25G Objective Modifications and Potential Path Forward

IEEE P802.3bq 40GBASE-T Task Force

David Chalupsky, Intel

Ottawa, ON, Canada
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Objectives modification

- Propose *adding* 25G, not *replacing* 40G with 25G
- Goal to keep 40GBASE-T & 25GBASE-T architectures aligned
  - Minimize extra work to cover both speeds
- It will take time to execute the project scope change – keeping 40G keeps work progressing that is reusable for 25G
- Who knows… 40G might become fashionable again when one-lane XLAUI interface from MAC to PHY becomes feasible
  - …or maybe it will be 50G… we are all pretty poor at predicting the future.

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

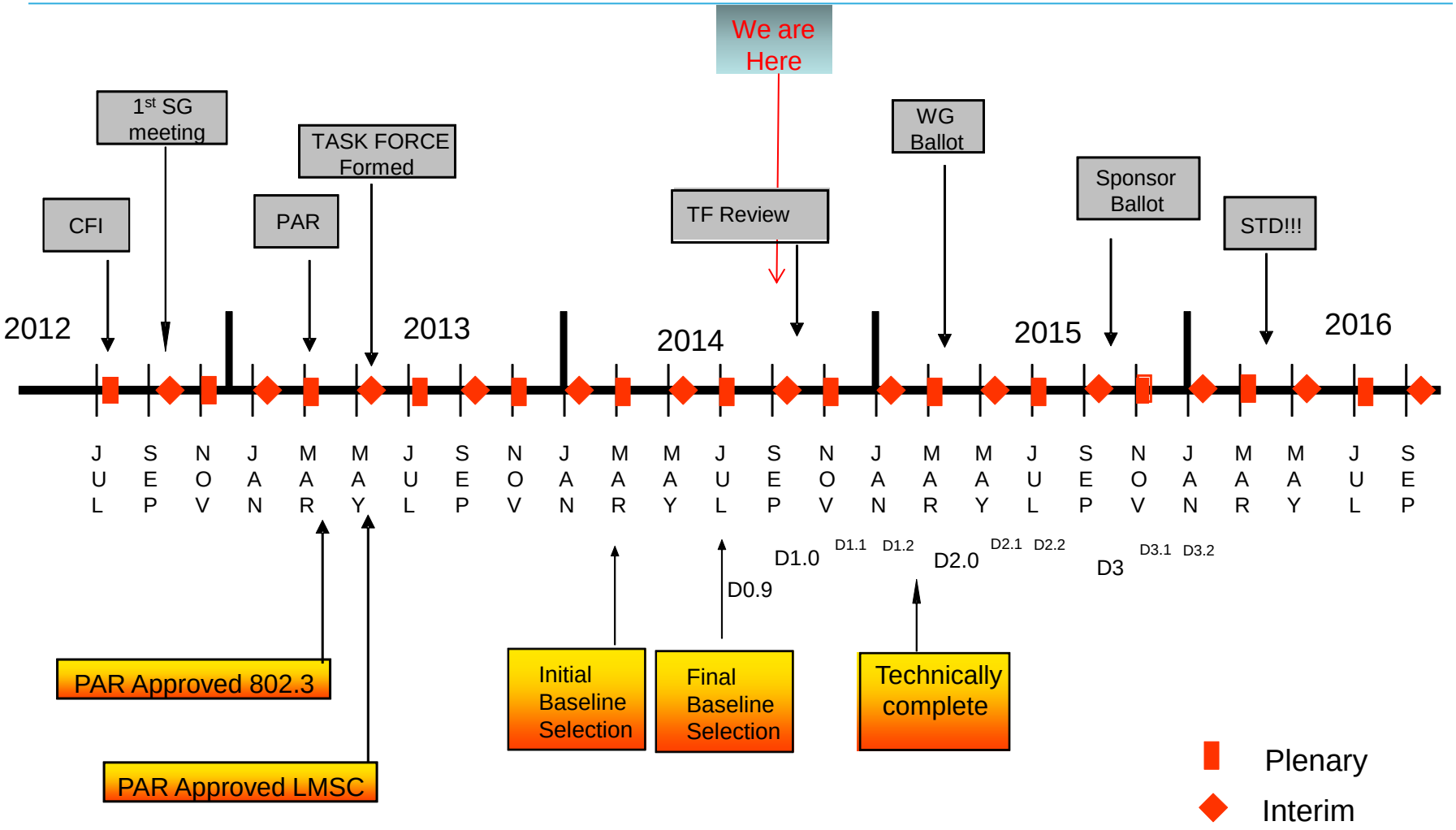
Potential New Objectives

- 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
- Nov'14: Hold CFI at 802.3 plenary
  - 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

Considerations & TBDs

- A CFI is necessary for 802.3
- TBD whether outcome of CFI is a SG or assign work to bq, schedule is the same.
- TBD impact to project timeline
- If bq has already in WG ballot, expanded scope will allow necessary mods to draft
- Need time for 25G to enter TF phase and set architecture direction

Straw Poll

I would support expanding the scope of P802.3bq to include 25GBASE-T.

Yes:

No:

Thank You!