

VITESSE

Backplane Ethernet Auto-Negotiation

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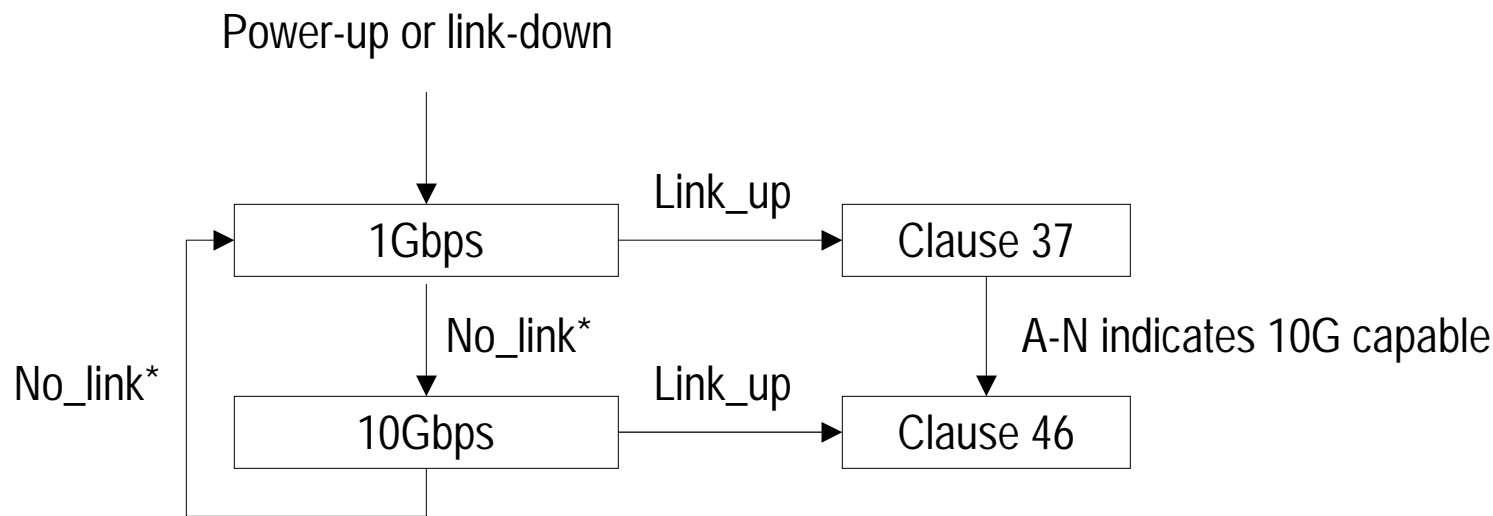
YOUR PARTNER FOR SUCCESS

- ▶ Requirements:
 - ▶ Ease of use (plug-n-play)
 - ▶ Backward compatible with existing 1G and 10G solutions
 - ▶ Support both single-speed and multi-speed devices
 - ▶ Minimum changes to the MAC
 - The MAC will be used in both Backplane Ethernet and existing Ethernet applications

Proposal – keep it simple!

▶ Solution 1G/10G:

- ▶ If the link is 1Gbps – use Clause 37
- ▶ If the link is 10Gbps NRZ – use Clause 46



* Random timer seed for transition from state to state to avoid lockup

- ▶ Works for other coding schemes as well:
 - ▶ If the link is 1Gbps - use Clause 37
 - ▶ If the link is 10Gbps non-NRZ – Startup in 1Gbps and use Clause 37

- ▶ Special case - 1G/10G XAUI/10G serial :
 - ▶ Switch XAUI lane 0 to 1Gbps mode and if in sync – enable Clause 37 Auto-negotiation
 - ▶ Switch to XAUI - If all four lanes are in sync – Run in 10Gbps XAUI
 - ▶ Switch XAUI lane 0 to 10Gbps serial – if in sync – run 10Gbps serial

- ▶ An auto-negotiation protocol can be build on top of existing auto-negotiation protocols and ensure backward compatibility
- ▶ The proposed protocol is
 - ▶ Flexible to support several different serial speeds and codings
 - ▶ Supports both multi-speed devices and single speed devices
 - ▶ Ensure interoperability with existing 1000BASE-X implementations
- ▶ Devices will not be build to address Backplane Ethernet alone
 - ▶ The Clause 28 proposal requires a “parallel detection” scheme to connect to existing 1000BASE-X and 10GBASE-R devices.