



25 Gb/s Ethernet over a single lane for server interconnect Study Group: status and work

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Draft work

Draft Objectives (Foundational)

- Support a MAC data rate of 25 Gb/s
- 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 a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Support optional Energy-Efficient Ethernet operation

Draft Objectives (Strong Consensus)

Backplane

- Define a single-lane 25 Gb/s PHY for operation over a printed circuit board backplane consistent with channels specified in IEEE Std 802.3bj-2014 Clause 93

Twin-ax options

- A. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m
- B. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m that re-uses the host board silicon transmitter and receiver characteristics specified in IEEE Std 802.3bj-2014 Annex 92A
- C. Define a single-lane 25 Gb/s PHY for operation over copper twin-axial cable consistent with the overall channel budget specified in IEEE Std 802.3bj-2014 Clause 92

Twin Ax Objective options discussed 8/28/14

Twin-ax options

- A. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m
- B. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 5m
- C. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m and up to at least 5m
- D. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, that re-uses the host board silicon transmitter and receiver characteristics specified in IEEE Std 802.3bj-2014 Clause 93
- E. ~~Define a single lane 25 Gb/s PHY for operation over copper twin axial cable consistent with the overall channel budget specified in IEEE Std 802.3bj-2014 Clause 92~~

2 polls: "Chicago Rules" and "Pick one"

- 1) Option A
- 2) Option B
- 3) Option A & B
- 4) Option C
- 5) Option D

Survey Monkey Straw Poll initiated

Twin Ax Objective options discussed 9/2/14

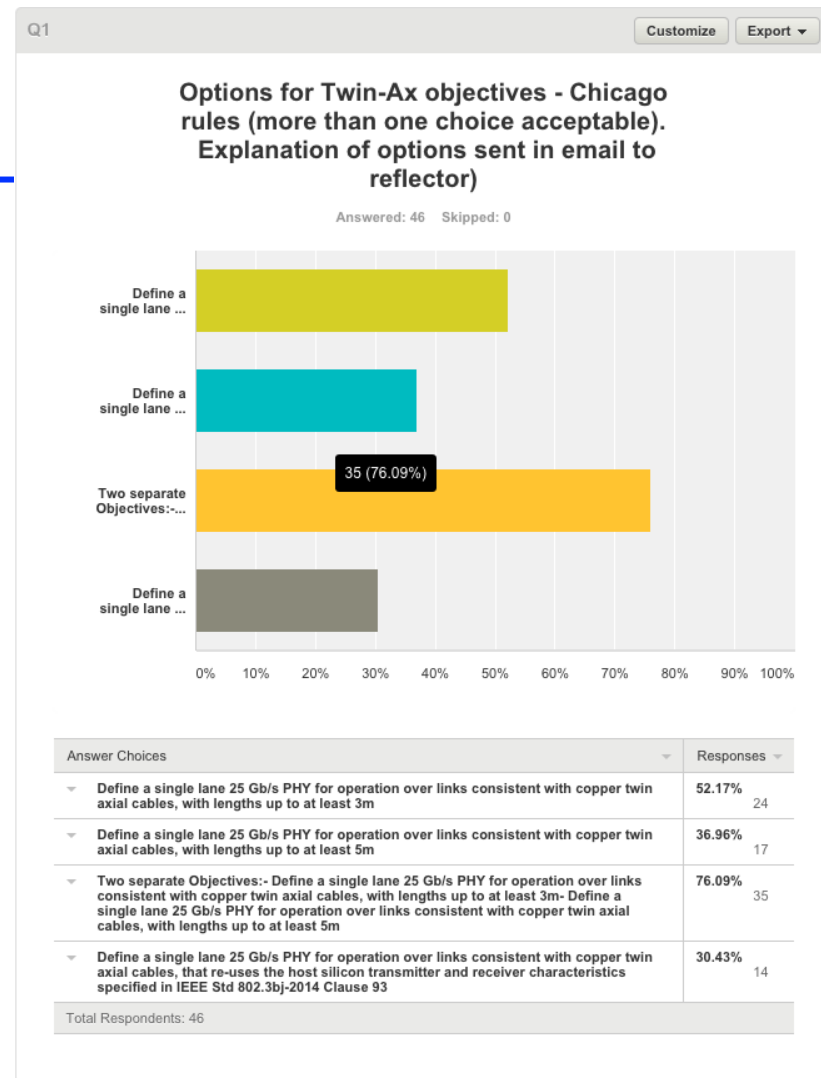
Twin-ax options

- A. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m
- B. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 5m
- C. Two Objectives:
 - Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least
 - Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 5m
- D. Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, that re-uses the host silicon transmitter and receiver characteristics specified in IEEE Std 802.3bj-2014 Clause 93

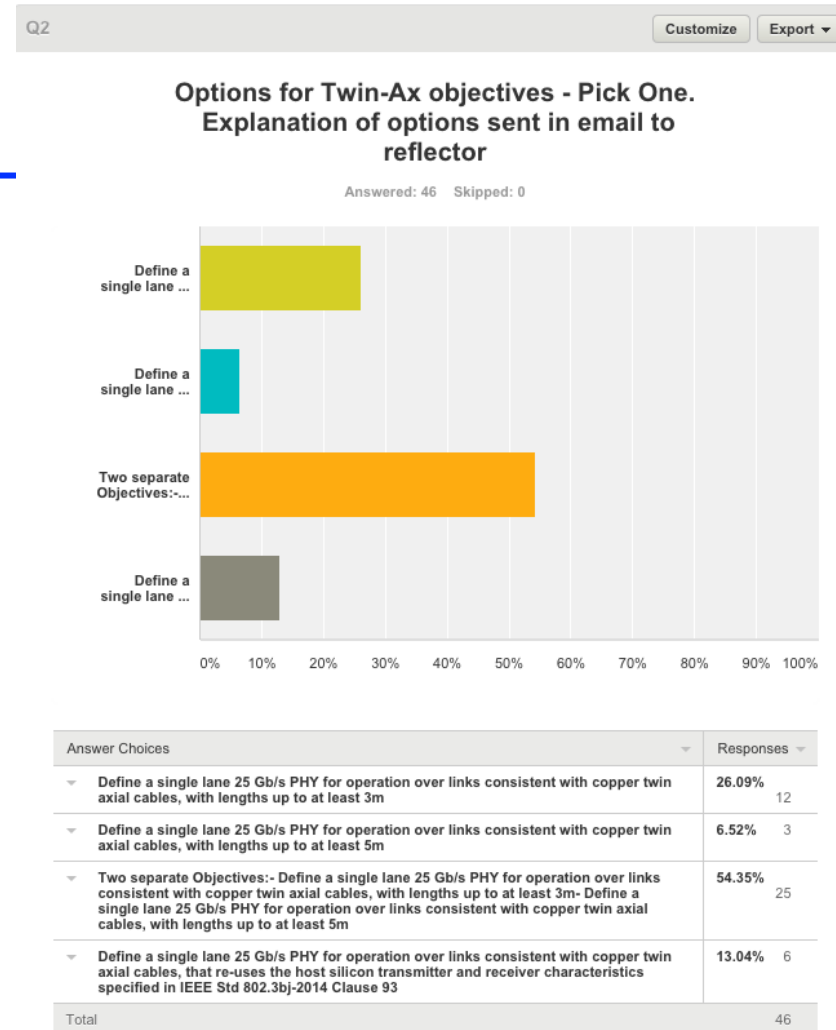
2nd Survey Monkey Straw Poll initiated

- Chicago rules of options
- Pick one
- Chicago rules on what you would oppose

2nd Straw poll results – Chicago Rules



2nd Straw poll results – pick one



2nd Straw poll results – Chicago Rules negative variant

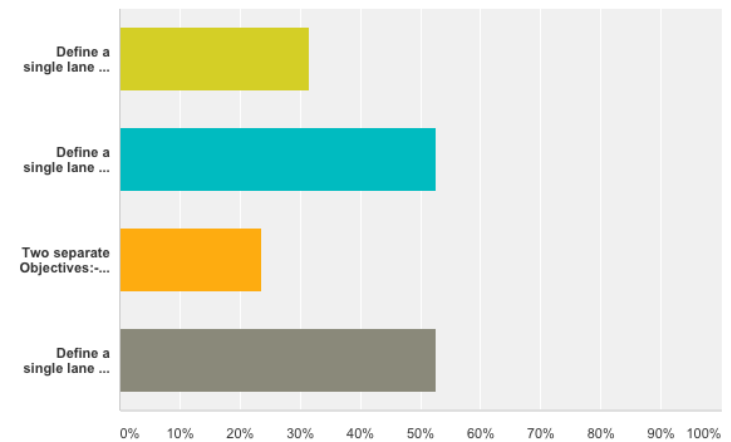
Q3

Customize

Export

I would oppose these options for Twin-Ax objectives - Chicago Rules - pick all you would actually oppose by voting "No" against this option in a motion.

Answered: 38 Skipped: 8



Answer Choices	Responses
Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m	31.58% 12
Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 5m	52.63% 20
Two separate Objectives:- Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 3m- Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, with lengths up to at least 5m	23.68% 9
Define a single lane 25 Gb/s PHY for operation over links consistent with copper twin axial cables, that re-uses the host silicon transmitter and receiver characteristics specified in IEEE Std 802.3bj-2014 Clause 93	52.63% 20
Total Respondents: 38	

2nd Straw Poll takeaway's

- Clear consensus building on the “Two Objective” approach
 - But numbers not enough to pass a motion if only those that voted on straw poll were in the room and voted same way
- Negative variant poll further support the “Two objective” approach as it causes least heart-burn
- Single objective with 3m reach is 2nd alternative – but straw poll seems to indicate that be very hard to achieve consensus on.

Caveat!! → SurveyMonkey is great tool but definitely imprecise way to take these polls since no control on who submits

Next week

- Lots of hall-way discussions please!!