

# The Road to 25GBASE-T: Editorial Considerations, Standards Dependencies, and Potential Timeline

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# Adding in 25GBASE-T...What's it take

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- **BIG WORK:** repeat much of the detail work we've just done to take clause 55 text and convert it to 40G:
  - Frequency scale PMA/PMD and rate specs
    - 15 references to Msymbol/sec + 31 references to MHz on PHY
      - 8 of which are test setups
  - Scale or clean-out fixed references to times (e.g., msec in EEE)
  - Autoneg changes
  - Management register name changes & bit allocs to include 25G
- **Little stuff:**
  - Every 64-bit XLGMII transfer will have parallel reference to 2 32-bit 25GMII transfers
  - Figures and tables for inclusion in 25G clauses
- **What we don't HAVE to do:**
  - New link segment, new PCS to protect unprotected bits, loop timing changes

# Editorial Considerations

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- Nomenclature: Long names
  - 10G/40GBASE-T blah blah is kind of wordy,
  - 10/25/40GBASE-T blah blah is worse
  - 2.5/5/10/25/40/50GBASE-T is unwieldy
- **PROPOSED SOLUTION:** Define term to apply to this family of BASE-Ts
  - Not 1000BASE-T – it's different in too many places
  - If you don't like xGBASE-T, propose something!

# Project Dependencies: 802.3bx

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- Revision draft in sponsor ballot
- Relatively stable
- Adding 25G is no different than 40GBASE-T
  
- PLAN: Check and track these dependencies in WG ballot now

# Parallel work – 802.3bz

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- Much of the work converting to 25G is likely identical to 802.3bz
  - Same registers to add bits/multi-purpose
    - Reduce the workload by defining the term xGBASE-T (currently 10GBASE-T & 40GBASE-T) and just adding PHYs to the definition.
  - Same Autoneg considerations
  - Same parts of the text to manage frequency and possible time scalings
  - Same parts in the text to manage xMII mappings to 64/65B blocks

# Standards Dependencies

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- External - cabling:
  - ISO/IEC 11801-1 Edition 3, TIA Cat 8
    - No difference relative to 40GBASE-T
  - Consideration of other channel specs to satisfy the link segment
    - Problem - what to reference? All channel specs are for 100meters

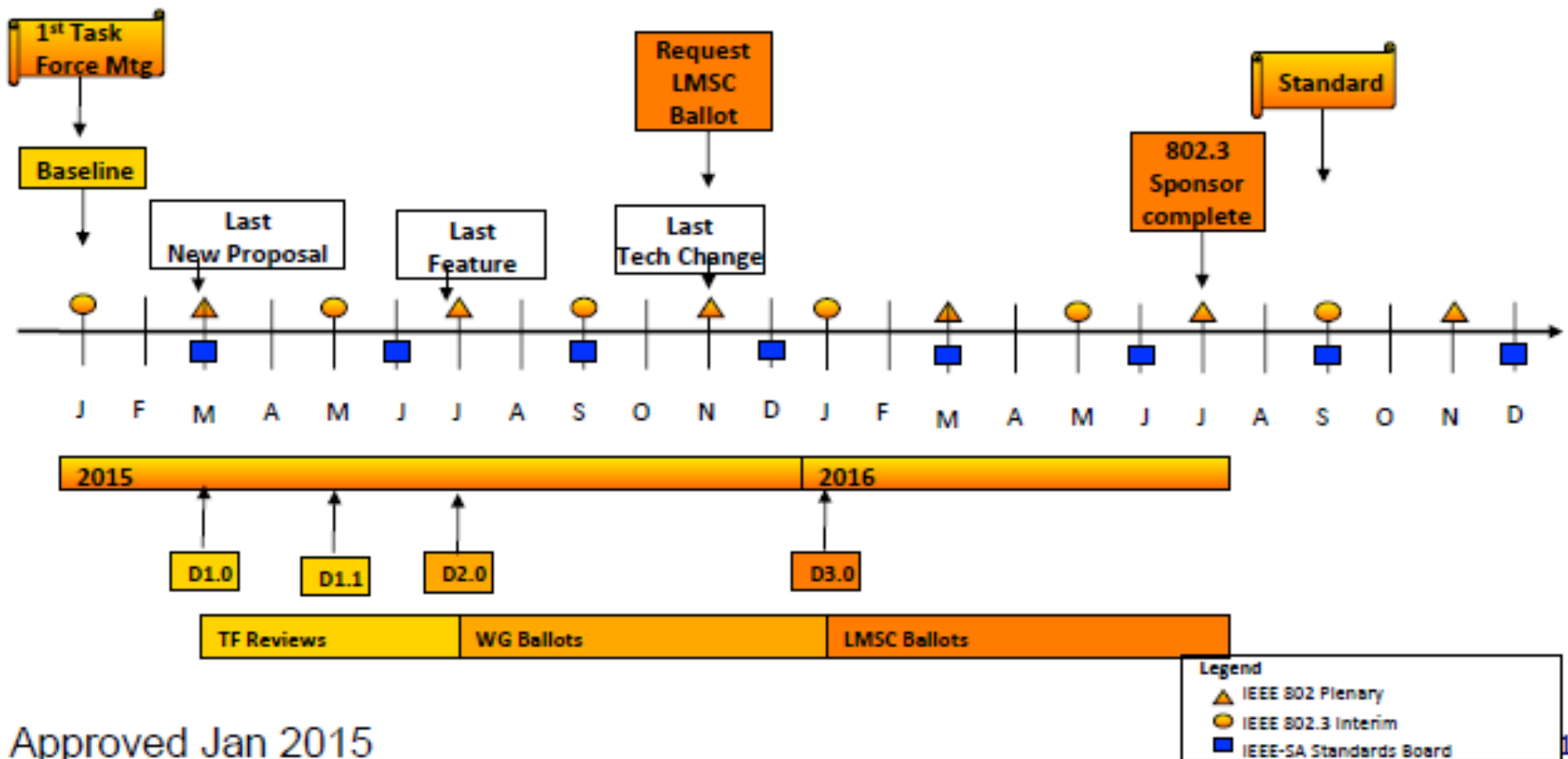
# Project Dependencies: 802.3by

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- 25Gbps Ethernet dependencies in the text (well understood)
  - Clause 105. Introduction to 25 Gb/s networks
  - Clause 106. Reconciliation Sublayer(RS) and Media Independent Interface (25G-MII) for 25 Gb/s operation
  - Clause 109. Physical Medium Attachment (PMA) sublayer, type 25GBASE-R (encodings)
  - Clause 45 25Gbps-specific registers
  - Clause 78 Energy Efficient Ethernet: (esp. 78.1.3.3.1 'get out of fast wake' language)
  - Others?
- Too close to call which one publishes first
- PROPOSED PLAN: track dependent clauses,
- Publication/Sponsor-ballot path TBD, working with leadership
  - Possibilities: 802.3by publishes first, concurrent publication (e.g., hold bq at standards board), or include relevant text in bq if it moves to sponsor ballot first

# 802.3by Timeline

## IEEE P802.3by Task Force Timeline\*

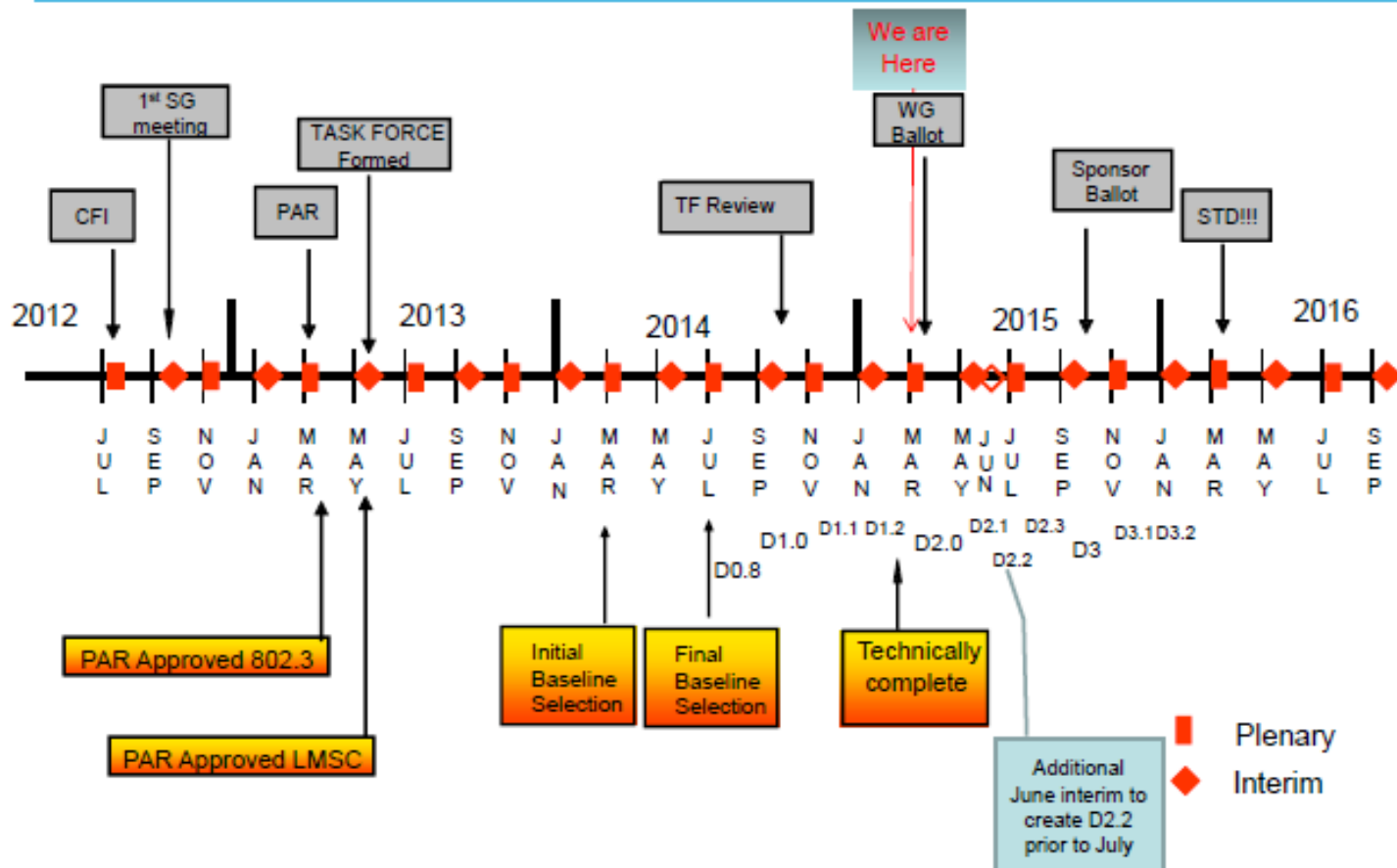


\* Approved Jan 2015



# Timeline, discussed last meeting

## IEEE P802.3bq Potential Timeline with 25GBASE-T



# Ooops, no PAR - impact

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- Objectives, CSDs approved in 802.3, PAR not voted.
- Task Force work of choosing specifications and changing text must wait
  - PAR slips to July, 1st 25/40G WG ballot ~Sept
  - Earliest Sponsor ballot after November plenary
  - Any new content beyond the simple will add cycles
    - Likely slip sponsor ballot to March, possibly July
    - Try to keep it simple!
- **PROPOSED PLAN:** Coordinate with 802.3bz, add now what generalizations can be justified on the basis of 10G/40G or 2.5G/5G/10G/40G