IEEE 802.3dg 100BASE-T1L: Downshift/Upshift

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Background

- Concepts previously presented in:
  - May 2024: IEEE 802.3dg 100BASE-T1L: Downshift - part 2
  - May 2022: Downshift

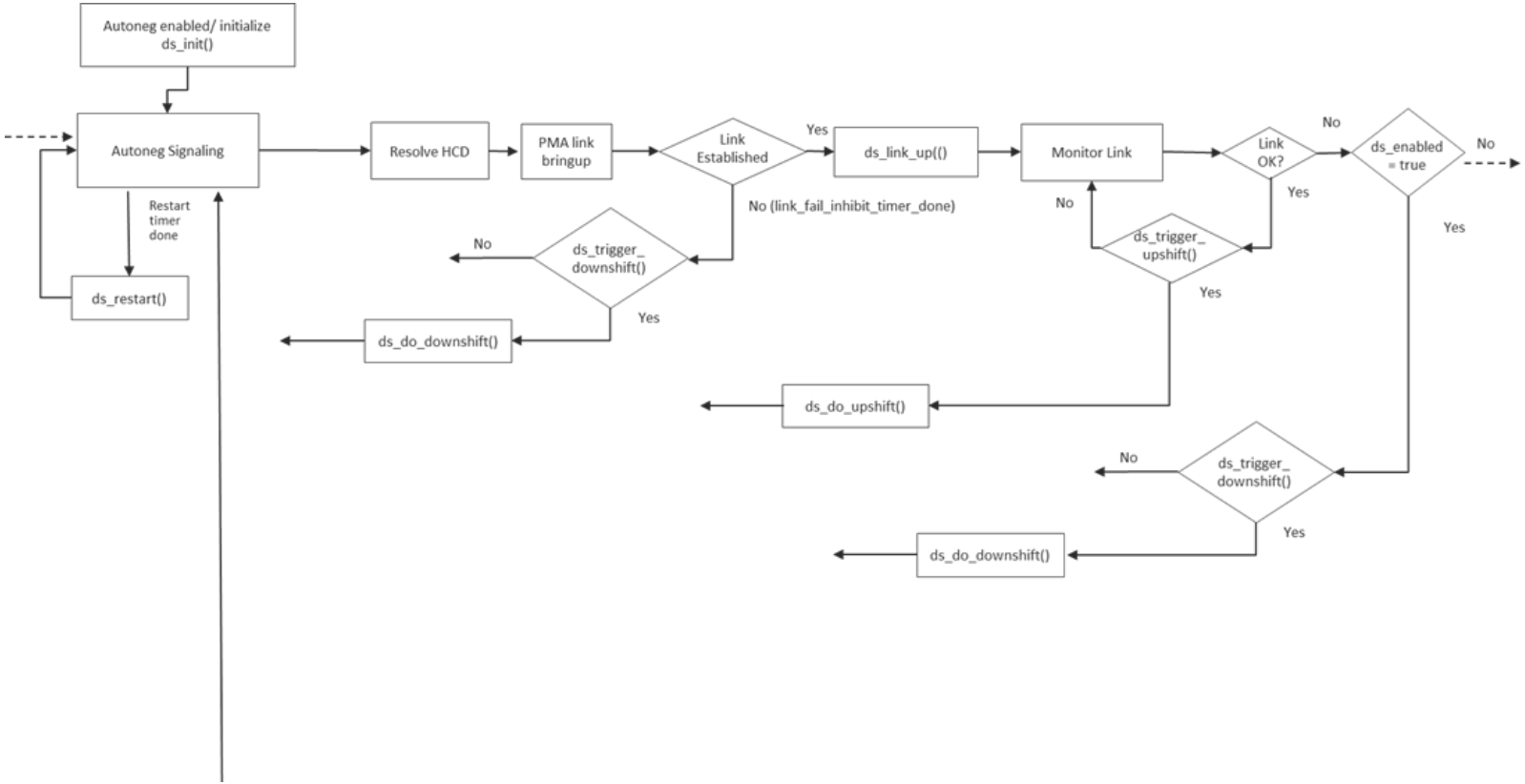
Downshift/Upshift and BASE-T1L

- The BASE-T1L PHYs are intended to be used in noisy environments.
- Link segment specifications for 100BASE-T1L are more stringent than 10BASE-T1L.
- The link quality can vary over time for many different factors. Some may be persistent and some may be transitory.
- Downshift/Upshift allow for:
  - Going down from HCD (Highest Common Denominator) when the link can't support a given speed (i.e., the link does not come up or fails more than a set number of times in a set period)
  - Going up back up in speed when the link has been stable for a set period, period.
- Review jones_3dg_july_2025_02.pdf for full details.

Changes proposed

- All substantive changes are in clause 98.5 - Single Pair Auto-Negotiation functions and state diagrams
- Supporting changes are in:
  - Clause 98.6 - Single Pair Auto-Negotiation PICS
  - Clause 45 – Table 45–378 MDIO and 45.2.7 Auto-Negotiation registers
  - Clause 30 - Table 30–1a—Capabilities and 30.6 Management for link Auto-Negotiation

BASE-T1L Downshift Flow Chart (illustrative)



Actions

- Review the proposed text
- Find areas of “weakness”
- Test the consensus of the group for adopting this in comment resolution for D2.0
- Figure out changes required to the proposed text so it would be acceptable to come in as a comment

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Thanks!