P802.3bn Combined PHY Sub-groups Opening Report

Mark Laubach, Broadcom

Review of Conference Calls since July

- Presentations / focus-itemson calls
  - FEC writeup (Marek Hajduczenia)
  - PHY-Link minimum frame times (Duane Remein)
  - PLC Timestamp (Duane Remein)
- 0 Straw Polls taken
- 0 eStraw Poll taken

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Some Issues Raised

- It has been noted that most of our decisions that haven't mentioned downstream or upstream (no mention whatsoever) should be considered to be downstream only. Upstream still needs to be proposed and considered.

- Note that boyd_3bn_02_0513.pdf (baseline start) is downstream only.

- "OFDMA frame" group of symbols sent together, e.g. 8 symbols

- What is combined fiber + coax max distance with respect to OFDMA frame?

- Symbol alignment needs to be within 10% of the cyclic prefix size.

- Consideration of using a timestamp will be discussed later.

Discussion Items / Open Issues
(ongoing)

- Timestamp: local to the PHY, similar to MPCP, used for ranging
  - Suggestions:
    - Use 32-bit timestamp (based on Reference Time Period)
    - Use MPCP timestamp (available via mgmt)
  - Need baseline proposals on PLC discovery and ranging (Avi?)
- What is frequency guard band of PLC vs data?
- Start and number of RB's for initial Ranging window,
- A detailed discussion on PHY Discovery
  - Information write-up?
  - What is goal of precision / jitter of symbol ranging relative to MPCP timestamp? (mentioned 5 nsec)

PHY Link Work Plan
(updated as per 8/21/13 conf call)

- Topics / Issues remaining:
  - **√** PLC FEC [scheduled for Geneva]
    - PLC error performance (and CRC discussions) [one slide for Geneva]
  - **√** PLC Preamble [scheduled for Geneva]
  - **√** PLC content [socialized at this conference call, scheduled for Geneva]
  - **√** PLC cycle time [128 symbols, aligns with pilot patterns. Has been discussed and is in baseline.]
  - Number of PLC channels (if more than one OFDM channel)
    - Redundancy considerations [need presentations for considerations]
    - TDD and FDD considerations
  - Question: Upstream PLC lowest modulation rate?
    - General assumption that down to QPSK for data channel [actual decision T.B.D.]
    - Discussion: given PLC can be positioned in better frequency spectrum and with LDPC, data rate (in worse spectrum) may have lower data rate in other portions of the spectrum.
  - PLC message protocol: send, reply/ack, timeout, CRC, etc? ("mini-MAC")
    - See last slide in this presentation package for informational reference.
  - CNU PHY time to register – need performance study and targets
    - Coldstart versus Warmstart, Use of OAM, …
  - PHY Ranging, Timestamp (in progress),

PHY sub-Task Force Items
(updated as per 8/21/13 conf call)

- Synchronizations
- Fidelity
  - Error Vector Magnitude (similar/same as MER, etc.)
  - Spurious emissions
- PHY Switching TDD mode
  - Minimum burst size? (Steve: need to agree on windows)
  - How to signal/control Transceiver switching?
  - PLC burst size with respect to TDD burst size.
    - (Duane: minimum required size consideration for conveying MDIO information.)
- PHY delays
  - Fixed, variable, granularity?
- Timing / Clock alignments?

- Chair note on 7/31:
  - Adding CLT transmit "data detector" (similar to CNU/ONU)

Goals for York Meeting

- Amend previous motions to add "downstream" clarification where needed.
  - Email Chair with motion #'s
- Sub-group session on Wednesday
  - Presentations
    - Discuss, straw polls where needed
  - Continued progress
  - Review/update work items / open issues

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THANK YOU