10GBASE-TSR

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A Service To Humanity

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Short Reach Mode for 10GBASE-T

Late in the 802.3an development process, it was concluded that the required power *could* constrain adoption rate.

A Short reach mode was proposed.

802.3an (10GBASE-T) specifies a Short Reach Mode (SRM)

- 45.2.1.61.2 PHY short reach mode
  - Defined for 30m reach test channel
  - Identifies the PHY operating in SRM
  - No means to Auto-Negotiate
  - Relatively un-used for lack of proper AN definition
  - *Did not anticipate broad adoption of Top-of-Row architectures and thus no lower-power 10m mode*

A “Service To Humanity”

The term has been used in the past to refer to work that should have been done, and was subsequently picked up by a later Task Force.

Typically, very limited in scope

- Example: Modifications to an Annex

Typically, related in some way to the existing project

- Example: BASE-T

Why do it?

- Reduce power beyond EEE
- Provide for higher density/lower cost TOR switches
- **Accelerate adoption of 10GBASE-T**

Proposal

The “Next Generation BASE-T Study Group” recognize an opportunity to address 10GBASE-TSR is before us.

- Create an Extended Next Page definition that provides for Short-Reach support (annexes to Clause 28)
  - Include a “Link Not Supported” bit to communicate a PHY’s determination that it cannot support the channel it is attached to at a given speed.
- Modify Annex 55B to provide informative tables for 10m cable parameters
- Consider Short-Reach-Mode for 40GBASE-T as well
  - Could use same Clause 28 Annex and register definition

Enable customers to deploy the Next Generation of BASE-T products at the most efficient power level possible for their network architecture.(1)

(1) dove_01_1112_ngbt.pdf)

Objectives

I recommend an objective that identifies the Task Force is planning to address the lack of a 10m alternative.

Objective: "*Define an optional 10GBASE-T mode of operation for links up to 10m*"

Conclusion

An opportunity exists to reconcile a long-standing hole in the 10GBASE-T spec, and to provide for a significant acceleration of 10GBASE-T technology.

10GBASE-TSR will require minimal work to specify

A 10m mode will enhance power savings beyond the existing 30m mode of operation

A 10m mode will enable new products to expand market potential

- SFP+ Module
- Very low cost/power 10GBASE-T TOR switches