



Proposed Modifications to IEEE P802.3az/D0.9 Clause 40

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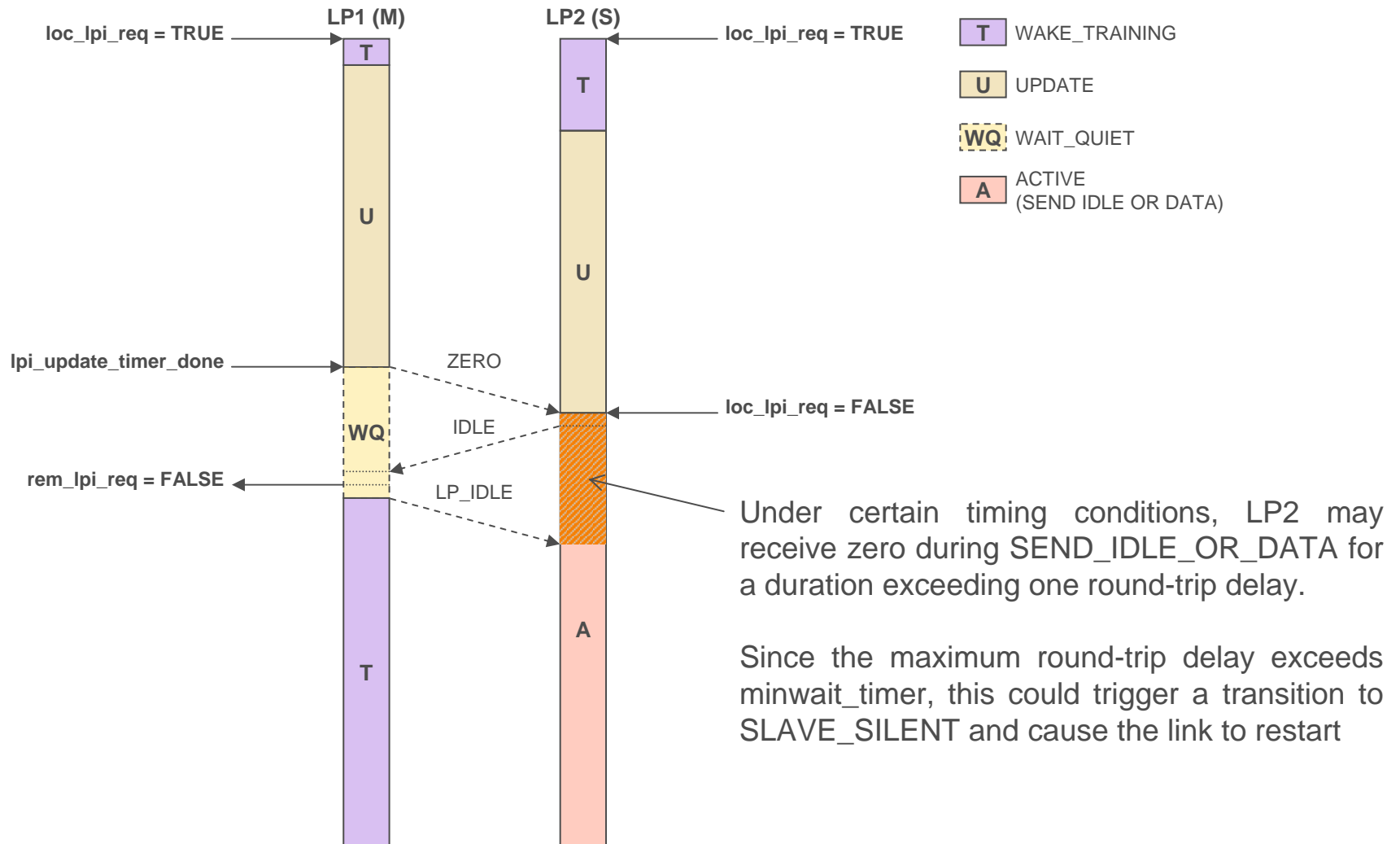
**IEEE P802.3az Task Force Meeting
Seoul, KR
September 2008**

Motivation

- It has been pointed out* that, per the current PHY Control state diagram, there is a possibility that the local device could receive zero during SEND_IDLE_OR_DATA when the local device de-asserts loc_lpi_req during UPDATE but the link partner transitions to WAIT_QUIET prior to receiving the notification
- Under certain timing conditions, the duration of zero could be on the order of the round-trip delay, leading to a link restart
- Also, it has been pointed out that the roles of SLEEP and UPDATE are similar so they may be consolidated into a single state
- This is reinforced by the fact that lpi_sleep_timer has recently been assigned a range similar to lpi_update_timer

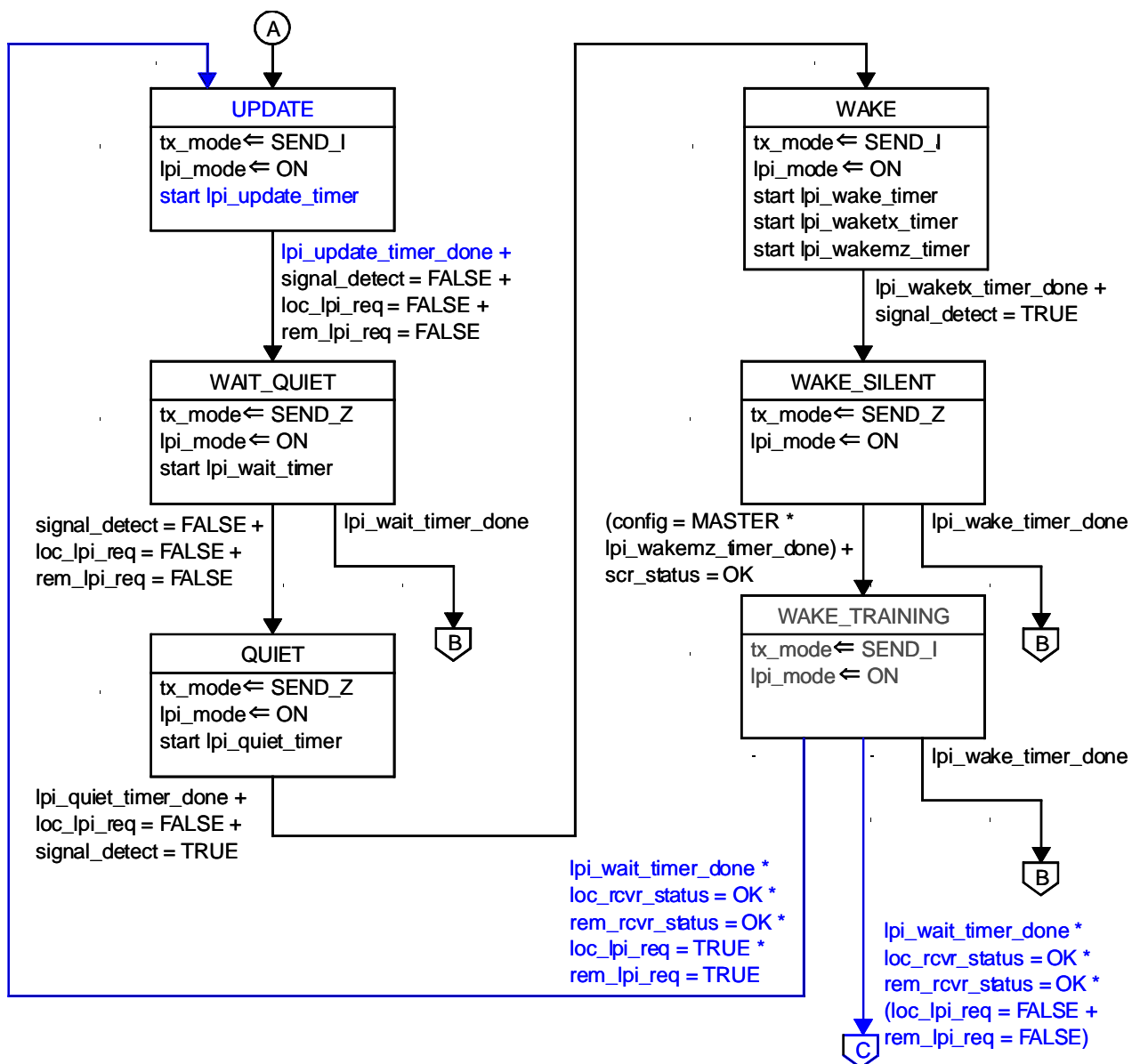
* Joseph Chou, Realtek

Motivation: Wake from Refresh



Corrective actions

- Consolidate SLEEP and UPDATE states
- Transition back to SEND_IDLE_OR_DATA from WAKE_TRAINING rather than UPDATE
- Refinement of transition conditions



Supporting edits

- **40.4.2.4:** Upon activation of the low power mode, the PHY Control asserts `tx_mode = SEND_I` for period of time defined by ~~`lpi_sleep_timer`~~`lpi_update_timer` which allows the remote PHY to prepare for the transition to the `WAIT_QUIET` state. When ~~`lpi_sleep_timer`~~`lpi_update_timer` expires, PHY Control asserts `tx_mode = SEND_Z` and transmission ceases.
- **40.4.5.2:** Delete `lpi_sleep_timer`



Questions?