25G Objective, PAR, and CSD Modifications for P802.3bq

IEEE 25GBASE-T Study Group

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WG Motion November'14

- Request that the IEEE 802.3 WG form a study group to develop PAR and CSD modifications to P802.bq to add 25GBASE-T to that project.
- Moved: David Chalupsky
  Seconded: George Zimmerman
  by rule (> 50%)

  Y: 83, N: 0, A: 5

  Passed 6-November 2014, 5:38 pm

IEEE P802.3bq 40GBASE-T Objectives

Current

- duplex operation only
- the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- re erve minimum and maximum Frame Size of current 802.3 standard
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface
- Support Auto-Negotiation (Clause 28)
- Support Energy Efficient Ethernet (Clause 78)
- Support local area networks using point-to-point links over structured cabling topologies, including directly connected link segments
- Do not preclude meeting FCC and CISPR EMC requirements
- Support a data rate of 40 Gb/s at the MAC/PLS Service Interface
- Define a link segment based upon copper media specified by ISO/IEC JTC1/SC25/WG3 and TIA TR42.7 meeting the following characteristics:
  - 4-pair, balanced twisted-pair copper cabling
  - up to 2 connectors
  - up to at least 30 m
- Define a single 40 Gb/s PHY supporting operation on the link segment

Duplicate for 25G

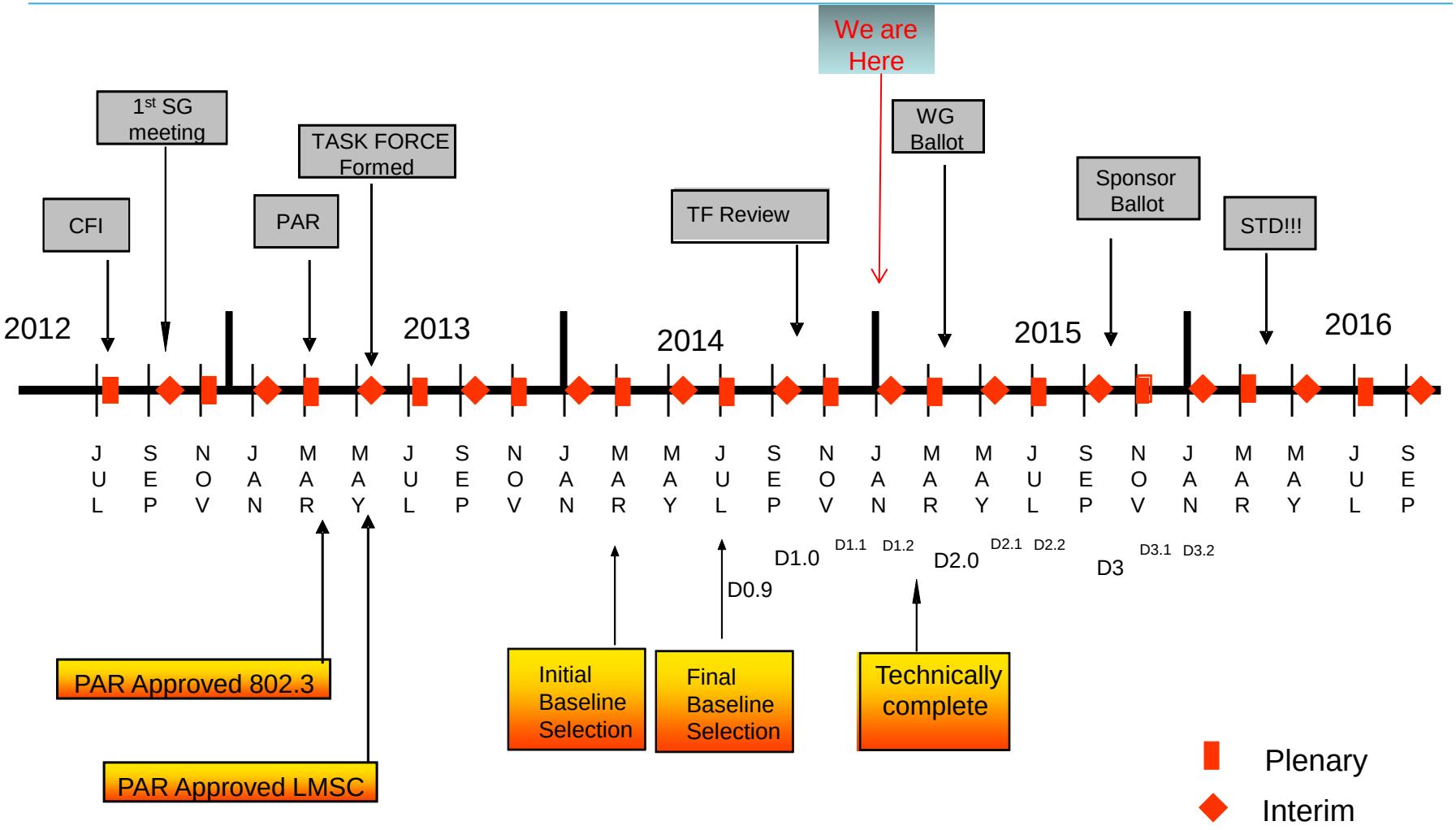
Potential New Objectives

- Support a data rate of 25 Gb/s at the MAC/PLS Service Interface
- Define a single 25 Gb/s PHY supporting operation on the link segment

Potential new P802.3bq 25/40GBASE-T Objectives

- Support full duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum Frame Size of current 802.3 standard
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface
- Support Auto-Negotiation (Clause 28)
- Support Energy Efficient Ethernet (Clause 78)
- Support local area networks using point-to-point links over structured cabling topologies, including directly connected link segments
- Do not preclude meeting FCC and CISPR EMC requirements
- Support a data rate of 40 Gb/s at the MAC/PLS Service Interface
- Support a data rate of 25 Gb/s at the MAC/PLS Service Interface
- Define a link segment based upon copper media specified by ISO/IEC JTC1/SC25/WG3 and TIA TR42.7 meeting the following characteristics:
  - 4-pair, balanced twisted-pair copper cabling
  - up to 2 connectors
  - up to at least 30 m
- Define a single 40 Gb/s PHY supporting operation on the link segment
- Define a single 25 Gb/s PHY supporting operation on the link segment

P802.3bq Adopted Project Timeline



Potential Path Forward

- Sep'14: Request CFI prior to Sept 29th - DONE
- Nov'14: Hold CFI at 802.3 plenary - DONE
  - motion in 802.3 to form Study Group at closing
- Jan'15: Hold SG mtg to modify PAR & CSD,
  - to be forwarded 30 days before March plenary
- Mar'15: 802.3 approval of changes; higher layer approvals
- May'15: P802.3bq operates with expanded scope

Proposed Actions for this meeting

- Objectives
  - Entertain motion for objective modification
- PAR
  - Review existing PAR with markups (chalupsky_25gbt_02_0115.pdf)
  - Entertain motion to approve markups
  - Enter into PAR tool and approve output
  - Entertain motion to approve
- CSD
  - Convert P802.3bq 5 Criteria into CSD format
  - Propose mods to include 25GBASE-T (chalupsky_25gbt_03_01115.pdf)
  - Entertain motion to adopt

Thank You!