802.3 PoE Plus Classification

By Derek Koonce
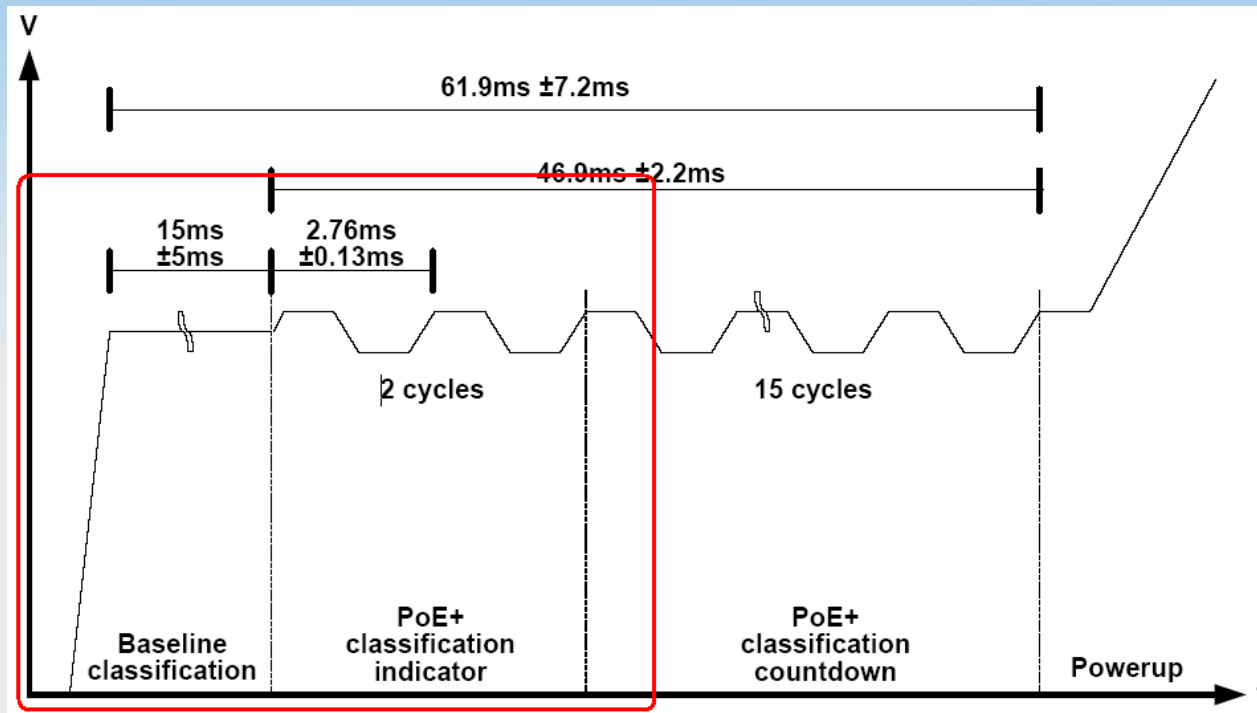
Combined idea inspired by:

- Matthew Landry, Silicon Magike
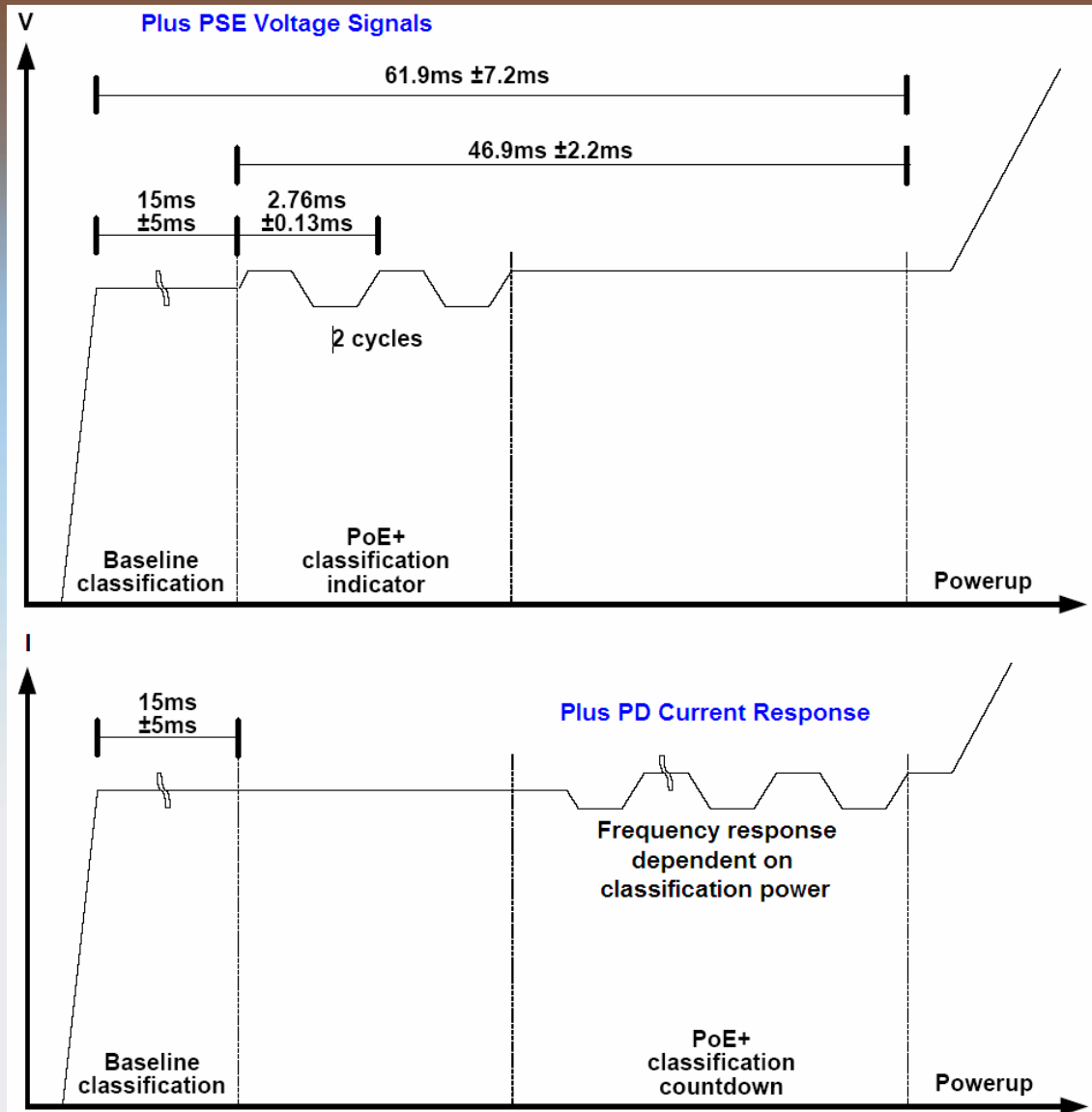- Steve Robbins, IXIA

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POE Plus PSE Operation

- Operation signals it is a Plus PSE
- Without oscillation, PD sees a .af PSE

PoE Plus PD Operation

- During initial classification, watches for oscillation
- Responds with oscillation for detailed classification request
- Plus PSE can count oscillations in a certain period to determine frequency and thus power requirement
- Standard PSE sees dc current draw per .af specification

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PoE Plus PD signals

Combined Classification Summary

- Complexity needs to be added to both sides; this evens it out
  - Plus PSE needs to add initial oscillation and detection of responding oscillation
  - Plus PD needs to detect initial oscillation and add low-cost oscillator that uses one extra pin to program frequency
- Provides complete two-way confirmation of PoE Plus

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Discussion