

Meeting Minutes

Group: IEEE P802.3bn Channel Model Ad Hoc committee.

Event: Teleconference

Date: 3 Jan 2013 from 5:30 PM to 6:45 PM EST

Recorded by Duane Remein

Summary: The ad Hoc discussed progress on the channel model and the order of priorities on topology/frequency range combinations. A template for the downstream channel model parameter table was reviewed. As with the upstream parameter table there will be several tables based on differing scenarios and topologies. It is clear that a complete, well verified channel model will not be ready for the January meeting. However, a great deal of parametric data will be provided in that timeframe allowing the Task Force to progress on high level PHY definition, especially for the downstream direction.

Opening

The group reviewed the agenda.

The group reviewed IEEE Patent Policy and a Call for Patents was made, no responses were received.

Discussion

The group discussed progress on the template for the downstream parameter tables (see howald_01_0113.pdf). As with the upstream parameter tables there will be several tables, each associated with one or more spectrum scenarios and network topologies. Overall the downstream tables will be very similar to the upstream tables. The example numbers in the table reviewed are somewhat DOCSIS centric (such as 85 MHz spectrum limit) and are illustrative only.

The scenario/topology is defined in rows 2-7 columns B-D. This includes; HFC D/S Spectrum, Cascade Depth, Channel Loading, Optical Architecture, and Premise Architecture. The number of amplifiers refers to the total number in the cable segment not just the path to any single CNU.

Many of the parameters in the table are similar to those with like names in the upstream table. For item 3, OFDM Power at CMTS Input, the term "CMTS" should be understood to mean CLT (or FCU in the CablLabs system architecture). This parameter defines the signal seen at the upstream receiver, the exact frequency buckets are TBD and will depend on the final RF Spectrum width selected for the upstream channel.

It was questioned why OFDM power was not defined on a sub-carrier basis and it was noted that use of single sub-carriers is very unlikely but rather sub-carriers will be grouped together, the buckets presented are familiar to those in the cable industry. It was noted that OFDM power might be defined in terms of sub-channels if such an entity is defined. It was pointed out that upstream transmitter power specifications will be part of the PHY specification. It was suggested that a parameter combination of path loss and frequency variation might be a good choice to use in the upstream channel model. It was

mentioned several times that tables and parameters for all passive networks (or Node+0 networks) might vary significantly from tables for topologies more commonly deployed currently.

Interference is split between well known interferers (items 5, 6, 7 & 8) and other noise sources (items 9 & 10) that are less well defined.

It was questioned if MSOs had or could provide data to verify assumptions/simulations behind the Amplitude Variation parameters. The data has been collected but it has not yet been examined in detail.

It was noted that Amplitude Slope will be more significant in some scenarios than others.

Parameters for Group Delay Variation and Echo Profile are still being developed through simulations. In some cases there is no significant body of data to verify against for these parameters, especially for frequency bands not currently used in cable plants.

In general the group expects to define 8-9 (hopefully fewer) scenarios for the channel model. The task force should expect a fairly good downstream channel model for several scenarios to be presented in the January meeting. The upstream channel model tables will be less well defined in the January time frame.

Action Items

No new action items were taken.

| Item | Date | Assigned to | Status | Description | Response/Update |
|------|--------|-------------|--------|--|--|
| 9 | 121018 | | O | Capture static model in Excel | Need an author if a this model is needed |
| 10 | 121128 | D Remein | O | Get channel model data template completed for Chinese MSOs | from EPoC SIG 11/19/12 |

Detailed presentation material:

All presentations will be available at [the p802.3bn private web site](#).

Attendees:

| Name | Affiliation |
|--------------------|--------------------|
| Laubach, Mark | Broadcom |
| Montreuil, Leo | Broadcom |
| Rahman, Saifur | Comcast |
| Remein, Duane | Huawei |
| Roberts, Hal | Calix |
| Shellhammer, Steve | Qualcomm |
| Solomon, Joe | Comcast |