**Evaluation Criteria and Requirements Open Issues**

**Evaluation Criteria**

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| **Potential Evaluation Criteria** | **Evaluation Criteria Recommended to Task Force** |
| EPoC Delay using EPoC Delay Model [1]  [1] Andrea Garavaglia, Ed Boyd, Rick Li, Bill Powell, Hesham ElBakoury, and David Barr, “EPoC Performance Model Delay and Efficiency,” September 2012 | EPoC Delay using EPoC Delay Model [1]  [1] Andrea Garavaglia, Ed Boyd, Rick Li, Bill Powell, Hesham ElBakoury, and David Barr, “EPoC Performance Model Delay and Efficiency,” September 2012 |
| Design to support a time transfer error performance of +/-120 ns or less from the CLT MAC/PLS to the CNU MAC/PLS  Notes   * There are a number of ways this can be met: Fixed & equal delay from MAC/PLS to the Medium and the Medium to MAC/PLS (but a not likely case) * Equal TX / RX delay to/from the MAC/PLS interface to/from the medium * Reportable time delay across the PHY layers to a known level of precision in each direction (may depend on configured OFDM, FEC, and interleaving configured parameters) * Others? |  |

**Requirements**

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| **Potential Requirement** | **Requirement Recommended to Task Force** |
| The standard shall support a downstream data rate of at least 1.6 Gb/s at the MAC/PLS service interface, in a 192-MHz OFDM channel, in baseline channel conditions | The standard shall support a downstream data rate of ~~at least~~ 1.6 Gb/s at the MAC/PLS service interface, in a 192-MHz OFDM channel, in baseline channel conditions  (Discussed by the Task Force Nov 2012, but not approved by the Task Force)  Will bring this to the TF again after baseline channel conditions is specified |
| The MAC/PLS data rate shall scale linearly with the number of OFDM channels, in same baseline channel conditions | The MAC/PLS data rate shall scale linearly with the number of OFDM channels, in baseline channel conditions  (Adopted by the Task Force Nov 2012) |
| The PHY should provide protection against burst noise  The burst noise will be specified by the Channel Model Ad Hoc | The PHY should provide protection against burst noise  The burst noise will be specified by the Channel Model Ad Hoc |
| Delay from the MAC/PLS interface to the Medium of less than TBD ms | Note: The TF will develop a proposed design, with state diagrams for each of the sublayers, and then calculate the delay. At that point the TF will decide if it is acceptible or not. |
| Delay from the Medium to MAC/PLS interface of less than TBD ms | Note: The TF will develop a proposed design, with state diagrams for each of the sublayers, and then calculate the delay. At that point the TF will decide if it is acceptible or not. |
| The jitter from TX MAC/PLS interface the medium shall be less than TBD ms  Set TBD to the EPON jitter requirement (12 TQ?)  Check how it is specified in EPON. | Note: In the past there has never been a jitter requirement on the PHY. The process involves building state diagrams for the sublayer, determining the tolerance on the delay, and deciding if the tollerance is acceptible. |
| The CNU device should be possible to be installed anywhere in the home (not only at the edge of the drop)  Deeper in the home there may be lower SNR leading to lower throughput.  Different operators may have different deployment scenarios.  Some operators are trying to support the Home Gateway deployment while they still need to support a deployment model where the CNU is anywhere in the home.  There is also the MDU deployment model which is different than the NA operator model.  In business model deployment the SNR may be higher and lower variation.  This is a system level requirement. To put a specific requirement on the PHY this would need to be turned into a Channel Model of SNR and SNR variation, which needs to be supported. | The CNU device should be possible to be installed anywhere in the home (not only at the edge of the drop)  Deeper in the home there may be lower SNR leading to lower throughput.  Different operators may have different deployment scenarios.  Some operators are trying to support the Home Gateway deployment while they still need to support a deployment model where the CNU is anywhere in the home.  There is also the MDU deployment model which is different than the NA operator model.  In business model deployment the SNR may be higher and lower variation.  This is a system level requirement. To put a specific requirement on the PHY this would need to be turned into a Channel Model of SNR and SNR variation, which needs to be supported. |
| It should be possible to implement in currently deployed types of devices, including set top boxes.  There does not seem to be any impact on the PHY other than the previous requirement of being deployed “anywhere” in the home. | This requirement is covered by the previous requirement, so it does not need to be added. |
| Implementation of MEF 23 services should be supported.  This is really a system level specification of delay and jitter (including the DBA and MPCP protocol), and should be address in a different group, like the CableLabs EPoC group  Do we support all of these services?  Suggest we just include delay and jitter requirements. We need to decide what portion of the delay and jitter can be budgeted for EPoC. | We need a volunteer to review MEF 23 and select those sections that apply direclty to EPoC. |
| The CLT to CNU frequency transfer error is less than 15 parts per billion (ppb), in order to support mobile backhaul applications  Comment: The low end CNU should not be required to meet this requirement |  |
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