Unconfirmed Minutes - Multiple MCS IEEE 802.3bn EPoC Ad Hoc – 020513

Attendance

Attendee	Present
Alan Brown – Aurora	
Andrea Garavaglia – Qualcomm	x
Avi Kliger – Broadcom	
Bill Keasler – Ikanos	x
Bill Powell – ALU	x
Charaf Hanna – ST Micro	
Christian Pietsch – Qualcomm	
Curtis Knittle – CableLabs	x
Dave Barr – Entropic	
Dave Urban – Comcast	
David Law – HP	
Duane Remein – Huawei	
Dylan Ko – Qualcomm	
Ed Boyd – Broadcom	
Ed Mallette - Brighthouse	
Eugene Dai – Cox	
George Hart – Rogers	
Guansheng Lu - Huawei	
Hesham ElBakoury – Huawei	x
Jim Farmer – Aurora	x
Joe Solomon – Comcast	
John Dickinson – Brighthouse	
John Ulm – Motorola	x
Jorge Salinger – Comcast	
Juergen Seidenberg – BK Tel	
Juan Montojo – Qualcomm	x
Leo Montreuil – Broadcom	
Liuming Lu – B-Star	x
Lup Ng – Cortina	
Marek Hajduczenia – ZTE	x
Mark Laubach – Broadcom	
Matt Schmitt – CableLabs	
Michel Allard – Cogeco	x
Mike Darling – Shaw	
Mike Emmendorfer – Arris	
Nicola Varanese – Qualcomm	
Ony Anglade – Cox	x
Patrick Stupar – Qualcomm	
Peter Wolff – Titan Photonics	

Raanan Ivry – Wide Pass	x
Ramdane Krikeb – Videotron	
Saif Rahman – Comcast	x
Sanjay Kasturia – Qualcomm	
Satish Mudugere – Intel	x
Steve Shellhammer – Qualcomm	
Thushara Hewavithana – Intel	
Tim Brophy – Cisco	x
Tom Staniec – Cohere	
Tom Williams –Cablelabs	
Venkat Arunarthi – Cortina	
Victor Hou – Broadcom	
Volker Leisse - CEL	x
Yitshak Ohana - Broadcom	

Patents Policy

- Everyone familiar with the policy; no response to call for patents

Current Status (Slide Review)

Reviewed the activities to date and next steps for the MMP Ad Hoc

No comments or discussion

Meetings are Tuesdays at 9 AM EST and Thursdays at 1 PM EST.

MMP Tool for Capacity and Gain – John Ulm

Updated slides from the Phoenix meeting were reviewed

Is there additional penalty due to the addition of Multicast, or do we get additional benefit from Multicast gains?

- The multicast goes into the slowest modulation profile, which reduces the efficiency

Cyclic prefix at 15 Khz or 25 Khz?

- If we used a 25 Khz CP, then we would see some gains there

Next step is to determine reasonable profiles to analyze

- The probability of any channel to be broadcasting are equal, so a bell shaped distribution seems reasonable. This was shown in presentations from Comcast.
- Also have data from Shaw and Rogers
- But when looking at other data from MTAs, the curve was much narrower
    - Good point; this device is intended to be connected in a way similar to MTAs
- Would be good to analyze a couple base use cases
- Comcast to share MTA data; encourage other operators to do so as well

FEC and Bit loading

- We should discuss how much granularity we want to have here

Multicast – what range should we use?

- % of data capcity? Fixed data rate?
- To Comcast, 15% seems high; we are working on a multicast infrastructure currently and expect it to be 10% at the highest
  - This allows us to target specialized content to a specific area where it will be popular
  - Also useful for cases where all viewers are watching the same event – i.e., the Super Bowl
- May be some cases where the multicast stream is used by a much smaller audience
- Don't you have to plan capacity based on the assumption that most viewing will be on a unicast basis?
  - Multicast infrastructure will be for addressing peak usage for linear content – e.g., prime time content
  - Plan is to multicast all linear programs that are being watched; becomes more efficient as more than one user watches that linear content
    - Helps to smooth out peak utilization
- Cogeco and Cox agree with 10% for multicast

If we had ½ as much spectrum, does multicast decrease in proportion?

- As the number of subscribers decrease, the gains from multicast decrease

Gate messages impact on switching profiles in the last codeword still needs to be assessed.

- John will try and resolve as much of this as possible before the Thursday call

MMP Specification Impact Presentation – Andrea Garavaglia

SMP is the starting point – slide 3 summarizes this