802.3bn EPoC Ad-hoc
Multiple Modulation Profile (MMP)
Open Report

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Jorge Salinger, Comcast – Chair
Presented by Saif Rahman – Comcast

Current Objectives of the Ad-Hoc

- Make a decision on whether to include MMP or not into the EPoC Standard by the March 2013 Plenary
- If the Ad-hoc agrees that MMP should be implemented in some or all use cases, then expand the objective of the Ad-Hoc to achieve consensus on how MMP would be implemented

MMP Ad-Hoc Meeting Summary

- Conference Calls on Tuesdays at 9:00 – 10:00 AM ET and Thursdays at 1:00 – 2:00 PM ET
  - Scheduled for world-wide participation
- Met twice a week since the Phoenix IEEE meeting
  - 9 meetings
  - Average of 18 participants in each meeting

Straw Polls

- 8 straw polls were held
  - Each straw poll taken over both weekly meetings to ensure participation
  - Each participant submitted 1 vote for any given straw poll
- 2/14-1: Should MMP be required for TDD?
  - Yes: 21 No: 2 Undecided: 6
- 2/14-2: Should MMP be specified for DS in FDD?
  - Yes: 9 No: 9 Undecided: 10
- 2/14-3: Should MMP be required for DS in FDD?
  - Yes: 3 No: 18 Undecided: 7
- 2/14-4: Should MMP be optional for DS in FDD?
  - Yes: 7 No: 17 Undecided: 4

Agreement that we should include MMP for TDD

Strong preference to exclude MMP for FDD DS.

Straw Polls (Continued)

- 2/14-5: Should MMP be specified for US in FDD?
  - Yes: 15 No: 3 Undecided: 9
- 2/14-6: Should MMP be required for US in FDD?
  - Yes: 9 No: 9 Undecided: 10
- 2/14-7: Should MMP be optional for US in FDD?
  - Yes: 8 No: 14 Undecided: 6
- 2/21-1: MMP shall be used in bursting DS and US transmissions in the EPoC standard.
  - Yes: 20 No: 1 Undecided: 10

- We are arriving to consensus
- Key issue for undecided votes is understanding the proposal for MMP in FDD US (reviewed proposals from Marc Werner and Ed Boyd during 3 subsequent meetings)
- Discussed over Email a better-worded, comprehensive straw-poll. See Proposed Motion (next slide)

Proposed Motion

The EPoC standard shall support multiple modulation profiles for the bursting DS and US PHY and a single modulation profile for the continuous DS PHY.

YES: NO: Abstain:

Conclusions

- There is wide agreement, shown in the last straw poll, that implementing MMP in the bursting interfaces is desirable.
- Presentations have shown that:
  - MMP can address per CNU variability in channel quality more effectively than typical US RF interventions (power adjustments, pre-equalization)
  - MMP more effectively uses bandwidth across CNUs with different channel qualities; all CNUs are not brought down to worst performer
  - Since CNUs only have to support one Tx MP at a given time, does not increase the complexity of the CNU
  - The CLT needs to know the modulation scheme of the incoming burst and conveying should not be complex
    - This could be supported by using burst markers
  - Specifying MMP for FDD US will not greatly increase the specification effort, since it should be the same as TDD US
  - FDD US will have a minimal impact on complexity of the CLT

Next Steps

- Present a motion to provide support for MMP in the EPoC standard
- Continue with teleconferences as needed
- If the consensus from the TF is to recommend that MMP shall be supported in EPoC:
  - Proposals on how MMP could be supported should be completed during normal course of business
  - Ad Hoc can meet to discuss pros/cons of proposals and achieve consensus on approach to take