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P2MP Fiber General Architecture Proposal

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Proposed Subject Areas for EFM's P2MP Fiber Track

1) OSR = Operator Service Requirements

- Service scope with required & optional service classes, functional & performance requirements, etc..

2) OSP = OutSide Plant

- From faceplate to faceplate addressing Loss budgets, reflections, topologies, dispersion considerations (Fiber vs. Laser trade-offs), and wavelength plan (Potential upgrade services).

3) PMD = Physical Media Dependent Layer

- OLT & ONU/T's Optical Transceiver's Dispersion (impacted most by 20km distance), Power Budgets (Observed/Anticipated Sensitivity & Overload), Isolation & Reflections (w/ & w/o WDM l3 for video overlays), FEC & line code impacts to optical loss budget and Burst Mode Dynamic Performance (TX Turn On & Off times, RX stabilization time, CDR clock recovery or lock times and RX dynamic range).

4) PSS = PHY Specific Sublayer

- PHY Bit Stream Framing (e.g., frame format, bit/byte/frame sync, etc.) for continuous and burst mode operation, Link Encoding (e.g., 8B/10B vs Scrambling, etc.), Framing Protection (e.g., CRCs, BIP, BER methods, etc.), Ranging, *Mechanism* for Upstream BW Allocation (e.g., Grants, BW-MAP, etc.), *Mechanism* for Security and Privacy (e.g., churning vs. encryption, etc.), *Mechanism* for Survivability (e.g. Signaling systems like SONET(K-byte) or RPR), PHY layer Quality of Service QoS (e.g. support for realtime and non-realtime traffic) and PHY layer OA&M.

5) OMC = ONT/ONU Management and Control

- OMC provides the overall system and element management functions for both ONT & ONUs.

6) SAS = Survivability And Security

- Survivability and Security requirements for Protection (Duration of outage, operational requirements) and Topologies of protection (1+1, 1:1, X:N, dual 0x1, others?).

7) DBA = Dynamic Bandwidth Assignment

- DBA related to service requirements (service classes and types), DBA performance (response time and fairness) requirements and signaling (bandwidth allocation and requesting) requirements. Note the DBA algorithms for bandwidth allocation should not be specified.

Subject Area Interlock Diagram