APSU fail action

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APSU FAIL state

- In the “Training control state diagram” there is no indication how to exit the FAIL state.
  - The expectation is that the management takes care of the situation
- Lack of explicit specifications may lead to interoperability issues

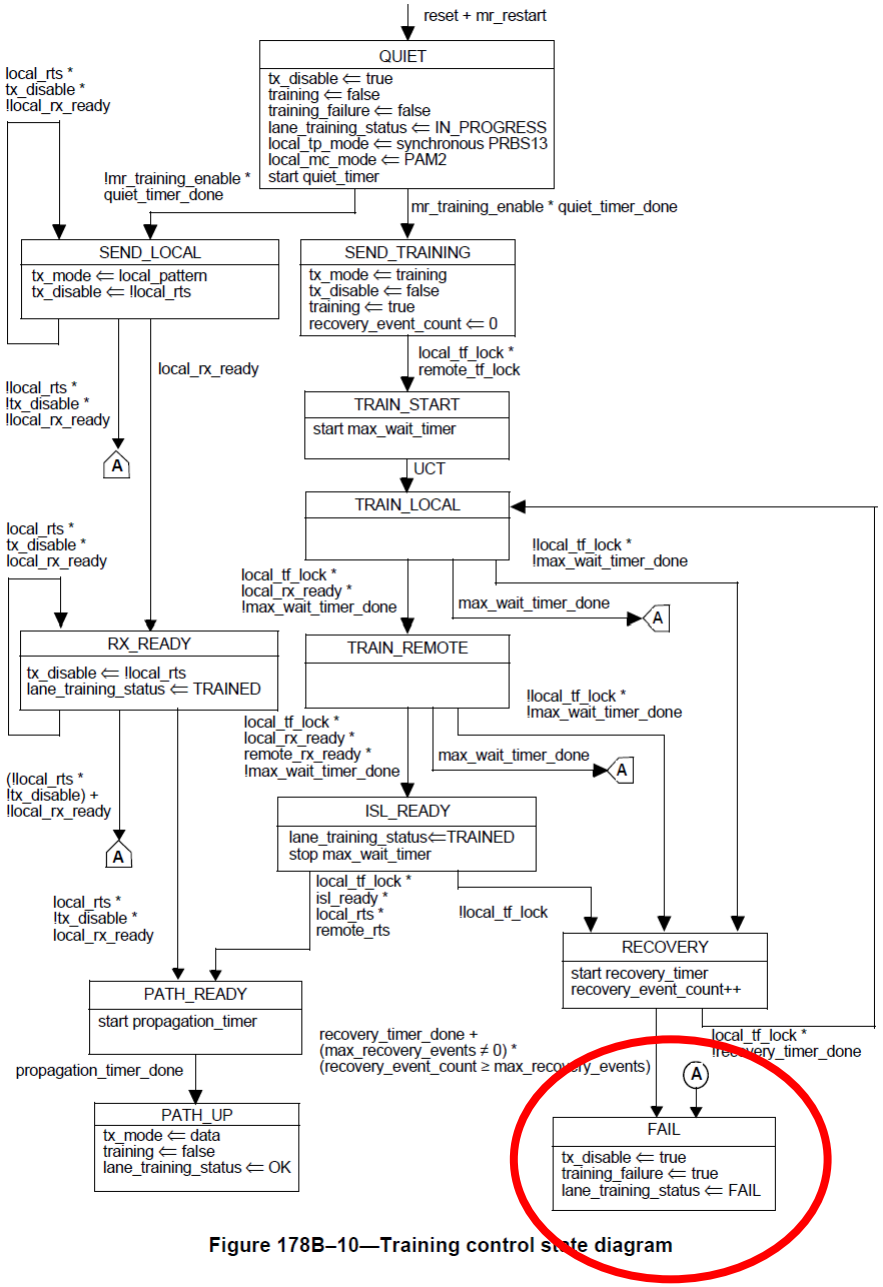


Figure 178B–10—Training control state diagram

Expected behavior

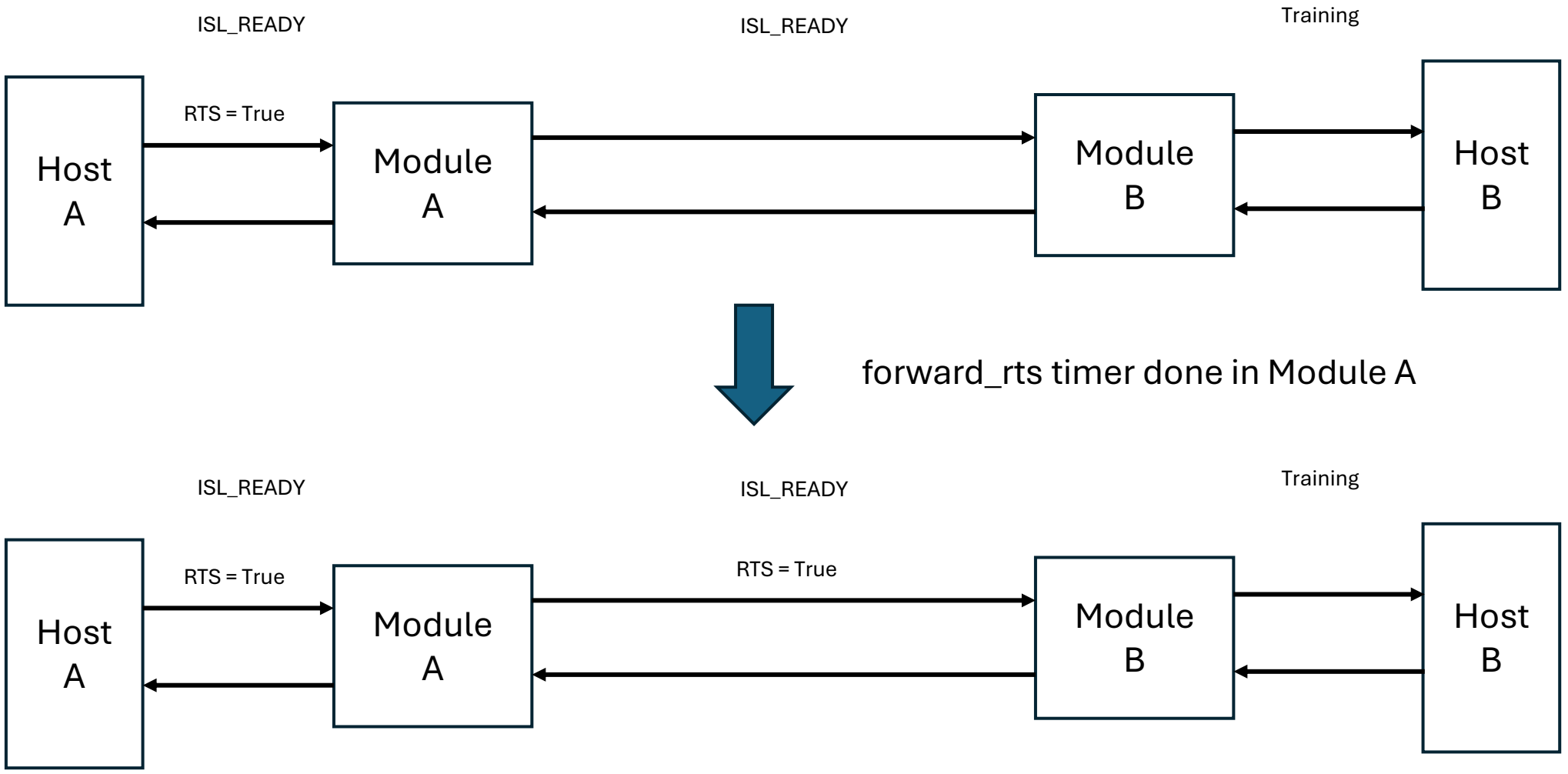
- If interface A of an ISL loses TF lock (local_tf_lock = false) and reaches the FAIL state in will set tx_disable = true
- Interface B (the peer interface in the ISL) will be either in the TRAIN_LOCAL, TRAIN_REMOTE or ISL_READY states waiting for responses from side A
- Interface B will lose TF lock (loss of signal) and also reach the FAIL state
- Management will need to decide if and when to restart APSU
- This is addressed by a note in D3.0:
  - *NOTE — There is no specified time limit for the APSU. Restarting APSU might result in live-lock situation, thus APSU should only be restarted if there is an indication of an unrecoverable fault. The definition of unrecoverable fault is beyond the scope of this standard.*
- It is not clear if reaching the FAIL state is an unrecoverable fault
- The live-lock situation may occur if an ISL in the path is already in the PATH_READY state
- This live-lock situation is resolved by the APSU restart proposal
  - See separate contribution

Proposal

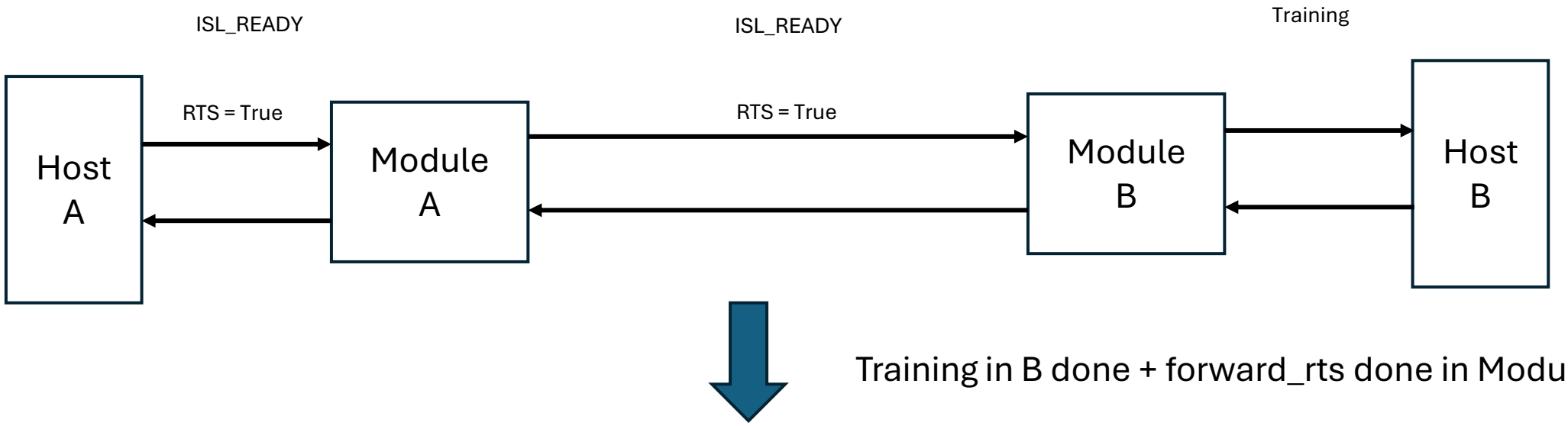
- Add text to the note, or add a new note:
  - Recovery from FAIL state requires management to assert mr_restart_training or reset. The timing for this recovery is implementation dependent.

Backup

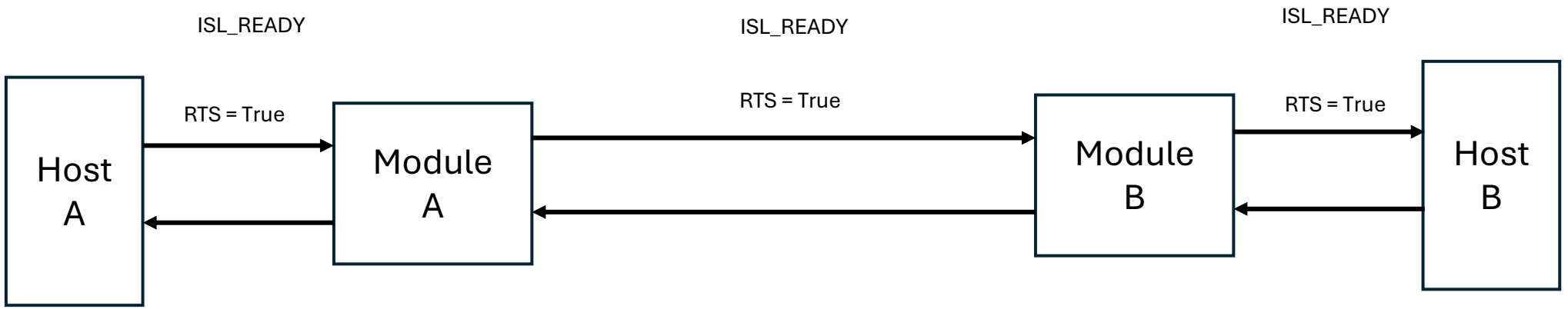
Live-lock situation - 1



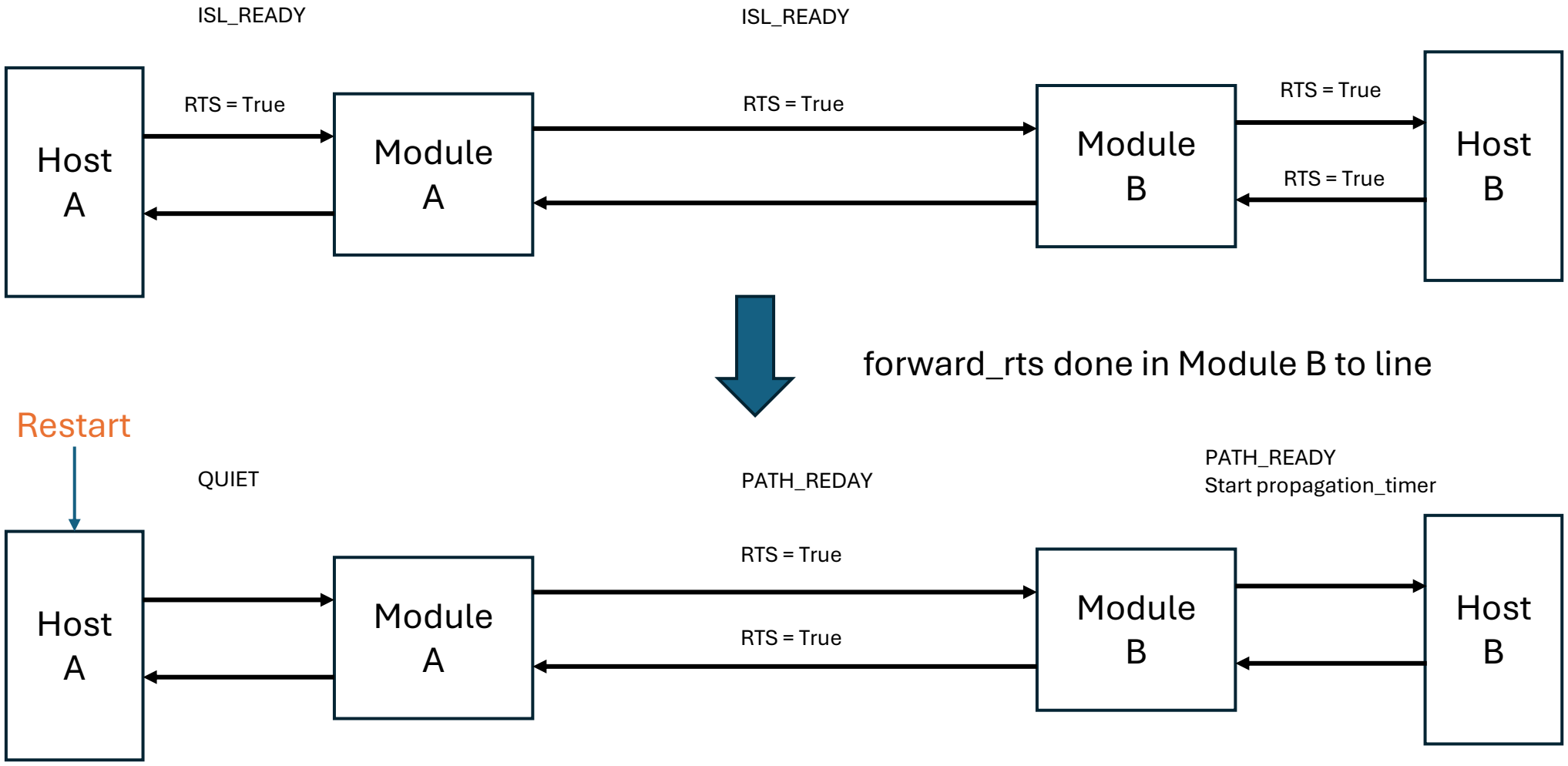
Live-lock situation - 2



Training in B done + forward_rts done in Module B to host



Live-lock situation - 3



- Host B will move to PATH_UP after propagation_timer expires
- Host A will wait for ILT frames to move from QUIET state to SEND_TRAINING state