

802.3bn Link Ad Hoc

Summary & Update

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Summary

- Conference calls
 - 4 Calls averaging 15 attendees per call
 - Thursday at 9am Pacific Time
 - 2 presentations made
 - Initial focus on Defining Topics & Link Transport
- We have an Overview and Link Topics
- We have started a list of “Parameters & Status Indicators” and Evaluation Criteria
- We have a list of questions related to Link Transport
- We have ½ of a straw poll

OVERVIEW & TOPICS

Overview

- Objective
 - Define the process for the CLT PHY to connect to CNU PHY before the MAC is enabled.
 - Define any re-negotiation or PHY parameter procedure.
 - Define the PHY parameters to be configured over MDIO & Auto-Negotiation
 - What happens after CLT PHY & CNU PHY power up?
 - What parameters are PHY? (others are MAC)
- Output of the Ad Hoc
 - Baseline proposal
 - A single agreed solution is best.
 - Two or more options with pros and cons is the other option.
 - Joint Presentation for next meeting

Link Topics

- Link Transport
 - Upstream
 - Downstream
 - e.g. Time Inserted or Frequency Inserted, or other
 - Protocol
- Auto-negotiation-Link state machine
 - Finding the Downstream
 - Speeding up the process
 - Initial Upstream
- Message Format & Addressing
 - e.g. Address + Register Pages
- Protocol
 - Dynamic or Static: Master or Slave, who makes change
 - e.g. Echo Protocol
- Parameters and Status Indicators
 - See following slide
- MAC Discovery Compatibility

Parameters & Status Indicators

System Wide

- TDD or FDD

Downstream Possible List

- 192MHz OFDM Channels Characteristics
 - Cyclic Prefix, FEC, Interleaver, symbol length
- 192MHz OFDM Channels: Available Sub-Carrier
- 192MHz OFDM Channels: Sub-Carrier Modulation Order

Upstream Possible List

- 192MHz OFDM Channels Characteristics
 - Cyclic Prefix, FEC, Interleaver, symbol length
- 192MHz OFDM Channels: Available Sub-Carrier
- 192MHz OFDM Channels: Sub-Carrier Modulation Order
- Transmit Power Level
- Transmit Offset

Evaluation Criteria

- Link establishment time.
- Simplicity
- Must work all of the time
- Must work below the MAC
- Bandwidth used

LINK TRANSPORT

Link Transport Notes

- How many CNUs are supported?
 - In general, this is a design specification issue but we need to size fields.
 - Fields should be 15 bits to match LLID size.
 - Practical Numbers for analysis: 256 CNU PHYs per CLT PHY. (8 LLIDs per CNU, what does really mean to the PHY?)
- Do we need a Link configuration on the CLT PHY for every CNU PHY?
 - Some parameters will be common but others will be unique.
 - If we have to specify transmit power, delay offset, etc; they would be unique.
- How wide is the frequency transport?
 - Not discussed yet
- How fast does it need to be? What is the data rate?
 - Not discussed yet
- How is the initial contention handled?
 - Not discussed yet
- Do we need to detect collisions or just provide avoidance?
 - Not discussed yet
- How do we find the initial downstream channel?
 - Not discussed yet
- Do we need to acknowledge information from CLT PHY to CNU PHY?
 - Not discussed yet
- How fast do things change in the Network?
 - Updates in minutes.

Link Transport Notes

- How do we handle ingress noise on PHY link channel?
 - Double the channel
 - Move the channel
 - Avoid placing it on top of ingress, use clean spectrum, low modulation order. Only move if required.
- Do we define a grid position for the PHY link channel to simplify searching?
 - One location in a 24MHz channel? (Centered or first carriers or last carriers?)
 - One location in 6MHz and/or 8MHz channel grid? (Centered or first carriers or last carriers?)
 - One location in 2MHz channel grid? (Centered or first carriers or last carriers?)
- We need to define a fixed pattern (preamble) in the downstream PHY link channel
 - Can we use a CP instead of a preamble?
 - Fixed period?

Straw Poll #1

- Should the downstream PHY link channel be a fixed modulation order (e.g. QPSK)?
- Y: 7 out of 10 attendees
- N: (ran out of time)
- Abstain: (ran out of time)

11/8/12 Conference Call: For reference only, updated straw poll at next meeting.

THANK YOU