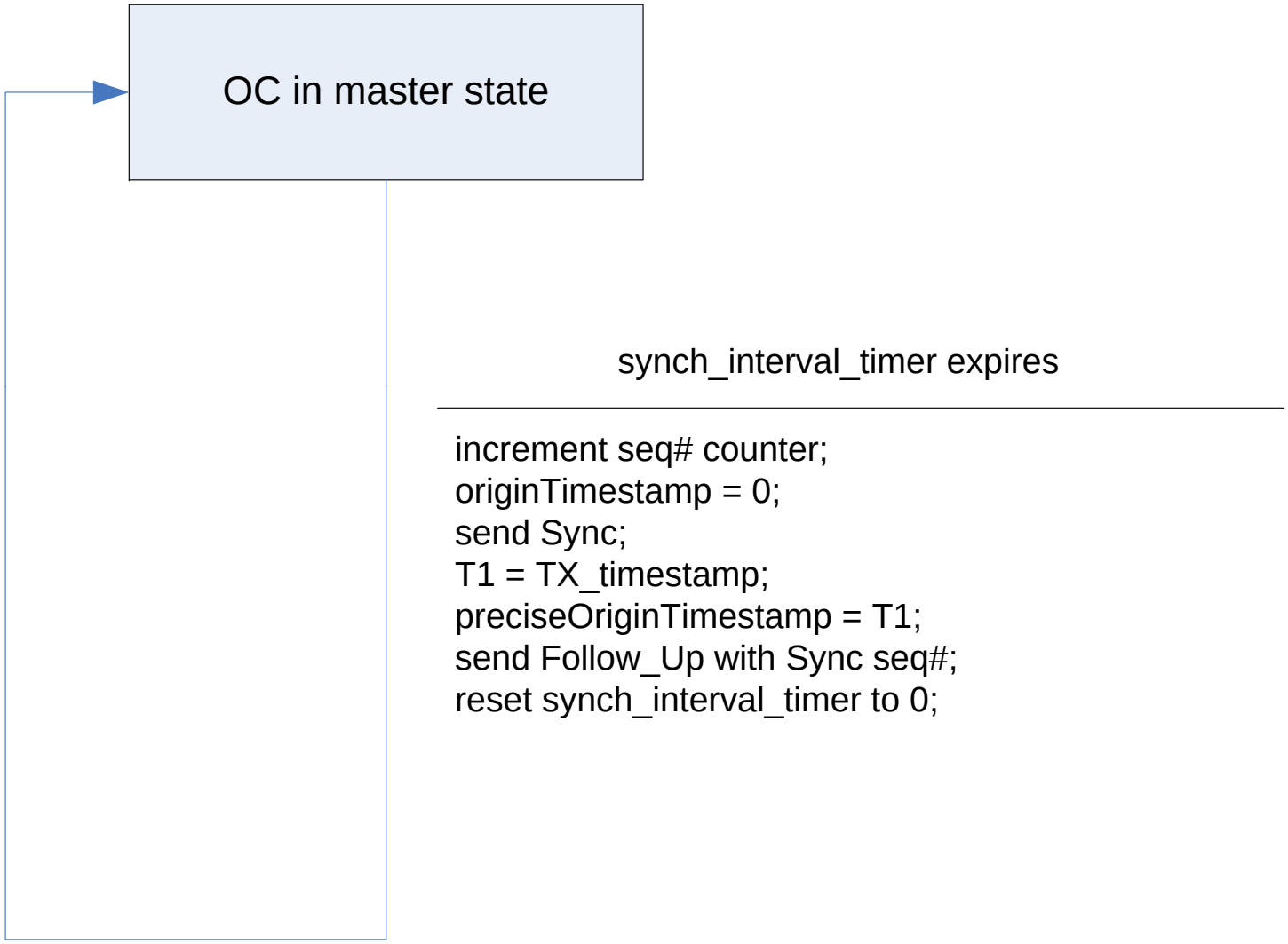
TC Node State Machine



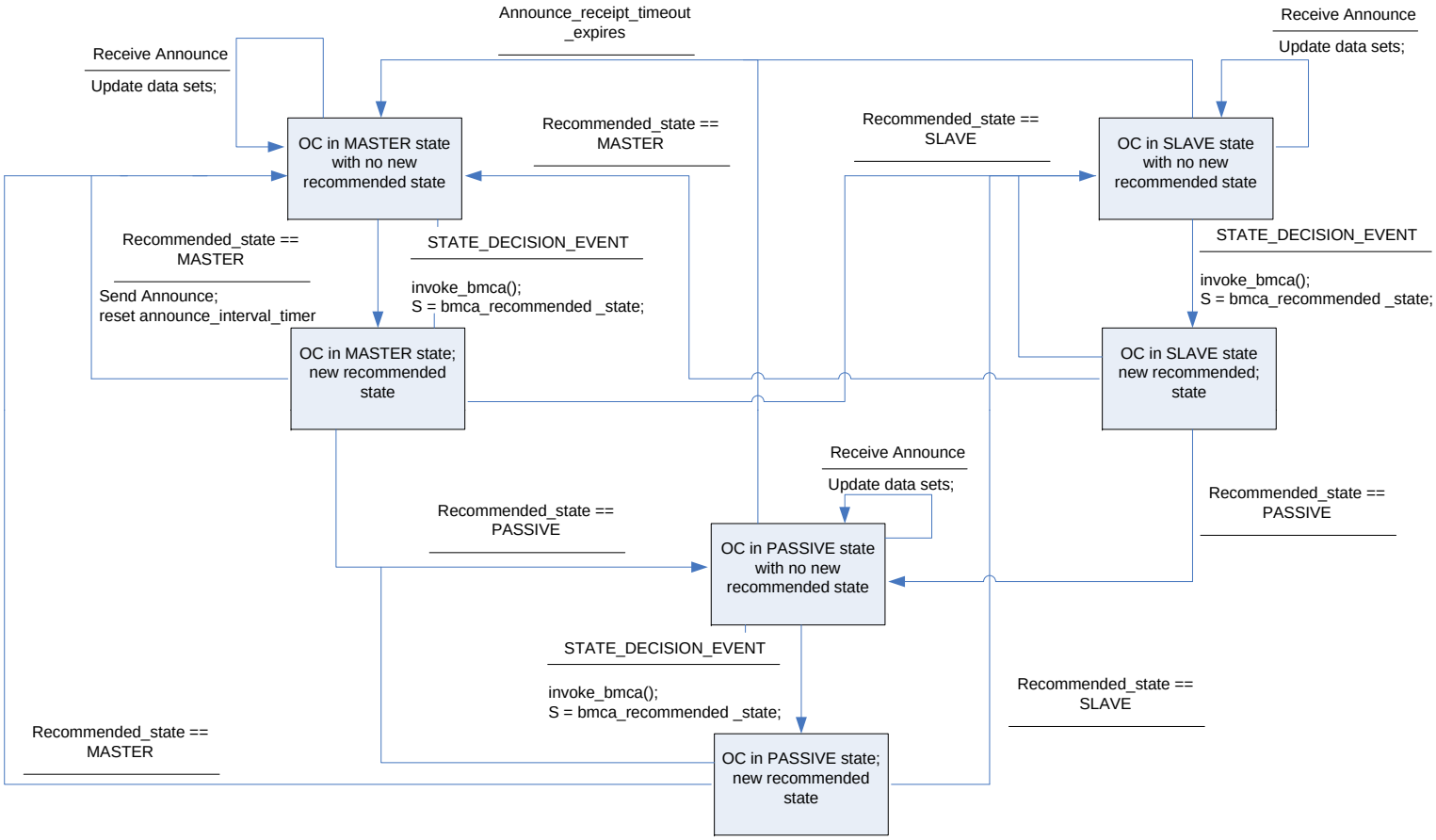
State Machine for Receipt of Sync by OC



State Machine for Sending of Sync by OC



State Machine for Sending and Receiving of Announce by OC



STATE_DECISION_EVENT shall occur once per Announce interval

- for MASTER, can occurs when Announce interval timer expires (just before sending Announce message)

- for SLAVE and PASSIVE, when a timer whose threshold is equal to the Announce interval expires.