Chinese Evaluation Criteria Ad Hoc – Minutes April 24th, 2013

Provided the IEEE-SA Patent Policy link.
- https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf

Everyone on the call was familiar with the IEEE patent policy.
A call for patents was made, no responses were received.

Discussion
We discussed 11 questions **brought up by Chinese MSO**.
Q1: Which is preferred for Chinese MSO? Unified DBA for OLT and CLT, or separated DBA on fiber segment and coax segment?
- ✓ Current EOC solutions can meet most of Chinese MSO's requirements, but they prefer to have more strict requirements on latency, jitter, and QoS for next generation EOC.
  - ◆ Requirements under discussion: transmission latency <10ms, jitter <2ms, BER(after FEC) <1e-9. Zero packet loss.
- ✓ There was no consensus on the definition of end-to-end service provisioning. But some Chinese MSOs think unified DBA for OLT and CLT may provide better end-to-end QoS than current PON+EOC solution.

Q2: Opinions on centralized DBA scheduling and 2-stage scheduling for PON and cable system.
(DPOE is not applicable for Chinese market. Chinese MSOs would prefer to have their own PON and cable system architecture.)
- ✓ One opinion is that centralized scheduling has its advantage if the number of CNU / ONU is small on one OLT port. But if terminal number is large, it will cause much more complexity and low efficiency for centralized DBA scheduling.
- ✓ separated PON and cable scheduling has advantages for Chinese MSOs with large connections under one OLT port (In China, bi-directional STB with embedded EOC/CM is being deploying very rapidly, because the embedded EOC/CM is mainly for narrowband singling and without much traffic, so CLT can connect with many terminals)
- ✓ Some MSOs suggested to figure out the relationship between terminal number and DBA complexity / system efficiency. The impact to system QoS with separated DBA should also be considered.
- ✓ Some think that CNU can use a single LLID because current 10GEPON OLT chipsets can support 2K LLID at maximum. However, other MSOs are concerned about the multi-service capability with a single LLID CNU.

Q3: Spectrum planning from Chinese MSO
- ✓ Some MSOs expect that next generation EOC can work on high frequency band, or DS high frequency and US low frequency with FDD. And the high frequency band should be above 860MHz.
- ✓ Generally, most Chinese MSOs prefer TDD because TDD is more flexible in spectrum allocation.
- ✓ Some MSOs suggested to do 2 spectrum plans, one for FDD and the other for TDD.

Q4: What are the requirements of Chinese MSO on data capacity? symmetric or asymmetric for US and DS?
- ✓ There is no consensus on this question among Chinese MSO.
- ✓ One opinion is that the flexibility of TDD applies to this problem.

Q5: What are the Chinese MSO's requirements on the lowest and highest system throughput for US and DS?
- ✓ There is no consensus on this question among Chinese MSOs.

Q6: Comments on one modulation profile per CNU, MMP and broadcasting.
- ✓ One opinion is that grouping CNU into few modulation profiles has its advantage but it will depend

on channel conditions.
- ✓ There are lots of discussions on channel condition. From Chinese MSO's data, the downstream SNR is around 40~45dB in the door and 35~40dB in the room.

Q7: Comments on data encryption.
- ✓ No consensus on whether a data encryption function is needed.
- ✓ DOCSIS encryption is disabled in some MSO's networks.

Q8: Comments on the number of CNUs that CLT and OLT should support
- ✓ One opinion is that CLT should support 64 CNUs at least.
- ✓ Some MSOs suggested that the number of terminals that CLT and OLT should support can be figured out by business model.

Q9: Which network management method is preferred for Chinese MSO?
- ✓ Some MSOs suggested management should be via the PON NMS and PON+EOC approach which is developed in SARFT NGB(Next Generation Broadcasting) access working group.
- ✓ Will discuss it further.

Q10: Is channel bonding is needed?
- ✓ Somebody think channel bonding is difficult for wideband channels of 128MHz and above.

Q11: Issues on interoperability.
- ✓ Some suggested that interoperability related issues (e.g. OAM, management) should be considered. Chinese MSOs will consider this problem once the PHY standard is complete.

Attendance

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Xiaojun Gao	Jiangsu Province Cable Network Company
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Bing Zhang	Xidian University
Hui Zhao	Peking University
Wu Guangsheng	Huawei Technologies Inc
Chengwei Wang	Cortina
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Evan Sun	Huawei Technologies Inc
Liuming Lu	B-star
Jeff Cheng	Qualcomm
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