(Unconfirmed)
IEEE P802.3bn EPoC PHY Task Force
May 14-16, 2014
Norfolk, Virginia, USA
Chair: Mark Laubach
Recording Secretary: Duane Remein

Summary:

The P802.3bn EPoC PHY Task Force met for two and one half days during the IEEE 802 plenary in Norfolk, Virginia, USA. A total of 9 presentations were reviewed and 5 technical motions were passed. A summary of decisions can be viewed at decisions. A comment resolution session was held for Task Force Draft D0.5. Creating Draft D0.6 was authorized. An informal ad hoc work item and socialization session was held Friday morning after the close of the agenda and adjournment of the formal meeting.

Wednesday, 14 May 2014

9:05 AM The Chair called the meeting to order. Introductions were held and each participant declared their employer and affiliation.

Opening

The chair gave his opening report and read the IEEE Patent Policy as presented in the draft agenda.

Motion# 1

Move to: Motion to approve minutes as amended from 18-20 March 2014, Beijing China meeting: unconfirmed_minutes_3bn_01a_0314.pdf

Moved: Duane Remein Second: John Ulm
Procedural Motion: passed by voice without opposition

9:17 AM - The Chair make a call for potentially essential patents. There was no response.

The chair reviewed the Task Force work item list and timeline.

Motion# 2

Move to approve the Agenda.

Moved: Leo Montreuil Second: Duane Remein
Procedural Motion: passed by voice without opposition

The Chair reviewed Work Item and Socialization conference calls since the last face to face meeting.

Reports:

Duane Remein reviewed the Opening report: Editors.

Detailed presentation material:

Leo Montreuil Scrambler for 802.3bn EPoC (rev 01a) **Broadcom**

This presentation suggested a seed for the PHY Link scrambler, and using the same Scrambler and seed for both US & DS PCS.

Avi Kliger, Upstream Framing (rev 01a) **Broadcom**
Duane Remein **Huawei**

This presentation built on a presentation given in Beijing. An upstream superframe was described in detail which allows the PHY to schedule US PHY Link, PHE Discovery or Fine Ranging such that the total number of subcarriers reserved for MAC data frames is a constant.

Duane Remein PHY Link Frame adjustments to align with US Superframe **Huawei**
Avi Kliger **Broadcom**

This presentation proposed changes to the downstream and upstream PHY Link frame to align with the superframe proposals.

Duane Remein Clause 45 Changes for US Superframes (rev 06a) **Huawei**
Avi Kliger **Broadcom**

This presentation proposed changes and additions to the Clause 45 registers to align with the Superframe proposals.

11:45 AM recessed for lunch, 1:12 PM reconvened.

Leo Montreuil Upstream Probe Sequence for 802.3bn (rev 02a) **Broadcom**

11:45 AM recessed for lunch, 1:12 PM reconvened.

Leo Montreuil Upstream PHY Discovery Preamble for 802.3bn (rev 03a) **Broadcom**

This presentation proposed a pseudo-random sequence and seed for use in the PHY Discovery response preamble.

Leo Montreuil Upstream Fine Ranging Preamble for 802.3bn (rev 04a) **Broadcom**

This presentation proposed a pseudo random sequence and seed for use in the Fine Ranging response preamble.

Leo Montreuil Upstream PHY Link Pilot Pattern for 802.3bn (rev 05a) **Broadcom**

This presentation proposed a Pilot pattern for use in the upstream PHY Link signal.

Leo Montreuil Using Burst Marker to signal Start and Stop RE with Upstream Data (rev 06a) **Broadcom**

This presentation built on a presentation given in Beijing regarding burst marker structure. This refinement proposed allowing the start burst marker to point to the first subcarrier in the burst that contains MAC data. Likewise it was proposed to allow the ending burst marker to point to the last subcarrier in the burst that contains FEC Parity.

The group held an open discussion to socialize this day's presentations before recessing at 5:50 PM.

Thursday, 15 May 2014

9:15 AM The Chair called the meeting to order. Duane Remein assumed the Chair for comment resolution.

Held comment resolution; a total of 46 comments were resolved including 8 “E”, 4 “ER”, 26 “T” and 8 “TR”. See P8023bn_draft0d5_Comments_Approved_Responses.pdf for details.

2:05 PM – Mark Laubach resumed the Chair.

The group held an open discussion on Framing and PHY Discovery before beginning motions.

Motion# 3

Move to:

* Adopt and incorporate in the draft the bit scrambler recommendation on pages 2, 3 and 4 of montreuil_3bn_01a_0514.pdf for the upstream PCS MAC data path function and PHY Link. The seed shall have a default value and may also be set via the PHY Link.
* Adopt and incorporate in the draft the bit scrambler recommendation on pages 5 and 6 of montreuil_3bn_01a_0514.pdf for the downstream PCS MAC data path function and PHY Link. The seed shall have a default value and may also be set via the PHY Link.

Moved:	Leo Montreuil	Second:	Duane Remein
For:	14		
Against:	0		
Abstain:	3		
Technical (>= 75%)		Motion Passed	

Motion# 4

Move to: Adopt and incorporate in the draft the Upstream Probe Sequence recommendation on pages 2 and 3 of montreuil_3bn_02a_0514.pdf without staggering.

Moved:	Leo Montreuil	Second:	Duane Remein
For:	14		
Against:	0		
Abstain:	3		
Technical (>= 75%)		Motion Passed	

Motion# 5

Move to: Adopt and incorporate in the draft the PHY Discovery preamble on slide 4 of montreuil_3bn_03a_0514.pdf.

Moved:	Leo Montreuil	Second:	Avi Kliger
For:	10		
Against:	1		
Abstain:	6		
Technical (>= 75%)		Motion Passed	

Motion# 6

Move to: Adopt and incorporate in the draft the Upstream PHY Link Pilot Pattern on slide 2 of montreuil_3bn_05a_0514.pdf without the Complementary Pilots (CP).

Moved:	Avi Kliger	Second:	Tom Kolze
For:	11		
Against:	0		
Abstain:	3		
Technical (>= 75%)		Motion Passed	

Motion# 7

Move to: Adopt the upstream burst marker proposal in slides 3 and 4 of montreuil_3bn_06a_0514.pdf with the example shown on slide 5 for information.

Moved:	Rich Prodan	Second:	BZ Shen
For:	8		
Against:	6		
Abstain:	3		
Technical (>= 75%)		Motion Failed	

Motion# 8

Move to: Accept in bulk the comment resolutions for all Editorial comments as recorded in 8023bn Draft 0.5 Comment Proposed Responses 140507. Authorize the Editors to create Draft 0.6 from Draft 0.5 by incorporating approved baseline and comment resolution material from the May 2014 meeting as recorded in Draft 0.5 Comment Approved Responses.

Moved:	Duane Remein	Second:	Avi Kliger
For:	15		
Against:	0		
Abstain:	0		
Technical (>= 75%)		Motion Passed	

The Chair held straw polls on future meetings.

5:00 PM The meeting recessed.

9:00 AM the chair reconvened the meeting

Motion# 9
Move to Adjourn

Moved: Tom Kolze Second: Rich Prodan
Procedural Motion: passed by voice without opposition

9:05 AM the Chair adjourned the meeting

Informal ad hoc Work Item and Socialization session

The group held an informal ad hoc work item and socialization discussion from 9:05 AM until 11:15 AM. The topics below were discussed and are recorded below. This information is informal and represents potential future areas for socialization and consensus building.

1) Fine ranging response could overlap with Probe symbols. There would need to be 3 or more adjacent probe symbols to accommodate the ± 1 symbol inaccuracy for CNUs that have only undergone PHY Discovery.
2) A minimum RTT of 1 RB (8 symbols or ≥ 172 us for minimum cyclic prefix) may be OK. This equates to a round trip distance of approximately 22 km (44 km total) of Coax or 17 km (34 km total) of fiber.
3) A Resource Block spectrum of 1 SC (i.e., eliminate options for 4 or 8 SC per RB) with a duration of 8, 12, 16 symbols may be OK. This has some implications:
    a. Pilots would have a configured repeating pattern. Resource blocks would be configured to include Pilots or not to include Pilots.
    b. Bursts could start on any resource block but would always start and stop with a pilot. If the starting RB is not configured to include the pilots, pilots would be added. The added pilot would have no effect on resource blocks already configured to include pilots.
    c. Subcarriers close to (within approximately 8 subcarriers) a spectrum “Edge” (i.e., boundary between excluded and non-excluded SCs) may require a lower bit loading.
4) Several methods to identify the first subcarrier in an upstream burst containing MAC data were discussed. Methods discussed included:
    a. Unused subcarriers within the first transmitted resource block in a burst are filled with IDLE Characters as described in boyd_3bn_01_0314.pdf
    b. The Start Marker is cyclically shifted and used to point to the subcarrier within the resource block which first contains data as described in montreuil_3bn_06a_0514.pdf
    c. Data in a burst is marked with a timestamp and the timestamp/data is shifted to the beginning of the first resource block in the burst.

Meeting Attendance

The following represents the attendance for the formal portion of this interim meeting as initialed in the attendance binder that was passed around the meeting each day. 27 individuals indicated their attendance for this meeting. If an attendee has an affiliation in addition to or different from their Employer for this meeting, it should be noted.

Lastname	Firstname	Employer	Affiliation (If Different)	Wed	Thu	Fri
Agata	Naoki	KDDI		X	X	X
Allard	Michel	Cogeco Cable		X	X	X
Boyd	Ed	Tibit Communications	Xingtera	X	X	*
Chang	Xin	Huawei			X	
ElBakoury	Hesham	Huawei		X	X	X
Gorshe	Steve	PMC-Sierra			X	
Hajduczenia	Marek	Bright House Networks		X		X
Hou	Victor	Broadcom		X	X	X
Kliger	Avi	Broadcom		X	X	X
Knittle	Curtis	CableLabs		X	X	X
Kolze	Tom	Broadcom		X	X	X
Kramer	Glen	Broadcom		X		
Laubach	Mark	Broadcom		X	X	X
Lin	Rong	Luster Light Tech Group Beijing		X	X	X
Lin	Rujian	Shanghai Luster Teraband Photonics		X	X	X
Liquan	Yuan	ZTE Corp		X	X	
Mallette	Edwin	Bright House Networks		X		
Montreuil	Leo	Broadcom		X	X	X
Noll	Kevin	Time Warner Cable		X	X	X
Peters	Michael	Sumitomo		X	X	
Prodan	Rich	Broadcom		X	X	X
Rahman	Saifur	Comcast		X	X	X
Remein	Duane	Huawei		X	X	X
Shen	BZ	Broadcom			X	
Ulm	John	Arris		X	X	
Zhang	Bing	Xidian University		X		
Zhang	Jin	Marvell Semiconductor		X	X	X

Note 1: The imat.ieee.org Attendance Tool is the formal recording mechanism for attendance records while present at an IEEE 802.3 working group or subgroup meeting. The P802.3bn attendance recorded here is for backup purposes as needed.

Note 2: Friday's meeting attendance is indicated as follows: "X" denotes attendance during the start of the formal meeting through adjournment and includes attendance for the informal ad hoc session. "*" denotes attendance for the informal ad hoc session as noted by The Chair.