



# 802.3 Next Generation Enterprise BASE-T Access CFI Progress Update for EA Technical Subcommittee F2F

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# History and Goals



# History

- During 802.1/3 Sept '14 interim, Yong Kim (BRCM) talked to a range of people to gauge interest for this project.
- With positive responses, “IEEE 2.5G CFI Initial Draft” is sent out mid-week
- A core steering group for the CFI is formed
  - Yong and I are jointly leading the CFI process
- We are moving forward with refining the deck and building consensus
- We are (lightly) on the agenda at “TEF 2014 : The Rate Debate”
  - BASE-T Ethernet: 1G/10G, 40G Coming Soon, Are 2.5G and 25G Coming Too?
- CFI dates
  - Socialization meetings every Tuesday @ 9:00am PST
  - CFI is scheduled for Tuesday, Nov 4th evening at the IEEE 802 plenary in San Antonio (before 25GBASE-T CFI)

# Goals

- One or more new Ethernet speed(s) between 1G and 10G over UTP.
- We believe there is market need to:
  - support higher than 1GE rates at 100m reach
  - using installed base of Cat 5e and above (with improved performance on better cable).
- Target applications
  - The lead application is Wireless AP needing Ethernet bandwidth ~2Gb/s within 12 months, and ~4Gb/s in 24-36 months.
  - High performance end devices like desktop PCs, etc
- Compatibility
  - Power-efficient solutions for PoE powered devices (802.3 Clause 33)
  - Clause 28 Auto-Negotiation
  - BASE-T from 100Mb/s to 10Gb/s
  - Energy Efficient Ethernet

# Progress and Asks



# CFI Progress

- Agenda will be
  - Overview (CFI owner)
  - Market Drivers (System Builder view)
  - Technical Feasibility (PHY expert view)
  - Why Now? (802.3 ecosystem & timeline view)
- Supporters coming in (~34), more welcomed.
- Main sections of the deck steadily improving
  - Reach out to Peter or Yong (emails later in deck) to help the process.

# CFI Section Summaries

- Market Drivers

- 802.11 APs are low footprint devices (e.g. power, cost, heat)
- A significant portion of installed base cabling is Cat 5e and Cat6
- 802.11ac – Wave 2 APs needing 2 to 4.5 Gb/s rolling out over next few years
- Link Aggregation/10GBASE-T only options today

- Technical Feasibility

- Lots of experience & knowledge from 10GBASE-T
- 2.5G/5G Technology (incl. 2.5/5G BASE-T PHY) for installed base well understood
- Cat 5e/6 has lots of channel bandwidth room to support of rates between 1G and 10G
- We know that solutions are possible

- Why Now?

- 802.11ac Wave 2 provides the key use case that wasn't there before
- Industry is moving
- We need IEEE 802.3 (and Ethernet Alliance) working in partnership with 802.11 ( and Wi-Fi Alliance) to deliver the value of 802.11ac (and beyond) to our customers

# Ask from this group

- Get involved, contact
  - Yong Kim (ybkim at broadcom com)
  - Peter Jones (petejone at cisco com)
- Help us make a success of
  - CFI
  - Study Group
  - Task Force
- Deliver the next broad speed upgrade for Enterprise Access networks over installed structured wiring



Thank you.

