IEEE P802.3bn EPoC PHY Task Force Opening Report

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IEEE 802.3 Working Group
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San Antonia, Texas, USA

Reflector and Web

- **Email**
  - **stds-802-3-epoc@listserv.ieee.org**

- **Web Page**
  - **http://www.ieee802.org/3/bn**
  - Note: includes ad hoc committee areas

- **Private Area (for draft documents)**
  - **http://www.ieee802.org/3/bn/private**
  - **Empty at present**

IEEE P802.3bn EPoC PHY Documents

- ## PAR
  - http://www.ieee802.org/3/bn/P802_3bn_PAR_300812_approved.pdf

- ## 5 Criteria
  - http://www.ieee802.org/3/bn/EPoC_5Criteria_200712_approved.pdf

- ## Objectives
  - http://www.ieee802.org/3/bn/EPoC_objectives_190712_approved.pdf

Activities Since July Plenary

- PAR approved 30 August 2012
  - Task Force created
- First Task Force meeting 27 & 28 September, Geneva
  - 48 attendees
  - 23 presentations
  - 8 technical motions approved
- Additional interim, 28 & 29 October, Hangzhou, China
  - 82 attendees
  - 14 presentations and 4 ad hoc committee reports
  - Information exchange primary focus, no technical motions
  - Interesting learning experience handling translations, etc.

September Interim Summary

- 802.3 member voting

- Confirmed chair appointment: Mark Laubach

- Appointed Steve Shellhammer, vice chair

- Charted 4 ad hoc committees:
  - RF Spectrum
    - Chair: Steve Shellhammer, Qualcomm
  - Evaluation Criteria and Requirements
    - Chair: Steve Shellhammer, Qualcomm
  - PHY Link
    - Chair: Ed Boyd, Broadcom
  - Channel Model
    - Chair: Duane Remein, Huawei

Technical Motions Approved, 27-28 Geneva

#	Motion Text	Motion #
1	Study support for configurable power saving mechanism for EPoC interface (s), technical details for further study.	5
2	Adopt OFDM for downstream EPoC PHY.	6
3	Adopt OFDMA for upstream EPoC PHY.	7
4	Adopt LDPC for downstream inner code. There is no decision on outer code at this time.	8
5	Support exclusion of one or more OFDM subcarriers.	10
6	Support multiple downstream modulations orders up to 4096QAM, support multiple upstream modulation orders up to 1024QAM.	11
7	In the downstream use OFDM channels of 192 MHz with OFDM sampling frequency of integer multiples of 10.24 MHz.	12
8	The standard shall support the ability for higher capacity by combining multiple 192 MHz OFDM channels.	14

All motions passed unanimously except #5 and #12

Decision history at: http://www.ieee802.org/3/bn/public/decisions/decisions.html

Motion #5 and #12 Summary

- Motion #5: Study support for a configurable power saving mechanism for EPoC interface(s). Technical details of a specific solution are for further study.
  - Moved: Marek Hajduczenia , Second: Ed Mallette
  - 802.3 voters: Yes 10 / No 2 / Abstain 9   (official vote)
  - All in room: Yes 14 / No 3 / Abstain 22   (survey)
  - Motion ruled technical (>= 75%) by the Chair
  - Motion Passed

- Motion #12: In the downstream use OFDM channels of 192 MHz with OFDM sampling frequency of integer multiples of 10.24 MHz
  - Moved: Jorge Salinger, Second: Dave Barr
  - 802.3 voters: Yes 9 / No 2 / Abstain 8
  - Motion ruled technical (>= 75%) by the Chair
  - Motion Passed

October Interim Summary

- Continued 802.3 member voting
- 82 attendees
  - 62 first time TF/SG attendees, mostly from China
- 14 presentations and 4 ad hoc committee reports
  - 10 presentations from individuals affiliated with Chinese Cable MSO/SARFT
- Information exchange primary focus, no technical motions
- Interesting learning experience handling translations, etc.
  - All presentations were translated to English
  - Real time "serial" translation from volunteers
  - One normal day of presentations extended to two days with translation
- Summary: Successful, generating "learning experiences"

Plan for this Week

- Meet two and half days:
  - Tue, 9A to 6P (reports and presentations)
  - Wed, 9A to 5P (presentations)
  - Thu, 9A to Noon (timeline, straw polls, motions)
- 20 presentations, 4 ad hoc committee reports
- Schedule ad hoc committee face-to-face meetings
  - T.B.D. on 3 of 4: before/after/during TF agenda
- Adopt Task Force Timeline
- Further progress on technical decisions

Agenda – Tuesday
(draft, subject to TF approval)

Tuesday, November 13 - Start of IEEE Task Force Meeting			Length	Time
Mark Laubach	Broadcom	Agenda and General Information	0:45	9:00 AM
Steve Shellhammer	Qualcomm	ad hoc report: Evaluation Criteria and Requirements	0:20	9:45 AM
Steve Shellhammer	Qualcomm	ad hoc report: RF Spectrum	0:20	10:05 AM
Duane Remein	Huaweii	ad hoc report: Channel Model	0:20	10:25 AM
		Break	0:10	10:45 AM
Ed Boyd	Broadcom	ad hoc report: PHY Link	0:20	10:55 AM
Avi Kliger	Broadcom	Link up and PHY Link Channel	0:45	11:15 AM
Nicola Varanese	Qualcomm	PHY Control Channel and PHY Initialization Procedures	0:45	12:00 PM
		Lunch	1:00	12:45 PM
David Law	HP	Potential IEEE P802.3bn architecture	0:30	1:45 PM
Andrea Garavaglia	Qualcomm	Further Details on TDD	0:30	2:15 PM
Jorge Salinger and Matt Schmitt	Comcast, CableLabs	Possible Deployment and Growth Scenarios for EPoC	0:30	2:45 PM
Ed Boyd	Broadcom	Upstream Mapping	0:30	3:15 PM
		Break	0:15	3:45 PM
David Barr	Entropic	Bonding at PHY-Layer	0:30	4:00 PM
Avi Kliger	Broadcom	On the complexity of PHY Bonding	0:30	4:30 PM
Steve Shellhammer	Qualcomm	Channel Bonding Sublayer	0:45	5:00 PM
		Break for Day - Recess IEEE TF meeting until 9AM Wednesday		5:45 PM

Agenda – Wednesday
(draft, subject to TF approval)

			Length	Time
Ed Boyd	Broadcom	Face-to-face: PHY Link ad hoc	1:00	8:00 AM
Wednesday, November 14 - Start of IEEE Task Force Meeting			Length	Time
Marek Hajduczenia	ZTE	EPoC PHY and MAC proposal	0:50	9:00 AM
Ed Mallette	Brighthouse Networks	Bright House Networks Downstream SNR Characterization (DOCSIS Carriers)	0:20	9:50 AM
Matt Schmitt	CableLabs	Motivations for Investigating Multiple MCS for EPoC	0:30	10:10 AM
		Break	0:15	10:40 AM
Eugene Dai	Cox Communications	Choice of Modulation Profiles for EPoC	0:30	10:55 AM
Ed Boyd	Broadcom	Multiple downstream profile implications	0:45	11:25 AM
		Lunch	1:00	12:10 PM
Juan Montojo, Andrea Garavaglia and Patrick Stupar	Qualcomm	Feature Matrix and Specification impact	0:30	1:10 PM
Andrea Garavaglia and Juan Montojo	Qualcomm	Adaptive Modulation and Coding	0:45	1:40 PM
Hal Roberts	Calix	Homeworx Lessons" Subtitle: What can we learn from the first deployment of OFDMA on HFC?	0:30	2:25 PM
Marek Hajduczenia	ZTE	MAC Efficiency Issues	0:30	2:55 PM
Duane Remein	Huawei	Efficiency	0:15	3:25 PM
		Break	0:15	3:40 PM
Juan Montojo, Christian Pietsch	Qualcomm	OFDM Numerology	0:30	3:55 PM
Break for Day - Recess IEEE Task Force meeting until 9AM Thursday				4:25 PM

Agenda – Thursday
(draft, subject to TF approval)

Thursday, November 14			Length	Time
Mark Laubach	Broadcom	Timeline Adoption	1:00	9:00 AM
Mark Laubach	Broadcom	Polls and Motions	1:30	10:00 AM
Mark Laubach	Broadcom	Closing	0:20	11:30 AM
Adjourn - by 12Noon to permit time for lunch and IEEE 802.3 WG plenary start				11:50 AM

Thank You!