

Consideration of max_wait_timer

Comment # 315

Xuebo Wang, Guangcan Mi
Huawei

Background

- ILT function defined in Annex 178B relies on the training control state diagram.
- Necessity of timers during training has been widely discussed via a list of contributions:
 - [slavick_3dj_01_2501](#)
 - [ran_3dj_02a_2505](#)
 - [slavick_3dj_02_2507](#)
 - [lusted_3dj_02a_2509](#)
- max_wait_timer was added in D2.2 draft to limit the time spent from TRAIN_START to ISL_READY.

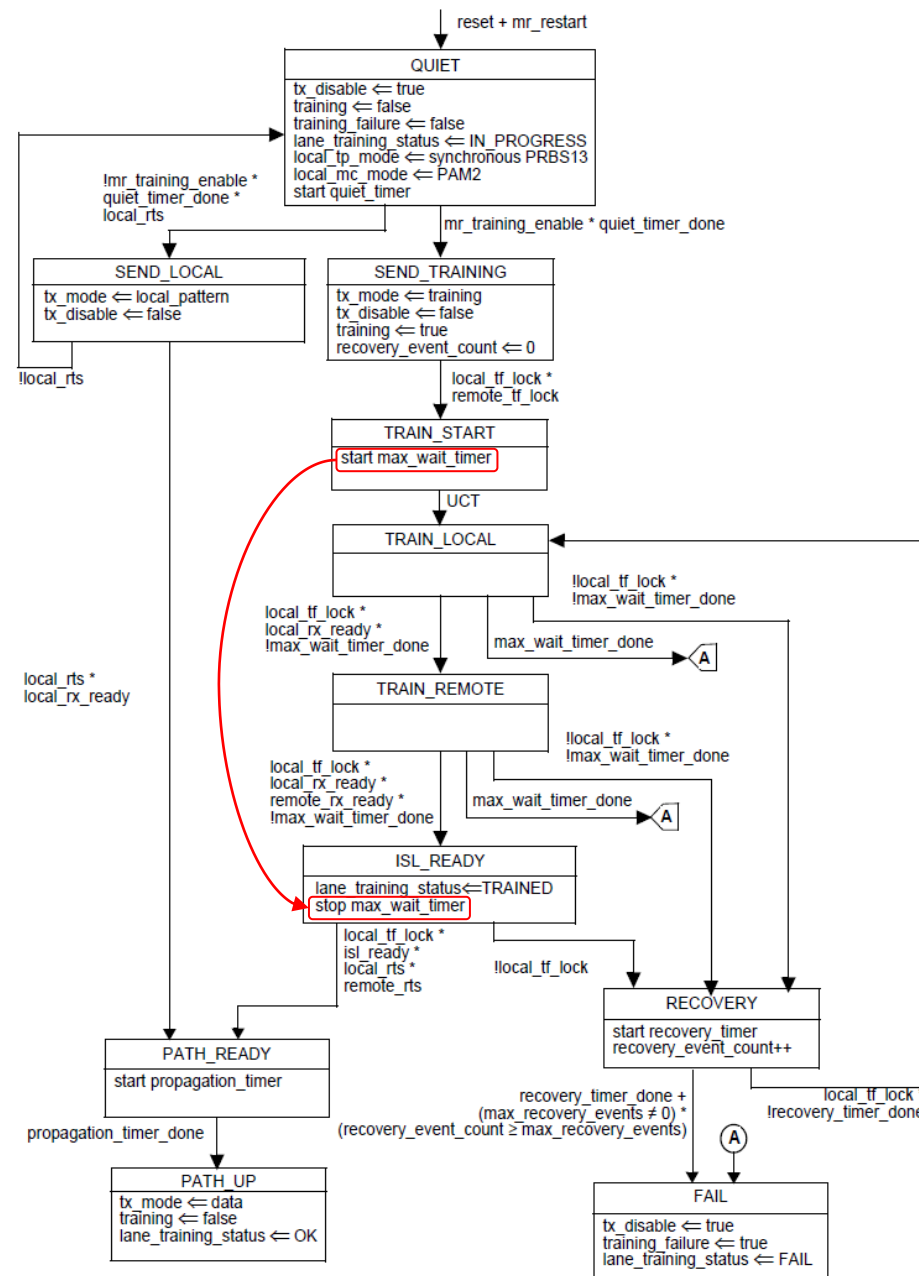


Figure 178B-10—Training control state diagram

Potential Issues of max_wait_timer

Several cases are considered:

- No worries before ISL_READY. Time spent from TRAIN_LOCAL to ISL_READY with potential recovery is included.
- Once entering ISL_READY, **no timer used to bound ISL_READY→PATH_READY**. If local_rts or remote_rts keeps false due to disconnected interfaces or interruption on other ISLs,
 - **Path start up cannot be achieved before debugging.**
 - **A dead loop may exist** when training frame lock is often lost and its recovery time never exceeds the limit of recovery_timer with max_recovery_events = 0.**(ISL_READY→RECOVERY→TRAIN_LOCAL→...→ ISL_READY)**

How to solve these issues?

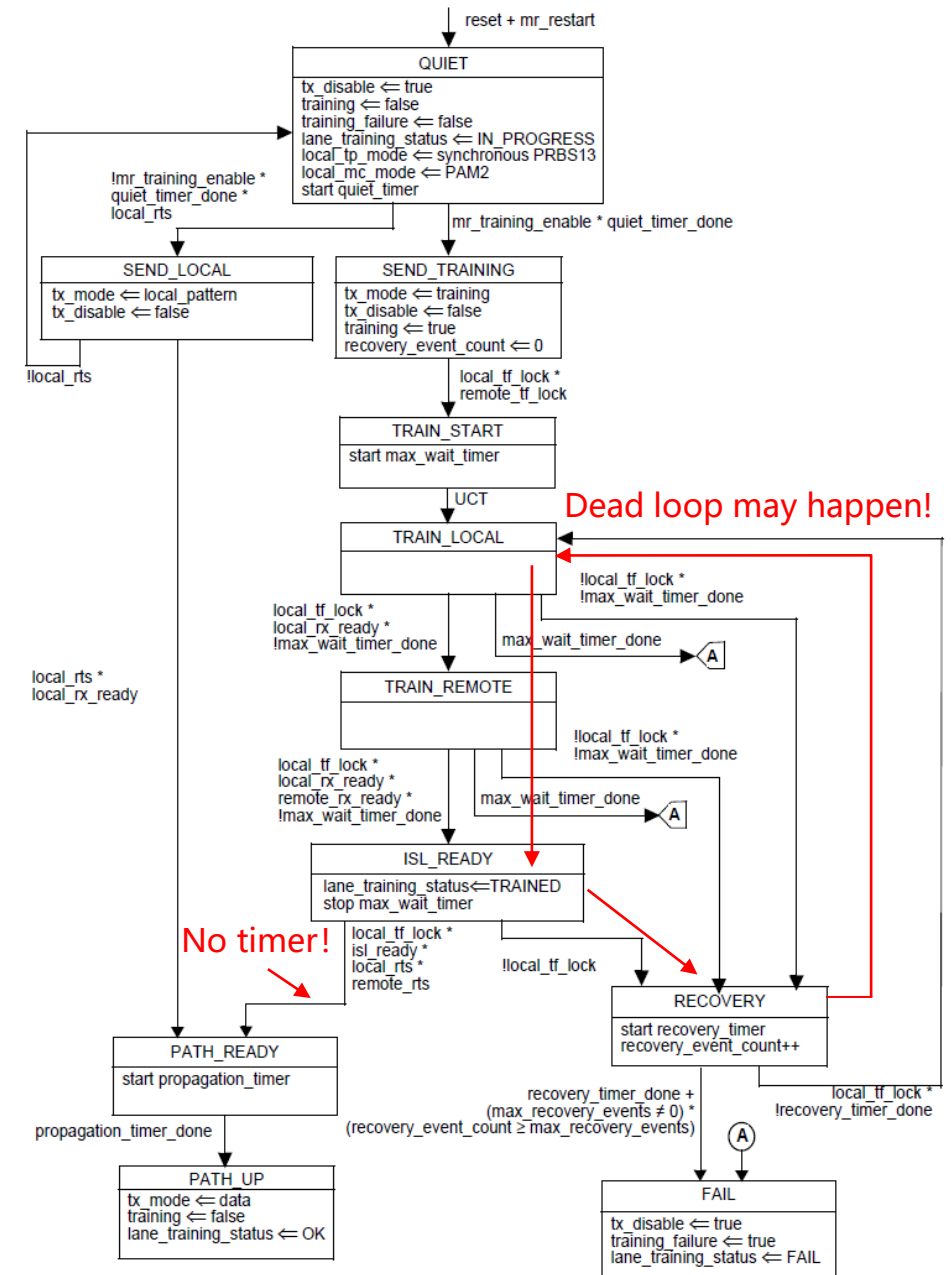


Figure 178B-10—Training control state diagram

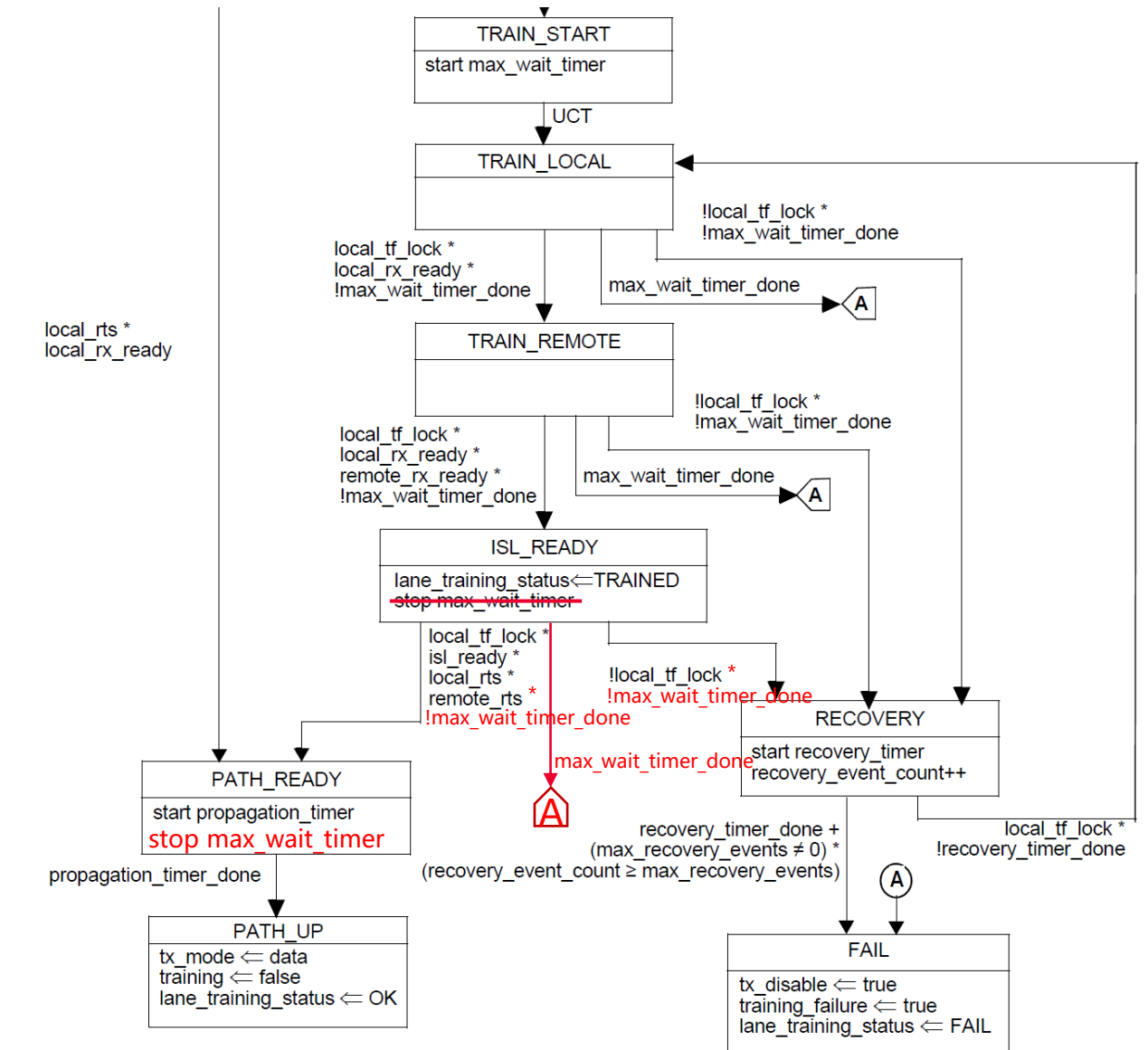
Possible Solution

Changes:

- Stop max_wait_timer in PATH_READY instead of ISL_READY.
- Add “!max_wait_timer_done” condition for the transition from ISL_READY to PATH_READY or RECOVERY.
- Add new transition from ISL_READY to FAIL when max_wait_timer_done = true.

Advantages:

- Indicate users to debug if ISL_READY → PATH_READY has timeout to FAIL.
 - Training will restart only after debugging.
- max_wait_timer_done makes effect for all possible recovery loops.
- Minimum change to FSM.



Summary

- When local_rts or remote_rts keeps false due to disconnected interfaces or interruption on other ISLs, path start up cannot be achieved and a dead loop may exist.
- Timeout for ISL_READY → PATH_READY is helpful, indicating users to debug what happens in the path. Training shall restart after debugging.
- Proposal to solve the issues have been presented per slide 4.

Thanks!