



# **L2VPN OAM Requirements & Framework**

## **draft-ietf-l2vpn-oam-req-frmk-04.txt**

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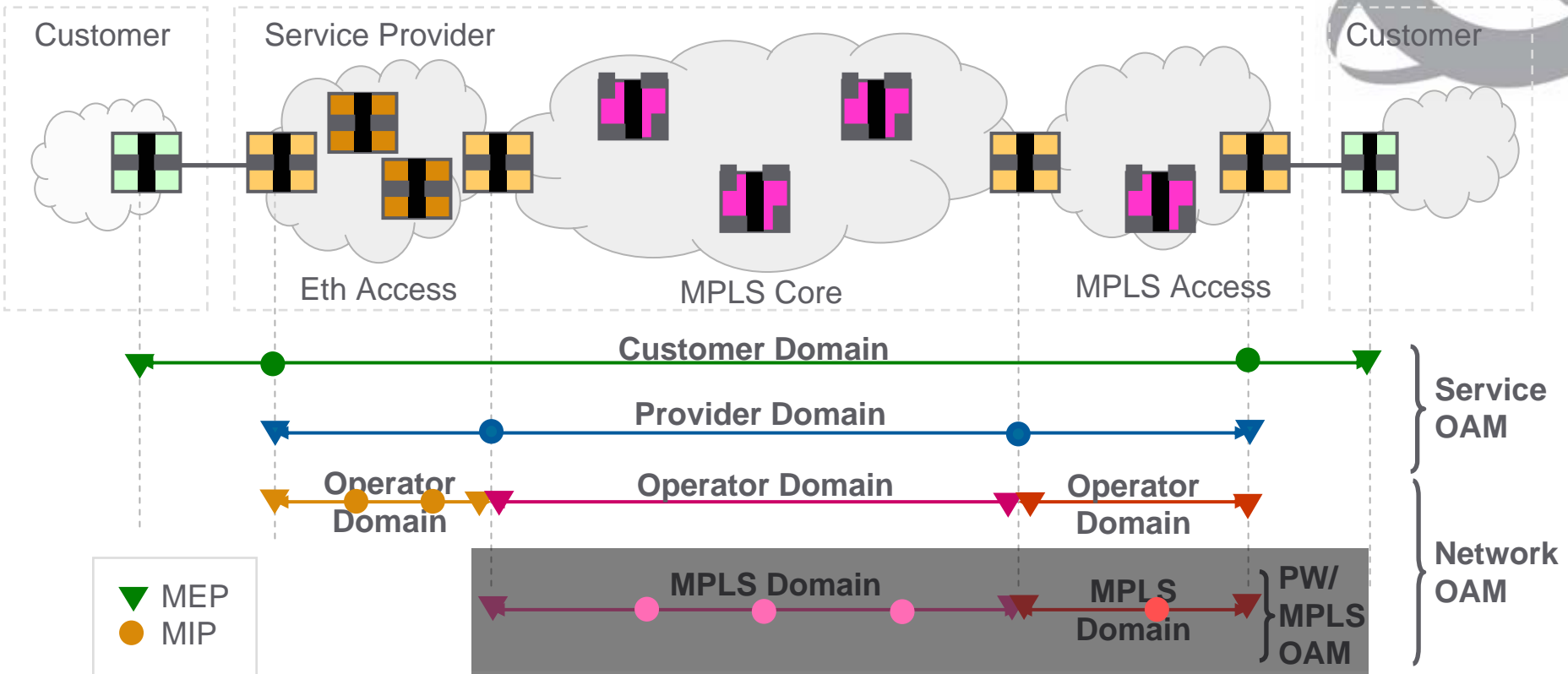
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**November 07, 2005**

# Overview



- > OAM Framework constructs and OAM Requirements
- > Service Layer make use of native technology OAM
- > Underlying MPLS/IP PSN layers make use of PW/LSP OAM

# Draft -04 Editorial Updates



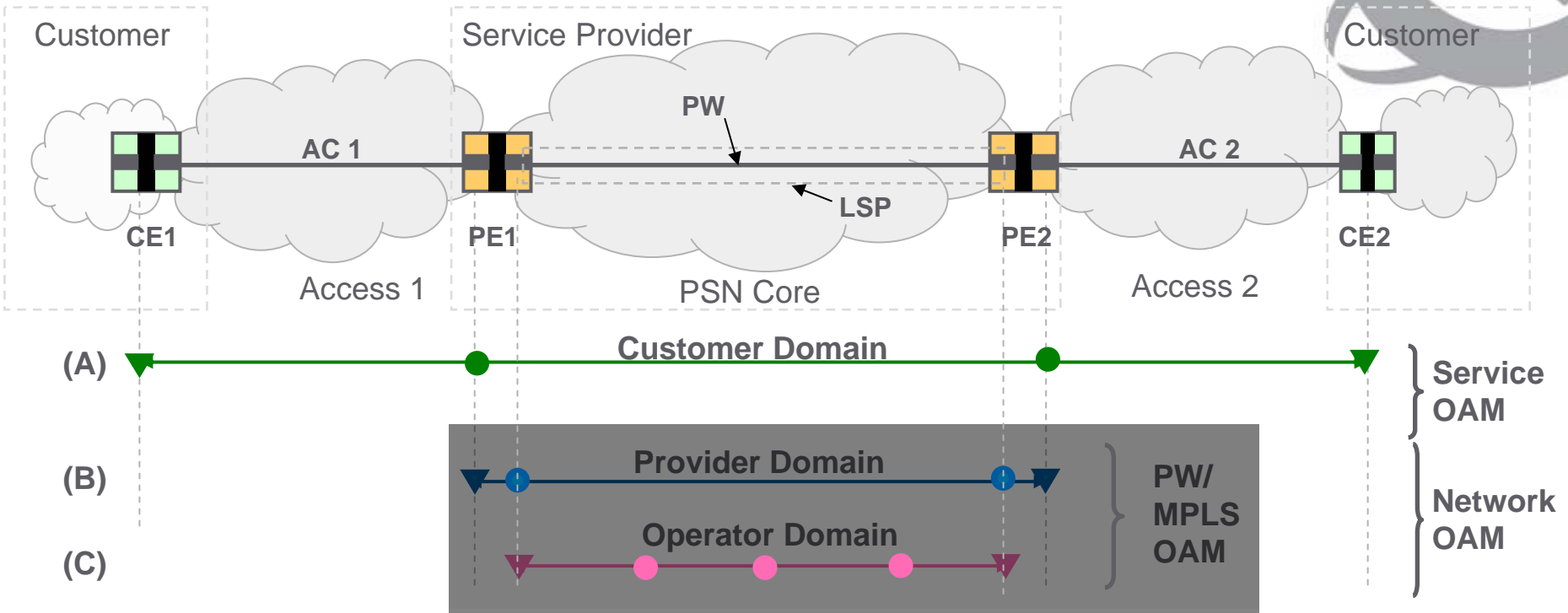
- > Authors and Contributors information updated
  - Additional authors added
    - Simon Delord (Uecomm)
    - Philippe Niger (France Telecom)
  - Additional contributors added
    - Deborah Brungard (AT&T)
    - Lei Zhu (Sprint)
    - Yuichi Ikejiri, Yuichiro Wada (NTT)
    - Kenji Kumaki (KDDI)
  
- > Section 1.1 (Terminology) added
  
- > Section 4 reorganized and other sections added for better readability

# Draft -04 Technical Updates - I



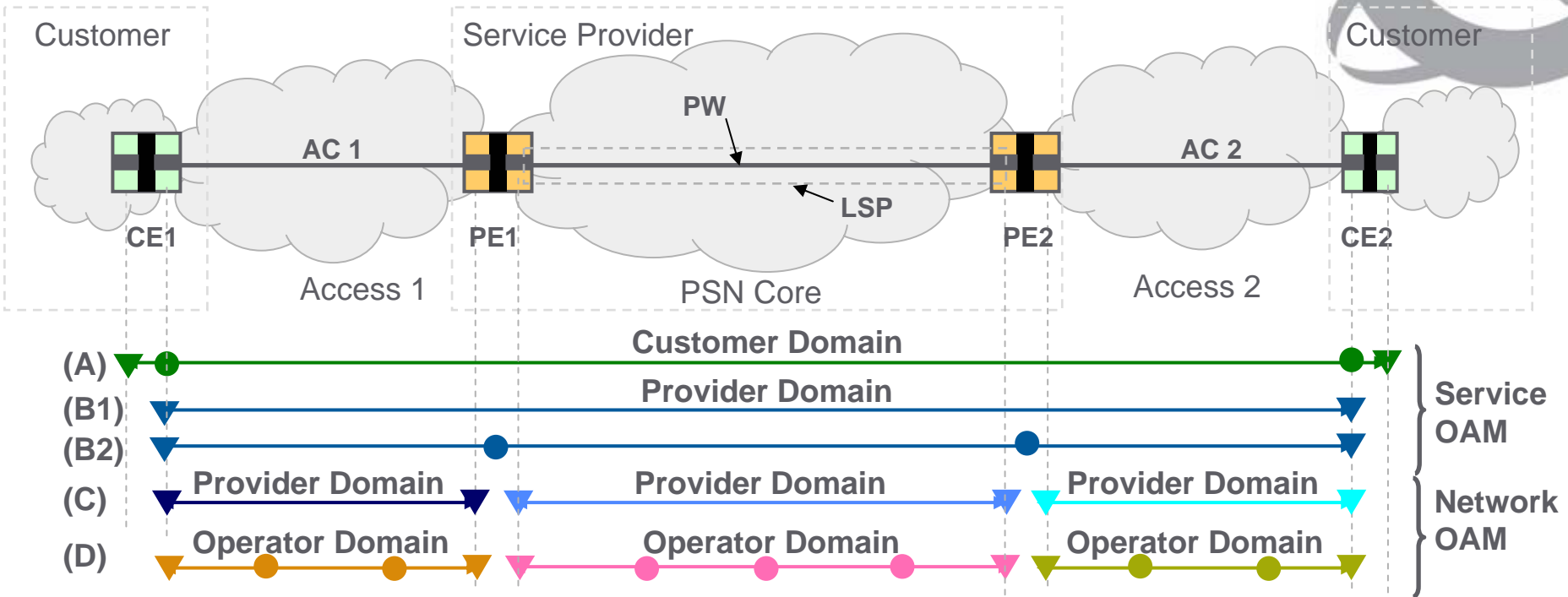
- > Section 3.2 (OAM Domains) updated
  - Hierarchical and Adjacent OAM domains distinction added
  
- > Section 5 (OAM Framework for VPWS) added
  - Based on VPWS framework in draft-delord-pwe3-oam-applications-01.txt
  
- > Section 9 (OAM Operational Scenarios) added
  - Indicate what kind of solutions can be used for different OAM layers without being prescriptive

# VPWS Management Model 1



- > CEs are owned and managed by Customer
  - Customer runs end-to-end OAM using native technology OAM
- > If CE to PE connection is phy interface, AC ME monitoring req is minimal
- > Provider is responsible for monitoring the PW ME
- > AC monitoring is joint responsibility of Customer and Provider

# VPWS Management Model 2



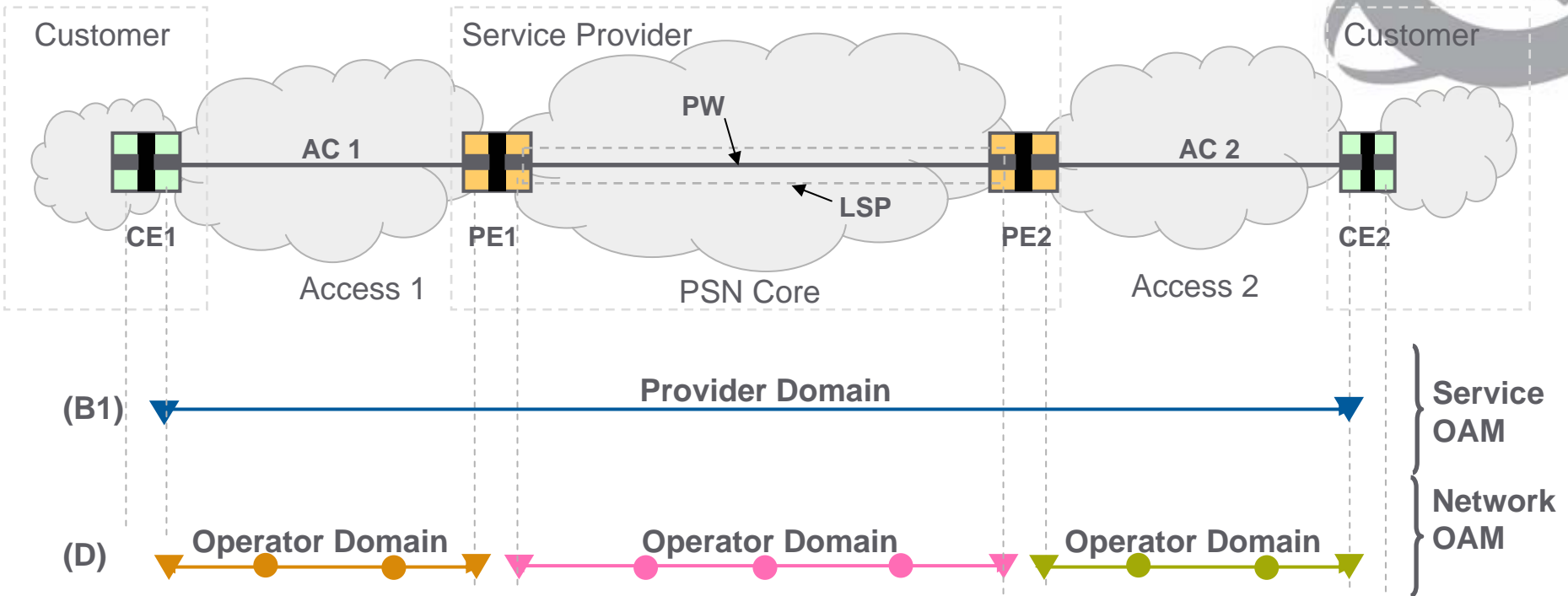
- > Provider manages CEs and runs end-to-end OAM (B1 or B2)
  - (B1) when PEs are client service unaware, (B2) when PEs are client service aware
- > Provider may additionally monitor AC and PW MEs (C)
- > Operator may monitor Access Tunnels and PSN Tunnels (D)
- > This model is assumed to be more common for carrier services
- > Not all MEs may be monitored as Provider & Operator may be same groups

# Draft -04 Technical Updates - II



- > Appendix 1 (Alternate Management Models) added
  - To allow a view of interim solutions when CEs or PEs are not functional to implement recommended Management Model 2
  
- > IPLS OAM Section removed
  - No interest or contributions identified

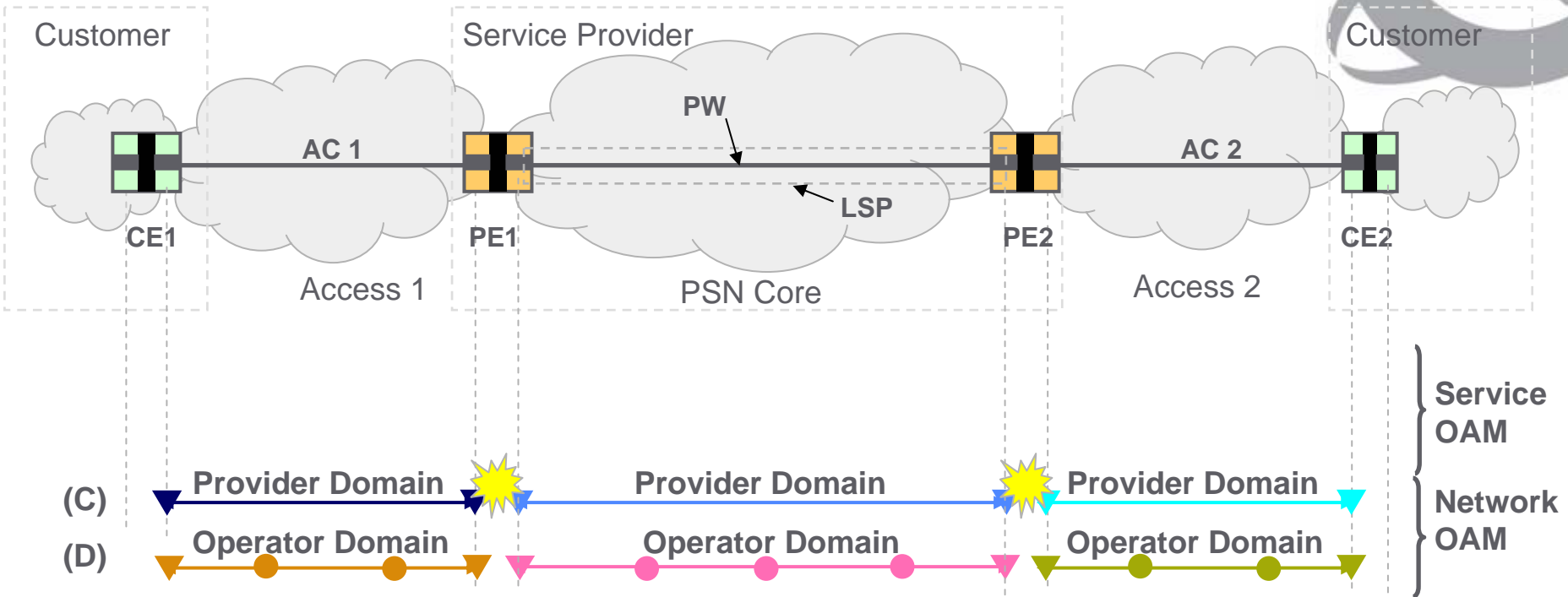
# Alternate Mgmt Model – Minimal OAM



- > Provider does end-to-end OAM (B1)
- > Network Operators monitor segments e.g. Access Tunnels and PSN Tunnels (D)
- > Advantage
  - VPWS monitoring is limited to CEs
- > Limitation
  - No Fault localization capabilities are available at the VPWS service layer



# Alternate Mgmt Model – Segment OAM I/W



- > End-to-end OAM is provided by interworking OAM across segments (C)
- > Interworking functions can be simple or complex depending on homogeneous VPWS or heterogeneous VPWS respectively
- > Limitation
  - End to end service is tied to network technology
  - Interworking function is needed which depends on the AC and PW technology types
  - End to end service path is not exercised

# Next Steps

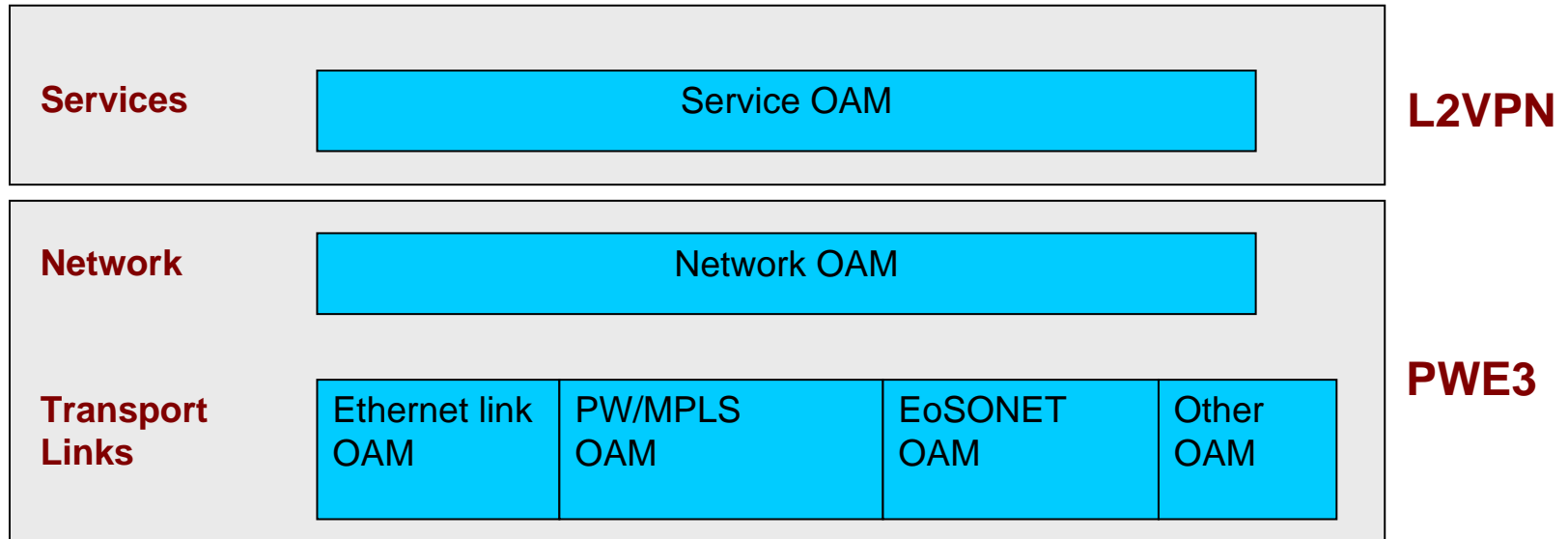


- > Add VPWS OAM Requirements
  - Based on draft-delord-pwe3-oam-applications-02.txt
- > Update References
- > Target last call by IETF-65
  
- > Initiate solution drafts addressing specific OAM requirements
- > Initiate other draft identifying interim requirements (minimal set of OAM requirements) for interim solutions???
  - Volunteers????



# Backup Slides

# L2VPN OAM – How diff. layers come together?



- > OAM Interworking possible to utilize OAM across Layers
- > However, each layer must support OAM capabilities independently

# History



- > IETF-63 (Paris)
  - draft-ietf-l2vpn-oam-req-frmk-03.txt updated submitted
  - Agreement to include VPWS framework and requirements from draft-delord
  - Discussion to reflect how the framework can accommodate interim solutions
- > IETF-62 (Minneapolis)
  - draft-ietf-l2vpn-oam-req-frmk-02.txt update submitted
  - Editorial updates based on discussion during IETF-61 meeting
- > IETF-61 (Washington D.C.)
  - draft-ietf-l2vpn-oam-req-frmk-01.txt discussed
  - Agreement to continue work for L2VPN Service OAM
  - Agreement to specifically identify requirements on underlying technologies supporting L2VPN e.g. PWs and/or LSPs
- > IETF-60 (San Diego)
  - Draft-ietf-l2vpn-oam-req-frmk-00.txt submitted
  - Overwhelming support for draft-mohan-sajassi-oam-req-frmk-00.txt to progress as a WG draft (during IETF-59 Seoul meeting and mailing list)