50 Gb/s Ethernet over a single lane And Next Generation 100 Gb/s and 200 Gb/s Ethernet Study Group and 200 Gb/s Ethernet Single Mode Fiber Study Group Joint Opening Report

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Macau, China

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IEEE 50G/NGOATH & 200G SMF Study Groups Project information

Study Group Organization

Mark Nowell, Cisco, SG Chair

Kent Lusted, Intel, SG Recording Secretary

Study Group web and reflector information

Reflector information: http://www.ieee802.org/3/50G/reflector.html

Home pages:

http://www.ieee802.org/3/50G/index.html

http://www.ieee802.org/3/NGOATH/index.html

Activities since Nov 2015

One interim meeting and 10 ad hoc meetings have been held

Atlanta Interim http://www.ieee802.org/3/50G/public/Jan16/index.html

Ad hocs http://www.ieee802.org/3/50G/public/adhoc/index.html

Interim SG meeting in Jan 2015, Atlanta

Reviewed 26 presentations

11 Straw Polls

21 Motions

Adopted Objectives

http://www.ieee802.org/3/50G/public/objectives_50G_NGOATH_01a_0116.pdf

Adopted CSDs

http://www.ieee802.org/3/50G/public/CSD_50G_NGOATH_01_0116.pdf

http://www.ieee802.org/3/50G/public/NGAOTH_802d3bs_CSD_modification_0116.pdf

Adopted PARs

http://www.ieee802.org/3/50G/public/50G_NGOATH_PAR_0116.pdf

http://www.ieee802.org/3/50G/public/NGAOTH_802d3bs_PAR_modification_0116.pdf

Activities since Nov 2015

Re-chartering of SGs occurred. WG approval @ Jan interim followed by EC approval

Original charters were:

- **50 Gigabit/s Ethernet over a single lane**
- **Next Generation 100 Gb/s Ethernet & 200 Gigabit/s Ethernet**

Adopted objectives, CSDs and PARs were inconsistent with above charters so approval was given to change them.

Updated charters are:

- **50 Gb/s Ethernet over a single-lane Study group and next generation 100 Gb/s and 200 Gb/s Ethernet rates**
- **200 Gb/s Ethernet Single Mode Fiber**

Adopted Objectives (1 of 2)

- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support optional Energy-Efficient Ethernet operation
- Provide appropriate support for OTN
- Support a MAC data rate of 50 Gb/s and 100 Gb/s
- Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 50 Gb/s and 100 Gb/s operation
- Support a MAC data rate of 200 Gb/s
- Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 200 Gb/s operation

Adopted Objectives (2 of 2)

Define single-lane 50 Gb/s PHYs for operation over

- copper twinaxial cables.
- printed circuit board backplane.
- MMF with lengths up to at least 100m
- SMF with lengths up to at least 2km
- SMF with lengths up to at least 10km

Note: Objectives in red have been proposed to be handled by the P802.3bs Task Force (400 Gb/s Ethernet).

Define 200 Gb/s PHYs for operation over

- copper twinaxial cables.
- printed circuit board backplane.
- MMF with lengths up to at least 100m

Provide physical layer specifications which support 200 Gb/s operation over:

- At least 2km of SMF
- At least 10km of SMF

Define a two-lane 100 Gb/s PHY for operation over copper twin-axial cables.

Define a two-lane 100 Gb/s PHY for operation over a printed circuit board backplane.

Define a two-fiber 100 Gb/s PHY for operation over MMF with lengths up to at least 100m

50G/NGOATH & 200G SMF Study Groups Meeting: week plan

Meeting all day Wednesday & Thursday morning

- Venetian Ballroom D

Goals for the meeting

- Review technical presentations
- Review/update/refine current objectives
- Consider new objectives
- Consider feedback on pre-submitted CSDs/PARs
- Update CSDs/PARs

Big ticket items

- Copper Objectives

In 802.3 WG closing plenary

- Request approval on documentation (Objectives, CSDs, PARs)

Questions?

Thank you!