Link Startup Time Specification

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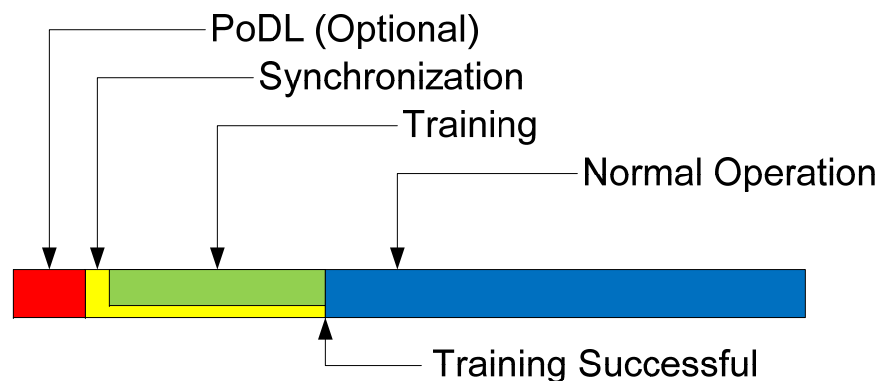# Agenda

▶ **Nature of Issue**

▶ **Suggestions on how to specify startup time**

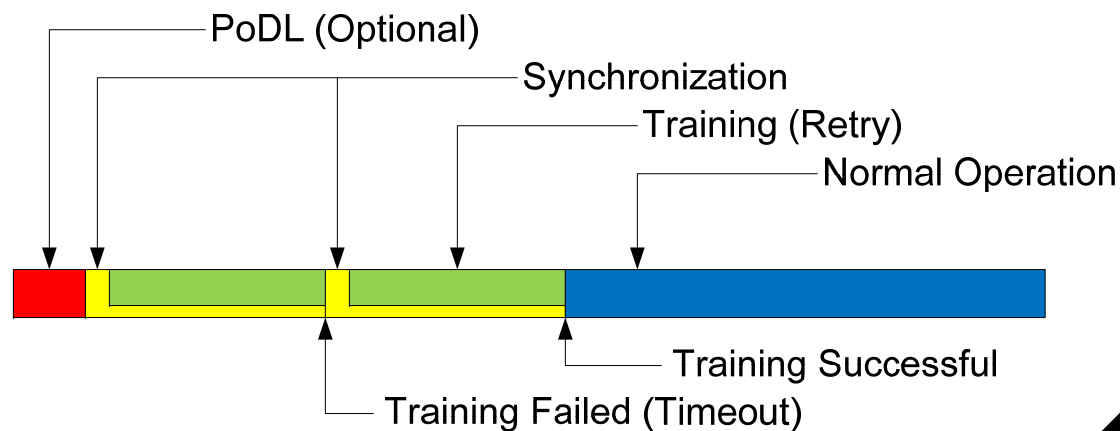# Link Retry Necessary

▶ **Lo_3bp_03_0514.pdf shows 10GBASE-T link training has less than 100% probability of finishing in any given attempt**

▶ **1 Attempt**

PoDL (Optional)
Synchronization
Training
Normal Operation

Training Successful

▶ **2 (or more)**

PoDL (Optional)
Synchronization
Training (Retry)
Normal Operation

Training Successful

Training Failed (Timeout)

Link Retry Necessary

▶ **1000BASE-T1 likely to have same issues**

  ▪ **Shorter startup time < 100ms vs. 2.0 – 2.5s for 10GBASE-T**

  ▪ **Noisier environment**

▶ **It is not realistic to specify link training:**

  ▪ **Completing under 100ms 100% of the time**

  ▪ **Under any and all conditions**
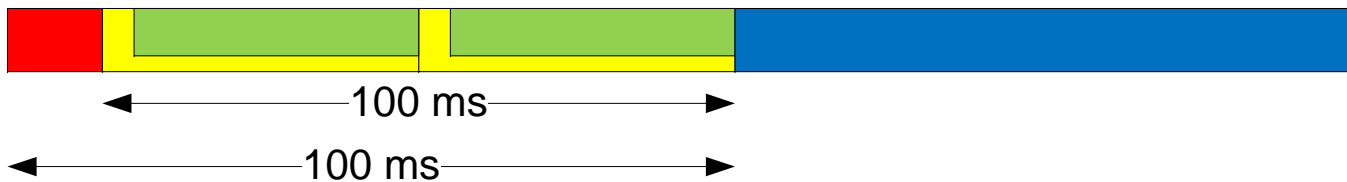
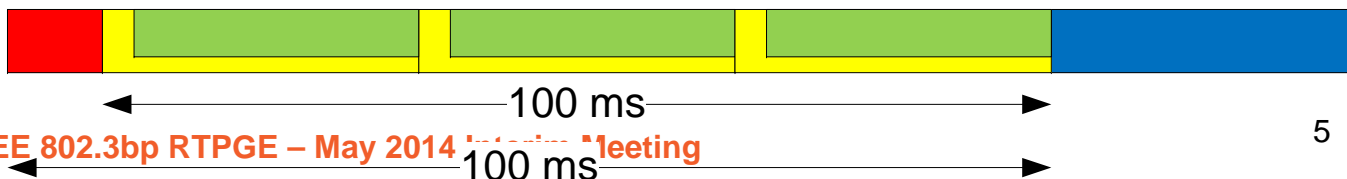# What does 100ms start up time encompass?

▸ **After power up?**

▸ **Include power up time?**

▸ **Include all link training attempts?**

▸ **Where does it stop?**

How to Specify

‣ **First – Agree on whether power up time is included**

  ▪ **If so then what is the time allocated for PoDL**

Some startup time options

▶ **Specify N attempts < 100ms**

- **Pro: Simple to understand and measure**
- **Con: Potentially less robust training due to less time for all attempts, no guarantee % of success**

▶ **Specify minimum % of successful attempts < 100ms under given condition**

- **Pro: Give up to maximum time to link up for all attempts, potentially more robust training, some performance guarantee**
- **Con: Need to specify condition and %, may be more difficult to setup/measure**

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THANK YOU